



OSH in figures: Young workers — Facts and figures



**OSH in figures:
Young workers — Facts and figures**

Prepared by Prevent — Institute for Occupational Safety and Health, for the European Agency for Safety and Health at Work, 2006

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ABBREVIATIONS

EODS	European Occupational Disease Statistics
ESAW	European Statistics on Accidents at Work
ESWC	European Survey on Working Conditions
ISCO	International Standard Classification of Occupations
LFS	Labour force survey
NACE	Nomenclature statistique des activités économiques dans la Communauté européenne (general industrial classification of economic activities within the European Communities)

COUNTRY CODES

BE	Belgium
CZ	Czech Republic
DK	Denmark
DE	Germany
EE	Estonia
EL	Greece
ES	Spain
FR	France
IE	Ireland
IT	Italy
CY	Cyprus
LV	Latvia
LT	Lithuania
LU	Luxembourg
HU	Hungary
MT	Malta
NL	Netherlands
AT	Austria
PL	Poland
PT	Portugal
SI	Slovenia
SK	Slovak Republic
FI	Finland
SE	Sweden
UK	United Kingdom



FOREWORD

There are many reasons why young workers are at risk. But they are all things that we can do something about if we are aware of them, and plan work and young people's preparation for work accordingly. Employers, educators, health and safety professionals, policymakers, and young workers themselves all have a responsibility to help keep young people safe and healthy. Information is needed to support this task and we hope to contribute to this process.

This report is the second in a series of risk observatory thematic reports describing health and safety at work as related to a specific risk, sector or group of workers. The aim is to provide as comprehensive a picture as possible of the potential related risks and health effects in the world of work. These activities are part of a larger project, the goal of which is the earlier identification of emerging trends and risks at work in order to assist in better targeting of resources and to enable more timely and effective interventions.

This publication seeks to review in depth what risks young workers are exposed to at work and what the consequences of these exposures are in both the short term and the long term for young workers. It does this not only by analysing statistics and studies, but also through selected case studies of prevention. This report will be complemented by a risk observatory website section presenting detailed information from many of the EU-25 Member States⁽¹⁾.

By bringing together this wealth of information, gathered from across the European Union Member States and beyond, the Agency hopes to provide an important insight into the health and safety experiences of young people at work. But more importantly than a mere description, the Agency hopes that this insight will contribute to better protection of young people as they embark on their working life and therefore to their improved health throughout it.

The report also contributes to the Agency's annual campaign, the European Week for Safety and Health at Work, which in 2006 was dedicated to the protection of young people at work. Under the emblematic slogan 'Safe Start', over 30 countries participate actively in Europe's largest occupational safety and health campaign to protect young workers.

The Agency would like to thank the members of the topic centre for their contributions to the information used in this report. It would also like to thank its focal points, expert group and advisory group for their valuable comments and suggestions.

European Agency for Safety and Health at Work
February 2007

(1) European Agency for Safety and Health at Work, Young workers. Dedicated section at <http://riskobservatory.osha.europa.eu/topics>



SUMMARY

Youth employment in the EU-25

In almost all Member States, the proportion of young workers is decreasing.

In 2005, about 193.8 million people were employed in the EU-25, including 20.4 million young workers ⁽²⁾. Young workers accounted for 10.5 % of the workforce. The employment rate ⁽³⁾ (EU-25) reached 36.3 % for young workers, compared to 63.6 % for the population aged 15–64.

The proportion of young workers is decreasing: this can be observed in almost all of the Member States. This is a reflection of the falling birth rate, but may also indicate the fact that educational activities are becoming more common and are taking longer. In addition, young workers are more vulnerable to economic recession — employers react to economic pressures by cutting back on hiring them. But a successful integration of young people into working life is vital for society and for enterprises, as well as being of great importance for young people themselves, and for their overall management of life, health and well-being.

In the EU-25, unemployment rates of young workers are on average twice as high as the total rates.

In many EU Member States, unemployment rates of young workers have also increased over recent years, although there are fewer young people in an overall ageing population. In the EU-25, unemployment rates of young workers are on average twice as high as the total unemployment rates. There are also substantial differences across regions: in two thirds of EU-25 regions, the unemployment rate for young people was at least twice that for total unemployment. Regional unemployment rates for young people varied from 6.2 % to 59.1 %.

A sectoral breakdown for young workers shows that, within the EU-25, the highest proportion of young workers can be found within 'Hotels and restaurants' and 'Trade', the proportion of young workers in these sectors being 22.7 % and 16.3 % respectively.

This distribution has important implications for the occupational safety and health of young people because of the specific set of harmful conditions that characterises these sectors (including low payment, temporary seasonal work, poor employment conditions and physically demanding work). Typical 'young' occupations include service, shop and market sales work, work in the armed forces, and elementary occupations.

When examining these large groups, typical 'young' jobs can also be seen to include working as hairdressers and call centre workers. Again, this distribution has implications for the safety and health of young workers. For example, hairdressers often work with hazardous substances, and call centre workers have an increased risk of developing symptoms in the neck and upper extremities.

There are gender differences faced by young workers just as there are in the general working population. As within the total working population, more young men than women are at work. This segregation is also vertical — men are more likely to work in jobs higher up the occupational hierarchy. For example, while men hold the majority of skilled agricultural jobs, in the lowest level, unskilled occupations, women are

⁽²⁾ Young workers: 15–24 years old.

⁽³⁾ The employment rate represents the total number of persons in employment as a percentage of the population of that age group.



disproportionately represented. Even where men and women appear to be employed to do the same job, in practice, the tasks they carry out can often be segregated by gender.

In 2005, 11.1 million young men and 9.3 million young women were working within the EU-25. For all the different types of hazards, both physical and psychosocial, gender issues strongly contribute to different hazard exposure and therefore to different health outcomes. As an example, hairdressing is a predominantly female profession, with 87 % female workers. More than a million people are employed in about 400 000 hairdressing salons in Europe. This sector is also characterised by a young workforce: 83 % of recruits are aged under 26 and 56 % are under 19. As a result, almost all risk factors for hairdressers are automatically relevant for young workers. The main health problems in this sector — skin problems, asthma and musculoskeletal disorders — therefore mostly affect young women.

In comparison with the overall workforce, workers aged 15–24 years are less often in full-time employment (72 % vs 82 %), more often on temporary contracts (39 % vs 14 %), and more often salaried workers (94 % vs 83 %).

Most temporary workers in the EU-25 are under 25. This figure partly reflects the use of fixed-term contracts to cover periods of training or probation. About 37.5 % of young workers in the EU-25 have a temporary contract. The percentage of young workers in temporary employment ranged from 6.8 % in Ireland to 59.4 % in Spain.

According to data on temporary agency work, people employed on temporary contracts have less access to training and to participation in long-term competence development than workers with permanent contracts. Temporary workers also have less control over the order of tasks, pace of work and work methods, have lower job demands and are less informed about risks at work.

Age analysis shows an uneven distribution of working time over the lives of individuals. The highest number of part-timers are employees at the beginning or end of their working lives. In 2005, one in four young workers had a part-time job within the EU-25. Part-time work is also increasing.

Research on part-time work in Europe indicates that there are fewer opportunities for training and career progression ⁽⁴⁾. The level of salaries and social security benefits is often lower and jobs are typically monotonous. Employees with part-time contracts tend to have the following characteristics: working under more favourable ambient conditions; working fewer non-standard hours; having less control over working time; carrying out less skilful work; receiving less training; being more likely to work in the social sector and the hotel/restaurant trade than in construction; being in service/sales occupations rather than as managers.

In 2005, 3.7 % of self-employed workers in the EU-25 were young workers. This figure ranges from 1.6 % in France to 6.8 % in Slovakia.

Exposure to risks

European and some national sources suggest that young workers are more exposed to the following physical work factors in comparison with the average working

Most temporary workers in the EU-25 are under 25.

EU and national sources suggest that young workers are more exposed to noise, vibrations, heat and cold, and the handling of dangerous substances.

⁽⁴⁾ European Foundation for the Improvement of Living and Working Conditions, Dublin. *Part-time work in Europe*, 2005. <http://www.eurofound.eu.int/ewco/reports/TN0403TR01/TN0403TR01.pdf>



population: noise, vibrations, heat and cold, and the handling of dangerous substances.

Regarding exposure to loud noise, young people working in hotels and restaurants and construction are especially at risk. Young call centre workers are particularly susceptible to acoustic shock injuries.

Exposure to heat is common in outdoor occupations (such as agriculture or construction), industry, and hotels and restaurants. Accidents appear to be more frequent in hot environments than in more moderate environmental conditions. Dangerous substances appear in various occupational settings where young workers are employed: they include agricultural chemicals, cleaning products, petrol, solvents and other harmful chemicals.

Concerning vibration exposure, specific reference is also made to research that indicates that young people with non-occupational Raynaud's disease should not be exposed to hand-arm vibrations and that young workers are especially vulnerable to back pain and other spinal disorders due to whole-body vibrations. According to survey results from EU and national sources, physically demanding work factors (such as working in awkward positions, handling heavy loads and repetitive work) seem to be more common among young workers than in the average workforce. As a result, young workers are at considerable risk of developing musculoskeletal disorders (including low back pain).

Young people increasingly have to work to tight deadlines and at very high speed.

There is evidence that being informed about occupational risks is particularly important for young workers, to reduce their rate of occupational accidents and disease. Surveys suggest that young workers wear more protective equipment than the average working population, but seem to be less informed about occupational risks.

As the pace of life and work continues to increase, young people (like the average worker) increasingly have to work to tight deadlines and at very high speed. And even though surveys suggest that they work fewer hours than the average working population, young people do more shift work and have more irregular working hours.

As to psychosocial work factors, young workers are more likely to report being the subject of unwanted sexual attention compared to the total working population. Young women with precarious jobs in the hotel and service industry are many times more likely to be exposed to the risk of sexual harassment. Then again, physical violence and intimidation do not seem to be more common among young workers. In general, exposure to unwanted sexual attention and intimidation have increased in all age categories during recent years.

Health outcomes

National data suggest that young workers are at greater risk of having an occupational accident.

National data suggest that young workers are at greater risk of having an occupational accident but that the average severity of these accidents is lower. Nevertheless, accident rates and causes of accidents vary greatly for different sectors and occupations.

According to European data, young workers have higher non-fatal accident rates compared to the average working population. In 2003, 4.7 % of young workers aged 18–24 years had an occupational accident with more than three days lost, compared to an average of 3.3 %.

According to the European Statistics on Accidents at Work (ESAW), there were about 4.1 million occupational accidents resulting in more than three days' absence from



work in the EU-15 in 2003. In total, 685 689 accidents, or 16.4 % of all accidents, happened to workers aged 24 and younger. The share of young workers in the number of accidents decreased over the years 1995–2003. Countries with the lowest share of young workers suffering an occupational accident in 2003 are Finland, Italy and Denmark. Austria, the Netherlands, Belgium and Spain saw young worker accident rates above the average of the EU-15. Young men especially appear to be a risk group for safety at work.

Young workers aged up to 24 accounted for 8.9 % of all fatal occupational accidents in Europe in 2002. In contrast to non-fatal accidents, the ESAW indicate that young workers have lower fatal accident rates compared to the average working population. In 2003, 2.6 out of 100 000 young workers aged 18–24 years had a fatal accident, compared to an average of four out of 100 000 workers. These results are in line with evidence from all over the world: young workers seem to have a higher non-fatal occupational accident rate than older workers.

Nevertheless, fatal accident rates of young workers can be considerable in some sectors. Agriculture has the highest incidence rate of fatal accidents among young workers, followed by construction and transport and communication and manufacturing. Construction is the sector with the highest number of young worker fatalities. It is a worrying fact that fatalities due to violence in retail are increasing in some countries. They make up a high proportion of fatalities of women in this sector.

According to the European Occupational Diseases Statistics (EODS), young workers account for around 7.4 % of all occupational diseases in Europe. The top five occupational diseases among workers aged 15–35 years are allergic reactions, irritation of the skin, pulmonary disorders, infectious diseases and musculoskeletal disorders. Although these results do not show the precise figures for young workers, they give an indication. As an example, dermatitis, upper limb disorders and stress are some of the predominant forms of work-related illness in retail.

Some 86.5 % of all self-reported health problems that are due to pulmonary disorders, and cause more than two weeks' absence, are reported by young workers aged 24 years and younger. Nearly half of all self-reported health problems due to stress, depression and anxiety, and which cause more than two weeks' absence, are reported by young workers aged 24 years and younger (48.9 %).

Young workers have a lower average risk of developing occupational diseases than older workers. This can be explained by the fact that occupational diseases often need a cumulative exposure and/or latency period to develop and may not always be recognised due to short-term work contracts. In comparison with chronic occupational diseases, the prevalence of acute diseases, such as allergies, infectious diseases and toxic reactions, can be higher among young workers. This is also because typical selection and the 'healthy worker effect' do not have enough time to have an effect.

Prevention and research needs

Possible reasons for higher occupational accident rates and the health problems identified above include: young workers' lack of experience; physical and psychological immaturity; lack of awareness of health and safety issues; the failure of employers to allow for these factors by providing appropriate training, supervision and safeguards; and placing young people in work situations that are appropriate for

The top five occupational diseases among workers aged 15–35 years are: allergic reactions, irritation of the skin, pulmonary disorders, infectious diseases and musculoskeletal disorders.

Nearly half of all self-reported health problems due to stress, depression and anxiety, and which cause more than two weeks' absence, are reported by young workers aged 24 years and younger.



them. Work-related risks to young workers need to be taken seriously. Still many of the risk factors are being seen as inherent to their risk-taking behaviour or the temporary nature of their involvement in work.

Specific targeted measures need to be taken in education and training as well as in daily workplace practice.

Knowing where young workers are working suggests that these sectors should be targeted with help on their occupational safety and health (OSH) training and prevention. Knowing what their main health risks are also means that employers and workers need awareness raising about these health risks.

Some research indicates that young workers might be less targeted by rehabilitation measures. The lower recuperation times of young workers might also indicate a lack of awareness about the risks they are exposed to and their consequences. Rehabilitation and employability policies for injured workers also need to be refocused to include young workers, irrespective of the origin of the injury, and whether it is due to psychosocial or physical risks.

Existing studies looking at the workplace situation of young people have some methodological problems.

- Statistics providing an overview at the EU level, broken down for young workers, can be limited or lacking, and the numbers available for analyses in some fields can be small.
- It is hard to define employment considering the informal work arrangements that are common among young workers (e.g. volunteer jobs, working for a family business, apprenticeships) ⁽⁵⁾.

Therefore, non-comparable data, examples from one Member State only, one-off studies, and studies from outside national official data fill in gaps and present some of the complexity of the situation of young workers.

More research is needed in order to do the following.

- Obtain a profile of risks to young workers and of the extent to which they are exposed to workplace factors such as dangerous substances, and specifically biological agents, carcinogens and reprotoxicants, noise and vibration, physically strenuous working conditions and psychosocial risks.
- Assess the gender differences in these risks and the relative importance of the respective risks to young women and men.
- Include diversity issues, for example regarding young migrant workers, within awareness raising, training and prevention.
- Adjust awareness raising, training and prevention in the light of the differences identified above.
- Assess the importance of specific risks to young workers in the sectors where most of them are employed, with a special focus on service sectors.
- Effectively target risk-reduction policies for work-related accidents to young workers. Cooperation across policy areas (e.g. public health, combating child labour, transport safety) could also be beneficial in this respect.
- Develop effective training methods for a diverse young working population, which includes, for example, young migrant workers.
- Inform activities for mainstreaming OSH into education at all levels.

⁽⁵⁾ Breslin, F. C. et al., *Systematic review of risk factors for work injury among youth*. Toronto: Institute for Work and Health, 2005.



Some recommendations for prevention and research include the following.

- Target sectors where young workers are most at risk.
- Target the most prevalent risks for awareness raising among employers and the young workers themselves.
- Target employment agencies to raise awareness about the risks to which young workers are exposed.
- Train inspectors about where most young workers are employed and what risks they face.
- Remember that young workers are not a homogenous group, and that specific groups (male/female, migrant, etc.) have specific needs.
- Pay special attention to part-time and temporary workers: advice should mention the importance of special attention to young workers; specific guidance should be given to employers, inspectors and preventive services.
- Include young workers' issues in guidelines on shift work.
- Recognise that including OSH in education is particularly important for those entering precarious jobs, who receive less training at work and are hard to reach.



European Agency for Safety and Health at Work

EUROPEAN RISK OBSERVATORY REPORT

1.

INTRODUCTION



The European Union's workforce is ageing, due to falling birth and mortality rates. This demographic transition has significant consequences for the future workforce. Europe's active population will, now and over the coming decades, see an increase in the proportion of workers aged 50 and above, with a corresponding reduction in the proportion of young people ⁽⁶⁾. The successful integration of young people into working life is therefore vital for society and for enterprises, and also of great importance for young people themselves, for their overall management of life, health and well-being ⁽⁷⁾. One of the aspects of a successful entry of young persons into working life is their health and safety at work.

This report sets out to combine information from several data sources to give a complete picture of the situation regarding young workers and OSH (for example, injury and illness rates, types of injury and ill health, important risk factors, subgroups at risk and emerging issues), to identify information gaps and to be able to set priorities on future measures to be taken.

The description is based on the collection of data from European and national OSH monitoring systems, complemented with literature reviews and case studies. A separate and complementary report by the Agency provides more detailed case studies (*Preventing risks to young workers: policy, programmes and workplace practice*).

Definition

The literature contains different definitions of 'young workers'. In this report 'young workers' are those who are 15–24 years old. They take part in the world of work in different ways, and include school students on work experience placements, vocational training college students on company placements, students at work in their spare time (during holidays, at weekends or in the evenings) and young people who have finished education and are starting their careers. Within this definition there are two groups: young workers under 18 who are covered by specific legal restrictions on the work they may do, the risks they may be exposed to and the hours they may work, and 18–24-year-olds who have a higher rate of non-fatal accidents than other age groups.

The age range of young workers is not always defined in the same way in research. Usually the years between 12 and 24 are considered to be 'young'. But sometimes the second and third decades of human life are considered as youth, and adult life is deemed to start at the age of 30 years. In this thematic report the following terminology is used.

⁽⁶⁾ European Commission, *Adapting to change in work and society: a new Community strategy on health and safety at work 2002–06*, 2002. (http://europa.eu.int/comm/employment_social/news/2002/mar/new_strategy_en.pdf)

⁽⁷⁾ Rantanen, J., 'How to ensure decent work for the young people in the 21st century?' In: Rantanen, J. et al., *Proceedings of the International Symposium on Youth and Work*. FIOH, 2003. pp. 2–9.



Table 1: Terminology regarding young workers

Term	Age range
Young workers	15–24 years
Children (childhood)	Under 15 years
Adolescents or teenagers (adolescence)	15–19 years
Young adults (young adulthood)	20–24 years
Adults (adulthood)	25+ years



European Agency for Safety and Health at Work

EUROPEAN RISK OBSERVATORY REPORT

2.

YOUTH EMPLOYMENT IN EUROPE





Before describing the risks that young workers are exposed to in the workplace and the related health outcomes, it is essential to present a statistical portrait of the young workers within the labour force. The following describes:

- the number/proportion and evolution of young workers within the total workforce;
- the sectors and occupations in which they are employed;
- the distribution of young male and female workers;
- their types of contract.

Many of these contextual features influence and interact with the OSH situation of the workers. The statistical portrait of young workers within the workforce helps to clarify their status and helps to some extent to explain their occupational safety and health situation at work.

Research difficulties

Studies looking at the contextual features (sector, occupation, gender distribution) of young people at work have some methodological problems.

- Statistics providing an overview at the EU level, broken down for young workers, can be limited or lacking, and the numbers available for analyses in some fields can be small.
- It is hard to define employment considering the informal work arrangements that are common among young workers (e.g. volunteer jobs, working for a family business, apprenticeships) ⁽⁸⁾.

Therefore, non-comparable data, examples from one Member State only, one-off studies and studies from outside national official data fill in gaps and present some of the complexity of the situation of young workers in the labour market.

2.1. YOUNG WORKERS — EMPLOYMENT FIGURES

In 2005, one in 10 EU-25 workers was between 15 and 24 years.

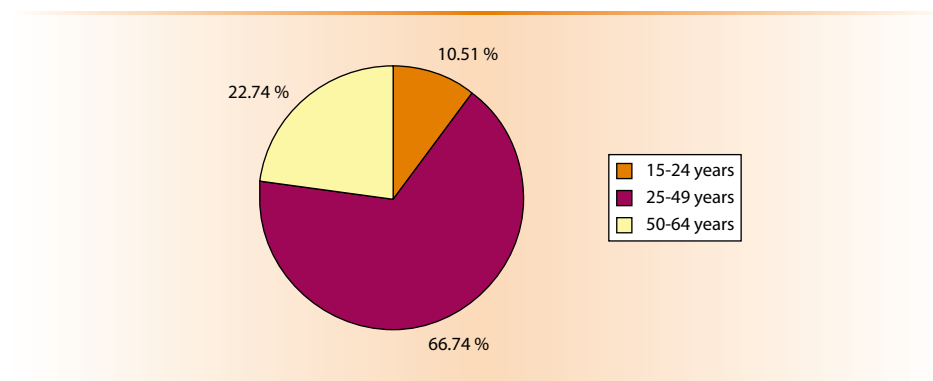
About 36.6 % of young people were in work.

⁽⁸⁾ Breslin, F. C. et al., *Systematic review of risk factors for work injury among youth*. Toronto: Institute for Work and Health, 2005.



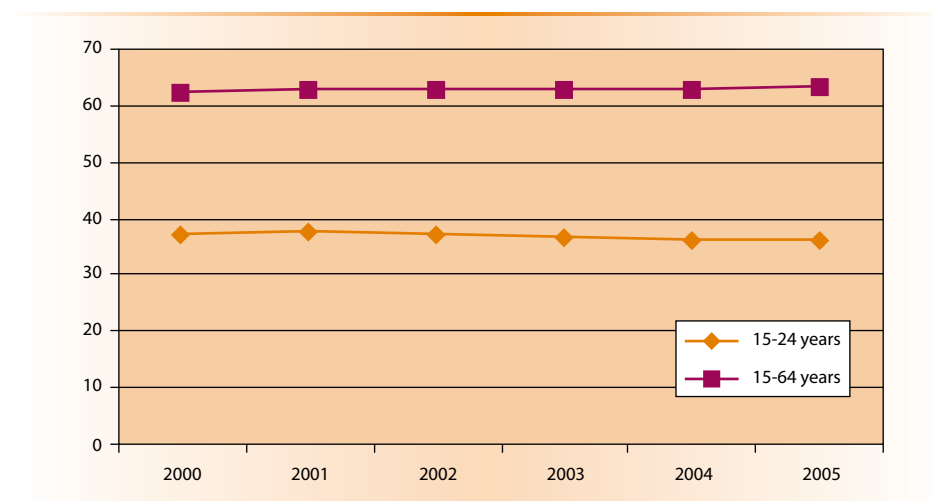
In 2005, about 193.8 million people were employed in the EU-25, including 20.4 million young workers, meaning that young workers accounted for 10.5 % of the workforce (Figure 1). This represents a decrease of 0.9 % since 2000 (from 11.4 % of the workforce). There were important differences between the Member States: in 2005, young workers accounted for about 7 % of the workforce in the Czech Republic, Greece, Italy, Lithuania and Hungary, ranging up to about 19 % in Malta.

Figure 1: Proportion of different age groups, % of the total workforce, EU-25, LFS 2005 ⁽⁹⁾



The employment rate ⁽¹⁰⁾ (EU-25) reached 36.3 % for young workers, compared to 63.6 % for the population aged 15–64 in 2005. It ranged from 21 % in Lithuania to 65 % in the Netherlands. Since 2000, the employment rate for young workers within the EU-25 decreased by 1.2 % (from 37.5 to 36.3 %) (Figure 2, Table 2).

Figure 2: Employment rate EU-25, 2000–05, LFS



⁽⁹⁾ Eurostat, labour force survey 1983–2005 (<http://europa.eu.int/comm/eurostat/>, http://forum.europa.eu.int/irc/dsis/employment/info/data/eu_lfs/index.htm). The LFS is a quarterly household sample survey conducted in the 25 Member States of the European Union and in Bulgaria and Romania in accordance with Council Regulation (EC) No 577/98 of 9 March 1998.

⁽¹⁰⁾ The employment rate represents the total number of persons in employment as a percentage of the population of that age group.



Table 2: Proportion of young workers, EU-25, LFS

Country	Number of young workers (1 000)	Proportion as % of the total workforce	Employment rate	
	2005	2005	2005	Trend ⁽¹⁾
EU-25	20 408	10.53	36.3	- 1.2
Belgium	336	8.02	26.6	- 6.8
Czech Republic	365	7.77	26.8	- 15.9
Denmark	366	13.59	62	9
Germany	3 984	11.16	41.4	- 3.7
Estonia	62	10.49	30.4	- 5.6
Greece	312	7.25	25.3	- 7.6
Spain	1 983	10.57	37.8	12.9
France	2 250	9.19	30.2	0.1
Ireland	295	15.60	46.3	- 1.2
Italy	1 578	7.08	26.1	- 8.3
Cyprus	34	10.09	36.9	- 0.1
Latvia	110	11.02	30.6	- 2.3
Lithuania	110	7.56	21	- 12
Hungary	273	7.06	21.4	- 6
Malta	28	19.05	44.9	- 7.5
Netherlands	1 265	15.79	65.3	26.8
Austria	506	13.43	51.6	- 2.1
Poland	1 267	9.26	21.4	- 6.4
Portugal	474	9.86	36	- 12.8
Slovenia	84	9.09	31.7	- 3.8
Slovakia	227	10.37	25.8	- 9.1
Finland	278	11.57	44	14.8
Sweden	447	10.44	40.2	3.7
United Kingdom	3 840	13.97	53	1.7
Luxembourg (2004)	12	6.4	21.4	- 34.9

The general reduction in the youngest age category is a reflection of falling birth rates, but may also indicate that educational activities are becoming more common and taking longer. In addition, young workers are particularly vulnerable to economic recession — employers react to economic pressures by cutting back on hiring new young workers.

The successful integration of young people into working life is therefore vital for society and for enterprises, and in addition of great importance for young people themselves, for their overall management of life, health and well-being.

⁽¹⁾ Data available since: EU-25: 2000; Belgium: 1983; Czech Republic: 1997; Denmark: 1983; Germany (including ex-GDR from 1991): 1983; Estonia: 1997; Greece 1983; Spain: 1986; France: 2003; Ireland: 1983; Italy: 1983; Cyprus: 1999; Latvia: 1998; Lithuania: 1998; Luxembourg: 1983; Hungary: 1996; Malta: 2000; Netherlands: 1983; Austria: 1999; Poland: 1997; Portugal: 1986; Slovenia: 1996; Slovakia: 1998; Finland: 1995; Sweden: 1995; United Kingdom: 1983.



UNEMPLOYMENT OF YOUNG WORKERS ⁽¹²⁾

2.2.

Most recent EU figures ⁽¹³⁾:

In two thirds of EU-25 regions, the unemployment rate for young people was at least twice that for total unemployment. Regional unemployment rates varied from 6.2 % to 59.1 % for young people.

The EU-25 youth unemployment rate was 18.7 % in 2005, more than twice as high as the total unemployment rate (9.0 %).

In 2005, youth unemployment in the EU-15 was running at 16.9 % compared to 8.2 % total unemployment. The difference was even higher in the new Member States: 29.5 % (youth unemployment) and 13.4 % (total unemployment).

Between 2004 and 2005, the overall unemployment rate for young people aged 15 to 24 in the EU-25 rose slightly from 18.5 % to 18.7 %. Regional differences in the unemployment rate for young people are also very marked. In the EU-25 in 2005, the best-performing regions as regards youth unemployment were in the Netherlands (six regions, with Zeeland recording the lowest figure in the EU at 6.2 %), the UK (two), Austria (one) and Italy (one). On the other hand, the highest youth unemployment was observed in Poland (six regions), Italy (two regions, with Calabria recording the highest youth unemployment in the EU at 46.1 %), Greece (one) and Slovakia (one). In Romania, the unemployment rate was below 10 % in all level 2 regions, while in Bulgaria it was between 7.6 % and 13.7 %.

The unemployment rate for young people was less than 10 % in 2005 in 27 EU-25 regions. Ten of these were in the Netherlands, five in the United Kingdom, four in Austria, two each in Ireland and Germany, and one each in the Czech Republic, Denmark, Italy and Slovakia. In 11 regions, the rate was over 40 %: four of these regions were in Poland, three in France (all overseas departments), two in Italy and one each in Greece and Slovakia. In two thirds of EU-25 regions, the unemployment rate for young people was at least twice that for total unemployment. There were only two regions, Mecklenburg-Vorpommern and Chemnitz in Germany, where youth unemployment was less than or equal to total unemployment ⁽¹⁴⁾.

⁽¹²⁾ The unemployment rate is defined as the percentage of unemployed persons in the economically active population. According to the recommendations of the International Labour Organisation, a person is deemed to be unemployed if all three of the following conditions are met:

- he or she is without work during the survey reference week;
- he or she is available for work, being able to take up employment within two weeks;
- he or she has actively sought work over the past four weeks.

The primary source of regional labour market information is the EU labour force survey (LFS).

⁽¹³⁾ Eurostat, 'Regional unemployment in the European Union, Bulgaria and Romania in 2005', *Statistics in Focus*, No 1/2006. http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-DN-06-001/EN/KS-DN-06-001-EN.PDF

⁽¹⁴⁾ Eurostat, *Unemployment in the EU-25*, News release 16 November 2006 (http://epp.eurostat.cec.eu.int/pls/portal/docs/page/pgp_prd_cat_prerel/pge_cat_prerel_year_2006/pge_cat_prerel_year_2006_month_11/1-16112006-en-bp.pdf).



In countries with the highest changes in total unemployment, the variation in regional youth unemployment was as follows:

- New Member States: Poland 30.3–45 %, Slovakia 9.8–41.4 % and Hungary 13.5–28.5 %. Single-region States: Estonia 15.9 %, Latvia 13.6 % and Lithuania 15.7 %.
- EU-15: Greece 17.7–44.1 %, Spain 12.8–28.3 %, Germany 9.4–27.6 %, Portugal 14.6–20.4 % and Sweden 18.5–23.9 %. Single-region States: Denmark 8.6 % and Luxembourg 13.7 %.

General unemployment in the EU-25 decreased from 9.2 % in 2004 to 9 % in 2005 (when 83 600 fewer were unemployed). This was due to improvements in the labour markets of the new Member States (with 279 300 fewer unemployed), closely linked to migration to the EU-15 for work purposes. After the year-to-year rise in the number of unemployed persons (+ 222 000) in the EU-25 in 2004, the trend thus changed to positive last year. Regional (NUTS-2 level) unemployment rates in the EU-25 varied between 2.6 % (region of Herefordshire, Worcestershire and Warwickshire in the West Midlands of the UK) and 23.1 % (Vychodné Slovensko in eastern Slovakia).

These figures are derived from the European Union labour force survey (EU-LFS) (Table 3).

Table 3: Unemployment rate ⁽¹⁵⁾ of population aged less than 25 years — annual average (%) ⁽¹⁶⁾

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
EU (25 countries)	:	:	:	:	19.5	18.6	17.5	17.9	18.5	19.0	19.0	18.6
EU (15 countries)	22.2	21.4	21.6	20.9	19.4	17.4	15.5	15.3	15.9	16.7	16.9	16.8
Euro area	23.7	23.0	23.4	22.8	20.9	18.4	16.2	16.3	17.1	17.9	18.2	17.8
Euro area (12 countries)	23.8	23.1	23.6	23.0	21.2	18.8	16.6	16.3	17.1	17.9	18.2	17.8
Belgium	23.2	22.9	22.1	22.0	22.1	21.1	16.7	16.8	17.7	21.8	21.2	21.5
Czech Republic	:	:	:	:	12.8	17.7	17.8	17.3	16.9	18.6	21.0	19.2
Denmark	10.2	9.6	9.7	7.7	7.3	9.1	6.2	8.3	7.4	9.2	8.2	8.6
Germany	15.6	14.9	15.6	16.2	15.0	12.7	10.6	12.8	14.2	14.6	15.0	14.8
Estonia	:	:	:	17.0	15.2	22.0	23.9	23.2	17.6	20.6	21.7	15.9
Greece	27.7	28.5	31.0	30.8	30.1	31.9	29.2	28.2	26.8	26.8	26.9	26.0
Spain	44.8	42.3	41.8	38.9	35.4	29.5	26.3	25.1	26.2	26.6	25.9	20.2
France	28.6	27.0	28.5	28.4	25.6	23.4	20.1	19.4	20.0	21.1	21.9	23.5
Ireland	23.0	19.5	18.2	15.4	11.3	8.6	6.8	7.3	8.5	9.1	8.9	8.7
Italy	29.1	30.3	30.4	30.2	29.9	28.7	27.0	24.1	23.1	23.7	23.5	24.0
Cyprus	:	:	:	:	:	:	10.1	8.1	8.1	8.9	10.5	13.0
Latvia	:	:	:	:	26.8	23.6	21.4	23.0	22.0	18.0	18.1	13.6
Lithuania	:	:	:	:	25.5	26.4	30.6	30.9	22.5	25.1	22.7	15.7
Luxembourg	7.1	7.2	8.2	7.9	6.9	6.9	7.2	7.3	8.2	11.2	16.5	13.8
Hungary	:	:	18.5	17.0	15.0	12.6	12.4	11.3	12.7	13.4	15.5	19.4
Malta	:	:	:	:	:	:	13.7	18.8	17.1	17.2	16.8	16.5
Netherlands	10.9	11.4	11.1	9.1	7.6	6.8	5.7	4.5	5.0	6.3	8.0	8.2
Austria	5.7	5.6	6.3	6.7	6.4	5.4	5.3	5.8	6.7	8.1	9.4	10.3

⁽¹⁵⁾ Unemployment rates represent unemployed persons as a percentage of the labour force. The labour force is the total number of people employed and unemployed.

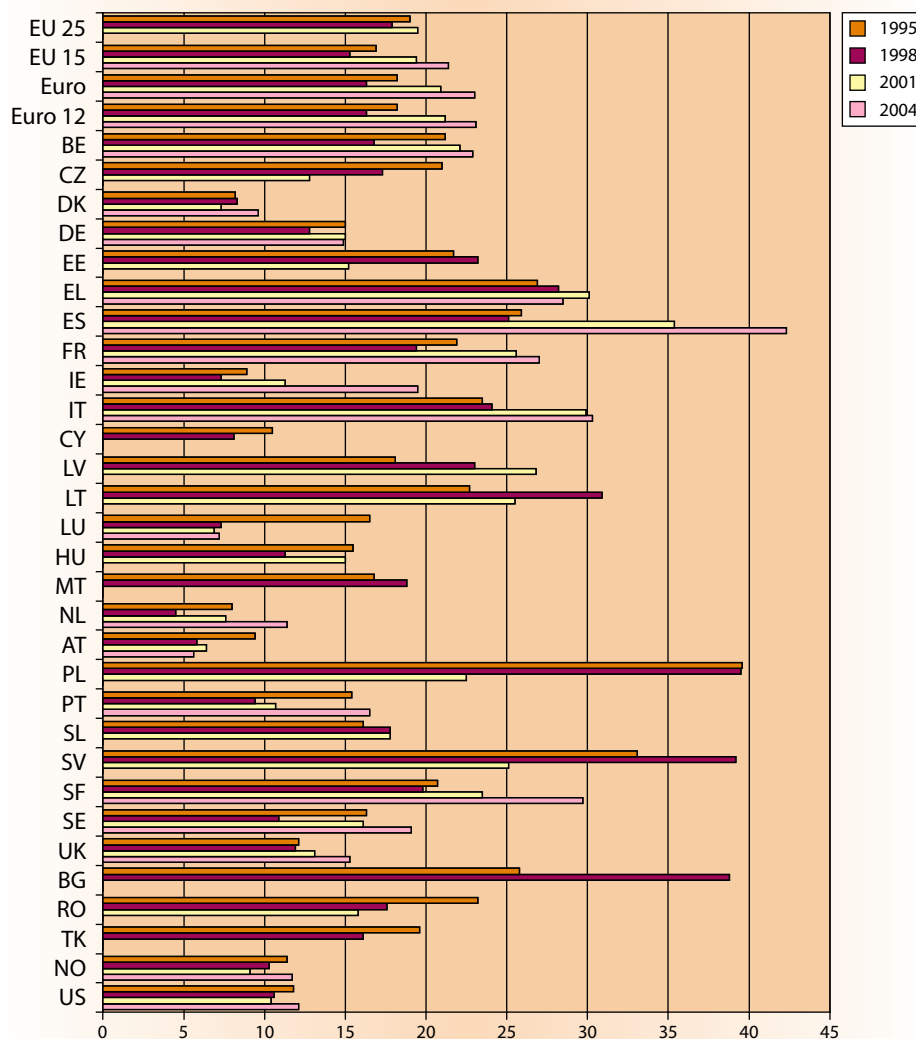
⁽¹⁶⁾ Eurostat, *Unemployment rate of population aged less than 25 years* (http://epp.eurostat.ec.europa.eu/portal/page?_pageid=1073,46870091&_dad=portal&_schema=PORTAL&p_product_code=CCB30992)



	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Poland	:	:	:	23.2	22.5	30.1	35.1	39.5	42.5	41.9	39.6	36.9
Portugal	15.0	16.5	16.7	15.1	10.7	9.1	8.8	9.4	11.6	14.4	15.4	16.0
Slovenia	:	:	17.5	17.2	17.8	17.6	16.3	17.8	16.5	17.3	16.1	15.9
Slovakia	:	:	:	:	25.1	33.8	36.9	39.2	37.7	33.4	33.1	30.1
Finland	34.0	29.7	28.0	25.2	23.5	21.4	21.4	19.8	21.0	21.8	20.7	20.1
Sweden	22.0	19.1	20.5	20.6	16.1	12.3	10.5	10.9	11.9	13.4	16.3	22.6 ^(p)
United Kingdom	16.4	15.3	14.9	13.7	13.1	12.7	12.2	11.9	12.1	12.3	12.1	13.0
Bulgaria	:	:	:	:	:	:	33.7	38.8	37.0	28.2	25.8	22.3
Romania	:	:	:	16.3	15.8	17.2	17.2	17.6	21.0	19.5	23.2	25.8
Turkey	:	:	:	:	:	:	13.0	16.1	19.1	20.5	19.6	:
Norway	12.5 ^(b)	11.7 ^(b)	12.1	10.5	9.1	9.4	9.9	10.3	11.1	11.6	11.4	11.6
United States	12.5	12.1	12.0	11.3	10.4	9.9	9.3	10.6	12.0	12.4	11.8	11.3
Japan	5.5	6.1	6.7	6.7	7.7	9.2	9.1	9.6	9.9	10.1	9.5	8.7

(:) Not available.
 (p) Provisional value.
 (b) Break in series.

Figure 3: Unemployment rate, EU-25, 1996–2005, LFS



2.3. LABOUR MARKET TRAINING MEASURES ⁽¹⁷⁾ ⁽¹⁸⁾

Work-based training is relatively little used compared to classroom training.



In 2003, the EU-15 Member States spent a combined total of more than EUR 25 billion on training measures for the unemployed and other disadvantaged groups needing help in the labour market. Nearly half of this money is spent on classroom-based training; work-based training other than apprenticeships is relatively little used, accounting for less than 7 % of training expenditure.

Across the EU, the largest share of expenditure on training (43 %) goes to cover the actual costs of the training, while 33 % goes to support the beneficiaries of training and 16 % to employers who take on trainees. However, the way in which individual countries spend money on training varies considerably. The interpretation of these differences is far from straightforward.

Labour market training measures aim to improve the employability of participants. In addition to the regular apprenticeship system, which is considered part of the regular programme of education and training open to all young people, some countries offer special aid to encourage the take-up of apprenticeships by unemployed persons and other target groups. Nearly half of expenditure on training measures goes to support classroom-based training and almost 55 % of this amount is accounted for by Germany alone. By contrast, work-based training (other than apprenticeship) is relatively unimportant, accounting for less than 4 % of training expenditure or around 7 % including integrated training, where a significant part of the training must be in the workplace. Over 60 % of EU expenditure on work-based training is accounted for by Italy, whilst France accounts for a similar share of integrated training expenditure. Special support for apprenticeships accounts for just over 27 % of EU-15 expenditure, but it is worth noting that over 90 % of this support is accounted for by four countries — Germany, France, Italy and the UK — and the amount spent by the remaining 11 countries is small.

The data show that the majority (86 %) of training measures in the EU are targeted, at least in part, at unemployed people, whilst just over one in four measures are open to persons already in employment and less than one in five to persons who are currently inactive. There are interesting differences in the targeting between countries that, presumably, reflect to some extent the labour market situation in each and the

⁽¹⁷⁾ Eurostat LMP database. The LMP database collects information on public interventions in the labour market that are targeted at specific disadvantaged groups — this distinguishes LMP from general employment policies that act indiscriminately across the labour force. Mostly this means help for the unemployed but the database also recognises that other groups need assistance — for example, persons who are out of work but are currently not looking or available for work for some reason (e.g. care responsibilities), and employed persons whose job is threatened by restructuring or similar.

⁽¹⁸⁾ Eurostat, 'Expenditure on training measures for the unemployed across the EU', *Statistics in Focus*, No 5/2006 (http://epp.eurostat.ec.europa.eu/cache/ity_offpub/ks-nk-06-005/en/ks-nk-06-005-en.pdf)



priorities of the public employment service in terms of servicing particular client groups. For example, in Austria and the Netherlands, half of all training measures are targeted, at least in part, at employed persons whilst in Greece, Spain, Ireland and the UK, employed persons are not targeted at all.

Of the specific client groups, the greatest attention is on young people (normally defined to be those aged under 25) and almost 30 % of all EU training measures are targeted at this age group.

Across the EU, the majority of measures (83 %) are applied across the whole of the territory of each country but regional interventions are important in some countries. In some cases this means regional variations of a measure that is applied throughout the country, but in others regional authorities may apply completely different measures. Support from the European Social Fund (ESF) is also important, with co-financing being provided for just under 42 % of measures across the EU. However, there is considerable variation between countries, with 19 out of 20 measures in Portugal receiving support whilst there is no ESF contribution to training measures in Belgium, Denmark, Luxembourg and Sweden.

There are some evident OSH consequences. Attention should be paid to improving labour market training.

- Shorter courses for the unemployed should include OSH aspects.
- Attention should also be paid so that training creating no formal qualifications (which increasingly concerns female workers, for example in service sectors such as home care or other similar professions) also includes OSH.
- Workplace training needs to be further enhanced.

It is also worth noting that those entering work who have not undergone formal vocational training are probably less likely to arrive with OSH knowledge.

It is also evident that there is a need for targeting employment agencies, in order to improve the effectivity of training measures for young workers financed by public funds.

The study described below highlights further possibilities for improving training measures for young workers and tailoring it to their needs.

2.3.1. Study: Why young people are more at risk at work and the impact of training and education ⁽¹⁹⁾ ⁽²⁰⁾

Two studies by the Health and Safety Laboratory (United Kingdom) explored why young people are more at risk at work, and the impact of training and education. Statistics repeatedly indicate that young workers are at greater risk of non-serious injury in the workplace than older workers. There are a number of reasons why young people are more at risk. These include inexperience and physical, cognitive and emotional developmental characteristics. Another important point is the

The greatest attention is on young people (aged under 25): 30 % of all EU training measures are targeted at this age group.

There is a need for targeting employment agencies, in order to improve the effectivity of training measures for young workers.

⁽¹⁹⁾ Sreenivasan, B., *A review of young people's attitudes to health and safety at work*, HSL/2001/03 (http://www.hse.gov.uk/research/hsl_pdf/2001/hsl01-03.pdf).

⁽²⁰⁾ Sreenivasan, B., *Young people's attitudes to health and safety at work*, HSL/2002/19 (http://www.hse.gov.uk/research/hsl_pdf/2002/hsl02-19.pdf).





nature of their employment: young people frequently move in and out of the labour market, changing jobs and work schedules as they respond to changes in employers' needs or labour market conditions. It can be argued that this transient nature of employment can have an adverse effect on young people. Another Health and Safety Executive (HSE) study looked into attitudes to health and safety among people between the ages of 16 and 22 years. The objective of the study was to provide ideas on what techniques work best for this age group in terms of communicating health and safety messages. A pilot focus group was initially conducted at a college of further education. This was then followed by two further focus groups at an

agricultural college and a university. The research was completed with individual interviews at an agricultural college, a youth club, a construction college, a further education college with construction students, and a university with students studying for degrees with health and safety components. The main objective of this study was to assess how young people perceive health and safety, and their experiences of it in the workplace.

Findings and recommendations were as follows.

- None of the young people in the study were taught about health and safety in school. In addition to teaching basic health and safety at schools, road shows or seminars for schools and youth clubs could be introduced as ways of communicating health and safety messages.
- Young people identify with modern techniques and approaches. More effort needs to be made to introduce interactive training packages when teaching health and safety.
- The HSE could appeal to young people by introducing a colourful logo or mascot to associate with health and safety. This would reflect modern trends for the use of logos and brand names in advertising, marketing, and society in general.
- None of the young people were aware of any health and safety leaflets issued by the HSE. The HSE needs to introduce guidance which is targeted specifically at young people, with bigger pictures, diagrams and greater use of colour. The guidance could also have distinctive logos or mascots.
- Internet-based health and safety activities should be introduced into the classroom. This would encourage interactive health and safety training in schools and move away from the traditional didactic methods of teaching.
- All of the young people were aware of government campaigns and adverts which use 'shock tactics'. The HSE could use such government campaigns to make young people more aware of health and safety.



- Using media such as the radio, posters or free newspapers is a good way of communicating messages to young people. The effects of radio advertising and posters, in particular, should be investigated as a method of making young people more aware of health and safety issues.
- Most of the young people believed the HSE should use celebrities to promote health and safety campaigns. However, if celebrities are to be used, the HSE would need to give careful consideration to issues such as the 'status' of the celebrity, their relevance to the particular industry and the age of the young people they are targeting.
- A recurring theme from the interviews and focus groups with agricultural students was the current financial difficulties in the industry. The HSE needs to take these difficulties into account when attempting to make young people in the agriculture industry more aware of health and safety.

DISTRIBUTION BY SECTOR

2.4.

A 17-year-old girl had to have part of the third finger on her left hand (the wedding ring finger) amputated after her fingers were crushed in a pie-making machine at the bakery where she worked.



The teenager had been employed for the duration of her Easter holiday. She had only been working for one hour before the accident happened. Her left hand was dragged into the machine after she had tried to remove a pie from the machine's rotating table.

She had touched a safety flap on a guard in front of the pastry press. But the machine was faulty and her hand was dragged through the flap so that the press came down on her fingers ⁽²¹⁾.

Within the EU-25 in 2005, the sector with the highest proportion of young workers is hotels and restaurants (22.7%), followed by trade (16.3%), other community, social, personal service activities (13.7%) and construction (12.5%) ⁽²²⁾ (Figure 4). The top three categories differ slightly between the Member States. An overview is given in Table 4.

⁽²¹⁾ RoSPa young worker resources. <http://www.youngworker.co.uk/youngpeople/casestudies/finger.htm>

⁽²²⁾ Proportion of young workers = number young workers/working population 15–64 years *100.



Figure 4: Proportion of young workers per sector, EU-25, 2005, LFS

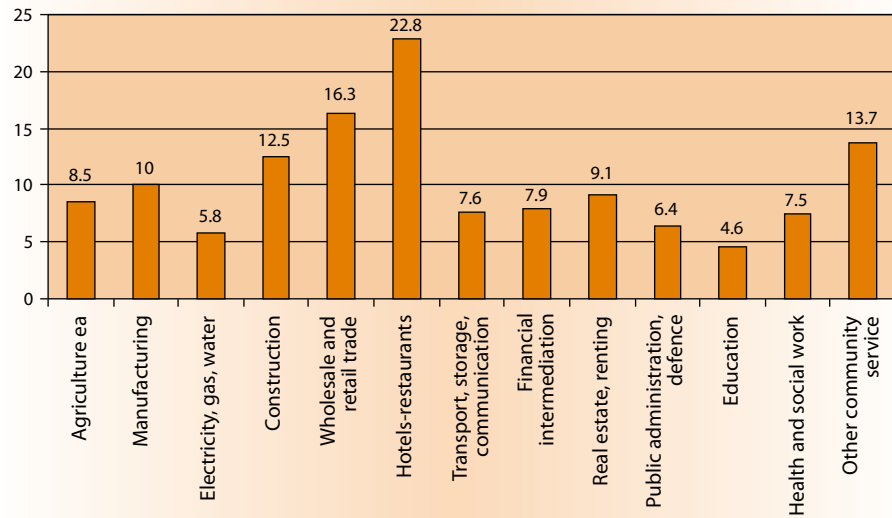


Table 4: Top three sectors with the highest proportion of young workers (%), LFS 2005

Belgium	1. Hotels and restaurants (16) 2. Construction (12.5) 3. Trade (11.9)	Lithuania	1. Hotels and restaurants (22.6) 2. Real estate (14) 3. Trade (9.8)
Czech Republic	1. Hotels and restaurants (19.6) 2. Trade (10.7) 3. Other community activities (9.6)	Malta	1. Trade (28.6) 2. Hotels and restaurants (27.3) 3. Manufacturing (26.7)
Denmark	1. Hotels and restaurants (52.5) 2. Trade (29.5) 3. Agriculture (20)	Netherlands	1. Hotels and restaurants (47.9) 2. Trade (31.1) 3. Agriculture (20.3)
Germany	1. Hotels and restaurants (20.9) 2. Trade (14) 3. Construction (11.9)	Austria	1. Hotels and restaurants (20.2) 2. Construction (19.3) 3. Manufacturing (15.7)
Greece	1. Hotels and restaurants (14.7) 2. Other community activities (14) 3. Construction (10.7)	Poland	1. Hotels and restaurants (22) 2. Trade (16) 3. Other community activities (14)
Spain	1. Hotels and restaurants (17) 2. Other community activities (15.4) 3. Trade (14.4)	Portugal	1. Trade (14.9) 2. Hotels and restaurants (13.4) 3. Construction (12.5)
France	1. Hotels and restaurants (20.4) 2. Trade (14.6) 3. Construction (13.8)	Slovenia	1. Hotels and restaurants (24.4) 2. Agriculture (15.2) 3. Trade (9.9)
Ireland	1. Hotels and restaurants (30.3) 2. Trade (26.2) 3. Construction (22.5)	Slovakia	1. Hotels and restaurants (27) 2. Trade (12.8) 3. Manufacturing (12.6)
Italy	1. Hotels and restaurants (13.8) 2. Construction (11.5) 3. Other community activities (11.1)	Finland	1. Hotels and restaurants (31.7) 2. Trade (19.5) 3. Other community activities (15.6)



Cyprus	1. Real estate (16.7) 2. Trade (13.6) 3. Construction (12.5)	Sweden	1. Hotels and restaurants (34.2) 2. Trade (17.6) 3. Other community activities (14.2)
Latvia	1. Hotels and restaurants (25.8) 2. Other community activities (16) 3. Real estate (14.9)	United Kingdom	1. Hotels and restaurants (37.8) 2. Trade (26) 3. Other community activities (20)
Hungary	1. Hotels and restaurants (13.8) 2. Trade (9.4) 3. Construction (8.6)		

A comparison of the sizes of the various EU-25 economic sectors in 2005 shows that young workers were mainly employed in trade (4.6 million), followed by manufacturing (3.6 million), construction (1.9 million) and hotels and restaurants (1.8 million). Significant changes in the distribution of young workers by sector of economic activity have occurred during the past years. Between 2000 and 2005, the number of young workers decreased by 0.9 million in manufacturing, while the largest increase for young workers was seen in hotels and restaurants (+ 0.2 million).



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DISTRIBUTION BY OCCUPATION

2.5.

Within the EU-25 in 2005, the occupation with the highest proportion of young workers is service workers and shop and market sales workers (20%), followed by armed forces (18.1%) and elementary occupations (13.4%) (Figure 5). The top three occupations differ slightly between the Member States. An overview is given in Table 5.

In 2005, within the EU-25, young workers were mostly employed as service workers (5.2 million), followed by craft and related trades workers (3.6 million). Clerks (2.7 million) and technicians and associate professionals (2.7 million) stood in third and fourth place, closely followed by elementary occupations (2.5 million). This occupational breakdown differs slightly between the Member States.

In 2005 within the EU-25, young workers were mostly employed as 'Service workers', followed by 'Craft and related trades workers'.



Figure 5: Proportion of young workers per occupation, EU-25, 2005, LFS

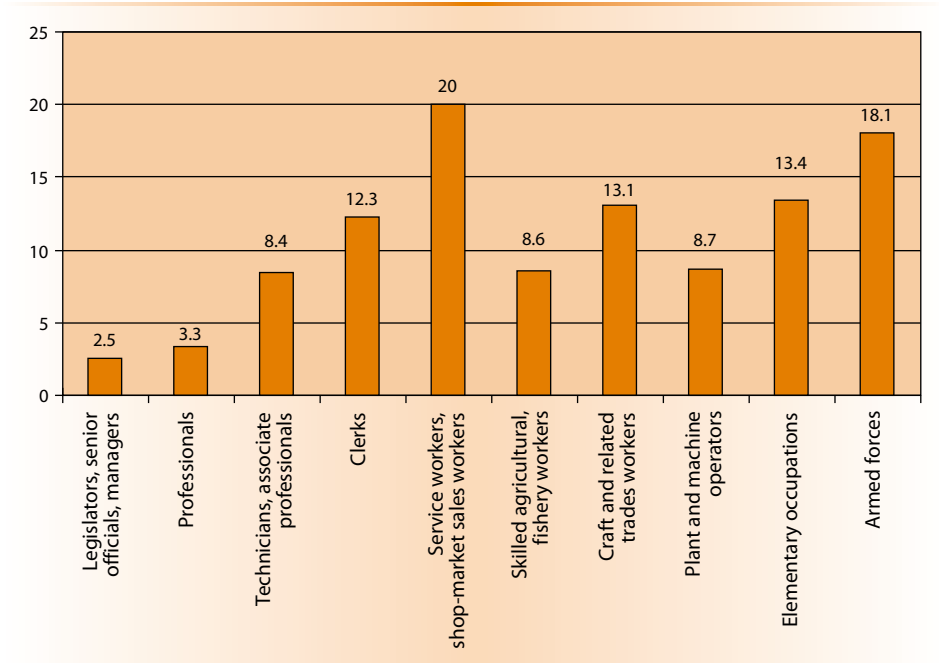


Table 5: Top three occupations with highest proportion of young workers (%), LFS 2005

Belgium	<ol style="list-style-type: none"> 1. Service workers and shop and market sales workers (72) 2. Craft and related trades workers (66) 3. Clerks (43) 	Lithuania	<ol style="list-style-type: none"> 1. Service workers and shop and market sales workers = Craft and related trades workers (20) 2. Elementary occupations (17) 3. Professionals (15)
Czech Republic	<ol style="list-style-type: none"> 1. Craft and related trades workers (80) 2. Service workers and shop and market sales workers (77) 3. Technicians and associate professionals (66) 	Malta	<ol style="list-style-type: none"> 1. Service workers and shop and market sales workers (7) 2. Clerks (6) 3. Plant and machine operators and assemblers (5)
Denmark	<ol style="list-style-type: none"> 1. Service workers and shop and market sales workers (130) 2. Elementary occupations (97) 3. Craft and related trades workers (42) 	Netherlands	<ol style="list-style-type: none"> 1. Service workers and shop and market sales workers (349) 2. Elementary occupations (285) 3. Clerks (175)
Germany	<ol style="list-style-type: none"> 1. Craft and related trades workers (911) 2. Technicians and associate professionals (872) 3. Service workers and shop and market sales workers (740) 	Austria	<ol style="list-style-type: none"> 1. Craft and related trades workers (130) 2. Technicians and associate professionals (109) 3. Service workers and shop and market sales workers (105)
Greece	<ol style="list-style-type: none"> 1. Service workers and shop and market sales workers (97) 2. Craft and related trades workers (67) 3. Clerks (42) 	Poland	<ol style="list-style-type: none"> 1. Service workers and shop and market sales workers (299) 2. Craft and related trades workers (231) 3. Skilled agricultural and fishery workers (208)



Spain	1. Service workers and shop and market sales workers (494) 2. Craft and related trades workers (404) 3. Elementary occupations (403)	Portugal	1. Craft and related trades workers (121) 2. Service workers and shop and market sales workers (104) 3. Elementary occupations (62)
France	1. Service workers and shop and market sales workers (516) 2. Craft and related trades workers (409) 3. Technicians and associate professionals (335)	Slovenia	1. Service workers and shop and market sales workers (21) 2. Plant and machine operators and assemblers (15) 3. Craft and related trades workers (11)
Ireland	1. Service workers and shop and market sales workers (93) 2. Craft and related trades workers (62) 3. Clerks (39)	Slovakia	1. Service workers and shop and market sales workers (50) 2. Craft and related trades workers = Plant and machine operators and assemblers (39) 3. Technicians and associate professionals (38)
Italy	1. Craft and related trades workers (379) 2. Service workers and shop and market sales workers (331) 3. Technicians and associate professionals (216)	Finland	1. Service workers and shop and market sales workers (82) 2. Elementary occupations (52) 3. Craft and related trades workers (42)
Cyprus	1. Service workers and shop and market sales workers 2. Skilled agricultural and fishery workers (7) 3. Craft and related trades workers (6)	Sweden	1. Service workers and shop and market sales workers (155) 2. Elementary occupations (65) 3. Clerks (57)
Latvia	1. Service workers and shop and market sales workers (25) 2. Technicians and associate professionals (19) 3. Elementary occupations (15)	United Kingdom	1. Service workers and shop and market sales workers (1377) 2. Clerks (633) 3. Elementary occupations (548)
Hungary	1. Service workers and shop and market sales workers (64) 2. Craft and related trades workers (53) 3. Technicians and associate professionals (36)		

From 2000 to 2005, the largest increase in the number of young workers was in service workers and shop and market sales workers (+ 0.38 million), followed by those in elementary occupations (+ 0.15 million) and technicians and associate professionals (+ 0.13 million). The largest decline was among craft and related trades workers (– 0.57 million), followed by clerks (– 0.37 million).



2.5.1. Young workers in hotels and restaurants



A teenage kitchen worker⁽²³⁾ suffered serious burns to his legs from a faulty pasta boiler. A Portuguese national who spoke no English, he was scalded when he accidentally knocked open a drain connector, which had become stuck.

The investigation by an environmental health officer revealed systemic failings within the company. Although a documented safety policy and a risk assessment were available, both failed to ensure that all employees were adequately trained. The company's health and safety policy instructed the restaurant manager to report any machine fault and mark the machinery 'out of use'. Unfortunately the restaurant manager had not been made aware of any such requirements. The company's own internal accident investigation was virtually non-existent. The company had adopted a training matrix system, but the investigation revealed that the kitchen manager had countersigned his own training records. The company employs a large number of non-English speaking employees, yet none of the health and safety information was translated. Although the company stated that it had an interactive CD-ROM this was not available at the branch.

The company pleaded guilty and was fined GBP 15 000 for failing to protect the health, safety and welfare of its employees and a further GBP 3 000 for failing to report the accident within 10 days.

They were ordered to pay GBP 5 000 in compensation to the injured person and legal costs of GBP 16 875.

Many young people are employed in the hotel and restaurant sector⁽²⁴⁾. At least four reasons can be found for the age distribution in this sector.

- The demand for unskilled and low-paid employees makes it possible for many young people with low educational qualifications to enter the labour market.
- The large demand for temporary seasonal work makes it possible for students at school and in higher education to earn money. They work during unsocial hours and with long working times, because of the extra pay, and they often like the dynamic social environment of cafés, bars, restaurants and discotheques.
- The relatively poor employment conditions (low wages, unsocial and long working hours) make older people hesitate to work in the sector, because they have to rely on a more stable environment and a higher income level to meet their family responsibilities.
- There is a high proportion of physically demanding work.

Additionally, the hotel and restaurant sector does not offer all employees life-long career prospects, though this is undoubtedly available for some. Less well-educated people can reach the top, through hard work and enthusiasm. The sector prefers to retain its motivated and promising employees, rather than lose them. Young people, however, often combine study with flexible work in hotels and restaurants, which often means that they have little commitment to the sector. It is considered as a good starting place for work, with many people eventually leaving because of the amount of work stress and long working hours.

⁽²³⁾ 'Too young to die', *Hazards*, No 95, July/September 2006.
<http://www.hazards.org/2young2die/#leonardoviera>

⁽²⁴⁾ European Foundation for the Improvement of Working and Living Conditions. *EU hotels and catering: work and employment conditions*, 2004. <http://www.eurofound.eu.int/publications/htmlfiles/ef0398.htm>



2.5.1.1 Hazards and risks to young workers in the hospitality sector

A 27 year-old woman received a GBP 9 000 settlement after sustaining serious shoulder and arm burns while working as a waitress in a café, leaving her with permanent scarring.

She was in the process of taking a customer's order when a candle on the table behind her set fire to her shirt. A customer in the restaurant noticed and shouted that the young waitress's shirt was on fire and the gentleman she was serving was able to pat out the flames.

She did not realise the extent of her injuries until the restaurant supervisor attended to her, going straight to the ice machine so he could treat her burns. Her parents came to pick her up and took her to the hospital accident and emergency department.

Following the accident, she had to apply zinc oxide tape for 22 months to reduce the scarring, some of which she has been advised would be permanent. The accident could have been avoided if her employer had taken the necessary measures to ensure a safe environment for all employees to work in ⁽²⁵⁾.

A specific set of harmful conditions characterises the working situation of young workers in the hotel and restaurant sector (Table 6).

Table 6: Hazards and risks in the hotel and restaurant sector

Physical work environment	
Safety conditions	<ul style="list-style-type: none"> • sharp objects, knives (e.g. severe risk of cuts from knives when deboning meat); • injury to hands from moving mixers, food-processors, machinery parts during use/cleaning, food-slicers, potato-chippers; • injury from contact with moving machinery when using waste compactors, cuts from broken glass while handling refuse; • risk of burns while working with hot substances and materials in kitchens; • fire and burns from hot oil fat fryers during cleaning, draining and use; • risks to waiters and kitchen personnel caused by deficiencies in canopy roofing over loading bays and goods entrances; • risks on the way home for employees who have to return home late at night after work.
Slips, trips and falls	<ul style="list-style-type: none"> • food spills on walkways, objects, slippery mats and coatings, insufficiently illuminated walkways, changes in floor levels, stairs, missing signs — according to the US National Floor Safety Institute ⁽²⁶⁾ wet or otherwise dangerous floors directly cause most slips and falls that occur in the food service industry; inexperience affects the likelihood of a slip or fall, as does age.

⁽²⁵⁾ Source: Croner's Health and Safety Alert 192, 20.1.2006/ solicitors Irwin Mitchell: Croner's website 17 January 2006, <http://www.croner.co.uk/croner/>

⁽²⁶⁾ Carpenter, J. et al. *Safer surfaces to walk on: reducing the risk of slipping*, Ciria, 2006. http://www.ciria.org/downloads/01/c652_restricted_access.pdf



Physically demanding work	<ul style="list-style-type: none"> • long periods of standing in kitchens; • walking and carrying loads as a waiter; • carrying heavy loads (beds and furniture for room attendants, bulk food packages for kitchen personnel, handling refuse); • manual handling (use of dishwasher, cleaning floors); • room attendants having heavy workloads compounded with time pressures, resulting in manual handling/ill health problems.
Equipment and technology	<ul style="list-style-type: none"> • new equipment and technology solutions are often beneficial in the hotel and restaurant sector — however, new problems may also arise, because of lack of proper training, incorrect or clumsy handling of equipment, simplification of tasks and work content and repetitive movements.
Eczema, skin problems and infections, chemical burns	<ul style="list-style-type: none"> • dermatitis, as a result of extensive wet work; • skin allergies that result from contact with food, excessive water, cleaning agents and disinfectant materials; • room attendants facing the risk of allergies and biological infections; • chemical burns to skin or eyes when handling corrosive cleaning materials, including oven- and beerline-cleaner.
Noise and high sound levels	<ul style="list-style-type: none"> • kitchens; • discotheques, cafés and nightclubs.
Temperature and breathing problems	<ul style="list-style-type: none"> • high temperatures; • draughts from open doors and air conditioning; • warm and humid environments; • alternating between cold and hot surroundings; • indoor climate problems such as poor air quality and bad smells; • annoying, harmful and toxic substances in the air (dirt, grease, oil, vapours, smoke and gases); • artificial cold in food storage, temperature differences between hot working environments and food storage rooms.
Smoking, alcohol consumption	<ul style="list-style-type: none"> • alcohol and tobacco are part of the hospitality service, and people have easy access to them; • passive smoking is particularly a problem for employees working in nightclubs, cafés, bars and discotheques.
Low light conditions	<ul style="list-style-type: none"> • a cosy low light environment may be pleasant for guests (in restaurants, bars and casinos), but may be a cause of risks, such as falling, burns and eye strain.
Work organisation	
High workload and stress	<ul style="list-style-type: none"> • continuous contact with customers; • complexity of certain tasks requiring high concentration levels; • workload rising at peak hours, and dependent on customer behaviour; • lack of replacements for sick colleagues, leading to more work for the remaining staff; • complaints resulting from working additional hours and working with difficult clients; • room attendants having heavy workloads compounded with time pressures, resulting in manual handling/ill health problems.
Violence, harassment and discrimination	<ul style="list-style-type: none"> • violence and harassment from customers, or from colleagues and superiors, are significant risk factors in the hotel and restaurant sector — employees who have contact with clients need to stay friendly and calm, which is not always easy; • safety risks when handling cash; • contact with the public is closely related to violence, aggression and discrimination experienced by employees working in pubs,



- discotheques, nightclubs and bars — this often involves members of the public who have drunk too much;
- staff working in food takeaway outlets also face the risk of violence and abuse from the public.

Organisation, management and working climate	<ul style="list-style-type: none"> • employees often have to perform more than one task, and tasks may be different depending on the time of the day — performing more than one task, however, may also expose employees to strenuous work, and to a higher probability of injury due to lack of specific training and professional specialisation; • sometimes, employees in the sector feel squeezed between demanding employers and clients; • typical of the work organisation in the sector are peak periods, which place added work pressure on the employee.
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Autonomy and control	<ul style="list-style-type: none"> • problems related to control in and over work, checks by superiors, lack of time for breaks, uncertainty about when work is due to finish, and lack of communication are inherent in the hotel and restaurant sector; • employees report a low degree of influence over their own work, which is often unpredictable; • monotonous work and work without creativity and initiative is widespread in the sector, though this depends on the type of work and organisation.
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Training, learning opportunities	<ul style="list-style-type: none"> • work tends to be of an unskilled nature; • training is often insufficient or inadequate.
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Working time

Overtime	It is common for workers in the hotel and restaurant sector to work longer hours than those that are officially negotiated.
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Irregular working times	Evening, night and weekend work is quite common in the sector.
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Split shifts	This particular working time regulation enables workers to be employed only at the busy hours of the day, with periods of leisure in between. In hotels, this means periods of leisure between the morning, when guests are leaving, and the evening, when new guests are arriving. In restaurants, employees work at lunchtime and at dinnertime, with some hours off in between these two busy periods. This is a solution for employers, who do not have enough work in the period that guests are not present, but a split system can distort the perception of working hours for employees, and be a serious disruption to the organisation of private life. The intermediate hours are difficult to put to use and commuting time is doubled.
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2.5.2. Studies and initiatives — hotels and restaurants

2.5.2.1. Work-related injury and disease among catering students (Ireland)

A study by Gleeson ⁽²⁷⁾ examined the incidence, nature and causes of work-related injury and disease among 315 students, at a large catering school in the west of Ireland, over a 10-month academic year. There was a high incidence of accidents that caused injury. Cuts and lacerations, arising from accidents with knives, were the most common injuries seen, followed by burns and scalds from



⁽²⁷⁾ Gleeson, D., 'Health and safety in the catering industry', *Occupational Medicine*, Society of Occupational Medicine, London, 2001. Vol. 51, pp. 385–391.



handling hot liquids. A significant level of work-related dermatitis was also recorded. Trainee chefs were identified as an occupational group with a high risk of occupational injury and disease. This group would benefit from vaccination against tetanus. Work-related injuries and disease generated a significant workload for the student health unit, which in itself is a good reason for catering establishments to make use of occupational health services.

2.5.2.2. Expectations and reality — young apprentices' experience of work and work culture in the restaurant and hotel industry (Norway)



Apprentices in the hotel and restaurant industry have high and clear expectations of work, and of their apprenticeships. Many of these expectations are met, but some of the most important, relating to vocational development, respect and care, are not. Negative experiences increase the risk that apprentices will leave, and reduce the likelihood of their going on to work in the industry. The findings may help to improve practice ⁽²⁸⁾.

2.5.2.3. Casino workers gambling with their health (Scotland)



A new study ⁽²⁹⁾ of casino workers by the GMB Union in Scotland concluded that most casino workers are suffering from health problems caused by their work. The study reveals that long hours and poor working conditions are major culprits. The union's report says three quarters of croupiers suffer from recurrent back and neck ache, one in five reports early signs of carpal tunnel syndrome, and 79 % complain of tiredness, with sleep disturbance and chronic fatigue commonplace. Stress and violence at work were up from the last survey in 2003, with the number of staff experiencing assaults trebling, racial harassment doubling and 'as many as 40 % of women workers surveyed reporting sexual harassment'. Second-hand smoke was seen as a major reason why one in five staff complained of respiratory problems, over a half (51 %) of eye irritation and 61 % of throat irritation.

What is especially striking is that the average age of these workers is just 34 years old. They are not workers approaching the end of their working lives, but younger workers just setting out on their careers, yet they are already suffering from stress, fatigue and upper limb disorders.

⁽²⁸⁾ Dagsland, Å. H. B., Einarsen, S. and Mykletun, R. J., Finnish Institute of Occupational Health, 'Expectations and reality — Young apprentices' meeting with work and work culture in the restaurant and hotel industry', Proceedings of the International Symposium on Youth and Work Culture 2005, 30–31 May 2005, Espoo. <http://www.ttl.fi/NR/rdonlyres/14DC15F0-ABC1-40C1-BA04-9A6BEB24F68E/0/dagslandweb.pdf>

⁽²⁹⁾ GMB. *Protecting you at work, casino workers gambling with their health*, 2006. <http://www.gmb.org.uk/Templates/Internal.asp?NodeID=93626>



2.5.2.4. Survey of fast food enterprises (France)

In a 1997 survey of fast food business in Paris, 41 % of all employees interviewed complained of being tired, a high percentage rate given the young average age (23.2 years) of this population. There were also complaints related to musculoskeletal disorders (24.3 %), sleeping problems (18.2 %) and irritability (14 %). Six factors making work difficult and stressful were mentioned: dealing with customers; the pace of work (particularly in the very busy periods); working premises and the lack of space; working hours; the wide variety of different tasks; and the particular type of management pressure specific to the way this business is run ⁽³⁰⁾.



Another 2002 study made an analysis of the working conditions of a population of 189 apprentices under 18, mainly in the catering and food trades. It revealed a number of features characteristic of apprentice work: travel time; working hours (weekly working time, distribution of working hours, rest days); working conditions (work on dangerous machinery, handling operations, exposure to chemicals, wearing protective equipment); accidents at or travelling to work; and health effects (sleep, fatigue, pain, job satisfaction). It showed frequent non-compliance with provisions of the French labour code, especially as regards working hours ⁽³¹⁾.

2.5.2.5. The hospitality and tourism sector in the north-east of England ⁽³²⁾

The 'People 1st' sector covers 14 separate industries: hotels; restaurants; pubs, bars and nightclubs; contract food service providers; hospitality providers; membership clubs; events; gambling; travel services; tourist services; visitor attractions; youth hostels; holiday parks, and self-catering accommodation. The tourism and hospitality sector in the north-east supports over 10 % of the region's labour force. It employs (directly and indirectly) approximately 44 000 people, and there was a 5 % increase in total sector employee jobs in the region between 2001 and 2004. Over two thirds of these are in establishments such as pubs, bars, nightclubs and restaurants. The tourism sector in the north-east is expected to increase employment and increase its share of the national tourism expenditure. Most of the industry's workforce are female (69 %), and there is an even split between those individuals who work on a full-time and a part-time basis. The sector also employs a relatively young workforce. A fifth of workers in the north-east are aged 16–19, while a further 18 % are aged 20–24. Core occupations tend to be those that are unique to the sector, such as work as travel agents, chefs and bar staff. Over half the workforce work in elementary occupations, as kitchen assistants, waiting staff and bar staff for example (Figure 6).

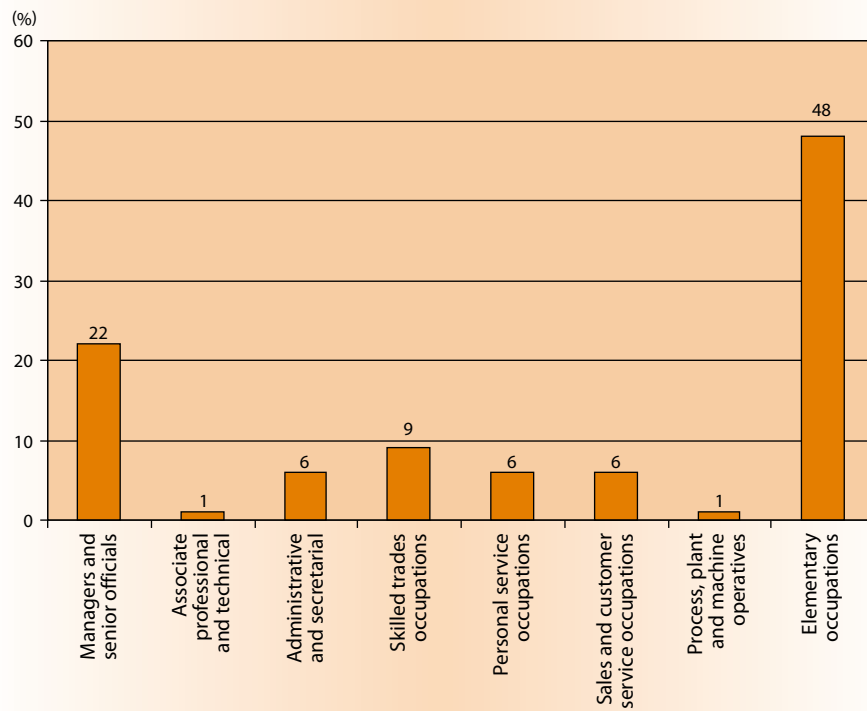
⁽³⁰⁾ Chautard, G. and Cuvillier, F. *Le travail dans la restauration rapide à Paris*. Documents pour le médecin du travail, No 72, 4e trimestre 1997 ; Devillechabrolle V. *Salariés ou cocottes-minute ?*, Santé et travail, No 24, juillet 1998. [http://www.inrs.fr/INRS-PUB/inrs01.nsf/inrs01_search_view_view/7C8420651679DCE8C1256DBA005055CE/\\$FILE/visu.html?OpenElement](http://www.inrs.fr/INRS-PUB/inrs01.nsf/inrs01_search_view_view/7C8420651679DCE8C1256DBA005055CE/$FILE/visu.html?OpenElement)

⁽³¹⁾ *Une analyse des conditions de travail dans une population d'apprentis de moins de 18 ans*. Documents pour le médecin du travail, Etudes et enquêtes 91 TF 117, No 91, 3e trimestre 2002, pp. 247–258.

⁽³²⁾ People 1st, *The hospitality, leisure, travel and tourism sector in the north east: regional profile*, 2006. http://www.tuc.org.uk/em_research/tuc-12306-f0.cfm



Figure 6: Occupational profile of the hospitality, leisure, travel and tourism sector in the north-east of England



Approximately 15 % of the workforce have no qualifications, while 23 % are qualified to either level 1 or entry level. A low proportion of the workforce hold level 4 or higher qualifications. Some 20 % of hospitality and tourism firms say they cannot fill vacancies, and almost half of unfilled posts are attributed to skills shortages. The average wage in the sector is almost half the average wage for all industries in the north-east. This figure is skewed somewhat by the low level of part-time wages for hotel and restaurant staff in the region. The average wage for female workers in hotels and restaurants is only 60 % of the equivalent male wage. Full-time workers in hotels and restaurants work, on average, 40 hours a week, which is higher than the average working week for all sectors and workers in the north-east.

2.5.2.6. Guidelines for training and development, especially in SMEs, in the hotel, restaurant and café sector, joint recommendation by EFFAT and Hotrec (EU)



The social partners EFFAT (the European Federation of Food, Agriculture and Tourism Trade Unions) and Hotrec (Hotel, Restaurants and Cafes in Europe) ⁽³³⁾ adopted guidelines for training and development in the hotel, restaurant and café sector, with particular emphasis on the needs of SMEs. They recommend that their member organisations review carefully the 12 ‘successful tips’ listed in the guidelines. These tips should inform future training activities in the sector.

⁽³³⁾ EFFAT and Hotrec. *Guidelines for training and development, especially in SMEs, in the hotel, restaurant and café sector*, 2004. <http://www.hotrec.org/areas/social/index.html>

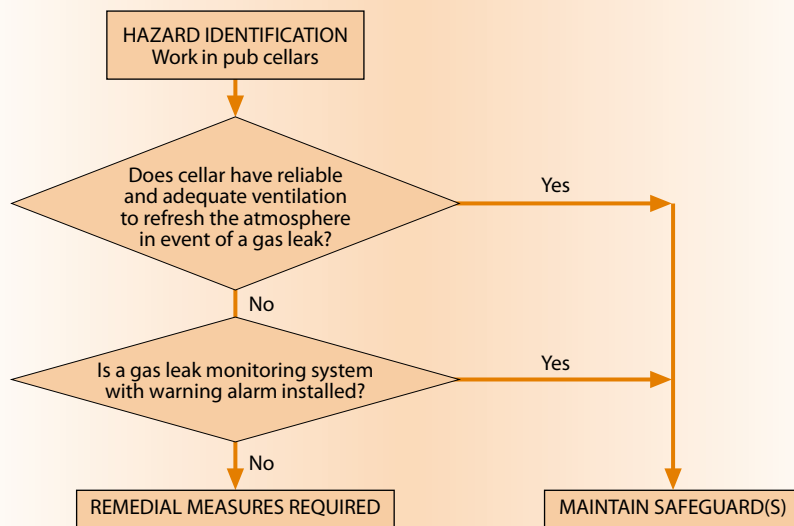


- Make it job-related.
- Apply the mentor-model.
- You need strong support from management and workers.
- Integrate training in (individual) career paths (horizontal/vertical).
- Embed training in a strong framework.
- Include basic skills: language, behaviour, culture and organisation.
- It takes passion, or at least motivation with ongoing stimulation.
- Training plans need to be transparent to users.
- Qualifications need to be recognised.
- It is important to establish goals and measure/evaluate results.
- Social dialogue is important.

2.5.2.7. Safe working in pub cellars (Ireland)

Pubs are establishments in which young people seek employment. However, pubs may contain cellars and young people need to identify those hazards that may arise from working in a cellar. Cellars may be dark, damp and inadequately ventilated, and while the publican is responsible for arranging and carrying out a safe system of working to eliminate or reduce the risk to health and safety, young persons must still be aware of these risks. The flow chart in Figure 7 provides an indication of how vigilant one should be when working in a cellar ⁽³⁴⁾.

Figure 7: A flow chart to identify those hazards that may arise from working in pub cellars



⁽³⁴⁾ HSA. Guidelines for safe working in cellars of pubs and other licensed premises, 2004. http://www.hsa.ie/files/product_20041221012816pub_cellars.pdf



2.5.2.8. *Creating a safety culture at live music events (United Kingdom)*



The project ⁽³⁵⁾ was about helping raise awareness of the need to manage and assess the risks to people working at live music events. The team set out to assess the competencies needed to ensure that work activities could be carried out safely, effectively and efficiently, and to develop a benchmarking system. The overall aim was to create a safer environment for staff, and conditions in which a safety culture could be perpetuated.

The website (www.safety-rocks.org) presents the results of the project and is aimed at sharing health, safety and welfare knowledge, experience and practices throughout the European live music event sector. The site has two types of content: examples and resources. The examples will be presented to the user in the form of a template tool allowing them to be guided through the process of identifying the specific risks to workers at live music events.

The safety-policy template enables employers to create a document that contains a clear statement of responsibilities. It describes what the employers have deemed to be the basic requirements for health, safety and welfare, including emergency planning, lines and methods of communication, and welfare concerns such as drinking water, toilets and first aid. The tool will ask a sequence of questions and come up with text that the user can edit and customise. The team compiled a database of hazards, the risks they present and suggested solutions.

2.5.3. *Young workers in the retail sector*



A work experience student was working in a clothes shop. After stock had been delivered the clothes had to be unpacked and steamed and hung up to get the creases out before going into the shop. The student had helped with this and had been shown how to use the steamer, but had not been allowed to use it. As she was again helping with this task, the supervisor using the steamer was called away. Thinking she knew what to do, and being keen to impress, the student started to use the steamer. She was just feeling confident when she stumbled over one of the packaging boxes and badly scalded her arm requiring medical treatment ⁽³⁶⁾.

The retail sector is very diverse. It includes activities in shops, petrol filling stations, vehicle dealers, retail warehouses, superstores, small shopping centres, markets, 'shops' in the everyday sense of the word, such as butchers, grocers, or to which members of the public are invited to resort either to leave goods for repair or treatment themselves, for example the parts of shoe repair shops or dry-cleaning establishments where goods are received, or self-service laundries, and financial and professional services to the public.

This sector is growing, thus making it easier for young people in the EU-25 Member States to find employment within it. However, pay in the retail trade tends to be

⁽³⁵⁾ European Agency for Safety and Health at Work. *Promoting health and safety in European small and medium-sized enterprises*, 2005. p.39. http://osha.europa.eu/publications/reports/ag05001/full_publication_en.pdf

⁽³⁶⁾ RoSPa. Young worker: <http://www.youngworker.co.uk/youngpeople/casestudies/shop.htm>

relatively low and there are high levels of part-time work and weekend work. Additionally, due to the changing nature of the retail sector, with restructuring, diversification and reductions in the workforce, the workforce has become more transient. Many retailers, especially those in fast food chains, now use more casual and part-time employees. Many of these employees are young workers, especially students still attending school or university.



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2.5.3.1. Hazards and risks to young workers in the retail sector

A bakery worker in a large supermarket chain, in his 20s, lost the top of his finger when he put his hand in the machinery. He required hospital treatment after trying to remove dough stuck in the mechanism. A guard — which should have prevented staff from putting their hands into a dough-dividing machine — had been removed, and the safety enforcement authority said that there was a culture of carelessness at the store. There were training procedures in place but the way in which these were put into practice at this store were inadequate and ineffective, putting the safety of staff at risk. Also the checks and balances to prevent these problems were themselves lacking and ineffectual. A logbook, which was supposed to be completed following daily safety checks, had regular omissions⁽³⁷⁾.



A specific set of harmful conditions characterises the working situation of young workers in the retail sector (Table 7).

Dermatitis, upper limb disorders and stress are some of the predominant causes of work-related illness in this sector⁽³⁸⁾.

Dermatitis, upper limb disorders and stress are some of the predominant causes of work-related illness in retail.

⁽³⁷⁾ <http://news.bbc.co.uk/1/hi/england/norfolk/4627393.stm>

⁽³⁸⁾ Health and Safety Executive, *Work-related injuries and ill-health in retail*
<http://www.hse.gov.uk/statistics/industry/retail.htm>



Table 7: Hazards and risks in the retail trade ⁽³⁹⁾

Physical work environment	
Physically demanding work	Exposure to lifting and/or moving of heavy loads is a potential hazard, which may be reduced through automation. Unloading baskets or trolleys. Packing customers' goods away.
Work in painful and tiring positions	May lead to musculoskeletal disorders. Includes having to remain standing for long periods, or having to push or pull trolleys, working with inadequate or non-adjustable seating, or inadequate scanning techniques.
Exposure to repetitive movements	This may include the packing and unpacking of goods (by hand, or using machinery). Pains in the back, neck and arms are common among checkout operators. This can be due to poor checkout design, task duration, or simply excessive workload.
Handling of chemicals	Includes workplace storage and dispensing of petrol for motor vehicles, using chemicals in barbers and hairdressers' shops, and work in dry-cleaning establishments. Products used in cleaning, disinfectants.
Heat or cold	Includes draughts, insufficient heating or cooling, for example at checkouts, insufficient protection in cold stores or when filling shelves with refrigerated goods.
Cuts and burns	For example in food retail.
Slips, trips and falls ⁽⁴⁰⁾	For example in areas that are used both by employees and the public, or involving wet floors, ramps, stairs, slopes, cluttered work areas, or ladders.
Work organisation	
Physical violence and verbal abuse ⁽⁴¹⁾	One risk that emerges strongly from the literature is that of physical violence and verbal abuse. The adverse effects of physical violence, whether threatened or actual, can range from superficial to life threatening physical injuries, through to stress-related illnesses such as anxiety. There may be particular safety risks to cashiers in ticket offices, travel agencies and betting offices, for example.
Monotonous work	This may include the packing and unpacking of goods (by hand, or using machinery).
Bullying and victimisation, sexual harassment	Violence and verbal abuse (attacks, intimidation, verbal abuse and harassment) from customers and colleagues, and unwanted sexual attention to young women, can be linked to insufficient environmental design, work practices, missing safety and security devices, low staffing levels.
Lack of control ⁽⁴²⁾ ⁽⁴³⁾ Workspace	Shaped by social demand, insufficient breaks (e.g. at checkouts), may lead to stress-related illnesses.

⁽³⁹⁾ European Agency for Safety and Health at Work. Summary for young workers — hazards and risks to young workers in the retail trade, 2006.

⁽⁴⁰⁾ In Germany, in 2001, half of the new cases of accident indemnity were due to walkways, stairs and ladders. Source BG Einzelhandel, http://www.bge.de/asp/dms.asp?url=/bge/scha_3_02/4.htm

⁽⁴¹⁾ Half of the fatal accidents reported by BG Einzelhandel in Germany in 2001 were related to physical violence: http://www.bge.de/asp/dms.asp?url=/bge/scha_3_02/4.htm

⁽⁴²⁾ Psychische Belastung in der Dienstleistungsbranche — am Beispiel Einzelhandel, Schriftenreihe der Bundesanstalt für Arbeitsschutz und Arbeitsmedizin Tb 137.

⁽⁴³⁾ Bödeker, W., 'Effect of occupationally related stress on diagnosis-specific work incapacity', *Soz Präventivmed*, Vol. 45, No 1, 2000, pp. 25–34.



2.5.4. Studies and initiatives — retail

2.5.4.1. Crime in real estate (United Kingdom) ⁽⁴⁴⁾

The British Retail Consortium's 2004 Annual Retail Crime Survey has revealed a worrying picture of retail crime in the UK, with the total cost of crime and violence against staff both showing significant increases since 2003. The 12th Retail Crime Survey showed that the impact of crime and crime prevention cost the retail sector GBP 2.13 billion in 2004, a 9 % increase from the GBP 1.96 billion in 2003. Across a five-year period, this cost is GBP 11.2 billion or on average GBP 2.24 billion per year. Retailers spent GBP 710 million on crime prevention in their stores throughout 2004. Over a five-year period the sector has spent GBP 3.58 billion.



Despite this investment, customer theft is a growing problem, with the number of known incidents per 100 outlets increasing in 2004 to 3 385, up 18 % from 2003. Since 2000, the incident figure has increased by nearly 50 %. Also, more worryingly, violence against retail staff is still of grave concern, with verbal abuse rising by 35 % compared to 2003 and physical violence also up 14 % from 2003. This has been a continuing trend since 2000. Over the past five years, retailers have spent more than GBP 3.5 billion on crime prevention, yet losses over the same period have been more than double the value of this investment — more than GBP 7 billion.

With the current culture of under-reporting of retail crime, these figures may well only be the tip of the iceberg, which is why the BRC has recently launched the SCAR (Stop Crime Against Retail) campaign to raise awareness of the real impact of crime and violence in the retail sector ⁽⁴⁵⁾.

A survey ⁽⁴⁶⁾ conducted by the British Retail Consortium on crime in the retail sector found that more than 11 000 retail staff workers were victims of physical violence on the job in the 1994/95 financial year, and 350 000 suffered threats and verbal abuse. The majority of physical attacks (59 %) occurred when staff members were trying to prevent theft. Other causes of physical violence derive from dealing with troublemakers, 16 %; robbery incidents, 10 %; angry customers, 5 %; drunk or drugged people, 5 %. The risk of physical violence was put at five attacks per 1 000 staff members; threats of violence, 35 per 1 000; and verbal violence, 81 per 1 000.

2.5.4.2. Preventing physical violence in the workplace — the Kauris method (Finland) ⁽⁴⁷⁾

The Finnish Institute of Occupational Health (FIOH) in 2001 developed the Kauris method for the retail trade industry (covering grocery stores, markets, and petrol



⁽⁴⁴⁾ BRC Retail crime survey: cost of crime up, violence against staff up
<http://www.brc.org.uk/details04.asp?id=766&kcat=&kdata=1>

⁽⁴⁵⁾ http://www.nu-riskservices.co.uk/news/articles/cms/1129798321212694732464_1.htm

⁽⁴⁶⁾ ILO. *World of work: when working becomes hazardous*, (1998).
<http://www.ilo.org/public/english/bureau/inf/magazine/26/violence.htm>

⁽⁴⁷⁾ European Agency for Safety and Health at Work. *How to tackle psychosocial issues and reduce work-related stress*, 2002. http://osha.europa.eu/publications/reports/309/psychosocialissues_en.pdf



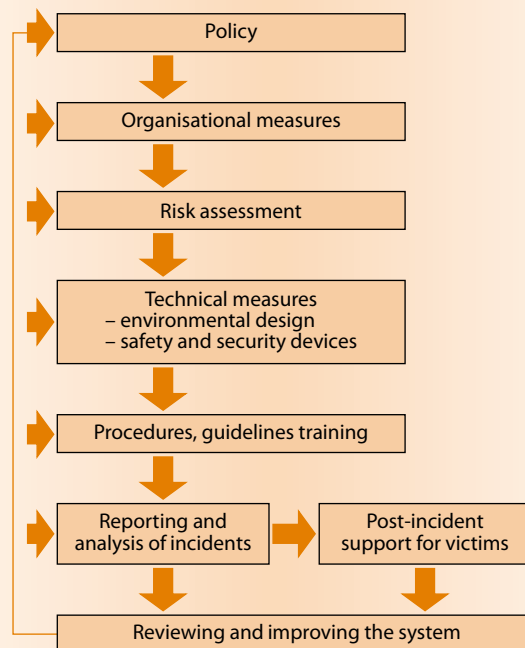
stations). A new method was needed due to the increase of violence in this sector, which was already above the national average and on the increase.

The goal of the Kauris method is to assess and manage the risk of violence at work, especially when it occurs in individual businesses. An overview of the method is presented in Figure 8.

The Kauris method:

- is very comprehensive, as it considers environmental design, safety and security devices, staffing plans, work practices, guidelines and training;
- contains questionnaires for recording employees’ experiences of threatening situations;
- uses checklists of various preventive measures, relating to shop layout, break-in protection, alarm devices and the handling of money, for example;
- uses a reporting form for incidents of violence, or the threat of violence, for risk assessment to support violence prevention programmes, such as employee training about safe procedures at work and in threatening situations;
- uses a participative approach, in which a team is formed for the implementation of the method and carrying out the necessary actions;
- proposes that staff are trained as part of the improvement process.

Figure 8: A model for the assessment and management of the risk of violence at work



2.5.4.3. Work-related injuries in youth in the retail and services industries (USA)

Mardis and Pratt ⁽⁴⁸⁾ estimated the incidence and patterns of work-related injuries to young people during 1998 in the retail and services industries. Data from the national electronic injury surveillance system and the current population survey were analysed. The highest number of work-related injuries to employees younger than 18 occurred in eating and drinking establishments, and food stores. Injuries occurring in these industries accounted for 44 % of all young worker injuries. Injury rates were similar during summer and school months. Youth continue to suffer high rates of injuries in retail and services. Improvements need to be made in safety training and injury prevention in these industries, particularly in eating and drinking establishments, food stores, and health services.



2.5.4.4. Preventing violence in retail (Germany)

Half of the fatal accidents reported by BG Einzelhandel in Germany in 2001 were related to physical violence ⁽⁴⁹⁾. In 2005, 112 cases of newly compensated workplace injuries were related to violence ⁽⁵⁰⁾. This is why BG Einzelhandel has issued guidance for the prevention of shoplifting, and for the handling of shoplifters, for the handling of cash and prevention of robberies, and what to do after an attack. It has also included the issue of robberies in guidance for petrol stations.



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⁽⁴⁸⁾ Mardis, A. L., and Pratt, S. G., 'Non-fatal injuries to young workers in the retail trades and services industries in 1998', *Journal of Occupational and Environmental Medicine*, Vol. 45, No 3, March 2003, pp. 316–23.

⁽⁴⁹⁾ BG Einzelhandel, *Unfälle und Berufskrankheiten im Jahr 2001*
http://www.bge.de/asp/dms.asp?url=/bge/scha_3_02/4.htm

⁽⁵⁰⁾ BG Einzelhandel, *Unfälle und Berufskrankheiten im Jahr 2005*
http://www.bge.de/asp/dms.asp?url=/bge/inh_aktu/main1.htm



2.5.4.5. *Work in checkouts (Sweden) ⁽⁵¹⁾*



Following extensive research on retail checkouts, the Swedish National Board of Occupational Safety and Health issued an ordinance for work in checkouts which came into force on 1 January 2003, and which is also available in English. The aim of these provisions is to limit the risk of musculoskeletal injuries, and also to reduce the specialisation of checkout work and to make possible both physical and mental variety in the duties of the checkout cashier. These provisions apply to work at checkouts on sales premises of the self-service type, where the working movements of the checkout personnel are repetitive and monotonous. The design and equipment of the checkout, as well as the number of checkouts, will be adapted to the design of the premises, the shop's turnover, staffing, range of stock, trolleys and other conditions in the shop, so that the cashier is not exposed to an accident risk or subjected to unsuitable physical or mental loads. Work postures, work loads and the need for job rotation shall be taken into account in connection with the introduction of new technology, such as optical character recognition in checkout work. Checkout work is feasible without unnecessarily strenuous bending, twisting or stretching movements or sustained muscular tension. Work shall be arranged in such a way that lifting is avoided as far as possible and manual handling of goods minimised for the cashiers. Checkout work shall be arranged so as to reduce the risk of robbery and assault. Recent research ⁽⁵²⁾ has evaluated the effects of a reorganisation of work among supermarket cashiers, and although not all measured variables were significantly improved, the overall result indicates that the reorganisation of work had positive health effects.

2.5.4.6. *Focus on German butchers, bakeries and patisserie shops*



This project, funded under the Agency's SME funding scheme 2001–02 ⁽⁵³⁾, was aimed at three groups in the food trade: bakers, pastry chefs and butchers. At the outset, it was clear that despite legislative requirements, there was still great potential for accidents to occur in these trades. A partnership was formed, consisting of a craft association, a baker's association and a health insurance company. Activities were focused on two areas:

- the analysis of problems and design of information material, with the help of experts;
- public events to involve a large number of participants in the project from SMEs and other bodies (such as craft worker organisations).

⁽⁵¹⁾ *Work in checkouts*. Ordinance of the Swedish National Board of Occupational Safety and Health containing provisions on work in checkouts, together with general recommendations on implementation of the provisions. AFS 1992:19. <http://www.av.se/dokument/inenglish/legislations/eng9219.pdf>

⁽⁵²⁾ Rissén, D. et al., 'Psychophysiological stress reactions, trapezius muscle activity and neck and shoulder pain among female cashiers before and after introduction of job rotation', *Work & Stress*, 16, 2002, pp. 127–137. <http://www.psychology.su.se/staff/ul/Rissen2002.html>. See 'Health problems of young workers' for a more detailed description of this research.

⁽⁵³⁾ http://sme.osha.europa.eu/publications/fs2001/2002/en/index_48.htm





The objective was to reduce the level of work-related accidents in these small enterprises, through a series of regional training workshops with the people involved and their trainees.

Information materials included a questionnaire on health and safety in the workplace and a checklist for risk assessment. In addition, the project dedicated a great deal of effort to publicity so that it would reach as wide an audience

as possible. Press releases were regularly produced and a press conference took place at the end of the project.

Training was carried out in each sector to raise awareness of the risks. This focused on the basics — first aid, accident prevention and insurance requirements, youth work protection law and pregnant women workers' protection — and addressed risk factors such as dangers from electricity, handling weights, driving small vehicles, machine operation, temperature control for deep-fat fryers and the danger of liquid gas explosions. Information is available on a dedicated web page ⁽⁵⁴⁾.

2.5.4.7. Safety matters in charity retailing

The most common causes of work-related harm in charity retailing are connected with manual handling, slips, trips and falls, sharp injuries and contamination arising from the sorting of donated products. Fire hazards provide the greatest risk of serious injury or death in charity retailing owing to the volume of combustible material held in small shop premises. These were the targets of a project to disseminate information and guidance organised in the UK. Areas of focus were risk assessment, manual handling and accident reporting and investigation, with special regard to the risks of injury to young, pregnant and disabled/vulnerable workers. Generic risk assessments were drawn up for shops, depots and stock collection schemes and these were issued to area managers after they had received training in risk assessment. A manual handling assessment form was tested and issued to managers, along with guidelines. New safety inspection checklists were produced and the systems for reporting accidents, investigating incidents and replying to enforcement agency correspondence were revised. The information pack contains specific advice for charity retailing that is based upon official guidance, plus examples of good practice that have been adopted by a number of charities ⁽⁵⁵⁾.



⁽⁵⁴⁾ Informations- und Kommunikationsnetzwerk in den Nahrungsmittelhandwerken Sachsen-Anhalts zur aktiven Gestaltung der Vermeidung von Arbeitsunfällen und arbeitsbedingten Gesundheitsgefahren: <http://www.baeckerverband.de/IKN2/index.htm>

⁽⁵⁵⁾ This project was funded under the agency's SME funding scheme 2001–02. See European Agency for Safety and Health at Work, *Promoting health and safety in European small and medium-sized enterprises*, 2003. <http://sme.osha.europa.eu/publications/fs2001/2002/>



More than 1 million people are employed in about 400 000 hairdressing salons in Europe; 83 % are under 26.

2.5.5. Young workers in hairdressing

More than 1 million people are employed in about 400 000 hairdressing salons in Europe. This sector is characterised by a young workforce: 83 % of recruits are aged under 26 and 56 % are under 19. As a result, almost all risk factors for hairdressers are automatically relevant for young workers ⁽⁵⁶⁾. Also, hairdressing is a predominantly female profession, with 87 % female workers. The main health problems in this sector, skin problems, asthma and musculoskeletal disorders therefore mostly affect young women.



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2.5.5.1. Hazards and risks to young workers in hairdressing

A specific set of harmful conditions characterises the working environment of young workers employed as hairdresser (Table 8).

Table 8: Hazards and risks — hairdressing

Risk factor	Health problems
Hazardous substances	<p>Hairdressers may be exposed to many chemicals while mixing and applying specialist formulations. These formulations can be broadly categorised as hair colouring preparations (bleaches, dyes), hair styling preparations (setting lotions, hair sprays, waving preparations, straightening preparations) and hair treatments (shampoos, conditioners). Contact with the skin (mainly on the hands) is considered to be the most frequent exposure of chemicals in hairdressing workplaces, although inhalation of chemicals can also occur. Chemical exposure among hairdressers poses a health problem, often resulting in irritant dermatitis and some respiratory diseases.</p> <p>Hairdressing is one of the occupations with the highest incidence of occupational skin disease, also known as dermatitis. The areas most likely to be affected are the hands and fingers, but the arms, face, and neck may also be involved. Up to 70 % of hairdressers will get some form of skin damage, mostly beginning in the first three years of training. Working with wet hands is likely to be the major cause. The skin is in contact with water and/or chemicals in</p>

⁽⁵⁶⁾ European Agency for Safety and Health at Work, 'Summary for young workers of hazards and risks to young workers in hairdressing', 2006. In publication.



Risk factor	Health problems
	<p>aqueous solution or suspension for a longer period. In a hairdressing salon there are many 'wet work' activities, especially for trainees, since they are mostly given tasks such as shampooing and rinsing the hair. Particularly in larger salons, trainees wash the hair of all the clients, while the cutting and dyeing will be done by more experienced staff. Apart from the unpleasant appearance, as well as physical discomfort and pain of dermatitis, it often means the hairdresser has to leave the profession and find other work. This may result in a 'healthy worker effect': only the less sensitive hairdressers will keep working. This may be another explanation why there are fewer skin problems among the older hairdressers.</p> <p>In general, apprentices suffer fewer respiratory irritations than other hairdressers. This can be explained by the frequency with which experienced hairdressers carry out tasks such as styling (with hairspray) and preparing the bleaching products. However, young workers who suffer from asthma often do not mention it as an occupational disease, and they may be unaware of occupational risks.</p> <p>Most hairdressers are women, and most of them are of child-bearing age. This makes the potential toxicity of a wide range of products important. A potential risk of reproductive disorders has been mentioned in some sources, although it was considered fairly low and is reported to be decreasing nowadays.</p>
Climate	<p>General and local ventilation is an established way of removing indoor air pollutants resulting from hairdressing work. Good ventilation also has implications in improving the well-being of the occupants of work rooms. However, draughts may cause problems and lead to discomfort. Also, when a client enters or leaves the salon, cold air may enter through the open door.</p>
Noise	<p>The level of noise in hairdressing salons, from blow dryers and hair liners, can be high, although it will not exceed the eight-hour limit value of 85 dB(A). However, the noise can make the communication between hairdresser and client more difficult, and so cause unnecessary annoyance.</p>
Slipping and tripping	<p>Internal or external steps, changes in floor coverings, electric cables and slippery or uneven floors are common causes of slips, trips and falls in hair salons. There can also be a risk if floors become wet or contaminated with shampoos, hair or cleaning materials.</p>
Ergonomic risks	<p>Musculoskeletal disorders may be caused by prolonged standing, strenuous postures, and repetitive strain injury. For example, in Finland a quarter (18/74) of hairdressers' occupational diseases in 2002 were caused by repetitive strain ⁽⁵⁷⁾.</p>

2.5.6. Studies and initiatives — hairdressing

2.5.6.1. Irritant skin damage associated with hairdressing (Germany)

The incidence of hand dermatitis is high in the hairdressing trade. The individual disease burden is substantial, as are the costs of treatment, workers' compensation and retraining programmes. To evaluate the risk of developing occupational irritant hand dermatitis associated with several potential risk factors, namely constitution (atopy) and occupational exposure, an observational prospective population-based cohort study was carried out in north-west Germany. It involved 2 352 hairdressing apprentices from vocational training schools ⁽⁵⁸⁾. Unprotected wet



⁽⁵⁷⁾ Finnish Institute of Occupational Health. *Occupational diseases in 2002*, 2003.

⁽⁵⁸⁾ Uter, W. et al., 'Hand dermatitis in a prospectively-followed cohort of hairdressing apprentices: final results of the POSH study', *Contact Dermatitis*, Vol. 41, No 5, November 1999, pp. 280–286.



work for more than two hours per day was found to be the major significant risk factor; low ambient absolute humidity was found to be equally associated with a significantly increased risk. Compared to the youngest age group, risk diminishes with increasing age. Constitutional risk factors are difficult to evaluate because of selective dropout of atopic participants. For primary prevention, a population approach, improving working conditions and skin protection for all exposed, appears to be the most beneficial.

2.5.6.2. Safety and health for hairdressers across the European Union (Sweden)



This transnational project ⁽⁵⁹⁾ was based on well-tested Swedish training materials and set out to address occupational safety and health in hairdressing salons across Europe. The project partners and their counterparts in other countries worked with management and staff to increase knowledge and understanding of OSH and to improve the working environment.

They published a 47-page manual in 11 languages, designed for a transnational target group. This is available in printed form and also on a CD-ROM. It can be used as a part of basic training in salons, and complements nationally-produced information material. It is also on the hairdressing employers' website in the United Kingdom.



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2.5.6.3. Covenant for the hairdressing sector (the Netherlands) ⁽⁶⁰⁾



In the Netherlands, the social partners have agreed on a covenant for the hairdressing sector. It places obligations on employers to provide safer workplaces, on employees to follow safe work practices, and on manufacturers to modify their products to prevent skin contact with them.

The covenant covers a wide range of measures, such as:

- gloves being worn when mixing, applying and rinsing out colouring, permanent wave and highlighting agents;
- gloves being worn when washing hair, whenever possible; disposable PVC gloves should be used as latex gloves are also associated with allergies;
- hairdressers' products containing GTG (glyceryl thioglycolate), primarily permanent wave agents, should be completely avoided;
- the packaging of permanent wave agents being modified to minimise skin contact; hair colouring packaging being modified;

⁽⁵⁹⁾ European Agency for Safety and Health at Work. *Promoting health and safety in European small and medium-sized enterprises*, 2005, p. 35. http://osha.europa.eu/publications/reports/ag05001/full_publication_en.pdf

⁽⁶⁰⁾ (<http://www.healthyhairdresser.nl>.
<http://www.arbobondgenoten.nl/arbothem/arboconv/sektdoku/kappers/kappers.htm>)



- only permitting the use of dustless or low-dust highlighting agents in the form of tablets, creams and granules;
- introducing rules regarding breaks and task rotation to prevent extended working with wet hands, as wet hands increase the risk of skin complaints;
- developing a screening instrument to enable hairdressers to determine whether they suffer from hairdressers' dermatitis or are likely to be affected by it.

The campaign started with a tour of theatre shows with music, dance and the latest fashions in hair while also covering hairdressers' postures and the use of gloves. About 10 000 people saw the show and received a pair of vinyl gloves and the 'healthy hairdresser' CD-ROM.

2.5.6.4. Health and safety content of hairdressing training courses (United Kingdom) ⁽⁶¹⁾

As hairdressing is the second-highest risk occupation in terms of occupational skin disease, a project was launched by the HSE to determine the general health and safety content of hairdressing training courses in further education colleges, establish the awareness of employer's duties under the COSHH (Control of Substances Hazardous to Health Regulations), ascertain the general understanding of student hairdressers regarding health and safety matters and identify the prevalence of skin problems in hairdressing apprentices.

The results of this survey are consistent with previous studies identifying clearly limited and often incorrect application of the relevant health and safety legislation. Of the 200 students interviewed, 20 % had pre-existing skin problems. Some 19–23 % had pre-existing respiratory problems or a history of allergy. A further 10 % developed significant skin symptoms and 3 % respiratory symptoms since commencing the course.



2.5.7. Young workers in call centres



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'Technicians and associate professionals' also include a high proportion of young workers in some countries. The call centre business belongs in this sector.

The call centre sector is characterised by rapid growth, with more and more people employed in it. There are a high proportion of young people working in call centres, and so young people are more likely to be exposed to the hazards linked to call centre work. The mean ages

among international call centre operators are generally low, and the proportion of women is high in some companies. Employees usually have an elementary and/or

⁽⁶¹⁾ Keddle, C., HSE, October 1998. 'A study of occupational dermatitis in further education training hairdressing establishments in Scotland', *Specialist Inspector Reports*, No 56. <http://www.hse.gov.uk/pubns/sir56.pdf>



The literature shows a clear link between work-related prolonged sitting and a higher incidence of MSDs, such as neck and shoulder pain.

upper secondary school education ⁽⁶²⁾. For example, it is estimated that 1.6–2 % of the total UK workforce is employed in call centres (figures provided by Call Centre Association (CCA) and Communication Workers Union (CWU)). This is more than the combined workforce in coal mining, steel and vehicle production, and continued expansion is likely, though probably not at the same rate as in recent years. There are between 3 000 and 5 000 call centres in Britain (figures provided by CCA and CWU). The number is inexact, as there is no universally agreed definition of what constitutes a call centre.

In 2005, the Agency conducted an expert survey which focused on physical risks ⁽⁶³⁾. The main risks identified in the study reflect a growing concern regarding multi-factorial exposure to risk. The various risk factors that call centre agents are exposed to include prolonged sitting, background noise and poor room acoustics, inadequate headsets, poor room ventilation, inadequate lighting conditions, poor ergonomic design of the work equipment, inappropriate arrangement of the work premises, and factors of a human and organisational nature such as low job control, high time pressure, poor work organisation, and high mental and emotional demands. Various health problems could be observed, such as musculoskeletal disorders (MSDs), varicose veins, nose and throat diseases, voice disorders, fatigue, stress and burnout.

The importance of the voice as an occupational tool is also growing, with the development of voice-activated technology and the increase in the number of individuals working in call centres, where vocal demands are high. Guidance for call centres also includes advice on how to avoid additional strain on the voice, including climate and ergonomic considerations.

A comparison between call centre agents and secretaries showed that the amount of time spent in sitting positions at work correlates to the amount of phone calls that are made and received ⁽⁶⁴⁾. The literature also shows a clear link between work-related prolonged sitting and a higher incidence of MSDs, such as neck and shoulder pain.

2.5.8. Studies and initiatives — call centres

2.5.8.1. Call centre work — characteristics, physical and psychosocial exposure, and health-related outcomes (Sweden) ⁽⁶⁵⁾



Call centres are one of the most rapidly-growing types of workplace in Sweden. The overall aim of this study was to describe work characteristics, physical and psychosocial exposure, and health-related outcomes for call centre operators in selected call centres in Sweden. Among other findings, the study shows that the call centre group spent longer continuously in front of the computer than other professional computer users. Emotional and cognitive demands and time pressure were considered high. Emotional demands and limited decision latitude

⁽⁶²⁾ Austin Knight & Calcom Group. Call centre practice not theory. The first national survey of call centre management & staff attitudes, 1997.

⁽⁶³⁾ European Agency for Safety and Health at Work. *Expert forecast on emerging physical risks related to occupational safety and health*, 2005. http://riskobservatory.osha.europa.eu/risks/forecasts/physical_risks

⁽⁶⁴⁾ See above, pp. 48–62.

⁽⁶⁵⁾ Norman, Kerstin. 'Call centre work — characteristics, physical, and psychosocial exposure, and health-related outcomes', *Arbete och Hälsa (Work and Health) Report* No 11, 2005. http://ebib.arbetslivsinstitutet.se/ah/2005/ah2005_11.pdf



were dominating features in call centre work. A higher proportion of the call centre group reported musculoskeletal symptoms compared to other professional computer users.

2.5.8.2. Quality of work in call centres (Austria)

A survey conducted by Forschungs- und Beratungsstelle Arbeitswelt (FORBA) focused on the quality of work, corporate strategies and institutional frameworks in call centres. The results are based on the responses of managers in 96 call centres, in-house as well as subcontracting companies, and represent 9 100 employees. The study concluded that the Austrian call centre sector is characterised by atypical work, low income and high staff turnover, and that it mainly employs female workers. In Austria, the central aims of cost reduction and increased flexibility in the call centre industry have led to a common practice of employing atypical workers, mostly on the basis of 'free-service contracts'. For employers, the free-service contract is largely associated with lower labour costs, along with increased flexibility. Workers on these types of contracts are only partially covered by Austria's social insurance system; health services and state pensions are included, but no sickness benefit is provided. Moreover, they have been denied unemployment insurance and any co-determination rights so far. The social insurance contributions that the employer is obliged to pay on behalf of these workers are much lower than those payable on behalf of standard employees. Furthermore, these atypical workers can be used flexibly and paid poorly, since they are not covered by any collective agreement, nor are they protected by any working time regulation ⁽⁶⁶⁾.



In 2005, about 30 % of all call centre agents were free-service contract workers. However, only 40 % of the country's call centres actually offer such contracts, which means that the proportion of free-service contract workers in these enterprises (most of which are subcontractors) amounts to almost 83 %, on average ⁽⁶⁷⁾.

2.5.8.3. Psychosocial risk factors in call centres: an evaluation of work design and well-being (United Kingdom)

This quantitative research report presents findings from a larger-scale (questionnaire-based) study conducted by the Health and Safety Laboratory (HSL) and includes data from 36 call centres and over 1 100 call centre employees. This report is the third of the HSL call centre studies.



It addresses four main questions.

- Is working as a call handler more stressful than working in other jobs?
- Is working as a call handler equally stressful for everyone who works as one?
- What is it that makes working as a call handler stressful?
- What can be done to reduce the psychosocial risks associated with working as a call handler?

⁽⁶⁶⁾ European Foundation for the Improvement of Living and Working Conditions, 2006. *Social partners seek to regulate employment of call centre workers*. <http://www.eiro.eurofound.ie/2006/09/articles/at0609039i.html>

⁽⁶⁷⁾ http://www.forba.at/files/download/download.php?_mmc=czo20iJpZD0xNDkiOw==



The report ⁽⁶⁸⁾ supports the view that psychosocial issues are a major contributory factor to poor mental health among call centre employees. The research indicates that working as a call handler is more stressful than working in other jobs, although not all staff are affected equally, or by the same factors. The research recognised that working in some call centre environments — such as in the telecommunications and IT business sectors — affected well-being more directly. Other contributing factors included:

- working in larger call centres (employing 50 or more staff);
- having permanent contracts;
- following strict scripts;
- staff having their performance measured.

2.5.8.4. Acoustics in call centres (Germany)



The primary task of call centre agents is talking to customers on the telephone. In order to maintain a smooth workflow and to ensure the health of the agents, many aspects must be kept in mind both in call centre planning and operation. A good acoustic environment has a substantial influence on whether or not callers are easily heard. The staff in call centres often work in teams, where agents help each other to answer a particular question or in dealing with angry callers. Yet discussion among other workers or between agents can also be distracting. Noise levels can be reduced by shielding and minimising the amount of reflected noise. Within the framework of the project 'Ccall — successful and healthy work in call centres', led by the institute for statutory accident insurance and prevention, several key topics in the area of acoustics were considered. For example, the acoustic properties of several headsets were analysed. Seven call centres in a number of sectors were selected. Staff in these call centres tested three different types of headsets during normal working activities, and the influences of ambient noise were recorded. The results show that the perfect headset does not exist. The guide to selection ⁽⁶⁹⁾ based on the results of this project thus contains the recommendation that personnel be given a free choice of headsets, for example ones that can be worn in different ways, and ones with ear cushions. Such a choice can often be provided within the product range of a single manufacturer. Only 16 % of the participants in this study were currently free to choose.

⁽⁶⁸⁾ Health and Safety Executive research report, RR169, 2003. *Psychosocial risk factors in call centres: an evaluation of work design and well-being*. <http://www.hse.gov.uk/research/rrhtm/rr169.htm>

⁽⁶⁹⁾ *Working environment and ergonomics — selection guide for headsets*. Ccall Report 4: www.ccall.de

2.6.

DISTRIBUTION BY GENDER



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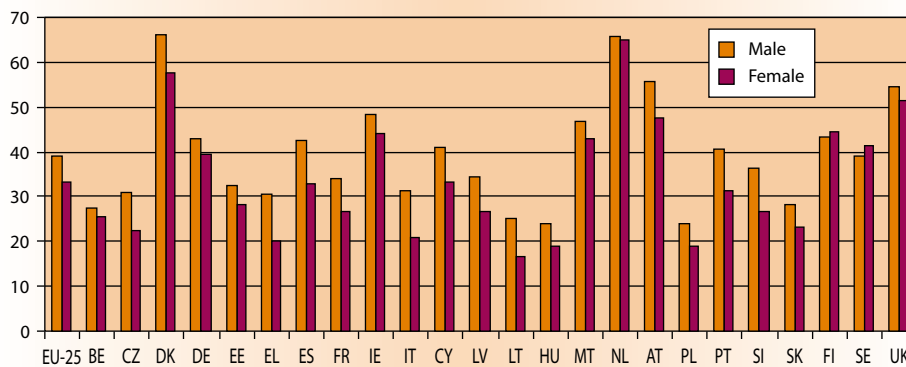
As was the case five years before, in 2005 the EU-25 workforce was still predominantly male (107.9 million against 85.9 million female workers). Among young workers, also, more males than females were at work (11.1 million males against 9.3 females).

In 2005, 11.1 million young males and 9.3 young females were working within the EU-25.

In 2005, 39.1 % of the male population and 33.3 % of the female population between 15 and 24 years were employed. For both young males and

females, employment rates are much lower than they are for the total working population (71.1 % for males aged 15–64 years, 56.2 % for females aged 15–64 years). Employment rates both for young males and females have been decreasing since 2000 (– 1.6 for males and – 1.0 for females). The employment rate of young male workers ranged from 23.8 % in Hungary to 66.3 % in Denmark, while the employment rate of young female workers ranged from 16.6 % in Lithuania to 64.9 % in the Netherlands.

Figure 9: Employment rates of young workers by gender, %, LFS 2005



NB: No data available for Luxembourg.

Employment rates for young males are higher than for young females.

For all the different types of hazards, both physical and psychosocial, job segregation strongly contributes to exposure to hazards and therefore to health outcomes. This is also true for young workers. Women are more likely to work in jobs involving caring, nurturing and service activities, associated with people, while men are more likely to work in management and manual and technical jobs associated with machinery or plant operation. Even within sectors, there is horizontal segregation — for example in the manufacturing sector women are concentrated in textiles and food processing. This segregation is also vertical — men are more likely to work in jobs higher up the occupational hierarchy. For example, while men hold the majority of skilled agricultural jobs, in the lowest level, unskilled occupations, women are disproportionately



represented. Even where men and women appear to be employed to do the same job, in practice, the tasks they carry out can often be segregated by gender ⁽⁷⁰⁾.

These general trends apply to young workers too and some of the implications are as follows.

- Gender differences will affect the risks that young men and young women are exposed to.
- OSH needs to be well integrated into training courses for traditional work areas which young men go into, such as construction or manufacturing professions, but it is not clear that equal attention needs to be given to 'typically female' vocational training. Some, such as hairdressing, are covered, but is information about musculoskeletal disorders included in secretarial courses? If young men enter at a higher skills level, they will also be more likely to receive vocational training than more unskilled female workers.
- Equally, where young men are higher up the hierarchy, they will have more opportunity to raise problems and thus have more control over their jobs.
- If prevention focuses mainly on accident risks (and thus on the more exposed young male workers), health problems and risks to female young workers will be excluded.

2.7. EMPLOYMENT STATUS OF YOUNG WORKERS

One can argue that, in terms of provision for health and safety at work, salaried workers, full-time workers and workers with an unlimited contract are on average in a better position than self-employed workers, part-time workers or workers with a limited-duration contract. Young workers seem to be in an unfavourable situation because of their full-time/part-time status and the duration of their contracts, while they are more likely to be salaried workers than the working population in general. In comparison with the overall workforce, workers aged 15–24 years are less often in full-time employment, more often on temporary contracts, and more often salaried workers ⁽⁷¹⁾.

2.7.1. Self-employment

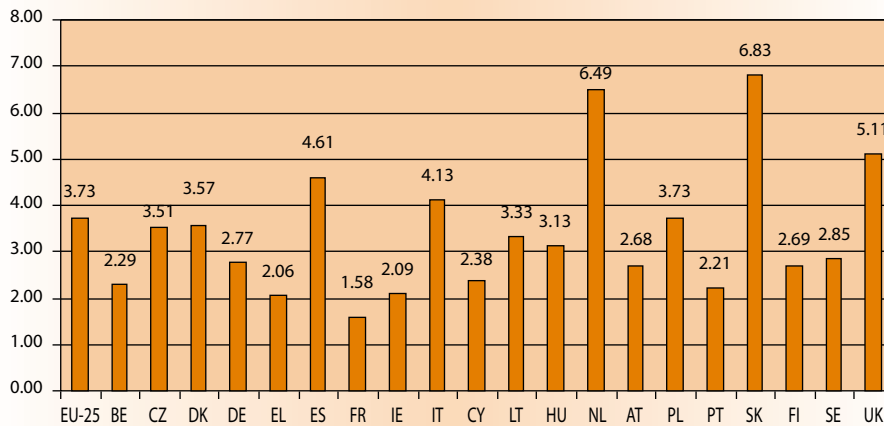
In 2005, 19 145 000 workers in the EU-25 were self-employed. This includes 715 000 young self-employed workers. The proportion of self-employed young workers has remained stable since 2000: 3.7 % of young EU-25 workers are self-employed. This figure ranges from 1.6 % in France to 6.8 % in Slovakia (Figure 10).

⁽⁷⁰⁾ Fagan and Burchell, European Foundation for the Improvement of Living and Working Conditions, *Gender, jobs and working conditions in the European Union*, 2002.
<http://www.eurofound.eu.int/publications/htmlfiles/ef0249.htm>

⁽⁷¹⁾ Karjalainen, A., European Agency for Safety and Health at Work. 'A statistical portrait of the health and safety at work of young workers', *Magazine 9*, 2006, pp. 6–7.
<http://osha.europa.eu/publications/magazine/9?language=en>



Figure 10: % self-employed young workers within the total self-employed working population, LFS 2005

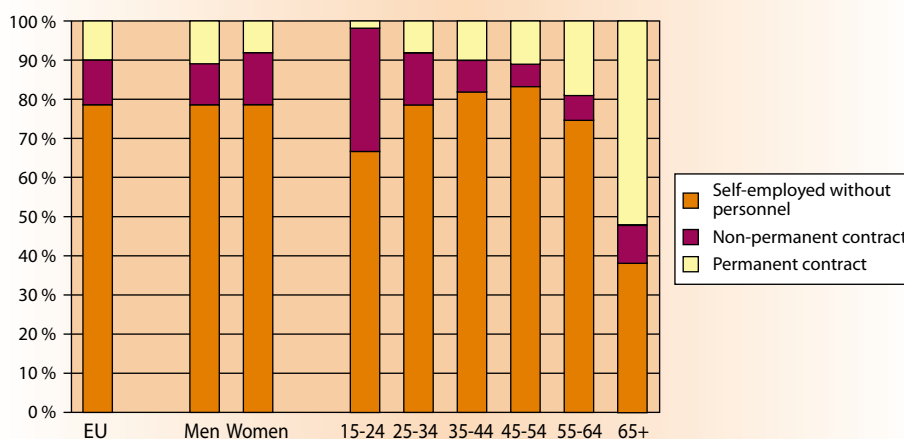


NB: No data available for Slovenia, Malta, Luxembourg, Latvia and Estonia.

The proportion of self-employed young workers decreased in Belgium (- 2.4), Czech Republic (- 5.0), Greece (- 1.4), Ireland (- 2.2), Italy (- 1.0), Lithuania (- 3.7), Hungary (- 2.1), Poland (- 2.0), Portugal (- 4.0) and the United Kingdom (- 4.4). It remained stable in Germany (+ 0.1), Spain (- 0.2), France (+ 0.2), Cyprus (+ 0.1), Austria (+ 0.5), Slovakia (- 0.8), Finland (- 0.7) and Sweden (- 0.3). The proportion of self-employed young workers increased in Denmark (+ 3.5) and the Netherlands (+ 2.5) ⁽⁷²⁾.

According to national authorities in Malta, with regards to self-employment, most self-employed people are younger than 44 years of age. In June 2002, 7 % of all self-employed people, who did not employ others ⁽⁷³⁾, were in the 15–24 age category.

Figure 11: Employment status by sex and age in 2000 (all workers, excluding small employers)



⁽⁷²⁾ Data available since: EU-25: 2000; Belgium: 1983; Czech Republic: 1997; Denmark: 1987; Germany (including ex-GDR from 1991): 1983; Greece: 1983; Spain: 1986; France: 2003; Ireland: 1983; Italy: 1983; Cyprus: 1999; Lithuania: 1998; Hungary: 1996; Netherlands: 1983; Austria: 1999; Poland: 1997; Portugal: 1986; Slovakia: 1998; Finland: 1995; Sweden: 1995; United Kingdom: 1983.

⁽⁷³⁾ 959 males and 122 females.



As we look at the different age groups, we see that the self-employed are mainly older employees. This is shown very clearly in Figure 11, where we see a drop in the share of employees and an increase in self-employment without personnel as age increases ⁽⁷⁴⁾.

2.7.2. Temporary employment

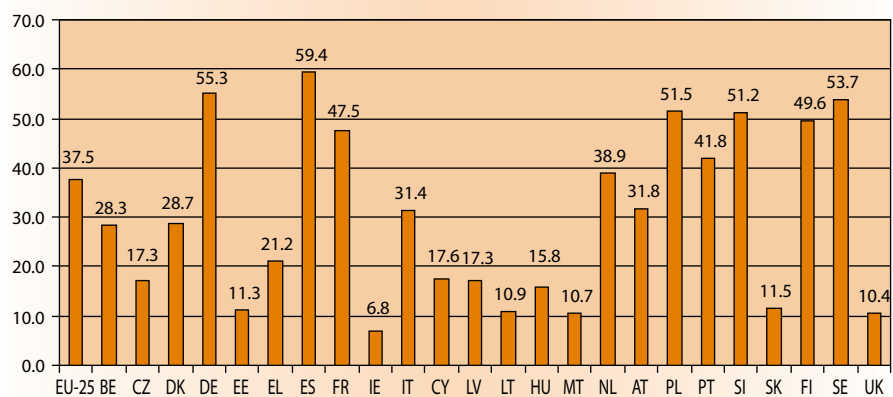


A firm and its officers were fined a total of GBP 245 000 in relation to the removal of asbestos, following an investigation by the labour inspectorate. The firm was contracted to carry out clearing and stripping work in a premise, prior to it being converted by a development company. The firm hired a team of temporary workers to work on the site, without warning them of the asbestos risk. Five people were hired, aged between 16 and 26, to do the work, as well as a foreman. The 16-year-old had just finished his school examinations. After almost five weeks the team walked off site. A second team was then hired, comprising four men and the same foreman. This team was on site for two days before a labour inspector, who had been contacted by one of the original team, inspected the site and ordered the work to stop. Work had been allowed to go ahead despite the concerns of the workforce ⁽⁷⁵⁾.

In 2005, 37.5 % of young workers in the EU-25 had a temporary contract.

Most temporary workers in the EU-25 are under 25. This is shown very clearly in Figure 12. In 2005, about 37.5 % of young workers were in fixed-term jobs, compared with about 12 % of workers in the total working population (15–64 years). This figure partly reflects the use of fixed-term contracts to cover periods of training or probation. The proportion of young workers who work temporarily has increased since 2000 with 4.3 % (from a total of 33.2 %), as against +1.5 % within the total working population (from a total of 10.5 %). The percentage of young workers in temporary employment ranged from 6.8 % in Ireland to 59.4 % in Spain.

Figure 12: Young workers in temporary jobs as % of the total group of young workers, LFS 2005



NB: No data available for Luxembourg.

⁽⁷⁴⁾ Goudswaard, A. and Andries, F. *Employment status and working conditions*. <http://www.eurofound.eu.int/publications/htmlfiles/ef0208.htm>

⁽⁷⁵⁾ Information provided by Health and Safety Executive. <http://www.hse.gov.uk/press/2004/e04113.htm>



In 2005, about 22.2 % of young workers in a temporary job were working temporarily because they could not find a permanent job. About 34 % were working temporarily due to education or training. About 10 % did not want a permanent job. The percentage of young workers in temporary employment due to education or training has decreased since 2000, from 38.4 % to 34 % in 2005. The percentage working in a temporary job because they could not find a permanent job was about 23.5 % in 2000, increased in 2003–04 to about 32 % and returned to about 22 % in 2005 ⁽⁷⁶⁾.

2.7.3. Hazards and risks facing young workers in temporary jobs



A 22-year-old agency worker was hit and killed by a train while working on a busy area of railway track. The student had only worked a few shifts and had been on a basic personal track safety course. Safety procedures and supervision were inadequate. Following the incident the employment agency

introduced a number of changes including a mentoring system to monitor the progress of new staff ⁽⁷⁷⁾.



Data indicate that the incidence of occupational accidents among temporary workers is higher than among other groups.

According to data on temporary agency work, people employed on temporary contracts have less access to training and to participation in long-term competence development than workers with permanent work contracts. They also have less job control in terms of the order of the tasks, pace of work and work methods. They are also less well-informed about risks at work.

Comparison between temporary agency workers and permanent employees reveals that temporary workers report higher levels of dissatisfaction, but a lower level of stress. Other positive aspects such as flexibility and variety of work experience are mentioned too ⁽⁷⁸⁾.

However, a study conducted by Seitsamo and Leino (FIOH) ⁽⁷⁹⁾, among 907 18–29-year-old adults who had been in some work during the last 12 months, concludes that for the young, atypical work is not necessarily a threat to well-being and health. Fixed-term jobs and many work contracts have always been associated with the early stages of careers and it is possible that older workers are more likely to describe the ill effects of atypical work. The results of this study indicate that in atypical jobs, both young men and women reported that their work was not as fast-paced as in permanent

⁽⁷⁶⁾ Goudswaard, A. and Andries, F. *Employment status and working conditions*. <http://www.eurofound.eu.int/publications/htmlfiles/ef0208.htm>

⁽⁷⁷⁾ Reported in *Health and Safety Practitioner*, UK, November 2004.

⁽⁷⁸⁾ European Foundation for the Improvement of Living and Working Conditions, Dublin. *Temporary agency work in the European Union*, 2005. <http://eurofound.europa.eu/ewco/reports/TN0408TR01/TN0408TR01.htm>

⁽⁷⁹⁾ Seitsamo, J. and Leino, T., Finnish Institute of Occupational Health. 'Type of employment, qualities of work and well-being among Finnish young adults', Proceedings of the International Symposium on Youth and Work Culture 2005, Espoo. <http://www.ttl.fi/NR/rdonlyres/7990D030-135D-43C8-B1D2-D4005E003839/0/seitsamoweb.pdf>



work. Furthermore, women in fixed-term jobs found more possibilities for development, and they were also less indifferent towards their work than female employees in permanent work.

These results are in contrast to the results of some other studies, but they may reflect the fact that for younger workers, precarious employment is indeed a voluntary option for them, before they get permanent work.

Nevertheless, data indicate that the incidence of occupational accidents among temporary workers is higher than among other groups of employees.

One of the reasons might be lack of experience on the job. Breslin and Smith ⁽⁸⁰⁾ examined the relation between job tenure (months on the job) and lost-time claim rates, with a particular focus on age-related differences. At any age, the claim rates seemed to decline as time on the job increased. Workers in the first month on the job were over four times more likely to have a lost-time claim than workers with over one year in their current job.

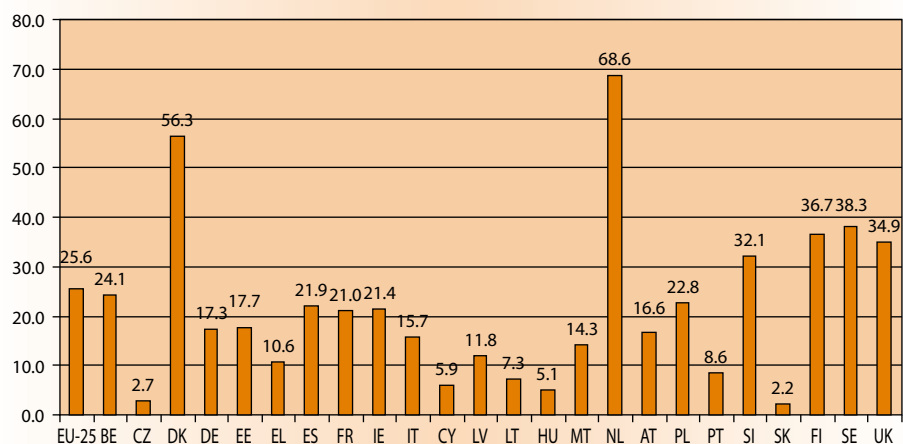
2.7.4. Part-time work

In 2005, one in four young workers had a part-time job within the EU-25. Part-time work is increasing.

An age perspective suggests an uneven distribution of working time in the lifetime of individuals. The highest proportion of part-time work is at the beginning and end of people’s working lives: 25.7 % of young workers and 20 % of workers aged 50–64 years were working part time in 2005. Full-time employment is concentrated in the middle years (16 % of workers aged 25–49 years worked full time in 2005). These results suggest that part-time work may facilitate, at least in a number of countries, the gradual entry of young persons into the labour market, as well as the gradual withdrawal from wage employment for older workers. The proportion of young workers having a part-time job ranged from 2.2 % in Slovakia to 68.6 % in the Netherlands.

Among young workers, the proportion of part-time employment showed an increase of 4.7 % (from 21 % in 2000 to 25.7 % in 2005).

Figure 13: % of young workers working part time, LFS 2005



NB: No data available for Luxembourg.

⁽⁸⁰⁾ Breslin, F. C. and Smith, P. 'Trial by fire: a multivariate examination of the relation between job tenure and work injuries', *Occupational and Environmental Medicine*, Vol. 63, No 1, 2006, pp. 27–32.



In 2005, about 21.5 % of young part-timers had not found a full-time job, 14.2 % did not want a full-time job and 51.9 % were in part-time work due to education or training. The percentage of young workers in a part-time job due to education or training decreased (from 56 % in 2000 to 51.9 % in 2005). The percentage of those working part time because they could not find a full-time job increased (from 18.5 % in 2000 to 21.5 % in 2005).

2.7.5. Hazards and risks in part-time jobs

Employees with a part-time contract tend to ⁽⁸¹⁾:

- work under more favourable ambient conditions;
- work fewer non-standard hours;
- have less control over working time;
- have work requiring less skill;
- receive less training;
- work in the social sector and hotels/restaurants, rather than in construction;
- work in service/sales occupations and not as managers.

Part-time workers might miss out on training, if it occurs when they are not at work, and on information exchange.

If students are working part time or young workers in several jobs, they might be tired and that would lead to a higher accident risk.

A report on part-time work in Europe also indicates that there are fewer opportunities for training and career progression ⁽⁸²⁾. The level of salaries and social security benefits is often lower and jobs are typically monotonous. Part-time employment often comes at the beginning or at the end of working life, especially for men. This means that it is often connected with the specific problems of young and older workers. Not all part-time workers are satisfied with their status. On the other hand, the report reveals a higher level of general satisfaction with working hours, and better opportunities to achieve a positive work–life balance. Part-time workers are less exposed to a number of hazards and to poor ergonomic conditions, and are less likely to report job-related health problems than full-time workers.

Considering the high concentration of low pay among part-time workers across the EU and Norway, it might be expected that part-time work would be prominent in the debate on low pay and poverty. However, according to an European Industrial Relations Observatory (EIRO) study ⁽⁸³⁾, it appears that in all countries covered, except Greece, there are no special legislative or collectively-agreed provisions that focus on minimum pay for part-time workers, providing for example for an increased rate. This comparative study — based on the contributions of the EIRO national centres in the EU Member States and Norway — examined the proportion of total employment made up by low-wage workers — i.e. the groups in the labour force who are more affected by wage inequality — and the characteristics of these workers and their employment. In Greece, legislation (Law 2874/2000) increased pay for part-time

⁽⁸¹⁾ Goudswaard, A. and Andries, F., *Employment status and working conditions*.
<http://www.eurofound.eu.int/publications/htmlfiles/ef0208.htm>

⁽⁸²⁾ European Foundation for the Improvement of Living and Working Conditions, Dublin. *Part-time work in Europe*, 2005. <http://www.eurofound.eu.int/ewco/reports/TN0403TR01/TN0403TR01.pdf>

⁽⁸³⁾ European Foundation for the Improvement of Living and Working Conditions, *Low-wage workers and the 'working poor'*, 2002. <http://www.eiro.eurofound.eu.int/2002/08/study/index.html>



employment by 7.5 % for working days of one to three hours (GR0012192F). In all other cases, part-time workers had the same minimum wage rates as full-time workers proportional to their reduced working hours. There also appeared to be very little debate on the issue, with two exceptions.

- France's SMIC minimum wage is an hourly rate and thus enabled limits to be put on the growth of low-wage work measured in hourly rates. However, with the strong growth in part-time work since the early 1990s, this hourly wage guarantee is reportedly becoming decreasingly effective in limiting the growth in the number of low-wage workers if looked at in terms of the income it secures for employees (on a monthly or annual basis). Accordingly, trade unions called for the SMIC to be raised, along with more restrictive regulations on the use of part-time work.
- The Greek General Confederation of Labour (GSEE) proposed that pay for part-time employment should be 25 % higher than the wage corresponding to the reduced duration of work, and under no circumstances should it be less than half the wage corresponding to regular employment.

Recommendations for prevention and training for temporary and part-time workers include the following.

- Target employment agencies and inspection services to raise awareness about the specific conditions of part-timers and temporary workers.
- Advice on part-time workers should mention the importance of special attention to young workers.
- Specific guidance should be provided to employers, inspectors and prevention services on part-time and temporary workers.

2.7.6. Studies and initiatives — psychosocial and organisational factors

2.7.6.1. Causes of job insecurity and work stress in Spanish young people ⁽⁸⁴⁾



This study was carried out with a representative sample of young people in the Autonomous Community of Valencia, and other young Spanish persons living in towns with more than 50 000 inhabitants. According to the recommendations made by its Employment Observatory, job flexibility in Spain over the last few years has reached levels that the European Union considers excessive ⁽⁸⁵⁾. A commission of experts, set up in 2005 in Spain, conducted a study of job flexibility in Spain and potential measures to reduce its effects on the insecurity of workers ⁽⁸⁶⁾.

The aim was to analyse the levels of job insecurity and stress among young people, and to identify the main causes of risks to their health and well-being. Job insecurity was defined as the fear of not being able to maintain continuity, in a situation where there is a threat of loss of employment or where a job is perceived as being unstable.

⁽⁸⁴⁾ European Agency for Safety and Health at Work, 'Safe start!', *Magazine* 9, 2006, pp. 50–54. <http://osha.europa.eu/publications/magazine/9?language=en>

⁽⁸⁵⁾ <http://www.eu-employment-observatory.net/>

⁽⁸⁶⁾ Report from the Committee of Experts on Social Dialogue: 'More and better employment in a new socio-economic scenario: for effective labour flexibility and security'. Approved on 31 January 2005.



The authors came to the conclusion that episodes of stress among young people at work depend not only on the actual characteristics of the job, and the degree of their involvement at work. Relations between the employer and employee can be a significant source of stress or, on the contrary, can help reduce stress. Honouring promises made by the employer and fair rewards in line with performance are consistent with lower levels of work-related stress in all the cases considered. Over-qualification is closely related to job insecurity (a position requiring a low level of qualification occupied by a well-qualified young person does not provide security), as is role overload (excessive demands placed on workers carrying out uninteresting and varied tasks). Episodes of role stress are also consistently greater for those who live away from home. Contract instability also plays a varied role in the experience of stress. A permanent contract helps reduce cases of job insecurity and role ambiguity, whereas it increases role overload. These results suggest that employers tend to make greater demands on permanent workers. The authors conclude that, 'in order to prevent that stress, these results will have to be taken into consideration, bearing in mind that its causes go well beyond the actual characteristics of the job'.

2.7.6.2. Occupational safety and health for the self-employed (Germany, Spain)

The aim of this project ⁽⁸⁷⁾ was to raise awareness of safety and health in the workplace among potential entrepreneurs and students planning to go into self-employment. This project was about education in occupational safety and health (OSH) for prospective entrepreneurs starting up small businesses and those taking courses with a view to self-employment. The partners devised training modules for the office and the laboratory that were designed to raise awareness of OSH issues, and to enhance their knowledge and preventive capabilities. They are also intended to encourage trainees to build OSH into their company plans, and put them into effect when they start an enterprise. A website was at the core of the project (www.sh-ee.org).



2.7.6.3. Looking after temps: partnership between employers and agencies (France)

This project ⁽⁸⁸⁾ aimed to reduce accidents and sickness among temporary workers and minimise their occupational risks. The immediate aim was to improve communication between temporary employment agencies and companies using their services. Employers, trade unions and the project holder drafted a tripartite partnership agreement. This was intended for firms with less than 50 employees, to be signed by companies, employment agencies and the



⁽⁸⁷⁾ European Agency for Safety and Health at Work. *Promoting health and safety in European small and medium-sized enterprises*, 2004, p. 19. http://osha.europa.eu/publications/reports/107/sme02-03_en.pdf

⁽⁸⁸⁾ European Agency for Safety and Health at Work. *Promoting health and safety in European small and medium-sized enterprises*, 2004, p. 57. http://osha.europa.eu/publications/reports/107/sme02-03_en.pdf



project holder. Promotional events and material included seminars, training for temporary employment agency staff, a brochure, a poster and a video. A booklet was also produced for the guidance of employers and agencies on the occupational safety and health of temporary staff.



© SME funding scheme 2002–03

2.7.6.4. Safety resources for temporary employment agencies (Belgium)



The Brussels-based non-profit association 'Prévention et Interim' (PI) provides safety resources for temporary employment agencies, which can be downloaded from its website <http://www.p-i.be/p/MM00-02>. A safety checklist for temporary employment agencies (SCT) is used by agencies in the Netherlands and Belgium, who place workers in higher risk industries, to review the safety management systems of the companies in which they place temporary workers. Available in both English and French, it can be ordered online: http://www.besaccvca.be/VCA_FR.htm (French language site).

2.8. YOUTH EMPLOYMENT AND UNEMPLOYMENT — SOME DATA FROM THE MEMBER STATES

2.8.1. Austria

Rising unemployment among young people between 15 and 24.

Despite a lower number of young people in the population, not only has the unemployment rate in the overall population increased, but also the unemployment of young people between 15 and 24. They are indeed more affected by unemployment and rising unemployment rates than all other age groups in society. There has also been a slight decline in the number of young insured wage/salary earners aged 15–25.

In December 2002, 30 400 young people were unemployed (17 200 men and 13 200 women, a year later this was 38 500 young people (23 700 male and 14 800 female) and



in December 2004 the number of unemployed young people rose to 55 300 (29 900 men and 25 400 women). Consequently, from December 2003 to December 2004 there were 16 900 more young people (6 300 men and 10 600 women) unemployed⁽⁸⁹⁾. The unemployment rate of 15–24 year-olds reached its lowest point in 2000 with 5.3 %. It reached its maximum in 2004 with 9.5 %. From 1993 to 2004, it rose from 6.3 % to 9.5 %. As a result the unemployment rate among young employees was roughly 2–4 percentage points above the unemployment rate overall in the population. On average during the years covered 6.5 % of 15–24 year-olds were unemployed.

The unemployment rate of young men was likewise slightly lower than that of men and women together. It attained its lowest value in 1999 with 4.3 %, while its high point was 9.3 % in 2004. From 1993 to 2001 the values were between 4 % and 5 % and they increased steadily from 2002 (6.4 %). These percentages were above the average values for men of all age groups, especially during the years 2002–05. The average unemployment rate during the years covered among young men was 5.6 %.

The unemployment rate of young women was markedly higher than that of young men. The minimum was in 2000 (6 %) while the maximum was in 2004 with 9.9 %. The value for young women in 1993 was 7.6 % and in 2004 9.9 %. Up to 2002, percentages of 6–7 % were recorded; from 2003 the values rose to 9–10 %. Between 1993 and 2004 women between 15 and 25 were on average affected by 7.5 % unemployment⁽⁹⁰⁾.

Young employees are hardly protected in the event of unemployment.



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Apprenticeship

In 1980, approximately 194 000 people completed an apprenticeship. The number of apprentices decreased permanently and in 2003, there were only 119 000 apprentices. Men had a constant ratio of 2:3. In 2005, the percentage of male

⁽⁸⁹⁾ http://www.statistik.at/fachbereich_03/ake/arbeitslos_tab4.pdf

⁽⁹⁰⁾ Eurostat, http://epp.eurostat.cec.eu.int/portal/page?_pageid=1996,45323734&_dad=portal&_schema=PORTAL&screen=welcomeref&open=/popul/labour/employ/lfsq/empasoc_q&language=de&product=EU_MAIN_TREE&root=EU_MAIN_TREE&scrollto=849



Young women often choose classic female professions.

Young people typically have low income.

apprentices was 67 % and female apprentices 33 %. Men preferred technical apprenticeships. The favourites in 2002 were car mechanic (7 531 out of 80 518; 9.3 %), electrician (6 266 out of 80 518; 7.8 %) and carpenter (4 983 out of 80 518; 6.2 %). The number of female apprentices in these professions was very low. Young women preferred jobs like office clerk (5 256 out of 39 968; 13.1 % in 2002), hairdresser (5 615 out of 39 968; 14 % in 2002) or jobs in the catering sector ⁽⁹¹⁾.

Career choice of young women

The percentage of women choosing technical or male-dominated occupations is low. Some 10–12 % of students in technical domains are females. In spite of an increase in the women's occupation rates, new jobs only develop in the traditional sectors of female work, in the service sector. In 2001, more than 75 % of the women were occupied in the following professions, in which the percentage of women is traditionally higher than 50 %: teacher or kindergarten teacher; health and social sector; clerk; catering service; retail service; and cleaner. The different choices of jobs by men and women are even noticeable among young workers. Equally, young women's salary gains are lower than young men's. In comparison with their male colleagues, salaries were 17.6 % lower for the 15–19-year-old female entrants and 18.9 % for the 20–24-year-old female entrants ⁽⁹²⁾.

Social benefits are also unevenly distributed. In 2003, 12.5 % of people who had to claim for emergency coverage were 19–24 years old (7.1 % male and 5.4 % female). 90 % of them had less than EUR 666 (men) or EUR 585 (women). In 2004, 10.9 % of all persons receiving emergency cover were between 20 and 24 years old. Some 90 % of the males had less than EUR 671 monthly at their disposition, and 90 % of the females had less than EUR 591 at their disposition ⁽⁹³⁾.

Young people also typically have low income: the highest proportion of the low paid was among workers younger than 25 with 19.5 % ⁽⁹⁴⁾.

2.8.2. Czech Republic ⁽⁹⁵⁾

There are 536 000 economically active young workers in Czech Republic, and the number has dropped by 260 000 since 1999. Men account for 56 % of the total number of economically active young workers. The most economically active workers are both men and women with upper secondary and post-secondary non-tertiary education and they account for 84 % of the total number of economically active young workers.

The employment rate of young workers is progressively dropping by about 2 % each year and it fell from 36.4 % in 2000 to 26.8 % in 2005. The declining tendency can be noticed among both men and women. However the employment rate for men has increased by 1.3 % in 2004–05. In 2005, the employment rate amounted to 31 % for men and 22.5 % for women.

⁽⁹¹⁾ http://www.statistik.at/cgi-bin/jahrbuch_2005.pl?KAPITEL=02&SPRACHE=E

⁽⁹²⁾ Bergmann, N. et al., 2003. *Berufsorientierung und Berufseinstieg von Mädchen in einen geteilten Arbeitsmarkt*. AMS info, 62 Österreichisches Institut für Berufsbildungsforschung.

⁽⁹³⁾ http://www.statistik.at/cgi-bin/jahrbuch_2005.pl?KAPITEL=02&SPRACHE=E

⁽⁹⁴⁾ www.eurofound.eu.int/2002/08/study/tn0208102s.html

⁽⁹⁵⁾ European Union labour force survey.



2.8.3. Denmark

Unemployment rates of young Danes have remained quite stable in the past five years. The most recent annualised rates (2004) were 9 % among men and 8 % among women.

2.8.4. Estonia

Overall unemployment rates of young Estonians have remained quite stable in the past five years. There have been larger fluctuations within the sexes, however. The most recent annual rates (2004) were 21 % among men and 22 % among women. For women, this was a seven-point decrease from 2003. Rates for men first declined in 2000–02 and then increased.

2.8.5. Finland

Unemployment rates of young Finns have remained quite stable for the past five years. The most recent annualised rates (2004) were 22 % among men and 19 % among women.

2.8.6. France

From 1975 to 2002, the employment rate for the 15–29 age group fell by 14 points, down from 55 % to 41 %, with the decline stabilising during the second half of the 1990s. This declining trend and its slowdown are mainly due to changes in the school attendance rate ⁽⁹⁶⁾.

In 2002, one person out of every two, and close to two thirds of those of working age (15–64), were employed. The employment rate of young people under 25 is low: less than one young male out of three and one young female out of four have a job. More than half of young people between 15 and 24 are students ⁽⁹⁷⁾.

Sectoral distribution of young people in work

Young people in work, that is, those who completed their education less than 10 years earlier, show very uneven distribution over the various service sectors. Out of 33 different identified service sectors, young employed people occupy more than one third of all jobs in just 10 sectors. They account for half of all staff in private telecommunications, consulting and IT support. In most industrial sectors, however, their rate of employment is comparable. They hold 18–25 % of all jobs with the exception of pharmacies, perfume and cosmetics and maintenance, where the figures are higher. The sectors with a higher level of young employee representation are often areas marked by growth and high levels of labour qualification. They are also to be found in considerable numbers in some areas of the service sector requiring relatively unskilled labour but which have enjoyed fast growth in recent years: fast food, super- and hypermarkets, security, police and civil protection.

Strong fall in employment of young people.

Young employed people occupy more than one third of all jobs in just 10 sectors.

⁽⁹⁶⁾ Fondeur, F. and Minni, C., *L'emploi des jeunes au cœur des dynamiques du marché du travail*. Economie et statistique, No 378–379, p. 200. http://www.insee.fr/fr/ffc/docs_ffc/es378-379e.pdf

⁽⁹⁷⁾ Insee Résultats, *Enquête emploi 2002 en continu. Les données essentielles*. http://www.insee.fr/fr/ffc/docs_ffc/IRSOC035.pdf



The under-25s are on limited duration contracts or doing temporary work more frequently than older workers.

Conversely, they are rarely to be found in other mainly public service sectors, although the jobs there require a fairly high degree of qualification.

However, when young people are recorded on the basis of their age, rather than their seniority on the labour market, it can be seen that there are a large number of young people who are poorly qualified in the 15–25-year-old category ⁽⁹⁸⁾.

Type of contract

When they are in work, young people are more likely than older workers to have one of the different variants of employment contract: the under 25s are on limited duration contracts (16 %) or doing temporary work (9 %) more often than older workers. Young people are more often taken on placement or supported contracts ('contrats aidés') (7 %), and are virtually the only ones concerned by apprenticeship (14 %). In all, 46 % of all 15–24-year-olds are employed under special status conditions, compared with 12 % of the 25–39 year olds and only 4 % of those in the 50–64 age group ⁽⁹⁹⁾. There are a number of surveys by INRS and the French ministry of labour showing that lack of job security is dangerous. Workers without the guarantee of an unlimited contract are twice as likely to have an occupational accident as permanent employees. Temporary workers and fixed-term contract employees have a lot in common: they are young people who are unskilled or low skilled without much job experience at the time the accident occurs ⁽¹⁰⁰⁾.

2.8.7. Germany

The percentage of 15- to 24-year-olds in gainful employment has been falling.

The overall percentage of 15–24-year-olds in gainful employment fell non-linearly by 10.1 % between 1992 (58.1 %) and 2004 (48 %). These values represent the maximum and minimum values. The proportion in gainful employment fell continuously between 1992 and 1997, to 49.8 %. Between 1998 and 2003, it lay between 50 and 51.6 %. It dropped significantly in 2004 to 48 %. The average percentage in gainful employment between 1992 and 2004 was 51.9 %. Between 1980 and 1995, the number of 15–24-year-olds in gainful employment fell dramatically. In 1980, 4.1 million of this group worked for a living. By 1991, the figure had fallen to 3.4 million, and by 1995 even to 2.3 million. Some 40 % of this reduction can be accounted for by the drop in the population group as a whole. This is not, however, the only explanation. In 1995, 30.9 % of 15–24-year-olds were gainfully employed, compared to 40.5 % in 1991. At the same time, more young people were unemployed in 1995 (4.6 %, compared to 3 % in 1991) and not gainfully employed ⁽¹⁰¹⁾ (7.5 %, compared to 5.9 % in 1991). Equally in 1995, more young people were undergoing training than in 1991 (57 %, compared to 50.9 % in 1991). This indicates an increase in the proportion of young people undergoing training, accompanied by a drop in the percentage in

The proportion of young women employed was below the rate for all groups and that for all men.

⁽⁹⁸⁾ DARES, 'Les jeunes actifs: nombreux dans les secteurs dynamiques à haute qualification.' Premières informations et premières synthèses, mars 2005.

http://www.travail.gouv.fr/IMG/pdf/publication_pips_200503_n-10-3_jeunes-actifs.pdf

⁽⁹⁹⁾ DARES, 'Contrats à durée déterminée, intérim, apprentissage, contrats aidés: les emplois à statut particulier ont progressé entre 1982 et 2002.' Premières informations et premières synthèses, avril 2005. http://www.travail.gouv.fr/IMG/pdf/publication_pips_200504_n-14-2_CDD-interim-apprentissage-ca_.pdf

⁽¹⁰⁰⁾ François M. and Liévin D. *Précarité: double risque*. Santé et travail, No 8, mars-avril 1994, pp. 38–41.

⁽¹⁰¹⁾ The category 'not gainfully employed' in this instance does not include unemployed persons and those undergoing education or training.



gainful employment. Between 1991 and 1995, young male employees were more seriously affected by the drop in the percentage in gainful employment (a drop of 10.2 %, compared to a drop of 8.9 % amongst the women). This can probably be accounted for by the loss of jobs in the male-dominated production sector ⁽¹⁰²⁾ ⁽¹⁰³⁾.

The proportion of young men in gainful employment each year was some 2–3 percentage points higher than the rate for all groups. However, it also fell (by 9.2 %) between 1992 (60 %) and 2004 (50.8 %). From 1992 to 1997, the proportion in gainful employment fell linearly by 6.7 %, reaching 53.3 %. It then rose slightly to 54.9 % in 1999, before falling steadily to 50.8 % in 2004. On average, 54.6 % of young men were gainfully employed between 1992 and 2004.

The proportion of young women in gainful employment was below the rate for all groups and that for all men. It ranged from 56.1 % in 1992 to 45 % in 2004. This rate fell linearly between 1992 and 1998, to 46.6 %. Between 1999 and 2003, it lay between 47.3 % and 48.3 %. Averaged over all the years surveyed, 49 % of young women were gainfully employed. The proportion of young women in Germany in gainful employment was thus approximately 5.6 % lower than that of their young male colleagues.

In 2000, the percentage of young people aged 20–25 in gainful employment was 2.2 times that of those aged 15–20 ⁽¹⁰⁴⁾.

Unemployment ⁽¹⁰⁵⁾ ⁽¹⁰⁶⁾ ⁽¹⁰⁷⁾

Up to 2003, young men were substantially less severely affected by unemployment than young women. The unemployment rate amongst 15–24-year-olds reached its lowest point in 1992, when only 6.2 % of young people were unemployed. From 1992 to 1993, the unemployment rate rose dramatically, reaching 15 %. It has fluctuated around this level since that time, reaching 15.1 % in 2004. It peaked in 1996, at 16.2 %. At these levels, unemployment was substantially higher amongst young people available for work than the mean figures for the population as a whole, which peaked at 9.5 % in 2004.

Up to 2003, young men were substantially less severely affected by unemployment than young women (between 10 and 2 percentage points lower each year). In 2003 and 2004, female unemployment was 0.5 % and 0.4 % lower respectively than male unemployment. In 1992, the unemployment rate for young men began to rise from 5.7 %, reaching its peak of 15.3 % in 2004. The values figure for young women rose from 6.7 % in 1992 to 14.9 % in 2004. Interim spikes of around 20 % were, however, noted. The peak rate for women was reached in 1994, at 20.2 %. Not until 1999 did the values drop once more below 15 %. Both the values for young men and those for young women were above the corresponding average values for men and women of all ages.

In 2000, the percentage of young people aged 20–25 in gainful employment was 2.2 times that of those aged 15–20.

Young people are particularly affected by unemployment.

⁽¹⁰²⁾ Eurostat, labour force survey.

⁽¹⁰³⁾ Engelbrech, G. and Reinberg, A. (1998). *Im Sog der Arbeitsmarkt-Turbulenzen*. Institut für Arbeitsmarkt- und Berufsforschung der Bundesanstalt für Arbeit (IAB), 5, 1–8.
<http://doku.iab.de/kurzber/1998/kb0598.pdf>

⁽¹⁰⁴⁾ Report by the German Government on the health and safety at work situation and on trends in occupational accidents and diseases in the Federal Republic of Germany in 2000.

⁽¹⁰⁵⁾ ILO figures. http://www.destatis.de/presse/deutsch/abisz/ilo_arbeitsmarktstatistik.htm

⁽¹⁰⁶⁾ *Leben und Arbeiten in Deutschland — Microzensus 2003*,
<http://www.destatis.de/presse/deutsch/pk/2004/mikrozensus2003b.htm>

⁽¹⁰⁷⁾ Eurostat.



Some 3.55 million persons were unemployed in October 2005. The unemployment rate was 8.3 % (7.9 % of men and 8.7 % of women were unemployed). In addition, 14.5 % of persons aged under 25 were unemployed, but only 7.4 % of over-25s. Some 7.5 % and 11.4 % of West and East (including Berlin) residents respectively were unemployed. Unemployment was thus a major issue in the former East Germany and East Berlin, where in May 2003, 18.6 % of 20–24-year-olds available for work were unemployed (1991: 10.5 %). In the former West Germany, the equivalent figure was only 10.3 % (1991: 3.5 %).

Occupations ⁽¹⁰⁸⁾

In March 2004, white-collar workers accounted for 8.8 % of all 15–19/20-year-olds, and 15–19/20-year-old male white-collar workers in turn accounted for 2.7 % of male white-collar workers of all ages. Some 22.4 % (542 000, 7 % of the male population) of all male white-collar workers were aged 20–24/25.

The proportion of male blue-collar workers aged 15–19/20 was substantially higher, at 18.4 %. 29.9 % of men aged 20–24/25 were likewise blue-collar workers. Amongst 15–19/20-year-olds, blue-collar workers numbered 444 000, therefore accounting for 5.7 % of all male blue-collar workers in the population. Amongst the 20–24/25-year-olds, they numbered 723 000 and accounted for 9.3 % of all male blue-collar workers in the population.

Women who were gainfully employed were generally white-collar workers; in the 15–19/20 age bracket, they numbered 301 000. Some 2.9 % of female white-collar workers were aged 15–19/20, and 13.2 % of the women in this age bracket were white-collar workers. Some 986 000 women aged 20–24/25 were white-collar workers. This corresponded to 9.6 % of all women in white-collar employment, and in fact 42.8 % of all women aged between 20 and 24/25.

The proportion of women in blue-collar employment was also relatively high. Some 201 000 women aged 15–19/20 were in blue-collar jobs in Germany in March 2004. This figure accounted for 5.8 % of all women aged 15–19/20, and 8.7 % of all women in blue-collar jobs. Some 287 000 female blue-collar workers were aged 20–24/25, 12.5 % of all women in this age bracket were in blue-collar jobs, and this age bracket accounted for 8.3 % of all female blue-collar workers in the population.

In 2004, the highest number of young employees worked in the ‘miscellaneous services’ sector, manufacturing, commerce, the hotel and restaurant industry, and transport.

Young workers are typically low-wage earners

Structural analysis reveals particularly high proportions of low-wage earners amongst persons without vocational training (29.3 %), women (31.3 %), young people (aged under 25) at 39.2 %, and foreign nationals, at 25.9 %. The proportion of low-wage earners in these groups lay above the proportion of low-wage earners in the West German economy as a whole (16.6 %). Low wages were nevertheless a phenomenon affecting wide groups: 71.6 % of low-wage earners had completed vocational training, 33.6 % were men, 73.4 % were aged 25–64, and 87.2 % were Germans ⁽¹⁰⁹⁾.

Young workers are typically low-wage earners.

⁽¹⁰⁸⁾ Federal Office of Statistics.

⁽¹⁰⁹⁾ Institut Arbeit und Technik im Wissenschaftszentrum Nordrhein-Westfalen, *Jahrbuch 2005*. <http://www.iatge.de/aktuell/veroeff/jahrbuch/jahrb05.html>



2.8.8. Hungary

In 2004, there were 387 000 economically active young workers in Hungary, and the number has dropped by 250 000 since 1999. Men account for 56 % of economically active young workers. The most economically active workers are both men and women with upper secondary and post-secondary non-tertiary education (68 % of all young workers). The employment rate of young workers is progressively dropping each year and it decreased from 33.1 % in 2000 to 21.4 % in 2005. The declining tendency is among both men and women. In 2005 the employment rates for men and women were 23.8 % and 18.9 % respectively.

Some 95 % of young workers are employees (259 000 in 2005). The employment status breakdown has not changed significantly since 2000. Most young workers are employed as full-time workers and the rate of full-time workers has increased from 89.5 % in 2000 to 94.8 % in 2005.

The employment rate of young workers decreased from 33.1 % in 2000 to 21.4 % in 2005.

2.8.9. Ireland ⁽¹¹⁰⁾ ⁽¹¹¹⁾ ⁽¹¹²⁾

Young workers (aged 15–24) do not generally plan their own work and working time schedules.

In the third quarter of 2005, there were 1 989 800 persons in the labour force; this figure represents an annual increase of 5 %, which is a record growth of the labour force. It now accounts for 63 % of all persons aged 15 and over (62 % in 2004, 54 % in 1995). The employment rate increases for all age groups. In the third quarter of 2005, 25 % of students had a job.

The 15–19-year-old group accounts for 3.7 % of the labour force (3.9 % for males, 3.4 % for females), the 20–24-year-old group for 12.4 % (11.3 % for males, 14 % for females). Young people are more concerned in the following occupational groups:

- manufacturing workers: 17 % for the young workers (aged 15–24), 12.5 % for all age groups;
- building and construction workers: 11.5 % for ages 15–19, 8 % for ages 20–24, 8 % for all age groups;
- sales and commerce workers: 15 % for young workers, 13 % for all age groups;
- other: 23 % for ages 15–19, 12 % for 20–24, 11 % for all age groups;
- looking for first regular job: 10.5 % for ages 15–19, 3 % for 20–24, 1 % for all age groups.

By gender group, the proportions are quite different. Males are more often manufacturing workers than females (25 % for young males, 6 % for young females), building and construction workers (16 % for young males, 0.2 % for young females), communications and transport workers (5 % for young males, 1 % for young females). Females are more often clerical, managing and government workers than males (13 % for 15–19-year-old females, 29 % for 20–24-year-old females, 6 % for young males), sales

Males are more often manufacturing workers than females.

⁽¹¹⁰⁾ CSO, QNHS, Quarterly national household survey, quarter 2, 2005.

http://www.cso.ie/releasespublications/documents/labour_market/current/qnhs.pdf and http://www.cso.ie/qnhs/main_result_qnhs.htm

⁽¹¹¹⁾ CSO, Census 2002, Vol. 6, Occupations, p.28. http://www.cso.ie/census/documents/vol6_entire.pdf, http://www.cso.ie/qnhs/spe_mod_qnhs.htm

⁽¹¹²⁾ CSO QNHS, special modules 2001, Tables 1, 2 and 4.

<http://www.cso.ie/qnhs/documents/qnhslengthandpatternofwork.xls>, http://www.cso.ie/qnhs/spe_mod_qnhs.htm



Young workers (15–24) generally do not plan their own work and working time schedules.

and commerce workers (21 % for young females, 11 % for young males), professional, technical and health workers (14 % for 20–24-year-old females, 10 % for 20–24-year-old males), and services workers (15 % for young females, 6 % for young males).

With young workers, there are proportionally few employers and managers (7 %), higher professional (4 % for 20–24-year-olds), lower professional (9.5 % for 20–24-year-olds), own account workers (1 %) or farmers (1 %).

Young workers (15–24-year-olds) generally do not plan their own work and working time schedules: they account for 4 %, compared to the other age band (29 % for the 35–44 group). Some 21 % of people for which work is planned by the employer are young people, 30 % (the maximum) are 25–34.

Young people normally work for the same firm or employer in 18 % of cases (the maximum is 29 % for the 25–34 group), 9 % do not work for the same firm (it is more than the 65 and over group, less than the other age bands).

Some 18 % of people working shift work are young people. This figure is more than the 45–54 age group (17 %) and the 55–64 group (6 %), and less than the 35–44 group (25 %) or the 25–34 group (33 %).

2.8.10. Latvia

According to recent labour force survey data (second quarter of 2005), some 110 000 young persons were employed (63 000 men and 47 000 women). The percentage of temporary workers was 16 % for men and 19 % for women. The number of employed young men has fluctuated without any clear trend. During the last two years it has been declining. The number of employed young women was stable, but increased by approximately 7 000 in 2004–05.

At an annual level, the biggest employers of young men were the manufacturing and construction sectors (both 14 000). These accounted for 16 % and 17 % of all male workers in those sectors, respectively. Estimates for young women were quite unreliable, but approximately 12 000 of them worked in wholesale and retail trade.

Unemployment rates of young Latvian men decreased markedly in 2003. The corresponding rate for women, on the other hand, has increased since 2000. Recent annualised rates (2004) were 15 % among men and 25 % among women.

2.8.11. Lithuania

According to recent labour force survey data (2nd quarter of 2005), 110 000 young persons were employed (67 000 men and 43 000 women). Overall, the proportion of temporary workers was 12 %. There has been a declining trend in the number of young workers.

The biggest employers of both young male and female Lithuanians were the wholesale and retail sector and the manufacturing sector (23 000 and 22 000, respectively). Among men, both agriculture and construction sectors employed significant numbers. The largest occupational categories were craft and related trades workers among young men (16 000) and service, shop and sales workers among young women (12 000).

Unemployment rates of young Lithuanians decreased notably in 2002 among men and in 2004 among women. Annualised rates in 2004 were 22 % among men and 19 % among women.



2.8.12. Poland

In 2004, there were 2 445 000 economically active young workers in Poland, and the number has decreased by 294 000 since 2001. Young men account for 56 % of all economically active young workers. The most economically active workers are both men and women educated at upper secondary and post-secondary non-tertiary level and they account for 73 % of the total number of economically active young workers. The total number of young workers in employment is 1 346 000.

Employment rates of young workers are dropping progressively each year and decreased from 24.2 % in 2001 to 21.1 % in 2004. The declining tendency can be noticed among both men and women. In 2004, the employment rate for young men was 23.8 %, for young women 18.3 %.

Most young workers are employed in the manufacturing sector (23 % in 2005), in wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods (23 % in 2005) and in agriculture, hunting, forestry and fishing (20 %). Young workers work mostly as service workers and shop and market sales workers (299 000 in 2005) and crafts and related trades workers (231 000 in 2005) and skilled agricultural and fishery workers (208 000 in 2005).

Almost 80 % of young workers are employees (1 006 000 in 2005). The employment status of young workers has not changed significantly since 2000. Most young workers are employed as full-time workers but the rate of full-time workers has decreased from 83 % in 2000 to 77 % in 2005.

Employment rates of young workers are dropping progressively each year.

2.8.13. Slovakia

In 2004, there were 355 000 economically active young workers in Slovakia, and the number has dropped by 76 000 since 1999. Men account for 55 % of the young workers. The most economically active workers are both men and women with upper secondary and post-secondary non-tertiary education. They account for 84 % of all economically active young workers. The total number of young workers in employment amounts to 227 000.

The employment rate of young workers has fallen from 28.3 % in 2000 to 25.8 % in 2005. The declining tendency can be noticed mostly among young women (from 27.9 % in 2000 to 23.3 % in 2005, while it was 28.7 % in 2000 and 28.2 % in 2005 for young men).

Most young workers are employed in the manufacturing sector, followed by the wholesale and retail trade, repair of motor vehicles, motorcycles and personal and household goods, hotels and restaurants and construction. Young workers work mostly as service workers and shop and market sales workers, crafts and related trades workers, plant and machine operators and assemblers and technicians and associate professionals.

Also, most young workers are employed full time, but the rate of full-time workers has decreased from 93 % in 2000 to 86 % in 2005.

2.8.14. Slovenia

In 2004, there were 137 000 economically active young workers in Slovenia. The number was dropping progressively from 145 000 in 1999 to 118 000 in 2003, but in 2004 it



The rate of full-time workers decreased from 86 % in 2000 to 67 % in 2004.

increased again. The employment rate of young men has been increasing progressively since 1999, and it accounted for 57 % in 2004. Some 68 % of all young workers are both men and women with upper secondary and post-secondary non-tertiary education.

The employment rate of young workers has not changed significantly since 2000, and amounts to 31 %. The employment rate is higher for young men than young women (in 2005 36.4 % versus 26.8 %).

Most young workers are employed in the manufacturing sector, in the wholesale and retail trade, repair of motor vehicles, motorcycles and personal and household goods, agriculture, hunting, forestry and fishing and in hotels and restaurants. Young workers work mostly as service workers and shop and market sales workers (21 000 in 2005) and plant and machine operators and assemblers (15 000 in 2005).

Most of the young workers are employed full time, but the rate of full-time workers has decreased from 86 % in 2000 to 67 % in 2004.

2.8.15. Spain

Almost 60 % of the young workers are employed in the service sector.

According to the information from INE 2004 ⁽¹¹³⁾, there are more than 1.5 million employees under 25 (1.7 million young workers), which represents approximately 11.2 % of all employees. There are 58 % young men and 42 % young women employed.

Some 65 % of young employees have fixed-term contracts (82 % of the very young workers under 19). Almost 60 % of young workers are employed in the service sector, almost 20 % in industry, 16 % in construction and only 4 % in agriculture.



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More than half of the young workers interviewed ⁽¹¹⁴⁾ in the fifth national workers' survey (V ENCT) indicate that they have received, in the last year, some type of training facilitated or offered by the company (54.2%). The training received is mainly to improve or to update the knowledge of the worker on the prevention of risks.

2.8.16. Sweden

According to recent labour force survey data (second quarter of 2005), 446 700 young persons were employed (223 200 young men and 223 400 young women). The percentage of temporary workers was 50 % for men and 62 % for women. The number of young people working increased notably in 2001. It has since declined among both men and women.

⁽¹¹³⁾ Instituto Nacional de Estadística.

⁽¹¹⁴⁾ Instituto Nacional de Seguridad e Higiene en el Trabajo, V Encuesta Nacional de Condiciones de Trabajo. http://www.mtas.es/insht/statistics/enct_5.htm



At an annual level, most young men were employed in the wholesale and retail sector (44 000) or the manufacturing sector (41 000). The largest sectors for young women were health and social work (50 000) and wholesale and retail trade (48 000). The sector with the largest proportion of young workers was the hotel and restaurant sector (28 % of men and 37 % of women).

The largest occupational category of both young men and young women was that of service, shop, and market sales workers (48 000 men and 102 000 women). Young men made up 24 % of total male employment in this category. Proportionally, this was not the largest category for women, 24 % of female employment being in elementary occupations (vs 17 % among service, shop, and sales workers).

In the past five years, unemployment rates of young Swedes have increased. Annualised rates in 2004 were 16 % for men and 17 % for women.

Unemployment rates of young Swedes have increased in the past five years.

2.8.17. United Kingdom ⁽¹¹⁵⁾

While the overall employment rate has increased every year since 1993 (56.1 % in 1993, 58.1 % in 1997, 59.5 % in 2000, 59.9 % in 2003, 60.1 % in 2005), the employment rate for 16–24-year-olds has decreased since 2000 (62.9 % in 2000, 61.9 % in 2002, 60.8 % in 2004, 59.4 % in 2005). The number of persons in employment (16 and over) in 2005 was 28 656 000. The employment rate for males is 66.8 % and for females is 53.7 %. In 2005, the employment rate for young males was 61.1 % and 57.6 % for young females.

Self-employed people account for 11 % in the UK (13 % in London).

While the overall employment rate has increased every year, the rate has decreased for the 16–24-year-old group.

⁽¹¹⁵⁾ Labour market statistics: educational status, economic activity and inactivity of young people.
<http://www.statistics.gov.uk/StatBase/tsdataset.asp?vlnk=429&More=Y>



3.

YOUNG WORKERS AND EXPOSURE TO RISKS



The following section of this thematic report addresses the specific hazards and risks that young workers may face during their employment. These risks are often linked to certain sectors (e.g. hotels and restaurants, construction, agriculture, etc.), occupations and types of employment. Therefore, case studies and additional research information add depth to the general figures.

Research difficulties

Studies looking at occupational risks (e.g. noise, vibrations, pace of work) facing young people have some methodological problems ⁽¹¹⁶⁾.

- It is hard to define employment, considering the informal work arrangements that are common among young workers (e.g. volunteer jobs, working for a family business, apprenticeships).
- In addition, under-reporting may occur due to young workers' lack of knowledge of the reporting process and hesitation to report hazards and risks.
- Statistics giving an overview at the EU level, which can be broken down by age, can be limited or lacking, and the numbers available for analyses in some fields can be small.

Therefore, non-comparable data, examples from one Member State only, one-off studies, and studies from outside national official data fill in the gaps and show some of the complexity of the situation of young workers' exposure to risk.

It is also not always easy to distinguish whether young workers are generally more exposed to a particular risk factor — this could be the case if they are given particular tasks that involve greater exposure, e.g. unskilled manufacturing tasks — or if they are more exposed because their proportion in the working population is higher in these sectors. This is the case in particular in the services, hospitality and the retail sector. For example, the highest rates of workers exposed to noise are in construction, industry, agriculture and transport, while the highest absolute numbers of workers exposed are in the tertiary sector (sales, personal services, education, health and social work).

3.1. PHYSICAL WORK FACTORS



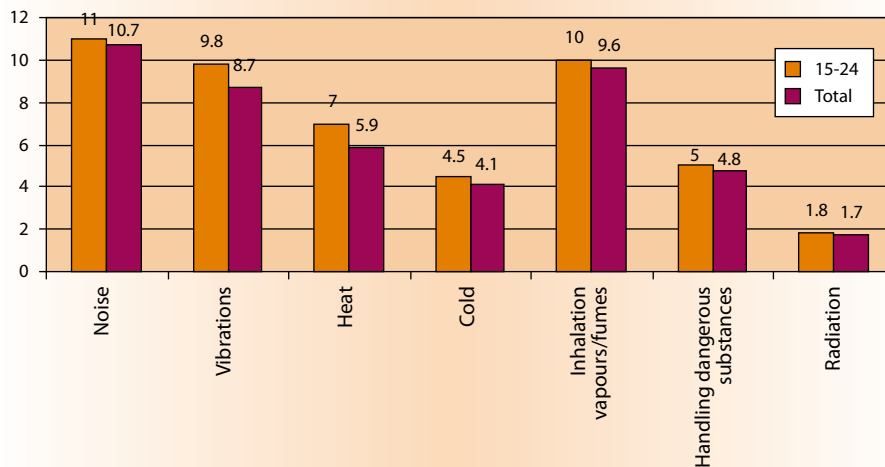
A railway track maintenance worker aged 24 received electrical burns while loosening nuts on track adjacent to a live 650-volt conductor rail. The rail maintenance company had failed to provide him with an insulated running spanner, or an insulating trough (used to cover an electrified section of track close to where someone is working). This was a potentially fatal accident. The young man was very lucky to sustain minor electrical burns only. If he had been given the correct information and insulated equipment to work with, he would not have been hurt ⁽¹¹⁷⁾.

⁽¹¹⁶⁾ Breslin, F. C. et al., Toronto: Institute for Work and Health. *Systematic review of risk factors for work injury among youth*, 2005.

⁽¹¹⁷⁾ Health and Safety Executive. <http://www.hse.gov.uk/press/2002/e02202.htm>

According to ESWC 2000, the proportion of young workers exposed to noise, vibrations, heat and cold, vapours and fumes and dangerous substances, is greater than in the average working population.

Figure 14: Overview: Exposure to physical work factors: % of workers exposed all or almost all of the time, ESWC 2000, EU-15 ⁽¹¹⁸⁾



3.1.1. Exposure to noise

A 24-year-old ⁽¹¹⁹⁾ sound designer and composer suffered permanent hearing loss through exposure to loud music. When he was younger he used to DJ at nightclubs and would often go home with ringing in his ears. He said, 'One night in particular I was DJ-ing in a club where the sound system was particularly loud; that night I went home with a ringing sensation so bad that it took my ears several days to get back to normal. In one ear, the ringing has never completely stopped.'



'Nowadays I am very sensitive to loud music (particularly high/treble frequencies) and the mild tinnitus I have normally increases dramatically if I expose myself to loud music. This can cause some problems for me as I work in a recording studio. I very rarely DJ these days, but if do I am careful to wear earplugs.'

According to the ESWC ⁽¹²⁰⁾, young workers are slightly more exposed to noise than the average working population. In 2000, about 11 % of young workers in the EU-15 were exposed all or almost all of the time to loud noise in the workplace, compared

Surveys suggest that young workers are more exposed to noise than the average working population.

⁽¹¹⁸⁾ ESWC, Data extracted from ESWC 1990, 1995 and 2000. <http://www.eurofound.eu.int/working/surveys/index.htm>

⁽¹¹⁹⁾ RNID. *A noise hangover*, May 2004. Part of the 'Don't lose the music' campaign. In: European Agency for Safety and Health at Work. *Reducing the risks from occupational noise*, 2005. http://europe.osha.eu.int/publications/reports/6805535/full_publication_en.pdf

⁽¹²⁰⁾ ESWC, Data extracted from ESWC 1990, 1995 and 2000. <http://www.eurofound.eu.int/working/surveys/index.htm>



to 10.7 % of the total workforce. About 30.5 % of young workers were exposed at least 25 % of the time to loud noise in the workplace, compared to 28.9 % of the total workforce. Exposure to noise has been slightly increasing among young workers since 1990.

- **Austria 1995–2000** ⁽¹²¹⁾ — The percentage of young people exposed to noise was slightly higher in 1995 and 2000 than for the number of 15–64-year-olds (1995: 29.5 % vs 24.8 %; 2000: 24.4 % vs 21.6 %). In general, the percentage of employees exposed to noise decreased slightly.
- **Belgium 2000** ⁽¹²²⁾ — About 12 % of young workers report being exposed to noise in the workplace all or almost all of their working time, compared to almost 8 % within the total working population. About 37.5 % of young workers are exposed for at least 25 % of their working time, compared to 25.4 % within the total working population. Exposure to noise has been increasing slightly within young workers since 1995.
- **Cyprus 2001** ⁽¹²³⁾ — An indication of increased exposure to noise in young workers is the fact that there is an increased proportion of young workers employed in construction after 2003 (16 % for young employees compared to 12 % for the total workforce).
- **Finland 2003** ⁽¹²⁴⁾ — About 12.4 % of young workers (aged 15–29 years) are exposed daily to noise at work to the extent that they cannot hear ordinary conversation from 1 metre away. About 15.1 % are exposed occasionally.
- **Germany 1998** ⁽¹²⁵⁾ — About 24.1 % of young workers report being exposed to loud noise, compared to 20.6 % of the total working population.
- **Greece 2000** ⁽¹²⁶⁾ — There are no data particularly regarding young workers in Greece. However, considering that the percentage of young Greek workers employed in construction (12.5 %) is much higher than among their colleagues in the EU-15 (around 7.9 %), or the average for employment in construction in Greece (around 8.4 %), it can be expected that young workers have to be exposed to noise at the same levels or more than the average Greek worker, which is higher than in any other country in Europe.
- **Netherlands 2005** ⁽¹²⁷⁾ — About 36.8 % of young workers report being exposed occasionally to loud noise compared to 31.1 % within the total working population.
- **Spain 2003** ⁽¹²⁸⁾ — According to the national working conditions survey, half of young workers say that where they work there is no noise or very mild noise, one

⁽¹²¹⁾ ESWC, Data extracted from ESWC 1995 and 2000.
<http://www.eurofound.eu.int/working/surveys/index.htm>

⁽¹²²⁾ ESWC, Data extracted from ESWC 1990, 1995 and 2000.
<http://www.eurofound.eu.int/working/surveys/index.htm>

⁽¹²³⁾ Eurostat Survey on Working Conditions in Acceding and Candidate Countries, 2001.
<http://www.eurofound.eu.int/ewco/surveys/ccsurvey.htm>

⁽¹²⁴⁾ FIOH. *Youth and work barometer*, 2003.
<http://www.ttl.fi/Internet/English/Thematic+pages/Youth+and+work/Research/>

⁽¹²⁵⁾ *Qualifikation und Erwerbssituation in Deutschland — 20 Jahre BIBB/IAB-Erhebungen*.
http://doku.iab.de/mittab/2002/2002_2_MittAB_Dostal_Jansen.pdf

⁽¹²⁶⁾ ESWC, Data extracted from ESWC 1995 and 2000.
<http://www.eurofound.eu.int/working/surveys/index.htm>

⁽¹²⁷⁾ *Nationale EnquêteArbeidsomstandigheden* 2005. (NEA) http://www.tno.nl/kwaliteit_van_leven/actueel/tno_nieuws/2006/nationale_enquete_arbeids/index.xml

⁽¹²⁸⁾ Instituto Nacional de Seguridad e Higiene en el Trabajo, *V Encuesta Nacional de Condiciones de Trabajo*.
http://www.mtas.es/insht/statistics/enct_5.htm



third that the noise is annoying, and more than 10 % that it is high or very high. Young workers are exposed to noisier environments than the average working population.

Noise is an important health risk. The hotels and restaurants sector, which employs a large number of young workers, is known as a high-risk sector. Young workers face serious risks of hearing damage when they have to work in noisy environments like pubs, discotheques or concert venues.

A risk of hearing damage from music at work generally arises from regular exposure to music at high sound pressure levels. Physicians strongly recommend that one should not be exposed to 100 db for a period longer than 15 minutes ⁽¹²⁹⁾. The sound pressure in night clubs and discotheques can reach levels of 100 dB or more, which means that a worker can reach the daily exposure limit in a very short period ⁽¹³⁰⁾.

Exposure to loud noise also remains a significant problem for young workers in industry. The problem is particularly important in the construction industry where noise levels frequently exceed standards, high rates of significant hearing loss and workers' compensation claims are endemic, and few hearing loss prevention programmes are effectively applied ⁽¹³¹⁾.

Young workers in call centres are especially at risk of suffering acoustic shock injuries.

Acoustic shock injury can be caused by a sudden, loud or piercing sound at a high decibel level. Acoustic shock is a term used to describe the physiological and psychological symptoms a person may experience after hearing a sudden, unexpected, loud sound (referred to as an acoustic incident), via a telephone headset or handset. Such noises can travel over telephone communication equipment, and can be caused by electronic feedback, fax modems or even malicious callers who use devices such as whistles. These signals are variously called acoustic shocks, audio shocks, acoustic shrieks, or high-pitched tones. The exact source of an individual acoustic shock is usually unknown, but various sources are possible, such as alarm signals, signalling tones, or feedback oscillation.

Acoustic shock is an emerging risk for young call centre workers.

Call/contact centre telephone operators are thought to be the type of workers most at risk ⁽¹³²⁾ ⁽¹³³⁾. Although these high-pitched tones can affect anyone, people using a regular hand-held telephone can quickly move the phone away from their ear, thus limiting their sound exposure to a fraction of a second. Call centre operators, however, usually use a headset, which takes considerably longer to remove from the ear were an intense sound to occur. They thus receive a greater noise exposure than people using hand-held phones. The problem may be exacerbated if call centres are so noisy that the operators need to have the volume controls on their telephones turned up higher than would be necessary in a quieter place.

⁽¹²⁹⁾ BGV B3 Verhütungsvorschrift Lärm. http://www.bgfe.de/bilder/pdf/bgv_b3_a04-2005.pdf

⁽¹³⁰⁾ http://osha.europa.eu/good_practice/risks/noise/FAQ/noise_prev_control/faq_entry.2005-03-15.1584578660/view?searchterm=entertainment

⁽¹³¹⁾ Seixas, et al. 'Prospective noise induced changes to hearing among construction industry apprentices', *Occup Environ Med*, Vol. 62, 2005, pp. 309–317.

⁽¹³²⁾ Noise Advisory Standard 2004 — Appendix 7 — 'Acoustic shock'. Queensland Government website. <http://www.dir.qld.gov.au/workplace/law/codes/noise/appendix7/#sources>

⁽¹³³⁾ 'Shocking news about call centres', Occupational safety and health resource, Canada Safety Council website. <http://www.safety-council.org/info/OSH/acoustic.html>



Acoustic shock may lead to:

- temporary or permanent damage to the inner ear;
- loss of hearing, tinnitus (ringing in the ear), earache and reduced tolerance to noise;
- headaches and nausea;
- dizziness and impaired balance;
- fatigue and anxiety ⁽¹³⁴⁾.

In Australia, a review of workers’ compensation claims for call centre stress and hearing injuries found a total of USD 3 million in claim costs from 1997 to 2000 ⁽¹³⁵⁾.

Recent findings ⁽¹³⁶⁾ suggest that noise caused by leisure activities is a substantial danger, especially to children, teenagers and young adults. Protection against irreversible ear damage caused by this noise has an important impact in preventive medical care. In order to protect children, young people and adults, national legislature needs to set limits for sound levels in discos, concert halls and for music equipment and toys by establishing the necessary standards and regulations.

3.1.2. Studies and initiatives — exposure to noise

3.1.2.1. Noise in clubs and pubs (literature review) ⁽¹³⁷⁾



The objectives of this study were to carry out a review of the literature, published since 1985, to establish what is known about the noise levels and noise exposure to workers in pubs and clubs.

All of the LEP,d values reported in the literature, with the exception of a few measured in pubs, exceed 85 dB(A). In the majority of cases, employees are subjected to exposure levels greater than 90 dB(A). Even taking into account the casual nature of this form of employment, there is a significant potential for employees to incur some level of hearing loss, the extent of which is dependent on the noise levels and the period of employment (Table 9).

Table 9: Summary of individual noise exposure, calculated from data presented in the literature

Task/occupation	Number of measurements	Average dB(A)	Standard deviation dB(A)	Average hours per week
DJ	53	96.3	4.8	16.5
Bar staff	204	92.3	4.2	15.7
Floor staff	32	92.9	4.4	
Security	10	96.2	3.2	

⁽¹³⁴⁾ European Agency for Safety and Health at Work, Risk Observatory. Thematic report — *Noise in figures*, 2005. <http://osha.europa.eu/publications/reports/6905723>

⁽¹³⁵⁾ ‘Shocking news about call centres’, Occupational safety and health resource, Canada Safety Council website. <http://www.safety-council.org/info/OSH/acoustic.html>

⁽¹³⁶⁾ Ear damage caused by leisure noise, *Noise and health*, Vol. 4, No 13, Oct–Dec 2001, pp. 1–16(16).

⁽¹³⁷⁾ Smeatham, D., Health and Safety Executive research report 026 , 2002. *Noise levels and noise exposure of workers in pubs and clubs — a review of the literature*. <http://www.hse.gov.uk/research/rrpdf/rr026.pdf>



3.1.2.2. Prospective noise-induced changes to hearing among construction industry apprentices (USA)

Hearing and noise exposure were monitored among a cohort of newly enrolled construction industry apprentices and a comparison group of graduate students. A total of 328 subjects were monitored an average of 3.4 times annually. In parallel with these measures, noise exposure and hearing protection device (HPD) use were extensively monitored during construction work tasks. Recreational/non-occupational exposure was also monitored in subgroups of subjects. Results indicate that construction apprentices in their first three years of work, with average noise exposures under 90 dB(A), have measurable loss of hearing function.



3.1.2.3. Sound design in a typical rock club — an interventions project (Sweden)

The National Institute for Working Life, West and AMMOT (Artists and Musicians against Tinnitus) initiated a project ⁽¹³⁸⁾ aimed at reducing staff and audience exposure to noise at the Henriksberg music venue. The project involved different interest groups: musicians, sound technicians, sound technology suppliers, acousticians, the event organisers' association, the Swedish musicians' union, the environmental department of Gothenburg city, and the Board of Culture. The measures that have been implemented have led to a reduction in noise exposure at the music club.



In order to evaluate musicians', workers' and listeners' satisfaction with the sound quality and the measures implemented, three questionnaires were designed, each targeted at a specific group, with questions related to perception of sound levels and sound quality, to hearing disorders, hearing protection and to the work environment. The survey results showed very positive reactions from all respondents with regards to the intervention.

The Henriksberg club has become a reference of good practice for other clubs that aim at implementing noise-reduction solutions. As a model in this sector, the venue will host the practical part of a short university course for self-trained sound engineers organised by the Swedish musicians union and the school of music and music education of Gothenburg University. The acoustical, technical and organisational measures taken in the small venue have resulted in lower noise levels, better sound quality and more satisfied staff, musicians and listeners. Training has been offered and information has been distributed. As a result, the risks of hearing disorders have been reduced and the club has been turned into a better working environment and a more pleasant place to enjoy music. The hope is that other clubs will now see what is possible and be encouraged to follow the example.

⁽¹³⁸⁾ European Agency for Safety and Health at Work. *Prevention of risks from occupational noise in practice*, 2005. http://osha.europa.eu/publications/reports/6905812/full_publication_en.pdf



Surveys suggest that young workers are more exposed to vibrations than the average working population.

3.1.3. Exposure to vibrations



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ESWC data ⁽¹³⁹⁾ suggest that young workers may be slightly more exposed to vibrations than the average working population. In 2000, about 9.8 % of young workers in the EU-15 reported being exposed all or almost all of their working time to vibration, compared to 8.7 % of the total workers. About 22.9 % of young workers reported being exposed at least 25 % of the time to loud noise in the workplace, compared to 21.4 % of the total workforce. This exposure has remained stable since 1995 among young workers. Unfortunately, the EU

survey does not differentiate between exposure to whole-body vibration, which may be due to driving vehicles and hand-arm vibration linked for example to operating a hand-held power tool.

- **Austria 1995–2000** ⁽¹⁴⁰⁾ — The percentage of 15–64-year-old employees exposed to vibration decreased from 1995 (24.7 %) to 2000 (18.9 %). Likewise, fewer young workers were exposed to vibration in 1995 (29.6 % vs 19.4 % in 2000).
- **Belgium 2000** ⁽¹⁴¹⁾ — Young workers are more often exposed to vibration than the average working population. About 11 % of young workers are exposed to vibration all or almost all of the time at work, compared to 7 % of the total working population. About 27.5 % of young workers are exposed at least 25 % of their working time, compared to 17.8 % of the total working population. Exposure to vibration among young workers has increased since 1995, while it has remained stable within the total working population.
- **Cyprus 2001** ⁽¹⁴²⁾ — One indication of increased exposure to vibration among young workers is that there is an increased proportion of young workers employed in construction and transport.
- **Finland 2003** ⁽¹⁴³⁾ — About 8 % of young workers (15–29 years) work every day with vibrating hand tools or other vibrating machinery, and about 8.6 % do so occasionally.
- **Germany 1998** ⁽¹⁴⁴⁾ — According to the 1998 BIBB/IAB survey only 6 % of young respondents were exposed to vibrations compared to 6.5 % of the total working population.

⁽¹³⁹⁾ ESWC, Data extracted from ESWC 1995 and 2000.
<http://www.eurofound.eu.int/working/surveys/index.htm>

⁽¹⁴⁰⁾ ESWC, Data extracted from ESWC 1995 and 2000.
<http://www.eurofound.eu.int/working/surveys/index.htm>

⁽¹⁴¹⁾ ESWC, Data extracted from ESWC 1995 and 2000.
<http://www.eurofound.eu.int/working/surveys/index.htm>

⁽¹⁴²⁾ Eurostat, Survey on Working Conditions in Acceding and Candidate Countries, 2001.
<http://www.eurofound.eu.int/ewco/surveys/ccsurvey.htm>

⁽¹⁴³⁾ FIOH. Youth and work barometer, 2003.
<http://www.ttl.fi/Internet/English/Thematic+pages/Youth+and+work/Research/>

⁽¹⁴⁴⁾ *Qualifikation und Erwerbssituation in Deutschland — 20 Jahre BIBB/IAB-Erhebungen.*
http://doku.iab.de/mittab/2002/2002_2_MittAB_Dostal_Jansen.pdf



- **Greece 2000** ⁽¹⁴⁵⁾ — There are no data on young workers in particular in Greece. However, looking at the sectors with the greatest exposure to vibrations (construction and transport), the percentage of young Greek workers employed in construction (12.5 %) is much higher than the average in the EU-15 (around 7.9 %) or the percentage of the total workforce employed in construction in Greece (around 8.4 %). This is not the case with transport. In general, it can be expected that young workers are exposed to the same level, or more, as the average Greek worker, which is higher than in any other country in Europe.
- **Netherlands 2005** ⁽¹⁴⁶⁾ ⁽¹⁴⁷⁾ — About 12.1 % of young workers report working with vibrating hand tools or other vibrating machinery all or almost all of the working time compared to 8.7 % within the total working population.
- **Spain 2003** ⁽¹⁴⁸⁾ — Young workers have a similar level of exposure to vibration to other workers, although slightly more to arm/hand vibrations.

Hand-arm vibration (HAV) is caused by the use of vibrating hand-held tools, such as pneumatic jackhammers, drills, gas-powered chain saws and electrical tools such as grinders. The nature of these tools involves vibration (a rapid back-and-forth motion), which is transmitted from the tool to the hands and arms of the person holding the tool.

Vibration syndrome and vibration-induced white finger (VWF) are the major health hazards related to the use of vibrating tools. Carpal tunnel syndrome is another health problem that has been linked to the use of smaller hand-held vibrating tools ⁽¹⁴⁹⁾.

There is an increased risk of the onset of non-occupational Raynaud's disease during adolescence, which can give similar symptoms to vibration white finger. Therefore, young people with non-occupational Raynaud's disease should not be exposed to HAV ⁽¹⁵⁰⁾.

Regular exposure to shocks, low frequency whole-body vibration, e.g. driving or riding in off-road vehicles on uneven surfaces, or excessive movement, may be associated with back pain, and other spinal disorders. Young workers may be at greater risk of damage to the spine, as the strength of the muscles is still developing and bones do not fully mature until around the age of 25 ⁽¹⁵¹⁾.

Young people with non-occupational Raynaud's disease should not be exposed to hand/arm vibration.

Young workers are especially vulnerable to back pain and other spinal disorders due to whole body vibration.

⁽¹⁴⁵⁾ ESWC, Data extracted from ESWC 1995 and 2000.

<http://www.eurofound.eu.int/working/surveys/index.htm>

⁽¹⁴⁶⁾ Nationale Enquête Arbeidsomstandigheden 2005 (NEA). http://www.tno.nl/kwaliteit_van_leven/actueel/tno_nieuws/2006/nationale_enquete_arbeids/index.xml

⁽¹⁴⁷⁾ ESWC, Data extracted from ESWC 1990, 1995 and 2000.

<http://www.eurofound.eu.int/working/surveys/index.htm>

⁽¹⁴⁸⁾ Instituto Nacional de Seguridad e Higiene en el Trabajo, *V Encuesta Nacional de Condiciones de Trabajo*. http://www.mtas.es/insht/statistics/enc_5.htm

⁽¹⁴⁹⁾ Alaska Department of Labour and Workforce Development, Labour Standards and Safety Division. Physical Agent Data Sheet — Hand-arm vibration. <http://www.labor.state.ak.us/lss/pads/hand-arm.htm#Hand-Arm>

⁽¹⁵⁰⁾ University of Washington, Orthopaedic Surgery and Sports Medicine. *Raynaud's Phenomenon*, 2004. http://www.orthop.washington.edu/uw/tabID__3376/print__full/ItemID__50/mid__0/Articles/Default.aspx

⁽¹⁵¹⁾ Nottingham City Council. Health and Safety Guidance and Information Sheet 17, 2001. http://www.nottinghamcity.gov.uk/sitemap/cdhs_information_sheet_17



It is important to educate young people in the risks posed by vibration, the symptoms they need to look out for and the need to minimise the risks by following good practice.

The EU has issued two guides to good practice with a view to implementing the ‘vibrations directive’ ⁽¹⁵²⁾ ⁽¹⁵³⁾. It is important to educate young people in the risks posed by vibration, the symptoms they need to look out for and the need to minimise the risks by following good practice. The evaluation and assessment of risks arising from exposure to vibration and the implementation of protection measures can be complicated. These non-binding ‘guides to good practice’ intend to facilitate the assessment of risks from exposure to hand-arm vibration and whole-body vibration, the identification of controls to eliminate or reduce exposure, and the introduction of systems to prevent the development and progression of injury.

3.1.4. Exposure to heat and cold



James is a 17-year-old worker for a city public works department. One hot afternoon (it was 92 °F outside) while James was weeding an overgrown lot, he started to feel dizzy and disoriented, and then fainted due to the heat.

Reggie is a 16-year-old petrol station attendant. One very cold winter night, his fingers and toes started to feel cold and later became numb. He worked four more hours until the end of his shift at 11 p.m. He went home but woke up in the middle of the night and couldn’t feel his fingers or his toes. He had second- and third-degree frostbite on all his fingers and on three of his toes ⁽¹⁵⁴⁾.

Young workers may be slightly more likely to be exposed to heat in the workplace.

According to the ESWC, young workers may be slightly more likely to be exposed to heat in the workplace. Young workers do not report being exposed to cold more than the average working population.

In 2000, about 7 % of EU-15 young workers were exposed to heat all or almost all of the time, compared to 5.9 % of the total workforce. About 23 % of young workers were exposed to heat at least 25 % of the time, compared to 21.4 % of the total workforce. As with the total working population, exposure to heat has increased since 1995.

About 4.5 % of young workers in the EU-15 were exposed to cold all or almost all of the time in 2000, compared to 4.1 % of the total workforce. About 19.9 % of young workers were exposed to heat, at least 25 % of the time compared to 20 % of the total workforce. As with the total working population, levels of exposure have improved since 1995 ⁽¹⁵⁵⁾.

⁽¹⁵²⁾ Guide to good practice on Hand-Arm Vibration. Non-binding guide to good practice with a view to implementation of EU Directive 2002/44/EC on the minimum health and safety requirements regarding the exposure of workers to physical agents (vibrations). [http://www.humanvibration.com/EU/IBGUIDE/HAV %20Good %20practice %20Guide %20V7.7 %20English %20260506.pdf](http://www.humanvibration.com/EU/IBGUIDE/HAV%20Good%20practice%20Guide%20V7.7%20English%20260506.pdf)

⁽¹⁵³⁾ Guide to good practice on Whole-Body Vibration. Non-binding guide to good practice with a view to implementation of EU Directive 2002/44/EC on the minimum health and safety requirements regarding the exposure of workers to physical agents (vibrations). [http://www.humanvibration.com/EU/IBGUIDE/WBV %20Good %20practice %20Guide %20v6.7g %20English %20070606.pdf](http://www.humanvibration.com/EU/IBGUIDE/WBV%20Good%20practice%20Guide%20v6.7g%20English%20070606.pdf)

⁽¹⁵⁴⁾ Source: Young Worker Safety Resource Center. [http://socrates.berkeley.edu/~safejobs/downloads/word/YWTRC %20Presentation.ppt](http://socrates.berkeley.edu/~safejobs/downloads/word/YWTRC%20Presentation.ppt)

⁽¹⁵⁵⁾ ESWC, Data extracted from ESWC 1995 and 2000. <http://www.eurofound.eu.int/working/surveys/index.htm>





- **Austria 1995–2000** ⁽¹⁵⁶⁾ — Between 1995 and 2000, exposure to high temperatures declined slightly in both age groups. Nevertheless a fifth of all young employees are still exposed to high temperatures for at least a quarter of their working time. The percentage for 15–64-year-olds was a little less (17.9%). From 1995 to 2000, the percentage of 15–64-year-old employees and the percentage of young workers exposed to low temperatures declined. The percentage of people in both age groups exposed to low temperatures was comparable in the original sample of 1995 and the random sample of 2000.

- **Belgium 2000** ⁽¹⁵⁷⁾ — About 25 % of young workers report being exposed to heat at least 25 % of the working time, compared to 21 % of the total working population. About 5.6 % of young workers are exposed all or almost all of their working time, compared to 5.3 % within the total working population. Young workers are slightly more likely to be exposed to heat in the workplace. As with the total working population, levels of exposure have improved since 1995.
- **Cyprus 2001** ⁽¹⁵⁸⁾ — The high percentages of reported exposure to heat and cold could be attributed to high percentages of employment in agriculture and construction (working outdoors). One indication of an increased exposure of young workers to heat and cold is that there has been an increased proportion of young workers employed in the construction industry after 2003 (16 % for young employees against 12 % of the total workforce). There are no certain data for employment of young people in agriculture.
- **Finland 2003** ⁽¹⁵⁹⁾ — About 40.2 % of young workers (15–29 years) work every day in hot, cold, or varying temperatures, while about 20.2 % do so occasionally.
- **Germany 1998** ⁽¹⁶⁰⁾ — About 22.7 % of young workers report being exposed to heat, cold, and moisture, compared with 20.6 % within the total working population.
- **Greece 2000** ⁽¹⁶¹⁾ — The high level of young people working in construction is the only indication that this age group is exposed at least as much or more than the average.

⁽¹⁵⁶⁾ ESWC, Data extracted from ESWC 1995 and 2000.

<http://www.eurofound.eu.int/working/surveys/index.htm>

⁽¹⁵⁷⁾ ESWC, Data extracted from ESWC 1995 and 2000.

<http://www.eurofound.eu.int/working/surveys/index.htm>

⁽¹⁵⁸⁾ Eurostat, Survey on Working Conditions in Acceding and Candidate Countries, 2001.

<http://www.eurofound.eu.int/ewco/surveys/ccsurvey.htm>

⁽¹⁵⁹⁾ FIOH Youth and work barometer, 2003.

<http://www.ttl.fi/Internet/English/Thematic+pages/Youth+and+work/Research/>

⁽¹⁶⁰⁾ Qualifikation und Erwerbssituation in Deutschland — 20 Jahre BIBB/IAB-Erhebungen.

http://doku.iab.de/mittab/2002/2002_2_MittAB_Dostal_Jansen.pdf

⁽¹⁶¹⁾ ESWC, Data extracted from ESWC 1995 and 2000.

<http://www.eurofound.eu.int/working/surveys/index.htm>



Exposure to heat is common in outdoor work, and work in industry, hotels and restaurants.

- **Netherlands 2001** ⁽¹⁶²⁾ — About 10 % of young workers report being exposed to heat.
- **Spain** ⁽¹⁶³⁾ — Young workers have a similar level of comfort to other workers, although they experience slightly more discomfort due to heat.

Exposure to heat is common in outdoor work, and work in industry, hotels and restaurants.

Typically, work in hot or hot and humid environments includes:

- outdoor work in hot weather, including surface mining, roofing, road repair and construction, dam building, and other construction;
- farming;
- work in iron, steel and non-ferrous foundries, brick-firing and ceramics operations, glass products manufacturing plants, rubber products manufacturing plants;
- work in electrical utilities (particularly boiler rooms), bakeries, confectioners, restaurant kitchens, laundries, food canneries, mines, smelters and steam tunnels.



© INSHT, Instituto Nacional de Seguridad e Higiene en el Trabajo, Spain

The frequency of accidents appears to be higher in hot environments than in more moderate environmental conditions.

Being uncomfortable is not the major problem with working in high temperature and humidity. Certain safety problems are common to hot environments. Heat tends to increase accident rates, due to the slipperiness of sweaty palms, dizziness, or the fogging of safety glasses. Wherever there are molten metal hot surfaces, steam, etc., there is also the possibility of burns from accidental contact.

Aside from these obvious dangers, the frequency of accidents, in general, appears to be higher in hot environments than in more moderate environmental conditions. One reason is that working in a hot environment lowers individuals' mental alertness and physical performance. Increased body temperature and physical discomfort make workers prone to irritability, anger, and other emotional states,

which sometimes cause them to overlook safety procedures or to divert their attention from hazardous tasks ⁽¹⁶⁴⁾.

⁽¹⁶²⁾ Arbeidsomstandigheden 2001.

<http://www.arbo.nl/content/network/szw/docs/arbeidsomstandigheden2001.pdf>

⁽¹⁶³⁾ Instituto Nacional de Seguridad e Higiene en el Trabajo, *V Encuesta Nacional de Condiciones de Trabajo*.

http://www.mtas.es/insht/statistics/enct_5.htm

⁽¹⁶⁴⁾ US Department of Health and Human Services. *Working in hot environments*, 1992.

<http://www.cdc.gov/niosh/hotenvt.html>



3.1.5. Exposure to vapours and fumes

A 16-year-old male restaurant worker was preparing to clean the floor by mixing cleaning solutions. During the mixing, noxious fumes were emitted and he began to feel ill and light-headed. He developed chest pains and was taken to an emergency department, where he was treated for chlorine gas inhalation.



A 16-year-old male stock handler was re-stocking garden shop shelves with bags of insecticide-containing fertiliser when he inhaled dust from a leaking bag. He began to choke, cough and feel light-headed. The following morning, when his symptoms had not resolved, he was taken to an emergency department where he was treated for insecticide and fertiliser inhalation ⁽¹⁶⁵⁾.

ESWC results suggest that exposure to inhalation of vapour/fumes is not more common among young workers compared to the average working population. In 2000, about 10 % of young workers in the EU-15 were exposed to inhalation of vapour and fumes all or almost all of the time, compared to 9.6 % of the total workforce. About 21.9 % of young workers were exposed to inhalation at least 25 % of the time, compared to 22 % of the total. As with the total working population, but even more so, exposure to inhalation of vapour and fumes in the workplace has decreased since 1995 ⁽¹⁶⁶⁾.

- **Austria 1995–2000** ⁽¹⁶⁷⁾ — All in all, the percentage of employees exposed to vapour, fumes, dust etc. at work was comparably high in both age groups in 1995 (23.9 % vs 23.5 %). The percentage decreased slightly in 2000 in both age groups, whereas the drop was slightly greater for 15–64-year-old employees (20.6 % in 2000 vs 22.3 % for young workers in 2000 in the random sample).
- **Belgium 2000** ⁽¹⁶⁸⁾ — About 8 % of young workers are exposed to inhalation of vapour/ fumes all or almost all of their working time, compared to 5.3 % within the total working population. About 24.4 % of young workers are exposed at least 25 % of their working time, compared to 21 % within the total workforce. This exposure has remained stable since 1995 within the total workforce, while it increased among young workers.
- **Finland 2003** ⁽¹⁶⁹⁾ — About 31.7 % of young workers (15–29 years old) report dust, fumes, vapours, smoke, or other factors which make the air quality worse when they are present in the workplace on a daily basis, while about 13.9 % report being exposed occasionally.
- **Germany 1998** ⁽¹⁷⁰⁾ — About 17 % of young workers report being exposed to fumes, dust, gas or vapour, compared to 15.1 % within the total working population.

Exposure to tobacco smoke (passive smoking) is a problem in the hotel and restaurants sector.

⁽¹⁶⁵⁾ Source: NIOSH, 2003. *Preventing Deaths, Injuries and Illnesses of Young Workers*.
<http://www.cdc.gov/niosh/docs/2003-128/2003128.htm>

⁽¹⁶⁶⁾ ESWC, Data extracted from ESWC 1990, 1995 and 2000.
<http://www.eurofound.eu.int/working/surveys/index.htm>

⁽¹⁶⁷⁾ ESWC, Data extracted from ESWC 1995 and 2000.
<http://www.eurofound.eu.int/working/surveys/index.htm>

⁽¹⁶⁸⁾ ESWC, Data extracted from ESWC 1990, 1995 and 2000.
<http://www.eurofound.eu.int/working/surveys/index.htm>

⁽¹⁶⁹⁾ FIOH. Youth and work barometer, 2003.
<http://www.ttl.fi/Internet/English/Thematic+pages/Youth+and+work/Research/>

⁽¹⁷⁰⁾ Qualifikation und Erwerbssituation in Deutschland — 20 Jahre BIBB/IAB-Erhebungen.
http://doku.iab.de/mittab/2002/2002_2_MittAB_Dostal_Jansen.pdf



- **Spain 2003** ⁽¹⁷¹⁾ — According to the ENCT, 26.6 % of young workers say that they breathe in dust, toxic smoke, fumes from aerosols, gases or steam (excluded tobacco smoke). This exposure is slightly higher than in the average working population.

According to the studies outlined below, passive smoking is a particular problem for young workers in nightclubs, cafés, bars, discotheques and casinos. Conditions might be different in countries having recently implemented legislation imposing bans on smoking in workplaces, such as Ireland, Spain and parts of the United Kingdom.

3.1.6. Studies and initiatives — exposure to tobacco smoke

3.1.6.1. Casino workers gambling with their health (Scotland)



A new study ⁽¹⁷²⁾ of casino workers by the GMB Union in Scotland has found that 81 % of Scotland's gaming workers complained of poor air quality, attributable to a mixture of ineffective ventilation and second-hand smoking. As a result, one in five staff complained of respiratory problems, over a half (51 %) of eye irritation and 61 % of throat irritation.

3.1.6.2. Are London casino workers concerned about exposure to other people's tobacco smoke at work?



A survey ⁽¹⁷³⁾ among 557 casino workers revealed the following.

- 83 % of casino workers report being exposed to other people's tobacco smoke nearly all the time at work.
- 75 % report being exposed to heavy levels of other people's tobacco smoke at work.
- 78 % of casino workers report being bothered by other people's tobacco smoke at work, while 91 % have at some time wanted to move away from where they work because of it.
- 57 % of casino workers feel that their health has suffered because of exposure to other people's tobacco smoke in the workplace, while a further 29 % are not sure.
- 30 % of casino workers have taken time off work because of a health problem they believe was caused by exposure to other people's tobacco smoke whilst at work.
- Casino workers report high levels of sensory irritation symptoms.

⁽¹⁷¹⁾ Instituto Nacional de Seguridad e Higiene en el Trabajo, *V Encuesta Nacional de Condiciones de Trabajo*. http://www.mtas.es/insht/statistics/enct_5.htm

⁽¹⁷²⁾ GMB. *Protecting you at work, casino workers gambling with their health*, 2006. <http://www.gmb.org.uk/Templates/Internal.asp?NodeID=93626>

⁽¹⁷³⁾ Paul Pilkington. *Smoking in casinos survey — Are London casino workers concerned about exposure to other people's tobacco smoke at work?* 2005. <http://ash.org.uk/html/workplace/html/casinosurvey.html>



3.1.6.3. Respiratory symptoms, pulmonary function, and markers of inflammation among bar workers before and after a legislative ban on smoking in public places ⁽¹⁷⁴⁾

This prospective observational study was conducted in Tayside, Scotland from February to June 2006. Some 105 non-asthmatic and asthmatic non-smoking bar workers were initially enrolled, of whom 77 completed the study per protocol. Smoke-free legislation was associated with significant early improvements in symptoms, spirometry measurements, and systemic inflammation of bar workers. Asthmatic bar workers also had reduced airway inflammation and improved quality of life.



Another study ⁽¹⁷⁵⁾ assessed indoor air quality in 128 Irish pubs in 15 countries, between 21 January 2004 and 10 March 2006. Testing sites included 41 smoke-free Irish pubs in Ireland, the United States and Canada, and 87 smoking-permitted Irish pubs located in Armenia, Australia, Belgium, China, England, France, Germany, Greece, Lebanon, Northern Ireland, Poland, Romania, and the United States. Air quality was evaluated using an aerosol monitor which measures the level of fine particle (PM_{2.5}) pollution in the air. Fine particle pollutants, such as those generated from burning cigarettes, are less than 2.5 microns in diameter. These fine particles are especially dangerous since they can be easily inhaled deep into the lungs and result in a variety of adverse health effects including cardiovascular disease, respiratory morbidity, and even death. The results of the study found that, overall, the level of air pollution inside Irish pubs located in smoke-free cities was 93 % lower than the level found in pubs in smoke-permitted cities.

3.1.7. Handling dangerous substances

A young man, aged 23, suffered extensive burns from contact with a flammable substance used to wash out spray-painting guns. Bad practices at the company included a lack of safe methods to handle and store dangerous chemicals, and a lack of training and supervision. One particularly dangerous practice involved carrying the hazardous gun wash in unlabelled, open-topped buckets. Even after the horrific incident, the company did not comply with the labour inspectorate's required improvements until they were taken to court and fined ⁽¹⁷⁶⁾.



National surveys suggest that young workers are handling dangerous substances more often than the average working population.

According to the ESWC ⁽¹⁷⁷⁾, handling dangerous products or substances is not more common among young workers compared to the average working population.

⁽¹⁷⁴⁾ Daniel Menzies et al., 'Respiratory symptoms, pulmonary function, and markers of inflammation among bar workers before and after a legislative ban on smoking in public places', *JAMA*, 296, 2006. pp. 1742–1748.

⁽¹⁷⁵⁾ Harvard School of Public Health, Roswell Park Cancer Institute and Health Service Executive-West, Ireland. *How smoke-free laws improve air quality: a global study of Irish pubs.* <http://www.hsph.harvard.edu/irishstudy/irishstudy.pdf>

⁽¹⁷⁶⁾ Reported in *Health and Safety Practitioner*, UK, 23.1, January 2005.

⁽¹⁷⁷⁾ ESWC, Data extracted from ESWC 1990, 1995 and 2000. <http://www.eurofound.eu.int/working/surveys/index.htm>





In 2000, about 5 % of young workers in the EU-15 were exposed to dangerous substances all or almost all of the time, compared to 4.8 % of the total workforce. About 13.7 % of young workers were exposed at least 25 % of the time, compared to 14.2 % of the total workforce. Among young workers exposure to dangerous substances in the workplace has improved since 1990, while it has remained stable among the average working population.

- **Austria 1995–2000** ⁽¹⁷⁸⁾ — Both for people aged 15–64 and young workers, handling dangerous

substances decreased from 1995 to 2000 (using a random sample). In 2000, only a tenth of all employees worked with dangerous substances for at least one quarter of their work time.

- **Belgium 2000** ⁽¹⁷⁹⁾ — About 4.4 % of young workers report handling dangerous products or substances all or almost all of the time, compared to 3.6 % of the total working population. About 11.9 % of young workers report handling dangerous products or substances at least 25 % of the time, compared to 10.5 % of the total working population. Young workers are slightly more likely to be exposed than the average working population. Handling dangerous products or substances has decreased since 1995 among young workers.
- **Finland 2003** ⁽¹⁸⁰⁾ — About 8.6 % of young workers (aged 15–29 years) have to use harmful or dangerous chemicals or substances every day at work, while about 15.7 % do so occasionally.
- **France 2003** ⁽¹⁸¹⁾ ⁽¹⁸²⁾ — The differences in exposure levels to chemicals between worker categories are increasing. Workers under 24 are exposed more than others (47 % compared with 37 %).

Workers under 25 years of age are exposed to carcinogenic substances more than any others: 17 %, compared to 13.6 % in the 25–29 category, 13.5 % for those between 30 and 39, 12.8 % between 40 and 49, and 12.6 % for those 50 years and over. With 43 % of the young people who are exposed, there is at least one substance that they are not effectively collectively protected against. Young apprentices or those under a training contract are most often exposed to carcinogenic substances (19 %), followed by temporary workers (15 %), fixed-term contract workers (10 %) and unlimited-term contract employees (14 %). These young apprentices account for a large proportion of

In France, surveys indicate that workers under 25 are the most exposed to carcinogens.

⁽¹⁷⁸⁾ ESWC, Data extracted from ESWC 1995 and 2000.
<http://www.eurofound.eu.int/working/surveys/index.htm>

⁽¹⁷⁹⁾ ESWC, Data extracted from ESWC 1990, 1995 and 2000.
<http://www.eurofound.eu.int/working/surveys/index.htm>

⁽¹⁸⁰⁾ FIOH. Youth and work barometer, 2003.
<http://www.ttl.fi/Internet/English/Thematic+pages/Youth+and+work/Research/>

⁽¹⁸¹⁾ Enquête SUMER 2003, L'exposition aux risques et aux pénibilités du travail de 1994 à 2003, Premières informations, premières synthèses, décembre 2004, No 52.1. http://www.travail.gouv.fr/IMG/pdf/publication_pips_200412_n-52-1_exposition-risques-penibilites-travail.pdf

⁽¹⁸²⁾ Statistiques nationales CNAMTS 2003.





employees posted to maintenance activities (installation, maintenance, adjustment and repair work), although it is well known that this type of activity carries a risk of exposure to carcinogens that is 1.5 times higher than in production and 4 times higher than in handling, warehousing or transportation activities. Workers exposed in maintenance activities are more often in contact with one or several carcinogens: 46 % are exposed to two substances or more, compared with 30 % exposed in production and 22 % of exposed workers overall ⁽¹⁸³⁾.

In 2003, with respect to less commonly occurring occupational diseases, in some areas there is a high proportion of young workers:

- 15 % of all disorders due to mineral oils and grease (12 cases),
 - 46 % of all disorders due to aromatic amines (11 cases),
 - 16 % of all disorders due to liquid organic solvents (10 cases),
 - 14 % of all diseases due to epoxy resins (7 cases),
 - 11 % of all allergies due to latex or natural rubber (6 cases),
 - 10 % of all infectious diseases in hospitals or at home (5 cases).
- **Germany 1998** ⁽¹⁸⁴⁾ — About 20.9 % of young workers report working with oil, grease, soil and dirt, compared to 18.1 % among the total working population.
 - **Netherlands 2001** ⁽¹⁸⁵⁾ — About 15 % of young workers are exposed to dangerous substances, compared to about 7 % of the total working population.

⁽¹⁸³⁾ Enquête SUMER 2003, 'Les expositions aux produits cancérigènes', Premières informations, premières synthèses, DARES, No 28.1, juillet 2005.

⁽¹⁸⁴⁾ Dostal, W. and Jansen, R., *Qualifikation und Erwerbssituation in Deutschland — 20 Jahre BIBB/IAB-Erhebungen*, Mitteilungen aus der Arbeitsmarkt- und Berufsforschung. http://doku.iab.de/mittab/2002/2002_2_MittAB_Dostal_Jansen.pdf

⁽¹⁸⁵⁾ Arbeidsomstandigheden 2001. <http://www.arbo.nl/content/network/szw/docs/arbeidsomstandigheden2001.pdf>





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- **Spain 2003** ⁽¹⁸⁶⁾ — According to the ENCT, 23.4 % of young workers say that they handle toxic substances or products in their jobs. This exposure is slightly higher than for the average working population.

Young people are more susceptible to having their health damaged by exposure to dangerous substances, although the effects may not appear until later in life. Table 10 gives an overview of dangerous substances in work settings where young workers are commonly employed ⁽¹⁸⁷⁾.

Table 10: Occupational exposure and adverse health effects in work settings where young workers are commonly employed (Chemical)

Dangerous substances appear in various occupational settings in which young workers are employed.

Occupational exposure	Work setting	Adverse health effects
Agricultural chemicals (pesticides, fertilisers, and others)	Farm, lawn care services, nurseries	Diseases of the nervous system, hormone disruption, fertility problems, cancer
Asbestos	Construction and maintenance	Lung and pleural cancer, lung and pleural disease (asbestosis)
Benzene (from fuels)	Petrol stations	Leukaemia
Cleaning solutions and disinfectants	Retail trades, building maintenance, healthcare	Eye or skin irritation, skin rash or inflammation, respiratory problems, asthma
Isocyanates	Construction, auto body shops	Respiratory irritation, asthma, skin rash or inflammation, allergic inflammatory disease of the lung
Lead	Auto repair, painting, construction	Developmental and neurological impairment, mental retardation, anaemia, sterility, possibly cancer, others

⁽¹⁸⁶⁾ Instituto Nacional de Seguridad e Higiene en el Trabajo, *V Encuesta Nacional de Condiciones de Trabajo*. http://www.mtas.es/insht/statistics/enct_5.htm

⁽¹⁸⁷⁾ NIOSH. *Preventing deaths, injuries and illnesses of young workers*, 2003. <http://www.cdc.gov/niosh/docs/2003-128/2003128.htm#top>



Occupational exposure	Work setting	Adverse health effects
Sensitisers and irritants (such as animal proteins, cleaning agents, enzymes, flour, natural rubber latex, and certain reactive chemicals)	Services, manufacturing, agriculture	Asthma, allergies, skin rash, or inflammation
Silica	Construction, maintenance, agriculture	Lung disease (silicosis), cancer

3.1.8. Young workers’ potential exposure to biological agents

Caroline was a trainee riding instructor. She also had an extra job to get some money working on a chicken farm. She got tetanus after being scratched by a chicken and earth got into the wound. She had not had a recent tetanus vaccination and died.



Tanya is a 15-year-old worker for a summer clean-up corps that was cleaning up city beaches. One day while she was picking up rubbish, her hand was stuck with a hypodermic needle. She was later tested and diagnosed with Hepatitis B ⁽¹⁸⁸⁾.

According to the labour force survey, more than 10 % of young workers report being affected by infectious diseases. Infectious diseases are also among the five most prevalent occupational diseases in young workers according to the EODS (European Occupational Diseases Statistics), (see Section 4.2. ‘Occupational diseases and health problems’ for more information). However, very little information can be found on the occurrence of infectious diseases in young workers and on the cause of exposure to biological agents. Further research and analysis of existing data are needed to assess exposures of young workers to biological agents and to prevent work-related infectious diseases among them. It also needs to be considered that young women and young men may be affected by very different infectious diseases depending on where they predominantly work.

Further research and analysis of existing data are needed to assess exposures of young workers to biological agents and to prevent work-related infectious diseases among them.

Particular care also needs to be taken of young people on work experience.

Table 11 provides indications on where young workers may be exposed to micro-organisms and parasites and the possible health effects. Young workers may have more direct exposure than older workers as they do more ‘hands-on’ work, with children, caring jobs, etc. At the same time, they may lack training and understanding about the danger.

⁽¹⁸⁸⁾ Source: Young Worker Safety Resource Center.
[http://socrates.berkeley.edu/~safejobs/downloads/word/YWTRC %20Presentation.ppt](http://socrates.berkeley.edu/~safejobs/downloads/word/YWTRC%20Presentation.ppt)



Table 11: Occupational exposure and adverse health effects in work settings where young workers are commonly employed (Biological)

Occupational exposure — Source of biological agents	Work setting	Potential biological agent	Adverse health effects
Contact with animals	Farms, nurseries, zoos, laboratory animals, veterinaries, leisure activities	Borrelia, other bacteria and viruses transmitted by ticks, Brucella, other zoonotic agents, E. coli, parasites (e.g. hookworm)	Enteric diseases, brucellosis, allergies, asthma, skin rashes, borreliosis, scabies other infectious diseases
Working outdoors	Agriculture, forestry, lawn care services, gardening, construction, outdoor leisure activities	Borrelia, Legionella, Staphylococcus, Tetanus	Borreliosis, meningitis, legionnaire’s disease, respiratory tract and skin diseases
Handling foodstuff	Kitchens, fast food and other, retail, food manufacturing	Salmonella, Rotavirus, E. coli, Hepatitis A	Diarrhoea, allergies, infections from contaminated food
Contact with people	Health and community care, residential care, education, youth groups, kindergartens, child care workers	Parasites (e.g. Giardia spp.), bacteria (E. coli, Salmonella), Rotavirus, influenza, childhood diseases such as chicken pox, measles, mumps	Diarrhoea, parasitic diseases (e.g. scabies), drug resistant infections, influenza, giardiasis, tuberculosis, reproductive effects (e.g. of rubeola on pregnant young women and the unborn child)
Contact with blood and other bodily fluids	Healthcare, drug agency staff, laboratory assistants, first aid workers, hospitality industry, cleaners	Blood-borne pathogens (HIV, Hepatitis B and C viruses)	Tuberculosis, Hepatitis B and C, Acquired immune -deficiency syndrome (AIDS), infectious liver diseases
Handling waste and other contaminated materials	Retail trades, building maintenance, healthcare, manufacturing, construction, demolition and maintenance, cleaning, health and residential care, retail, air conditioning system installer and service, painter, microbiological and food laboratories	Viruses affecting the digestive system, E. coli, Salmonella, Hepatitis A, B and C, HIV, drug-resistant pathogens, endotoxins, Legionella, mould	Diarrhoea, blood-borne infections, eye or skin irritation, skin rash or inflammation, respiratory problems, asthma
Travelling abroad	Travel agencies, youth groups, voluntary work	Mycobacterium Tb., Hepatitis A, B and C, E. coli, Vibrio cholerae, parasites	Tuberculosis, tropical diseases, enteritis, infections from contaminated food and water, zoonotic diseases transmitted by mosquitoes or ticks, parasitic diseases



France 2003 ⁽¹⁸⁹⁾ ⁽¹⁹⁰⁾

Some 2.6 million people have a profession that could expose them to biological agents. Of these, 54 % (1.6 million) are exposed to biological agents originating from humans, 8 % because of contact with animals, and 23 % because they work in sewage and waste treatment or have contact with foodstuff. More than half of the population works in the health and social services sector, where 66 % are exposed. Other sectors are agriculture (33 % exposed), food and agricultural industries (31 %) and domestic staff and cleaners (27 %).

The intensity of exposure in the health sector varies according to the tasks carried out. Nurses have the most varied tasks. They report that they have to interrupt their work very often for an unplanned task, which is an additional risk factor. About 57 % of the laboratory and 40 % of the nursing staff are exposed more than 20 hours per week, while 22 % of the exposed health and social services staff carry out home services.

The exposure to biological agents for young people (aged less than 25) is illustrated in Table 12.

Table 12: % exposed to biological agents — France ⁽¹⁹¹⁾

	Total	Human contact	Contact with animals	Sewage, waste management Maintenance	Food Agro alimentary	Other
Exposed (x 1000)	2 586.4	1 608.6	393.1	319.5	277.2	191.9
Exposure rate ⁽¹⁹²⁾ (per 100 workers)	14.8	9.2	2.2	1.8	1.6	1.1
Gender						
Male	10.3	3.2	2.8	2.6	1.6	1.1
Female	20.8	17.1	1.5	0.8	1.1	1.1
Age						
Less than 25	12.5	4.9	3.0	1.6	2.9	1.6
25-39	14.3	8.5	2.5	1.7	1.6	1.0
40 and more	15.8	10.8	1.8	2.0	1.2	1.0
Occupation						
Managers	4.8	2.8	0.9	0.6	0.4	0.5
Intermediary professions	18.1	14.5	1.7	1.5	0.8	0.7
Administrative	6.5	4.3	1.4	0.3	0.1	0.6
Service workers and shop and market sales workers	35.0	30.2	1.7	1.4	1.4	2.4
Skilled workers	9.3	1.1	2.4	2.7	3.1	1.2
Elementary and agricultural workers	15.6	1.9	5.9	4.3	3.5	1.4
Sector						
Agriculture	32.7	0.1	29.6	1.5	1.2	0.5

⁽¹⁸⁹⁾ Enquête SUMER 2003, L'exposition aux risques et aux pénibilités du travail de 1994 à 2003, Premières informations, premières synthèses, décembre 2004, No 52.1. http://www.travail.gouv.fr/IMG/pdf/publication_pips_200412_n-52-1_exposition-risques-penibilites-travail.pdf

⁽¹⁹⁰⁾ Statistiques nationales CNAMTS 2003.

⁽¹⁹¹⁾ Source: Enquête SUMER 2003, Dares. Adapted from *Les expositions biologiques en milieu de travail 2003*, Premières synthèses, informations, juin 2006, 26.1.

⁽¹⁹²⁾ Rates and percentages may not add up, as multiple exposures are also considered.



	Total	Human contact	Contact with animals	Sewage, waste management Maintenance	Food Agro alimentary	Other
Industry	7.3	0.6	1.7	1.6	3.3	0.5
Construction	6.0	0.5	1.5	4.1	0.3	0.7
Tertiary	17.6	13.1	1.8	1.7	1.2	1.3
Main activity						
Production	11.1	0.9	4.1	1.8	3.8	1.4
Installation, repair, maintenance	13.4	3.8	2.5	7.7	1.1	1.3
Cleaning	36.2	25.4	2.9	7.0	1.1	3.6
Transport	9.5	3.1	2.6	2.0	1.1	1.1
Administration, reception	4.8	3.9	0.5	0.2	0.1	0.3
Sales	6.9	2.5	1.5	0.2	2.3	1.5
Research, IT	4.1	1.5	1.6	0.7	0.5	0.4
Health, education, information, other	63.5	61.4	2.4	0.9	0.4	0.6

Young workers are slightly more likely to be exposed to radiation than the average working population.

3.1.9. Radiation

ESWC data ⁽¹⁹³⁾ suggest that exposure to radiation in the workplace is not more common among young workers. In 2000, about 1.8 % of young workers in the EU-15 were exposed to radiation all or almost all of their working time, compared to 1.7 % of the total workforce. About 4.8 % of young workers were exposed at least 25 % of the time, compared to 5.3 % of the total workforce. As with the total working population, exposure to radiation in the workplace has remained stable since 1995 among young workers.

- **Austria 1995–2000** ⁽¹⁹⁴⁾ — Both in 1995 and 2000 a higher percentage of young workers were exposed to radiation at work than was the case with 15–64-year-olds. The differences in the percentages were 3.5 % for 1995 and 2.1 % for 2000.
- **Belgium 2000** ⁽¹⁹⁵⁾ — About 2.5 % of young workers are exposed to radiation all or almost all of their working time, compared to 1.6 % of the total workforce. About 7.5 % of young workers were exposed at least 25 % of the time, compared to 5 % of the total workforce. These results suggest that young workers are slightly more likely to be exposed to radiation. As with the total working population, exposure to radiation in the workplace has slightly increased since 1995 among young workers.
- **Spain 2003** ⁽¹⁹⁶⁾ — In terms of radiation, the greatest differences by age group relate to exposure to microwaves, which is higher among young workers, and to radio frequencies, which is lower.

In recent years there has been growing concern over the health risks caused by exposure to the sun's ultraviolet (UV) radiation. Construction workers are particularly at risk because they often work outdoors. Long-term health risks of UV exposure include:

⁽¹⁹³⁾ ESWC, Data extracted from ESWC 1995 and 2000.
<http://www.eurofound.eu.int/working/surveys/index.htm>

⁽¹⁹⁴⁾ ESWC, Data extracted from ESWC 1995 and 2000.
<http://www.eurofound.eu.int/working/surveys/index.htm>

⁽¹⁹⁵⁾ ESWC, Data extracted from ESWC 1995 and 2000.
<http://www.eurofound.eu.int/working/surveys/index.htm>

⁽¹⁹⁶⁾ Instituto Nacional de Seguridad e Higiene en el Trabajo, *V Encuesta Nacional de Condiciones de Trabajo*.
http://www.mtas.es/insht/statistics/enct_5.htm



- skin cancers
- eye damage
- weakening of the immune system
- premature ageing of the skin.

Sunlight is the main source of UV, which is known to damage the skin and cause skin cancer. Studies show that people who work outside, such as construction workers, are at risk of developing skin cancer and need to be educated on the damaging effects of the sun and how to protect themselves.

Melanoma is the least common but most dangerous type of skin cancer. The incidence of melanoma in men is rising faster than all other cancers. Melanomas most often appear on the upper back, head, and neck. There is generally a time lag of 10 to 30 years for the clinical appearance of skin cancer to occur. Consequently, it is critical for young workers to be aware of the cumulative effect of unprotected sun exposure. The more time they spend unprotected in the sun, the higher the risk of developing skin cancer ⁽¹⁹⁷⁾.

Exposure to UV radiation indoors (e.g. when young welders use aluminium or stainless steel) has similar long-term effects to exposure outdoors, and it may also cause short-term adverse effects such as skin burns or keratoconjunctivitis of the eyes (ophthalmia photoelectrica). Case-control studies have shown that arc welders are at increased risk of developing skin and ocular melanoma, and other welders can also be at risk when they are insufficiently protected. Some have postulated that the increased exposure to UV radiation is the probable (but not definite) cause ⁽¹⁹⁸⁾. The literature review concludes that when patients with skin cancer have not had a significant history of sun exposure, arc welding should be considered as a possible cause. One study also showed increased risk of ocular melanoma among male cooks, and among female metal workers and material-handling operators ⁽¹⁹⁹⁾.

The sun's ultraviolet (UV) radiation and young construction workers: the cumulative effect of unprotected exposure.



© INSHT, Instituto Nacional de Seguridad e Higiene en el Trabajo, Spain

⁽¹⁹⁷⁾ Electronic Library of Construction Occupational Safety and Health. *Ultra-violet radiation*, 2001. <http://www.cdc.gov/elcosh/docs/d0600/d000665/d000665.html>

⁽¹⁹⁸⁾ Dixon A. J. and Dixon, B. F., 'Ultraviolet radiation from welding and possible risk of skin and ocular malignancy', *MJA*; Vol. 181, No 3, 2004, pp. 155–157. http://www.mja.com.au/public/issues/181_03_020804/dix10826_fm.html#i1085762

⁽¹⁹⁹⁾ Guenel, P. et al., 'Occupational risk factors, ultraviolet radiation, and ocular melanoma: a case-control study in France', *Cancer Causes Control*, Vol. 12, No 5, June 2001, pp. 451–459.



3.1.10. Studies and initiatives — young workers' exposure to risks

3.1.10.1. Quebec: young workers more exposed to physical and organisational constraints



Workers under 25 years of age are at high risk, and are exposed more often to physical and organisational constraints than older workers. This is one of the findings of a study on Quebec workers' working, health and safety conditions, recently published by the Canadian HSW research body Institut de recherche Robert-Sauvé en santé et en sécurité du travail (IRSST). The authors analysed the data of the 1998 Health and Social Survey, which was conducted by the Quebec Statistical Office among 11 000 workers.

The researchers looked closely at Quebec workers' exposure to a set of 11 physical and organisational constraints. Their findings are particularly worrying for young workers, only a quarter of whom face none of the constraints studied, compared to 40 % of workers aged 25 and over.

The figures show that irregular working hours are more common among young workers (35 %), levelling-off at around 30 % after the age of 35. Night working is also more prevalent among workers under 35 years of age (13–14 %), but decreases thereafter to a level that holds steady up to retirement (8 %).

Workers in the 15–24 age group have the highest frequency of exposure to physical constraints, particularly the three most widespread in the work environment — repetitive work, handling of heavy loads and strain from using tools or machinery.

Young people are also exposed more often to vibrating hand tools, solvents and wood dust. Only exposure to loud noise and to whole-body vibration predominate among workers in the 25–34 age range.

The survey reveals that young people are also most affected by combinations of exposures to constraints. More than 15 % of workers aged 15–24 are exposed to at least four work constraints, a percentage that falls below 10 % for workers aged 45 and over.

On psychosocial risks, the study finds that since 1998, workers aged 15–24 have reported the highest levels of psychological distress.

27 % of female and 18 % of male workers aged 15–29 reported a high level of psychological distress, compared to an all-age-group average of 23 % for women and 16 % for men ⁽²⁰⁰⁾.

⁽²⁰⁰⁾ Gervais, Michèle, Massicotte, Paul and Champoux, Danièle, Conditions de travail, de santé et de sécurité des travailleurs du Québec, Organisation du travail, IRSST IRSST, 2006, Rapport R-449. <http://www.irsst.qc.ca/files/documents/PubIRSST/R-449.pdf>, <http://www.irsst.qc.ca/fr/statistiques-conditions-de-travail-et-age.html>



3.1.10.2. Young people at work (France) ⁽²⁰¹⁾

The idea that young people form a high-risk population in terms of the relationship between work and health is illustrated in a case study in the publication *Santé et Travail* containing several articles that address different aspects of the personal experience of young people on their entry into the world of work.



Some of the topics covered are:

- occupational burn-out of low-skilled young workers aged 16–25;
- statistical data on the under-25s;
- working conditions for apprentices;
- risk prevention in occupational training;
- the programme to raise the profile of occupational training adopted by the French education ministry;
- jobs for the young;
- student workers and the requirements of the fast food business.

3.1.10.3. Educating teenagers in the hazards of the workplace ⁽²⁰²⁾

Many young students between the ages of 15 and 18 work in their spare time. Most of this takes place in SMEs, and research shows that a disproportionate number of accidents at work involve this young age group. This is especially the case in agriculture, restaurants, construction and supermarkets, where many young people are employed. Many of these are school leavers but an increasing number are still in full-time education and are therefore even less familiar with the working environment and the hazards to health and safety that it can present. This project set out to exchange best practice and to develop education in health and safety issues for the young workforce in cooperation with schools and workplaces, with a view to reducing the number of accidents involving young people in SMEs. In Spain, the employers association, COEPA, worked with a local municipality, targeting job seekers between 16 and 21 years old and focusing on education in occupational safety and health (OSH) and on work experience. In Greece, the Technological Educational Institute of Piraeus worked with the Technical High School on a combination of work and OSH education, targeting the young workforce aged between 15 and 18 years. The Danish Partner, a trade union body, worked with two local municipalities, a supermarket, an agricultural enterprise and an educational NGO, on a combination of OSH education and its practical application in the workplace. The target group was the young workforce including school students aged between 14 and 16 years in two schools. The local partners worked to strengthen cooperation between teachers, management and OSH organisations through OSH courses in local schools. A final seminar entitled 'The first step' presented the conclusions of the local pilots: young people were



⁽²⁰¹⁾ *Jeunes travailleurs : la galère*, Santé et Travail, No 33, octobre 2000, pp. 21–51.

⁽²⁰²⁾ This transnational project was funded under the Agency's 2003–04 funding scheme. See European Agency for Safety and Health at Work. *Promoting health and safety in European small and medium-sized enterprises*, 2005. <http://osha.europa.eu/publications/reports/ag05001>



strongly motivated to take an interest in OSH topics; it was important to discuss and reflect on the issues, not merely to learn about them; the link between education and job functions was crucial; visiting companies and having actual work experience of health and safety issues was highly motivating, and the young participants in these pilots were subsequently much more capable of detecting major risks at work. The project-holder produced website content and a 'how to' leaflet, which stressed the importance of learning about occupational safety and health before young people enter the labour market.

3.1.10.4. Apprentice safety week (Austria) ⁽²⁰³⁾



One of the biggest producers of wood-free coated paper has for some years, and with some success, committed itself to reducing its numbers of accidents. The programme, intended to improve the integration of confidential safety officers in safety activities, included not only seminars for safety officers and a joint training course for them and managers on incident analysis, but also an apprentice safety week.



© SME funding scheme report 2003–04, p. 16

During this week, third-year apprentices were trained as confidential safety officers and as fire protection officers. Project work was included to strengthen the link with practical realities. The project involves recognising hazards in the work place and communicating possible solutions to the colleagues affected. Apprentices present their projects to the managers of the areas they have examined. This means not only that training is provided, but that staff and managers are also made more aware of potential problems.

3.1.10.5. The farm safety plan 2003–07 ⁽²⁰⁴⁾ (Ireland)



The farm safety plan 2003–07 was prepared against a background of an average of 20 farm fatalities per annum and over 3 000 recorded injuries in 2001. This lists the actions agreed between state agencies and farmers' representative organisations to reduce farm accidents. To achieve this target, an emphasis is put on education/training, engineering and enforcement. The education and training part of the plan includes focused health and safety programmes for children at primary and post-primary schools, access for all third-level students to an occupational health and safety module in college courses, etc.

⁽²⁰³⁾ This project won a national safety at work award in 2003.
http://osha.europa.eu/publications/newsletter/16/index_41.htm/view?searchterm=apprentice

⁽²⁰⁴⁾ *Farm safety plan 2003–07*, HSA. http://www.hsa.ie/files/product_20040615101112FarmSafetyPlan.pdf





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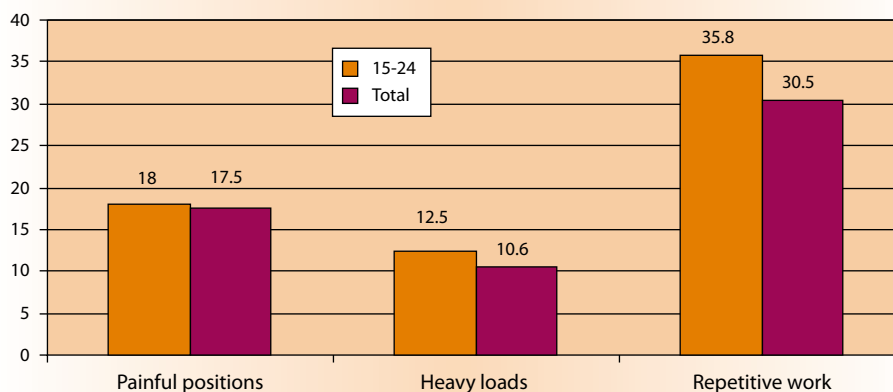
Over 30 % of accidents on farms involve children and young people. The booklet ‘Children and safety on farms’⁽²⁰⁵⁾ explains how to minimise the dangers that children face on the farm. It applies to children and young persons whether they are employed in agriculture or just helping their parents on the farm. The areas covered include the law, danger areas, information, instruction and supervision, staff and visiting workers. A short checklist and information on safe tractor driving skills for 14–16-year-olds is also included.

PHYSICALLY DEMANDING WORK FACTORS

3.2.

According to the ESWC⁽²⁰⁶⁾, working in painful positions is slightly more common among young workers. In 2000, about 18% of young workers in the EU-15 worked in painful positions all or almost all of their working time, compared to 17.5% of the total workforce. About 46.8% of young workers worked in painful positions at least 25% of the time, compared to 46.3% of the total workforce. As with the total working population, work in painful and tiring positions has reduced since 1995 among young workers.

Figure 15: Overview: exposure to physical work factors, % of workers exposed all or almost all of the time ESWC 2000, EU-15



⁽²⁰⁵⁾ *Children and safety on farms*, HSA. http://www.hsa.ie/files/product_20040604102326Childsafety.pdf

⁽²⁰⁶⁾ ESWC, Data extracted from ESWC 1990, 1995 and 2000. <http://www.eurofound.eu.int/working/surveys/index.htm>



3.2.1. Painful positions



© Central Labour Inspectorate, Ministry of Economics and Labour, Austria

Young workers are more likely to work in painful positions.

- **Austria 1995–2000** ⁽²⁰⁷⁾ — In 1995, as well as in 2000, about 40 % of all employees, young workers and 15–64-year-olds had a job which involved working in painful or tiring positions.
- **Belgium 2000** ⁽²⁰⁸⁾ — About 6.9 % of young workers work in painful or tiring positions all or almost all of their working time, compared to 13.6 % of the total workforce. About 40 % of young workers worked in painful or tiring positions at least 25 % of the time, compared to 39.4 % of the total workforce. These results suggest that young workers are not more affected than average. As with the total working population, work in painful and tiring positions has slightly increased since 1995 among young workers.
- **Finland 2003** ⁽²⁰⁹⁾ — About 28.8 % of young workers (aged 15–29 years) have to work in awkward postures every day, while about 31.9 % do so occasionally.
- **Germany 1998** ⁽²¹⁰⁾ — About 23.6 % of young workers report working in painful positions, compared to 18.8 % of the total working population.
- **Netherlands 2005** ⁽²¹¹⁾ — Working in painful or tiring positions is more common in young workers. About 27 % of the young workers report working all or almost all of the time with a bent trunk compared to 23.1 % within the total working population. About 25.1 % of young workers report working all or almost all of the time with a bent neck or twisted head compared to 23.1 % within the total working population. About 43.2 % of young workers report continuously working in the same body position compared to 41.7 % within the total working population.
- **Spain 2003** ⁽²¹²⁾ — There are no significant differences between age groups.
- **UK 1995** ⁽²¹³⁾ — About 51 % of workers aged 16–24 report working in awkward or tiring positions, compared with 45 % of the total workforce.

⁽²⁰⁷⁾ ESWC, Data extracted from ESWC 1995 and 2000.
<http://www.eurofound.eu.int/working/surveys/index.htm>

⁽²⁰⁸⁾ ESWC, Data extracted from ESWC 1995 and 2000.
<http://www.eurofound.eu.int/working/surveys/index.htm>

⁽²⁰⁹⁾ FIOH. *Youth and work barometer*, 2003.
<http://www.ttl.fi/Internet/English/Thematic+pages/Youth+and+work/Research/>

⁽²¹⁰⁾ *Qualifikation und Erwerbssituation in Deutschland — 20 Jahre BIBB/IAB-Erhebungen*.
http://doku.iab.de/mittab/2002/2002_2_MittAB_Dostal_Jansen.pdf

⁽²¹¹⁾ Nationale Enquête Arbeidsomstandigheden 2005 (NEA).
http://www.tno.nl/content.cfm?context=markten&content=case&laag1=52&item_id=107

⁽²¹²⁾ Instituto Nacional de Seguridad e Higiene en el Trabajo, *V Encuesta Nacional de Condiciones de Trabajo*.
http://www.mtas.es/insht/statistics/enct_5.htm

⁽²¹³⁾ Health and Safety Executive, *Self-reported working conditions in 1995: results from a household survey*, HSE Books, 1997. 'When work is a pain: young workers face a terrible strain injuries risk', *Hazards*, No 73, 16 February 2001. <http://www.hazards.org/strainpain.pdf>



3.2.2. Heavy loads

ESWC ⁽²¹⁴⁾ results indicate that young workers are more likely to carry or move heavy loads than the average working population. In 2000, about 12.5 % of young workers in the EU-15 were exposed to carrying or moving heavy loads all or almost all of the time, compared to 10.6 % of the total workforce. About 40.2 % of young workers were exposed at least 25 % of the time to painful positions, compared to 36 % of the total workers. As with the total working population, carrying or moving heavy loads in the workplace has declined since 1995 among young workers.

- **Austria 1995–2000** ⁽²¹⁵⁾ — From 1995 to 2000 the percentages of young workers, as well as of employees aged 15–64 years, whose jobs involved carrying heavy loads at least around a quarter of the time, increased. In 2000 (according to a random sample) 34.4 % of 15–64-year-old employees and 40.8 % of young workers were involved in carrying heavy loads.
- **Belgium 2000** ⁽²¹⁶⁾ — Young workers are more exposed to carrying or moving heavy loads than the average working population. About 10 % of young workers were all or almost all of the time exposed to carrying or moving heavy loads compared to 9.2 % of the total workforce. About 41.3 % of young workers were exposed at least 25 % of the time to painful positions, compared to 32.1 % of the total workers. Among young workers carrying or moving heavy loads in the workplace has increased since 1995, while it has remained stable in the average working population.
- **France 2003** ⁽²¹⁷⁾ — Young people under 25 are in general exposed to physical stresses more than older workers, and this has become more marked in the last 10 years.
- **Germany 1998** ⁽²¹⁸⁾ — About 32.6 % of young workers report handling heavy loads (more than 20 kg), compared to 27.2 % within the total working population.
- **Greece 2000** ⁽²¹⁹⁾ — There are no data in Greece for young workers in particular. However, considering that the percentage of young Greek workers employed in construction (12.5 %) is much higher than among their colleagues in the EU-15 (around 7.9 %) or the percentage of employed in construction in Greece (around 8.4 %), it can be expected that young workers are exposed to heavy load handling at the same levels, or more, as the average Greek worker, which is higher than in any other country in Europe.
- **Netherlands 2005** ⁽²²⁰⁾ — About 15.4 % of young workers report lifting heavy loads (more than 25 kg) compared to 11.9 % within the total working population. About

Young workers are more likely to carry or move heavy loads.

⁽²¹⁴⁾ ESWC, Data extracted from ESWC 1990, 1995 and 2000.
<http://www.eurofound.eu.int/working/surveys/index.htm>

⁽²¹⁵⁾ ESWC, Data extracted from ESWC 1995 and 2000.
<http://www.eurofound.eu.int/working/surveys/index.htm>

⁽²¹⁶⁾ ESWC, Data extracted from ESWC 1990, 1995 and 2000.
<http://www.eurofound.eu.int/working/surveys/index.htm>

⁽²¹⁷⁾ Enquête SUMER 2003, *L'exposition aux risques et aux pénibilités du travail de 1994 à 2003*, Premières informations, premières synthèses, DARES, décembre 2004, No 52.1. http://www.travail.gouv.fr/IMG/pdf/publication_pips_200412_n-52-1_exposition-risques-penibilites-travail.pdf

⁽²¹⁸⁾ *Qualifikation und Erwerbssituation in Deutschland — 20 Jahre BIBB/IAB-Erhebungen*.
http://doku.iab.de/mittab/2002/2002_2_MittAB_Dostal_Jansen.pdf

⁽²¹⁹⁾ ESWC, Data extracted from ESWC 1995 and 2000.
<http://www.eurofound.eu.int/working/surveys/index.htm>

⁽²²⁰⁾ Nationale Enquête Arbeidsomstandigheden 2005 (NEA).
http://www.tno.nl/content.cfm?context=markten&content=case&laag1=52&item_id=107



Young workers carry out more repetitive movements and short repetitive tasks than the average worker.

23.6 % of young workers report moving heavy loads (more than 25 kg) compared to 15.5 % within the total working population. About 11.4 % of young workers report carrying heavy loads (more than 25 kg) compared to 8.9 % within the total working population.

- **Spain 2003** ⁽²²¹⁾ — According to the ENCT, 14 % of young workers indicate that they carry or move heavy loads at least 25 % of the time.
- **UK 1995** ⁽²²²⁾ — About 36 % of workers aged 16–24 report using appreciable force during work, compared with 28 % of the total workforce.

3.2.3. Repetitive work



The ESWC ⁽²²³⁾ suggests that young workers carry out more repetitive movements and short repetitive tasks than the average worker. In 2000, about 35.8 % of young workers in the EU-15 carried out repetitive movements all or almost all of their working time, compared to 30.5 % of the total workforce. About 62.2 % of young workers were exposed at least 25 % of the time, compared to 56.8 % of the total workforce.

As with the total working population, the exposure to repetitive movements has increased since 1995 among young workers. The ESWC's questions with regard to repetitive tasks have changed, however, which makes comparison more difficult. In 1990 no time limit was set. In 1995 a 10-minute time limit was introduced. In 2000, a time scale replaced the frequency scale. Therefore, results have to be considered with caution, although it can still be concluded that young workers are significantly more involved with short repetitive tasks.

- **Austria 1995–2000** ⁽²²⁴⁾ — In 1995 and 2000, the percentages of 15–64-year-old employees whose work demands repetitive hand or arm movements were alike. For young workers, in comparison with 1995 (49.9 %), the percentage of people doing repetitive work at least a quarter of the time increased to 55.8 % (going by the original sample) or 58.1 % (going by the random sample) in 2000.
- **Belgium 2000** ⁽²²⁵⁾ **and 2004** ⁽²²⁶⁾ — Young workers carry out more repetitive movements than the average working population, according to the ESWC 2000 and the WBM 2004. According to the ESWC, about 36.9 % of young workers carry out repetitive movements all or almost all of their working time, compared to 27.8 % within the total working population. About 60 % of young workers are exposed at

⁽²²¹⁾ Instituto Nacional de Seguridad e Higiene en el Trabajo, *V Encuesta Nacional de Condiciones de Trabajo*. http://www.mtas.es/insht/statistics/enct_5.htm

⁽²²²⁾ Health and Safety Executive 'Self-reported working conditions in 1995: results from a household survey'. HSE Books. 1997, 'When work is a pain: young workers face a terrible strain injuries risk', *Hazards*, No 73, 16 February 2001. <http://www.hazards.org/strainpain.pdf>

⁽²²³⁾ ESWC, Data extracted from ESWC 1990, 1995 and 2000. <http://www.eurofound.eu.int/working/surveys/index.htm>

⁽²²⁴⁾ ESWC, Data extracted from ESWC 1995 and 2000. <http://www.eurofound.eu.int/working/surveys/index.htm>

⁽²²⁵⁾ ESWC, Data extracted from ESWC 1990, 1995 and 2000. <http://www.eurofound.eu.int/working/surveys/index.htm>

⁽²²⁶⁾ WBM 2004, <http://www.serv.be/uitgaven/603.pdf>



least 25 % of the time, compared to 50 % within the total working population. As with the total working population, the proportion of young workers carrying out repetitive movements has increased since 1995.

- **Finland 2003** ⁽²²⁷⁾ — About 46.3 % of young workers (15–29 years) report that their work involves repetitive, monotonous movements every day, while about 18.7 % say that it does occasionally.
- **Germany 1998** ⁽²²⁸⁾ — About 51.1 % of young workers report that their work involves repetitive movements, compared to 45.1 % within the total working population.
- **Netherlands 2003, 2005** ⁽²²⁹⁾⁽²³⁰⁾ — More than half of employees aged between 15 and 24 indicated in 2003 that they have to make repetitive movements with their arms regularly or often. About 56.1 % of the workers between 15 and 24 in 2005 indicated that they regularly or often have to make repetitive movements with their arms compared with 45.6 % within the total working population.
- **Spain 2003** ⁽²³¹⁾ — According to the ENCT, more than 50 % of young workers consider their tasks to be repetitive, and of very short duration, for more than a quarter of the working day. A high proportion of young workers consider their work repetitive compared to the total Spanish working population (68 %, against 58.1 % of the total).
- **UK 1995** ⁽²³²⁾ — About 78 % of workers aged 16–24 report that their work involves repetitive movements, compared with 65 % for the total workforce.

3.2.4. Studies and initiatives — lightening the load

3.2.4.1. Risk factors affecting workers experiencing low back pain for the first time, in their first job (Belgium)

A cross-sectional analysis ⁽²³³⁾ was carried out on 278 young workers in their first job, who did not have a history of low back pain prior to working, in order to investigate the work-related risk factors that affected them. Work-related physical factors, psychosocial work characteristics, individual variables and newly-developed low back pain were assessed by means of a questionnaire.



About half of the young workers who developed low back pain after starting their job did so in the first year of employment. An increased risk was observed when

⁽²²⁷⁾ FIOH. Youth and work barometer, 2003.

<http://www.ttl.fi/Internet/English/Thematic+pages/Youth+and+work/Research/>

⁽²²⁸⁾ Qualifikation und Erwerbssituation in Deutschland — 20 Jahre BIBB/IAB-Erhebungen.

http://doku.iab.de/mittab/2002/2002_2_MittAB_Dostal_Jansen.pdf

⁽²²⁹⁾ Nationale Enquête Arbeidsomstandigheden 2003 (NEA).

<http://www.arbeid.tno.nl/perskamer/20040526.htm>

⁽²³⁰⁾ Nationale Enquête Arbeidsomstandigheden 2005 (NEA).

http://www.tno.nl/content.cfm?context=markten&content=case&laag1=52&item_id=107

⁽²³¹⁾ Instituto Nacional de Seguridad e Higiene en el Trabajo, *V Encuesta Nacional de Condiciones de Trabajo*.

http://www.mtas.es/insht/statistics/enct_5.htm

⁽²³²⁾ Health and Safety Executive, *Self-reported working conditions in 1995: results from a household survey*.

HSE Books, 1997, 'When work is a pain: young workers face a terrible strain injuries risk', *Hazards*, No 73, 16 February 2001. <http://www.hazards.org/strainpain.pdf>

⁽²³³⁾ Van Nieuwenhuysse, A. et al. Risk factors for first-ever low back pain workers in their first employment.

Occupational Medicine, Vol. 54, 2004, pp. 513–519.



employees worked sitting down for long periods, when they made more than 12 flexion or rotation movements of the trunk per hour, and when they had spent more than three years in a job that involved lifting more than 25 kg at least once an hour. As to psychosocial work characteristics, newly-developed low back pain was associated with a combination of low psychological job demands and low supervisory support.

The study concluded that work-related physical factors and psychosocial work characteristics should be considered as risk factors for newly-developed low back pain. New episodes of low back pain are common in the first year of employment. This may reflect a lack of work experience or training.

3.2.4.2. When work is a pain (United Kingdom)



Young workers are facing a repetitive strain injury epidemic, according to the Trades Union Congress (TUC). Using official data, the TUC claims that a whole generation of workers could become victims, devastating the British economy and leaving millions in pain.

Health and Safety Executive (HSE) figures indicate that young workers are more at risk than any other age group in relation to all four of the main risk factors associated with RSI: repetition and speed, awkward posture, lack of control over the work process, and use of force. Nearly 4 million young people between the ages of 16 and 24 are in work in the UK.

Table 13: Work can be more of a pain when you are young ⁽²³⁴⁾

	% Age 16–24	% Total workforce
Had to work very fast		
Men	70	57
Women	72	62
All	71	60
Had to use appreciable force		
Men	46	35
Women	28	21
All	36	28
Were not able to choose or change the order of their tasks or method of working		
Men	48	34
Women	38	32
All	43	33
Had to work in awkward or tiring positions		
Men	54	46
Women	49	45
All	51	45

⁽²³⁴⁾ Health and Safety Executive, Self-reported working conditions in 1995: Results from a household survey. HSE Books, 1997.



These statistics point to a bleak future for British industry. If a high percentage of young workers already suffer from RSI, then businesses of the future will have a limited workforce to choose from.

Others see the emergence of the e-economy and the digital age as the root cause of this simmering problem. Computer manufacturers in particular have had the finger pointed at them. By failing to promote a safety culture, young people are 'subconsciously trained' to think it is okay to sit at a poorly designed desk and chair, to slouch, and to work without breaks ⁽²³⁵⁾.

3.2.4.3. *Your job, your body, your life in the motor trade (Sweden)*

'Your job, your body, your life in the motor trade' is an information and training project undertaken jointly by the following partners in the sector: the Swedish motor trade association, the Swedish metalworkers' union and the Swedish painters' union. The aim of the project is to provide information on minimising injuries due to overload and repetitive strain injury (RSI), and how to handle thermoset plastic and isocyanates correctly. The project also serves as an up-to-date teaching aid on matters relating to the working environment for motor mechanics' streams at secondary schools. The concept covers marketing materials for workshops and schools — the project provides a complete training/information package, as well as knowledge tests for all target groups. A web-based support site enables the studies to be followed-up ⁽²³⁶⁾.



PROTECTIVE EQUIPMENT AND INFORMATION ON RISKS 3.3.

3.3.1. Wearing protective equipment

Who: young male employee, aged 18 years
 Job: metal coating, known as galvanising, which is the process of coating metal (iron) with zinc as a protection against rust
 Injury: multiple burns (very serious)
 How: exposure to hot substances (molten metal)
 Reasons: inadequate training, failure of PPE (personal protective equipment).



⁽²³⁵⁾ *Hazards and Workers' Health International Newsletter*, 2001. <http://www.hazards.org/strainpain.htm>

⁽²³⁶⁾ <http://www.jklsupport.nu/>



On the day of the accident, the usual operator went home early and the young employee was asked by the foreman to take his place. The job he was asked to do was considered by the charge-hand galvanisers to be unsuitable for a trainee without one-to-one supervision. He was not closely supervised and attempted to relocate a basket hanger before it had been immersed. While he was doing this, an eruption of molten zinc went onto his arm, face and hands. He was not wearing a visor or overalls, and suffered multiple burns despite the safety glasses, hat and gloves that he wore.

National surveys suggest that young workers wear more protective equipment than the average working population.



"Bezpieczny start: Safe Start 2006 winner"

According to the same survey ⁽²³⁷⁾, young workers wear some personal protective equipment about as frequently as workers overall (27 % of workers aged 18–24 years vs 25 % of all workers wear such equipment half of the time or more at work).

In 2000, about 22.8 % of young workers in the EU-15 wore personal protective equipment all or almost all of their working time, compared to 20.6 % of the total workforce. About 30.1 % of young workers wore this

equipment at least 25 % of the time, compared to 29.5 % of the total workforce. As with the total working population, wearing personal protective equipment has increased since 1995 among young workers.

- **Austria 1995–2000** ⁽²³⁸⁾ — The percentage of employees wearing protective equipment aged between 15 and 64 years remained stable from 1995 (21.7 %) to 2000 (21.6 and/or 22 %). In contrast, the percentage of young workers wearing protective equipment increased from 20.5 % in 1995 to 26.7 % in 2000. This indicates a trend towards better occupational safety and health.
- **Belgium 2000** ⁽²³⁹⁾ — About 26.3 % of young workers wore personal protective equipment all or almost all of their working time, compared to 18.8 % of the total workforce. About 35 % of young workers wore this equipment at least 25.6 % of the time, compared to 29.5 % of the total workforce. These results suggest that young workers wear personal protective equipment slightly more than the average worker. As with the total working population, wearing personal protective equipment has increased since 1995 among young workers.
- **Germany 1998** ⁽²⁴⁰⁾ — About 22 % of young workers report wearing protective equipment, compared to 17.1 % within the total working population.

⁽²³⁷⁾ ESWC, Data extracted from ESWC 1995 and 2000.
<http://www.eurofound.eu.int/working/surveys/index.htm>

⁽²³⁸⁾ ESWC, Data extracted from ESWC 1995 and 2000.
<http://www.eurofound.eu.int/working/surveys/index.htm>

⁽²³⁹⁾ ESWC, Data extracted from ESWC 1995 and 2000.
<http://www.eurofound.eu.int/working/surveys/index.htm>

⁽²⁴⁰⁾ Qualifikation und Erwerbssituation in Deutschland — 20 Jahre BIBB/IAB-Erhebungen.
http://doku.iab.de/mittab/2002/2002_2_MittAB_Dostal_Jansen.pdf



- **Spain 2003** ⁽²⁴¹⁾ — There is an amount of compulsory usage of protective equipment among young workers in contrast to the rest of the workforce. However, a smaller proportion of young workers chooses protective equipment voluntarily in comparison to other workers, with a difference of 13 %.

3.3.2. Information on risks

A 27-year-old, and several others, had been employed by a company to remove and replace the roof of a warehouse. No safe system of work had been prepared before the work began, and no safety precautions were in place at the time of the incident. The young man had never worked on a roof before. Whilst working on the roof, he stepped backwards onto a fragile roof light on an adjoining warehouse, which gave way. He fell approximately 6.75m, landing on the ground floor directly below. He died as a result of his injuries ⁽²⁴²⁾.



The ESWC ⁽²⁴³⁾ concludes that young workers seem to be less well-informed about the risks in using materials, instruments or products than the average working population. In 2000, about 11.8 % of young workers were badly or very badly informed, compared to 9.6 % of all workers, while for all workers, including young workers, risk awareness has improved since 1995.

Young workers seem to be less well-informed about the risks in using materials, instruments or products.

- **Austria 1995–2000** ⁽²⁴⁴⁾ — About 73 % of young workers and 85 % of all employees felt that they were well informed about the risks resulting from the use of materials, instruments or products which they handled in their jobs.
- **Belgium 2000** ⁽²⁴⁵⁾ — About 3.8 % of young workers were badly or very badly informed about the risks in using materials, instruments or products, compared to 9.1 % of the total workforce. These results suggest that young workers are more informed about the risks in using material, instruments or products than the average working population. As with the total working population, the risk awareness within young workers has improved since 1995.
- **Finland 2003** ⁽²⁴⁶⁾ — About 71.1 % of young workers (15–29 years) have received sufficient instruction and guidance concerning the work-related dangers and safety regulations, while about 11.5 % have a little and 8.3 % none at all.
- **Netherlands 2005** ⁽²⁴⁷⁾ — About 46.4 % of the young workers and 50.5 % of all workers report that they receive much information to work safely.

⁽²⁴¹⁾ Instituto Nacional de Seguridad e Higiene en el Trabajo, *V Encuesta Nacional de Condiciones de Trabajo*. http://www.mtas.es/insht/statistics/enct_5.htm

⁽²⁴²⁾ Information provided by Health and Safety Executive, 2005.

⁽²⁴³⁾ ESWC, Data extracted from ESWC 1995 and 2000. <http://www.eurofound.eu.int/working/surveys/index.htm>

⁽²⁴⁴⁾ ESWC, Data extracted from ESWC 1995 and 2000. <http://www.eurofound.eu.int/working/surveys/index.htm>

⁽²⁴⁵⁾ ESWC, Data extracted from ESWC 1995 and 2000. <http://www.eurofound.eu.int/working/surveys/index.htm>

⁽²⁴⁶⁾ FIOH. Youth and work barometer, 2003. <http://www.ttl.fi/Internet/English/Thematic+pages/Youth+and+work/Research/>

⁽²⁴⁷⁾ Nationale Enquête Arbeidsomstandigheden 2005 (NEA). http://www.tno.nl/content.cfm?context=markten&content=case&laag1=52&item_id=107



- **Spain 2003** ⁽²⁴⁸⁾ — Although young workers generally receive less training from their employers, they receive more training related to occupational safety and health. The elements most analysed in evaluation studies are: ‘Security of machines, equipment and material’, ‘Physical positions, effort and repetitive movements’ and ‘Security of infrastructure’, corresponding to some of the principal causes of work accidents pointed out by those who have had any work accident in the last two years (e.g. ‘Physical positions, efforts and repetitive movements’ and ‘Insecure work place’). On the negative side, more than half of young workers (57 %) were not informed of the results of evaluation studies, in contrast to the 59 % of the total Spanish working population that were (data in both cases for 2003).

3.3.3. Studies and initiatives — protective equipment and information on risks

Studies reveal the need for young workers to wear protective equipment and to be informed about risks in order to reduce their rates of occupational accidents and disease.

3.3.3.1. Work and protective clothing in the metal industry, reflecting young people’s preferences (Finland)

Studies reveal the need for young workers to wear protective equipment and to be informed about risks in order to reduce their rates of occupational accidents and disease.

Despite the number of jobs available in it, the metal industry is generally not very popular among young people because the work is perceived as dirty and physically strenuous. Because of the work demands and associated risks, metal workers must have protective clothing.

The main objectives of this study ⁽²⁴⁹⁾ were to design work and protective clothing which is more in line with the preferences of young people, and to find out the preferences of young adults regarding the appearance and style of protective clothing in the metal industry. Also, the study aimed to chart the use of protective equipment, and to investigate awareness and attitudes regarding occupational safety.



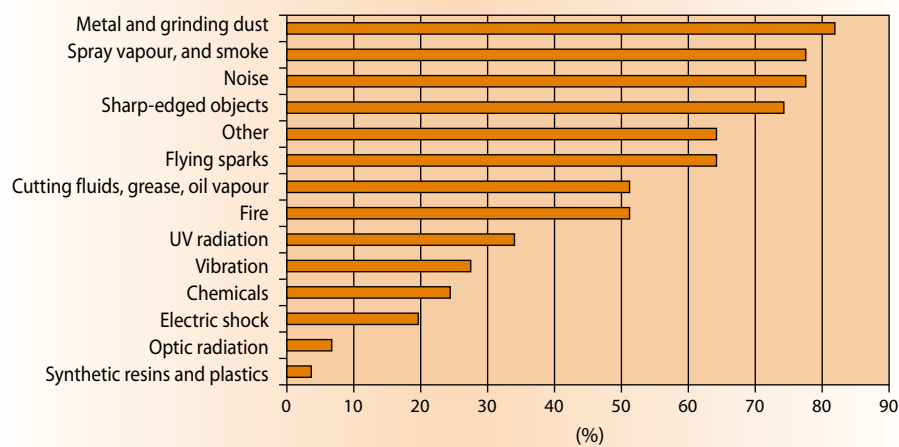
The target groups were students on metalworking curricula of vocational institutions, as well as young adults working in the field.

The survey revealed that young workers are exposed to dust, spray, vapour, smoke, noise, sharp-edged metal objects and flying sparks. Dust was considered a hazard at the highest level. Exposure to smoke, vapour, noise and sharp-edged objects was also considered a significant problem. The front, groin area, and collar of garments were the most vulnerable areas. The young workers reported hazards which are often caused by flying sparks. One reason for accidents was inappropriate work wear, with workers not using flame-retardant protective clothing. In typical hazardous situations the coverall caught fire when the worker was using the angle grinding machine, and welding sparks burned through the worker’s clothing.

⁽²⁴⁸⁾ Instituto Nacional de Seguridad e Higiene en el Trabajo, *V Encuesta Nacional de Condiciones de Trabajo*. http://www.mtas.es/insht/statistics/enct_5.htm

⁽²⁴⁹⁾ Mäki, S. and Mäkinen, H. Finnish Institute of Occupational Health, ‘Work and protective clothing for the metal industry, as preferred by young people’, *Proceedings of the International Symposium on Youth and Work Culture 2005*, 2005. <http://www.ttl.fi/NR/rdonlyres/1DB16EBD-6C3B-4DE6-BD84-4B5C69546904/0/mäkiweb.pdf>



Figure 16: Young workers' opinions of occupational hazards experienced

According to young workers, protective clothing should protect the front, the groin area, the neck, the wrists, the shoulder area, and back of the neck from flying sparks. The clothing used in the metal industry should have pockets for work tools, such as vernier calipers, scribe awls, pencils, and work plans, as well as various work pieces. A special pocket is needed, in which the tool will stay in place while bending over and kneeling down.

As part of the project, six different collections of work and protective clothing, as well as special protective gear, were designed. The collections consisted of about 60 different models. Prototypes were manufactured of the most attractive models. Specifically, the clothing should be a two-piece design (coat and trousers), but for welding a one-piece overall is needed.

These results show that it was possible to find out new and practical ideas for work and protective clothing by reconciling the young workers' preferences with the demands of safety and ergonomics. By providing work and protective clothing that pleases the worker it may be possible to increase job satisfaction, which in turn can improve work safety and productivity.

3.3.3.2. *The safe teen work project: a study in reducing cutting injuries among young and inexperienced workers (USA)*

A tool used to cut cardboard containers, known as a case cutter, frequently causes lacerations among adolescent grocery store workers. The study ⁽²⁵⁰⁾ evaluated a safety programme using a less hazardous case cutter, combined with worker education. Nine supermarket stores were divided into three groups. In Group A stores, employees received new safety case cutters along with education in how to use them; in Group B stores, employees received education in using the old cutters; Group C stores were the control. Case-cutting lacerations were tracked three years before, and one year after the intervention. There were



⁽²⁵⁰⁾ Leonard B. et al., 'The safe teen work project: a study to reduce cutting injuries among young and inexperienced workers', *American Journal of Industrial Medicine*, Vol. 31, Issue 5, 1997, pp. 619–622.



199 cutting injuries. Cutting injury rates decreased by 3.5/100 000 man-hours in Group A stores, compared to 1.5 in Group B stores and 1.6/100 000 man-hours in the control stores, with a marked reduction of compensation-related injuries in the A stores. Estimated cost savings for A stores were USD 245/year/store and USD 29 413/year for the chain.

An intervention to decrease case-cutting injuries among adolescent grocery store workers can be protective and cost-effective.

3.3.3.3. Prevention of hand eczema in the metalworking industry: risk awareness and behaviour of metalworker apprentices (Switzerland)



In the metalworking industry, occupational hand eczema is very common, often due to contact with cutting fluids. Since it can be avoided by adequate protective measures, prevention plays an important role. However, the effectiveness of prevention depends heavily on the employees' awareness of this health risk.

The study ⁽²⁵¹⁾ aimed to collect information on the attitude of metalworker apprentices towards the risk of occupational skin disorders and skin protection, since it is believed that their attitude at the beginning of the education will guide their future risk behaviour. By means of a questionnaire, 79 metalworker apprentices were interviewed about their awareness of dermal risk factors and their risk behaviour at work.

The apprentices were very badly informed about skin diseases and skin care. Most of them were not concerned about developing occupational skin problems, and said that they had obtained very little information about this subject. Considering this finding, it is important to intensify the health and safety education that is already provided at the beginning of the apprenticeship.

3.3.3.4. Technological change and the skill acquisition of young workers (USA)

Since technological change influences the rate at which human capital obsolesces, and also increases the uncertainty associated with human capital investments, training may increase or decrease at higher rates of technological change. Using the National Longitudinal Survey of Youth, the researchers found that production workers in manufacturing industries with higher rates of technological change are more likely to receive formal company training. At higher rates of technological change, the training gap between the more and less well-educated narrows, low-skilled non-production workers receive significantly more training than higher-skilled non-production workers, and the proportion of individuals receiving training increases ⁽²⁵²⁾.

⁽²⁵¹⁾ Itzschner, L. et al., 'Prevention of hand eczema in the metalworking industry: risk awareness and behaviour of metalworker apprentices', *Dermatology*, Vol. 193, No 3, pp. 226–229.

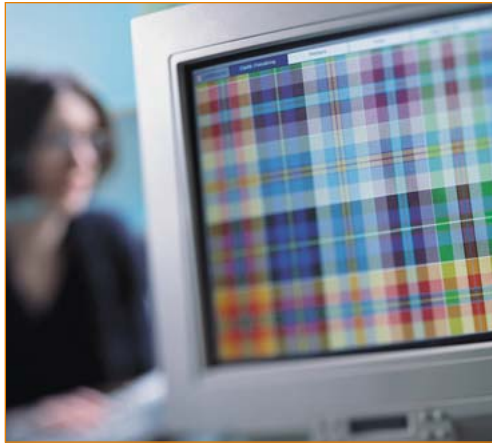
⁽²⁵²⁾ Bartel, Ann P. and Sicherman, Nachum, 'Technological change and the skill acquisition of young workers', *Journal of Labor Economics*, Vol. 16, No 4, October 1998, pp. 718–755.



WORK ORGANISATION

3.4.

3.4.1. Working with computers



According to the ESWC ⁽²⁵³⁾, young workers seem to be less involved in working with computers than the average working population. About 17 % of young workers were working with computers all or almost all of their working time in 2000, compared to 19 % of the total working population. The proportion of people working with computers (at least occasionally) has increased from 36 % in 1995 to 40 % in 2000. By contrast, the proportion of young workers working at least occasionally with

Young workers seem to be less involved in working with computers than the average working population.

computers has decreased from 38 % in 1995 to 31 % in 2000. Among the total working population, the proportion of workers who never or almost never work with computers has decreased by 4 % since 1995, while it decreased by 0.9 % among young workers.

- **Austria 1995–2000** ⁽²⁵⁴⁾ — From 1995 to 2000 the percentage of employees aged between 15 and 64 years old using computers at work increased slightly from 37.7 % to 40.3 %, whereas the percentage of young workers using computers decreased from 40.9 % in 1995 to 31.7 % in 2000.
- **Belgium 2000** ⁽²⁵⁵⁾ — About 63.7 % of young workers never work with computers, compared to 53.2 % of the total working population. About 36.3 % of young workers work with computers all or almost all of the working time, compared to 24.4 % of the total working population. These results suggest that young workers seem to be less involved in working with computers than the average working population. As with the total working population, working with computers among young workers has increased since 1995.
- **Finland 2003** ⁽²⁵⁶⁾ — About 32.7 % of young people work with a computer for at least two hours per day, while about 5.0 % do so occasionally.
- **Germany 1998** ⁽²⁵⁷⁾ — About 42.3 % of young workers report working with computers, compared to 50.2 % of the total working population.

⁽²⁵³⁾ ESWC, Data extracted from ESWC 1995 and 2000.
<http://www.eurofound.eu.int/working/surveys/index.htm>

⁽²⁵⁴⁾ ESWC, Data extracted from ESWC 1995 and 2000.
<http://www.eurofound.eu.int/working/surveys/index.htm>

⁽²⁵⁵⁾ ESWC, Data extracted from ESWC 1995 and 2000.
<http://www.eurofound.eu.int/working/surveys/index.htm>

⁽²⁵⁶⁾ FIOH. Youth and work barometer, 2003.
<http://www.ttl.fi/Internet/English/Thematic+pages/Youth+and+work/Research/>

⁽²⁵⁷⁾ Qualifikation und Erwerbssituation in Deutschland — 20 Jahre BIBB/IAB-Erhebungen.
http://doku.iab.de/mittab/2002/2002_2_MittAB_Dostal_Jansen.pdf



- **Greece 2000** ⁽²⁵⁸⁾/**Cyprus 2001** ⁽²⁵⁹⁾ — Higher IT skills among younger people is the only indication that more young workers are working with PCs.
- **Netherlands 2001, 2005** ⁽²⁶⁰⁾ ⁽²⁶¹⁾ — Young workers report that they work with computers less than the total working population: about 25 %, compared to about 50 % in 2001.
- **Spain 2003** ⁽²⁶²⁾ — The main equipment used by young people at work are hand tools, followed by computers. Among the total working population the situation is the opposite, with most using computers, followed by hand tools.

3.4.2. Pace of work

While the pace of work is increasing, young workers more than most are working at very high speed and to tight deadlines.

The ESWC ⁽²⁶³⁾ suggests that working at very high speed and to tight deadlines is more prevalent among young workers. In 2000, about 27.9 % of young workers in the EU-15 reported working at very high speed all or almost all of the time, compared to 24.9 % of the total workforce. About 60.6 % of young workers reported working at very high speed at least a quarter of the time, compared to 55.4 % of the total workforce. As with the total working population, working at very high speed has been increasing since 1990 among young workers.

As a conclusion, ESWC 2000 suggests that while the pace of work is increasing, regardless of the worker's age, young workers more than most are working at very high speed and to tight deadlines.

Younger employees contend far more commonly with the pace set by their colleagues (50.5 % vs 42.7 %), by the automatic speed of a machine or movement of a product (24.2 vs 20.2 %) or directly by their boss (46.9 vs 32.2 %). As with the total work population, working to a pace set by their colleagues has risen among young workers since 1995, while working to a pace set by the automatic speed of a machine or movement of a product, and to a pace set directly by their boss has slightly decreased since 1995. Pace induced by external demands is less common among young workers than with the average worker (67.8 % vs 68.5 %). Pace set by numerical production targets is more or less equal between young workers and the average worker (30.7 % vs 30.5 %).

- **Austria 1995–2000** ⁽²⁶⁴⁾ — All in all, more than 60 % of employees worked at very high speed for at least a quarter of their work time. In 1995 and in the original sample of 2000, young workers were even more exposed to high-speed work than the

⁽²⁵⁸⁾ ESWC, Data extracted from ESWC 1995 and 2000.
<http://www.eurofound.eu.int/working/surveys/index.htm>

⁽²⁵⁹⁾ Eurostat, Survey on Working Conditions in Acceding and Candidate Countries, 2001.
<http://www.eurofound.eu.int/ewco/surveys/ccsurvey.htm>

⁽²⁶⁰⁾ Arbeidsomstandigheden 2001.
<http://www.arbo.nl/content/network/szw/docs/arbeidsomstandigheden2001.pdf>

⁽²⁶¹⁾ Nationale Enquête Arbeidsomstandigheden 2005 (NEA).
http://www.tno.nl/content.cfm?context=markten&content=case&laag1=52&item_id=107

⁽²⁶²⁾ Instituto Nacional de Seguridad e Higiene en el Trabajo, *V Encuesta Nacional de Condiciones de Trabajo*.
http://www.mtas.es/insht/statistics/enct_5.htm

⁽²⁶³⁾ ESWC, Data extracted from ESWC 1990, 1995 and 2000.
<http://www.eurofound.eu.int/working/surveys/index.htm>

⁽²⁶⁴⁾ ESWC, Data extracted from ESWC 1995 and 2000.
<http://www.eurofound.eu.int/working/surveys/index.htm>



group of 15–64-year-olds. Whereas in 1995 three quarters of all 15–64-year-old employees still had to work at least a quarter of their time to tight deadlines, only 60 % of them had tight schedules in 2000. Young workers worked less to tight deadlines than 15–64-year-olds in 1995 (69.3 %), but worked under time pressure more than the 15–64-year-olds in 2000 (using the random sample; 65.4 %).

- **Belgium 2000** ⁽²⁶⁵⁾ — Younger employees contend with the problem of working at very high speed more commonly: 61 % of employees under the age of 25 experience this at least a quarter of the time, compared with 44 % of employees aged over 50. Young employees face the problem of working to tight deadlines more (49 % at least a quarter of the time) than older employees (44 % at least a quarter of the time). As with the total work population, both hazards have increased since 1990.
- **Finland 2003** ⁽²⁶⁶⁾ — About 24.1 % of young workers (15–29 years) have little control over work tasks, while about 15.7 % have very little. About 17 % have little influence over working hours or work schedule, while about 20.9 % have very little. About 41.2 % report being busy at work every day.
- **Germany 1998** ⁽²⁶⁷⁾ — About 42 % of young workers report high-pressure deadlines and pressure to perform, compared to 50 % within the total working population.
- **Netherlands 2003** ⁽²⁶⁸⁾ — About 30.4 % of young workers report having to work at very high speed (compared to 32.7 % of all workers), while about 23.2 % of young workers report having to work to tight deadlines (compared to 31 % of all workers). Both factors are less common among young workers compared to the average working population. About 38.3 % have influence on the working speed compared to 48 % of all workers.
- **Spain 2003** ⁽²⁶⁹⁾ — According to the ENCT, more than 75 % of young workers experience a high pace of work for more than a quarter of the working day. The pace of work of a little more than half of these workers is determined by the direct demands of people (clients, passengers, etc.) and, to a lesser extent, by deadlines (14.1 %) and the automatic speed of machines (8.4 %).
- **UK 1995** ⁽²⁷⁰⁾ — About 71 % of workers aged 16–24 have to work at high speed, compared with 60 % of the total workforce.

⁽²⁶⁵⁾ ESWC, Data extracted from ESWC 1990, 1995 and 2000.
<http://www.eurofound.eu.int/working/surveys/index.htm>

⁽²⁶⁶⁾ FIOH. *Youth and work barometer*, 2003.
<http://www.ttl.fi/Internet/English/Thematic+pages/Youth+and+work/Research/>

⁽²⁶⁷⁾ Qualifikation und Erwerbssituation in Deutschland — 20 Jahre BIBB/IAB-Erhebungen.
http://doku.iab.de/mittab/2002/2002_2_MittAB_Dostal_Jansen.pdf

⁽²⁶⁸⁾ Arbeidsomstandigheden 2001.
<http://www.arbo.nl/content/network/szw/docs/arbeidsomstandigheden2001.pdf>

⁽²⁶⁹⁾ Instituto Nacional de Seguridad e Higiene en el Trabajo, *V Encuesta Nacional de Condiciones de Trabajo*.
http://www.mtas.es/insht/statistics/enct_5.htm

⁽²⁷⁰⁾ Health and Safety Executive, *Self-reported working conditions in 1995: results from a household survey*. HSE Books. 1997, 'When work is a pain: young workers face a terrible strain injuries risk', *Hazards*, No 73, 16 February 2001. <http://www.hazards.org/strainpain.pdf>



3.5. WORKING TIME

Young workers seem to work fewer hours than the average working population. However, it is hard to define working time (eg. volunteer jobs, working for a family business, apprenticeships)."

Working hours

According to the results of the ESWC 2000, young employees in the EU-15 were working fewer hours per week than the average employee: 35 hours compared to 37.74 hours. As with the total working population, the number of working hours per week has declined sharply since 1990. Young workers were more likely to report working less than 30 hours per week — 19.6 % as against 16.7 % within the total working population. On the other hand, young workers were less likely to report working more than 45 hours per week — 10.5 % against 14.3 %.

However, it is hard to define working time, considering the informal work arrangements that are common among young workers (e.g. volunteer jobs, working for a family business, apprenticeships).

Commuting

According to the ESWC, average commuting time has remained almost identical for young workers: 37.22 minutes in 2000 compared to 37.45 minutes in 1995. The daily average commute of young workers is practically no different from that of the total working population.

Working time patterns

Saturday work is more common among young workers: 53.9 % work at least one Saturday per month. About 80.9 % of young workers reported that their working hours fit their family and social commitments.

Shift work

The ESWC 2000 found that 22.4 % of young EU-15 workers work shifts, compared to 19.3 % within the total working population. The results suggest that young workers are more likely to work in shifts. As with other shift workers, alternating morning, afternoon (and night) are the most common shifts with young workers ⁽²⁷¹⁾.

- **Austria 1995–2000** ⁽²⁷²⁾ — In general, the majority of employees worked between 30 and 44 hours a week. Whereas, in 1990, most of the 15- to 64-year-old workers (40.1 %) worked 40 to 44 hours a week, most young workers worked only 30 to 39 hours a week. This pattern can also be found in the random sample from 2000. In the original sample from 2000, the percentage of young workers is relatively balanced between those who work 30–39 hours and 40–44 hours a week.

⁽²⁷¹⁾ ESWC, Data extracted from ESWC 1990, 1995 and 2000.
<http://www.eurofound.eu.int/working/surveys/index.htm>

⁽²⁷²⁾ ESWC, Data extracted from ESWC 1995 and 2000.
<http://www.eurofound.eu.int/working/surveys/index.htm>

Saturday work is more common among young workers.

Shift work is more common among young workers.



- **Belgium 2000** ⁽²⁷³⁾ — Young employees work fewer hours per week than the average employee. The working hours of young workers have declined since 1990, and young workers are more likely to report working less than 30 hours per week. Shift work is more common among young workers: 23.8 % work shifts, compared to 18.4 % of the total working population. Young workers report that they work more Saturdays than the average working population. Young workers report that they work more irregular working hours than the average worker.
- **Finland 2003** ⁽²⁷⁴⁾ — About 85.3 % of young workers (15–29 years) work for more than six hours per day (30 hours per week), and 13.5 % work less than six hours per day (30 hours per week). About 4.6 % report working in the evening, and 2.1 % at night. About 11.5 % of young workers do two-shift work, and 6.8 % three-shift work.
- **Germany 1998** ⁽²⁷⁵⁾ — More young workers report that they are working less than 30 hours a week, compared to the total working population. About 10.8 % of young workers report regular night work, compared to 9.6 % of the total working population. About 23.8 % of young workers report regular Saturday work, compared to 18.9 % of the total working population. About 10.2 % of young workers report regular Sunday work, compared to 9.5 % of the total working population. About 24.3 % of young workers report regular shift work, compared to 20.3 % of the total working population.
- **Ireland 2001** ⁽²⁷⁶⁾ — About 18 % of people who work shifts are young people (compared to 17 % of those aged 45–54, 6 % of those aged 55–64, 25 % of those aged 35–44 and 33 % of 25–34-year olds). Young workers (aged 15–24) generally do not plan their own work and working time schedules: only 4 % do so, compared to 29 % for the 35–44 age range. About 21 % of young people have their work planned by their employer.
- **Netherlands 2005** ⁽²⁷⁷⁾ — The youngest group of employees, between 15 and 24, had the lowest average number of contractual working hours; approximately 25.1 hours/3.8 days a week compared to 31.2 hours/4.3 days a week for all workers. About 18.3 % of the young workers work shifts compared to 12.4 % within the total working population. Young workers report more working at night: 37 % report night work on a regular basis compared to 24.1 % within the total working population. Young workers report more working weekends: 54.4 % report weekend work on regular basis compared to 28.3 % within the total working population. This can be explained by the large number of students in this age class who work while they study.
- **Spain 2003** ⁽²⁷⁸⁾ — According to the ENCT, 19 % of workers indicate that they work more than 40 hours a week, 6.1 % work at night and 16.2 % work shifts. On an average Spanish workers work almost 40 hours a week, split between mornings and

In Germany, about 10.8 % of young workers report regular night work.

⁽²⁷³⁾ ESWC, Data extracted from ESWC 1990, 1995 and 2000.
<http://www.eurofound.eu.int/working/surveys/index.htm>

⁽²⁷⁴⁾ FIOH. *Youth and work barometer*, 2003.
<http://www.ttl.fi/Internet/English/Thematic+pages/Youth+and+work/Research/>

⁽²⁷⁵⁾ Qualifikation und Erwerbssituation in Deutschland — 20 Jahre BIBB/IAB-Erhebungen.
http://doku.iab.de/mittab/2002/2002_2_MittAB_Dostal_Jansen.pdf

⁽²⁷⁶⁾ CSO QNHS, special modules 2001, tables 1, 2 and 4. <http://www.cso.ie/qnhs/documents/qnhslengthandpatternofwork.xls> http://www.cso.ie/qnhs/spe_mod_qnhs.htm

⁽²⁷⁷⁾ Nationale Enquête Arbeidsomstandigheden 2005 (NEA).
http://www.tno.nl/content.cfm?context=markten&content=case&laag1=52&item_id=107

⁽²⁷⁸⁾ Instituto Nacional de Seguridad e Higiene en el Trabajo, *V Encuesta Nacional de Condiciones de Trabajo*.
http://www.mtas.es/insht/statistics/enct_5.htm



Young workers are affected more profoundly by evening and night shift-work schedules.

afternoons, and with no significant differences between age groups. There is a small variation in the flexibility of the schedule: younger workers have less chance of accommodating or choosing their work schedule (15.7 % aged 18–24 years, compared to 23.5 % of the whole working population). There are no big differences in the time that Spanish workers spend commuting. For most of them it takes less than 30 minutes. Young people seem to have the worst working time patterns, with more shift work, night work and weekend work.

3.5.1. Hazards and risks facing young workers on shift work

Dual demands of school and work, as well as having differing chronopathic patterns than older workers, can explain why young workers are affected more profoundly by evening and night shift-work schedules ⁽²⁷⁹⁾. Unusual working hours or shift work can, however, influence the risk of accidents at work by affecting concentration. At night the condition of illumination and the lower number of workers and supervisors can also lead to a higher accident risk. Working at night leads to a 1.4 to 1.5 higher rate of accidents, while working at times that go against the body's biological rhythm can cause digestive problems, sleep disturbance, physical and mental fatigue and cardiovascular problems ⁽²⁸⁰⁾ ⁽²⁸¹⁾.

There are two aspects to the problems associated with shift work of an irregular nature. Firstly, biological aspects, which involve problems associated with sleeping and eating times no longer being synchronised with the normal functioning of the body. Secondly, of a rather more social nature, working rhythms are out of step with the general pace of life in society. Over the years, it appears that increasing intolerance to these types of working hours, rather than becoming accustomed to them, may explain the trend in returning to 'normal' working hours ⁽²⁸²⁾.

On the other hand, below the age of 25, the highest proportion of men who believe that their job does not affect their health is among shift workers (rather than non-shift workers). This finding tallies with the conclusions of studies that suggest that there is 'self-selection' among the workers who accept shift work. With age, this proportion falls very sharply among workers still doing shift work. Above the age of 35, the proportion of respondents who think there is a link between their job and their state of health is far higher among shift workers than non-shift workers ⁽²⁸³⁾.

⁽²⁷⁹⁾ Horwitz, I.B., McCall, B.P. An analysis of occupational burn injuries in Rhode Island: workers' compensation claims, 1998 to 2002. *Journal of Burn Care Rehabilitation*. 2005, November–December, 26(6), 505-14.

⁽²⁸⁰⁾ ILO. Conditions of Work and Employment Programme: Night work (2004).

⁽²⁸¹⁾ Pamela Carr, London Chamber of Commerce and Industry. Shift and night-working. Occupational health helpline, 2004. [http://www.londonchamber.co.uk/lcc_public/article.asp?id=&did=&aid=1748&st=Shift %20and %20Night-working %20&oid=](http://www.londonchamber.co.uk/lcc_public/article.asp?id=&did=&aid=1748&st=Shift%20and%20Night-working%20&oid=)

⁽²⁸²⁾ European Foundation for the Improvement of Living and Working Conditions. *Age and working conditions in the EU*, 2003. <http://www.eurofound.eu.int/publications/htmlfiles/ef02106.htm>

⁽²⁸³⁾ European Foundation for the Improvement of Living and Working Conditions. *Age and working conditions in the EU*, 2003. <http://www.eurofound.eu.int/publications/htmlfiles/ef02106.htm>



3.5.2. Studies and initiatives — shift work and temporary work

3.5.2.1. Health and safety training for workers in atypical employment (Italy, United Kingdom, France)

Research at national and European level shows that workers in atypical and flexible employment are exposed to a greater-than-average risk of accidents and ill health at work. Generally they receive less training in occupational safety and health (OSH), and are less aware of and involved in protective and preventive measures. Businesses pay less attention to them and they themselves tend to accept poorer working conditions and higher levels of stress, and are less motivated to take an interest in OSH issues.



The main outputs of the project were a website, a handbook, training workshops (with 500+ trainees), seminars (for a total of 700 people), and the setting-up of a network of workers' safety representatives, trade unionists and OSH experts. This transnational project was targeted at smaller call centres, social and healthcare assistance bodies and SMEs in the food industry, where there are high levels of flexible labour and a disproportionate number of women ⁽²⁸⁴⁾.

3.5.2.2. Training for employees from temporary employment agencies (Belgium, Luxembourg, Netherlands)

Temporary employment agencies can be called upon at a moment's notice to provide staff, frequently to SMEs. But, how can one be sure that the staff assigned to the SMEs have some knowledge of the occupational health and safety risks that they face? This was the central question raised by a Belgian/Dutch/Luxembourgish collaborative project.



The project resulted in the design of a training course intended for temporary employment agency staff, to ensure that they could ensure a minimum level of training for the workers they sought to place in SMEs. The project aims at providing all temporary employment agencies with the necessary training instruments to enable them to train their personnel. In that respect, a training package was developed covering both the basic health and safety aspects and the specific problems related to temporary jobs and sickness absence. The text of the course, the teaching material and the procedure for testing, were drafted with a view to making them available for temporary employment agencies in Belgium, the Netherlands and Luxembourg ⁽²⁸⁵⁾.

⁽²⁸⁴⁾ This project was funded under the Agency's funding schemes for initiatives for SMEs. See European Agency for Safety and Health at Work, *Promoting health and safety in European small and medium-sized enterprises (SMEs)*, 2004. <http://sme.osha.europa.eu/publications/fs2003/2004/en>

⁽²⁸⁵⁾ This transnational project was funded under the Agency's funding scheme for initiatives for SMEs 2002–2003. See European Agency for Safety and Health at Work, *Promoting health and safety in European small and medium-sized enterprises (SMEs)*, 2003. <http://sme.osha.europa.eu/publications/fs2001/2002/>



3.5.2.3. An example of time-contingent effects of long-term stress



In an oil refinery with a labour force of 1 260 male blue-collar workers, 300 matched cases of permanent shift workers, day workers, and drop-outs were selected and split into four groups corresponding in age and years at work. In terms of an overall score, health was found to deteriorate with age, but to a different degree in the shift and day workers.

In shift workers, a steep decrease in score during the first years at work was followed by a continued slight decrease in middle age; from the age of 41 years onwards there was a further pronounced decrease in score. In day workers a stabilisation in score was observed up to middle age, with a distinct decrease thereafter.

The difference in health parameters between the groups was only small in younger workers (up to 12 years at work), but became striking and significant with increasing age. In the permanent shift workers an increasing health risk was clearly indicated by increases in absence due to sickness, gastrointestinal and cardiovascular diseases, and unspecific health complaints (sleep disturbances, premature fatigue). A specific kind of behaviour during illness (e.g. less readiness to consult a doctor) was also observed in the shift workers. In the permanent day workers health risks were not strictly age-related.

In drop-outs with considerable prior exposure to shift work, strikingly high rates of absence due to sickness and excess rates of cardiovascular disease were observed ⁽²⁸⁶⁾.

3.6. PSYCHOSOCIAL WORK FACTORS

The ESWC results indicate that young workers report being subject to unwanted sexual attention more often than the total working population. The overall rate decreases from 3.2 % in those aged 18–24 years to less than 0.6 % in those aged 55–64 years ⁽²⁸⁷⁾. Hotels and restaurants (9 % of all workers), and health and social work (3.6 % of all workers) seem to have a higher occurrence of such problems.

Physical violence and intimidation, however, are not more common among young workers. According to the ESWC 2000, 2 % of young workers reported being exposed to physical violence from people within the workplace, compared to 1.7 % of the total working population. Some 4 % of young workers reported being exposed to physical

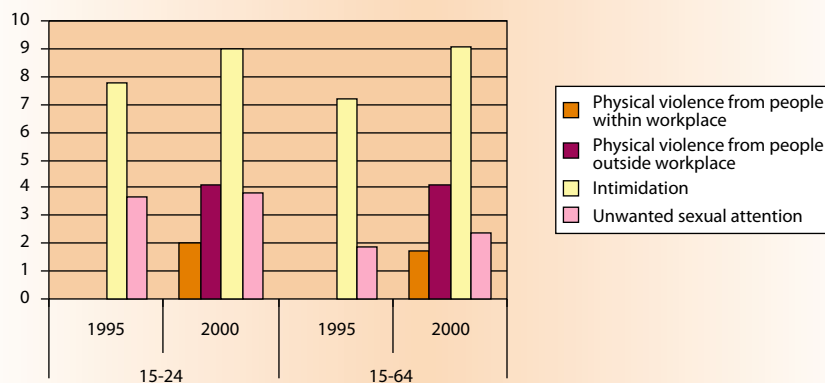
⁽²⁸⁶⁾ Koller, M., 'Health risks related to shift work: an example of time-contingent effects of long-term stress', *International Archives of Occupational and Environmental Health*, Vol. 53, pp. 59–75.

⁽²⁸⁷⁾ Eurostat, *Work and health in the EU: a statistical portrait, 1994–2002*. Catalogue No KS-57-04-807-EN-N.



violence from people outside the workplace, compared to 4.1 % of the total working population. About 9 % of young workers reported being subject to intimidation, compared to 9.1 % of the total working population. For both groups, this number has increased since 1995. About 3.8 % of young workers reported being the subject of unwanted sexual attention; this seems to be more common among young workers than in the average working population (Figure 17) ⁽²⁸⁸⁾.

Figure 17: Overview: % of workers exposed to violence, intimidation and unwanted sexual attention all or almost all of the time, ESWC 1995–2000, EU-15



Exposure to intimidation has increased in the last few years.

- Austria 1995–2000** ⁽²⁸⁹⁾ — In 1995, 4.1 % of all employees aged between 15 and 64 years old were exposed to physical violence at work. In 1995, the percentage of young workers at risk was lower, at only 2 %. In the random sample from 2000, fewer 15–64-year-old workers were concerned by physical violence than in 1995 (1.8 %). By contrast, more young workers than in 1995 were exposed to physical violence at work (3.1 %). In 1995, as well as in 2000, young workers were more concerned by intimidation than workers aged between 15 to 64 years old. The percentage of 15–64-year-old employees at risk of intimidation remained stable in 1995 and 2000, at 6.6 %. By contrast, nearly double the number (11.6 %) of young workers were at risk of intimidation in 1995. In 2000, 17.1 % of young workers from the random sample were concerned by intimidation. Young workers were more concerned by age discrimination than employees aged between 15 and 64 years in 1995 and in 2000. The percentage of young workers concerned by age discrimination was nearly twice as high as the percentage for 15–64-year-old workers. In 1995, 10 % of young workers were concerned, while in 2000, 6.1 % of them were concerned.
- Belgium 2000** ⁽²⁹⁰⁾ — Being the subject of unwanted sexual attention and physical violence from people outside the workplace seems to be more common among young workers than in the average working population. About 1.3 % of young workers reported being subject to physical violence from people within the workplace, compared to 1.3 % of the total working population. About 6.3 % of young workers reported being exposed to physical violence from people outside the workplace, compared to 4.3 % of the total working population. About 11.3 % of young workers

⁽²⁸⁸⁾ ESWC, Data extracted from ESWC 1990, 1995 and 2000.
<http://www.eurofound.eu.int/working/surveys/index.htm>

⁽²⁸⁹⁾ ESWC, Data extracted from ESWC 1995 and 2000.
<http://www.eurofound.eu.int/working/surveys/index.htm>

⁽²⁹⁰⁾ ESWC, Data extracted from ESWC 1990, 1995 and 2000.
<http://www.eurofound.eu.int/working/surveys/index.htm>



reported being subject to intimidation, compared to 11.3 % of the total working population. About 2.5 % of young workers reported being the subject of unwanted sexual attention, compared to 1.8 % within the total working population.

- **Finland 2003** ⁽²⁹¹⁾ — About 1.5 % of young workers (15–29 years) report being subjected to physical violence during the past 12 months at work, about 2.2 % were subjected to sexual harassment.
- **Netherlands 2004, 2005** ⁽²⁹²⁾ ⁽²⁹³⁾ — Sexual intimidation and violence from customers and patients is more common among young workers. Also, physical violence seems to be more common among young workers. In 2005, 11.7 % reported unwanted sexual attention from people outside the workplace compared to 7 % of all workers and 4.8 % reported unwanted sexual attention from people inside the workplace compared to 3.3 % of all workers. Intimidation seems to be less common among young workers: 20.2 % of young workers reported intimidation from people outside the workplace and 8.6 % from people in the workplace (compared to respectively 21.3 % and 14.1 % of all workers). Young workers are more exposed to physical violence: 1.3 % report physical violence from people within the workplace, about 8.7 % report physical violence from people outside the workplace, (compared to 0.9 % and 7.2 % of all workers).



A young woman with a precarious job in the hotel and service industry is many times more likely to be exposed to the risk of sexual harassment than the average worker.

When the ESWC data is explored in depth, it indicates a close connection between precarious work, gender, being young, and sectors at special risk. Exposure to sexual harassment among women in EU workplaces is more than twice the average for the whole population, as is that of workers with a precarious status. Exposure to sexual harassment is even higher for young women and workers in the service sector. Although these percentages cannot be simply added to one another, a young woman with a precarious job in the hotel industry is many times more likely to be exposed to the risk of sexual harassment than the average worker ⁽²⁹⁴⁾.

Other studies have found that adolescent workers at large fast-food retail outlets were also commonly exposed to occupational violence in the form of verbal abuse.

Violence and stress at work are more present in the service and hotel industry than in other industries, because of the large amount of direct contact with the public (customers). Serving alcohol in bars and entertainment venues makes things worse. Bartenders and other bar staff run three times the risk of being victims of homicide than the national average ⁽²⁹⁵⁾. Working alone, at night, and having to exchange

⁽²⁹¹⁾ FIOH. Youth and work barometer, 2003.

<http://www.ttl.fi/Internet/English/Thematic+pages/Youth+and+work/Research/>

⁽²⁹²⁾ Arbobalans 2004. http://docs.minszw.nl/pdf//35/2004/35_2004_3_6157.pdf

⁽²⁹³⁾ Nationale Enquête Arbeidsomstandigheden 2005 (NEA).

http://www.tno.nl/content.cfm?context=markten&content=case&laag1=52&item_id=107

⁽²⁹⁴⁾ Chappell, D. & Di Martino, V. *Violence at work*, 1995. [http://www.ilo.org/public/english/protection/safework/violwk/violwk.pdf#search='young %20workers %20retail %20sector %20european %20union %20occupational %20health %20safety'](http://www.ilo.org/public/english/protection/safework/violwk/violwk.pdf#search='young%20workers%20retail%20sector%20european%20union%20occupational%20health%20safety')

⁽²⁹⁵⁾ Jenkins, E. L., 'Workplace homicide: Industries and occupations at high risk', *Occupational Medicine: State of the Art Reviews*, Vol. 11, 1996, pp. 219–225.



money with the public are all factors increasing the risk of being assaulted, both physically and psychologically. Young workers normally do not have the maturity and experience to face these attacks ⁽²⁹⁶⁾.

3.6.1. Studies and initiatives — stress and harassment

3.6.1.1. Adolescents at work: gender issues and sexual harassment

This study ⁽²⁹⁷⁾ describes adolescents' experiences of sexual harassment while working part-time and attending high school. In a sample of 712 high school students, 35 % of the 332 students who work part-time reported experiencing sexual harassment (63 % girls, 37 % boys). Results revealed that there are differences in the experience of sexual harassment by gender, work relationship, and emotional reaction. Students experienced harassment from supervisors (19 %), co-workers (61 %), and unidentified others at work (18 %). Girls reported being significantly more upset and threatened by the sexual harassment they experienced than boys.



3.6.1.2. Stress management in the catering trade (Belgium, Germany and the Netherlands)

The catering trades are a high-risk sector for stress, which not only harms human health but also damages performance and competitiveness. Most of the stress arises from conditions that are characteristic of the sector. These include shift work, long periods standing up, heat, and emotional stress in dealing with customers.



This project ⁽²⁹⁸⁾ developed and implemented training in dealing with stress in small and micro catering businesses in Belgium, Germany and the Netherlands. A resource-based approach was chosen, with a series of seminars on stress. They were specific to the catering trades and practical. Alongside seminars, a coaching service was made available to small businesses, allowing for an individual approach. The stresses and strains facing the business were analysed and solutions drawn up jointly with the employees. The project partners oversaw their implementation in an advisory capacity. Some 13 500 SMEs were mailed with details of the project and more than 400 people took advantage of the services on offer.

The primary aim of the project was to organise a transnational network to encourage the design and implementation of continuing education and consultancy, geared to the specific needs of small businesses in the catering trade. It also created a website with a view to providing consultancy to the target group, even beyond the duration of the project.

⁽²⁹⁶⁾ Hoel, H. and Einarsen, S., International Labour Office Geneva. *Violence at work in hotels, catering and tourism*, 2003.

⁽²⁹⁷⁾ Fineran, Susan, 'Adolescents at work: gender issues and sexual harassment', *Violence Against Women*, Vol. 8, No 8, 2002, pp. 953–967.

⁽²⁹⁸⁾ The project was funded under the Agency's funding scheme for OSH initiatives for SMEs 2002–2003. See European Agency for Safety and Health at Work. *Promoting Health and Safety in European Small and Medium-sized enterprises*, 2005, p. 39. http://osha.europa.eu/publications/reports/ag05001/full_publication_en.pdf



3.6.1.3. Introduction of a healthy and successful work organisation at a call centre ⁽²⁹⁹⁾ (Germany)



Psychosocial risk factors are common in call centres, as the work can be monotonous and demanding, with little scope for control. The longer the time spent on the telephone, the more likely is the occurrence of mental strain. A holistic approach was taken. The planning stage was based on quantitative and qualitative findings of a work assessment. This established the frequency and difficulty of various activities. A software tool was used to identify when stress may occur, to help plan work in advance. Work could then involve a mixture of easy and more demanding tasks to keep mental demands at an appropriate level. Manufacturers of office hardware and software and furniture producers were consulted, as well as relevant trade associations. Staff were consulted once the call centre was set up.

The following organisational measures were adopted.

- Participation: involving staff in decision-making is very important. The assignment of work resources is harmonised in cooperation with the staff council and workers.
- Job rotation: a system of rotation between staff at the same hierarchical level.
- Task completion: arrangements to ensure that a staff member deals with a case from the time it arrives at the call centre until a decision is taken on it.
- Scope: attempts were made to broaden scope as much as possible so that staff can choose which task to do and when, as long as there are adequate staff. Staff are allowed freedom in what they say: there are no scripts on the screen. They can also become product experts.
- Short break system: after every hour worked, staff can take a 10-minute break away from the screen and they are encouraged to leave their desk. This is to help reduce stress on the voice and ears, as well as allowing a change in posture.
- Preventive measures include voice training, stress management and relaxation as well as improvements to the work environment such as air-conditioning, provision of height-adjustable desks, etc.

This good practice example has been awarded a good practice award in the context of the European Week for Safety and Health at Work 2002. The aim of this Agency initiative was to support the dissemination of good practice information about psychosocial risks and work-related stress, and promote the application of 'practical solutions' in workplaces in Member States and across Europe.

⁽²⁹⁹⁾ European Agency for Safety and Health at Work. *Prevention of psychosocial risks and stress at work in practice*, 2002, pp. 12–14. <http://osha.europa.eu/publications/reports/104/>



4.

HEALTH OUTCOMES



The following section of this thematic report addresses health outcomes among young workers as a result of their employment. These outcomes are divided into:

- occupational accidents;
- occupational diseases;
- self-reported health problems.

These outcomes are often linked to certain sectors (e.g. hotels and restaurants, construction, agriculture, etc.), occupations, and types of employment. Therefore, case studies and additional research information add depth to the general figures.

Research difficulties

Despite the amount of research conducted to date, several issues make it difficult to estimate the absolute prevalence of injuries (occupational accidents, diseases and self-reported health problems) to young workers, and the specific types of injuries experienced by them:

- definitions of what constitutes a work injury (e.g. any injury, any lost-time injury, injuries resulting in three or more lost workdays) can vary widely between studies;
- definitions of what constitutes employment differ between studies, especially as they relate to informal employment (e.g. baby-sitting, lawn cutting);
- many studies use samples that fail to cover young workers adequately and fail to cover all the potential injuries that they experience;
- official records may underestimate the number of work injuries among young people, because many injuries either go unreported or are under-documented;
- self-reporting of workplace injuries may be limited by what the young person can remember ⁽³⁰⁰⁾.

4.1. OCCUPATIONAL ACCIDENTS

4.1.1. General prevalence of occupational accidents among young workers



A 19-year-old was working for a company that cleans out industrial and residential ductwork. He and his co-workers were working overtime on a Saturday at an enterprise where transit buses are built. They were cleaning the inside of a duct, which was part of a paint booth. It was the young man's job to scrape the paint residue off the walls of the duct. While he was inside the duct, the paint particles inside ignited, resulting in a fireball. He was able to crawl out of the duct, but had suffered third degree burns to over 82 % of his body. With doctors utilising new burn technology, after many painful operations, he survived. He is now employed as a workplace safety and health officer ⁽³⁰¹⁾.

⁽³⁰⁰⁾ Loughlin, C. and Frone, M., American Psychological Association, 'Young workers' occupational safety', in Barling, J. and Frone, M., *Psychology of workplace safety*, 2002.

⁽³⁰¹⁾ 'Safe workers of tomorrow'. <http://www.workersoftomorrow.com/~truestories.html>



According to European Statistics on Accidents at Work (ESAW) ⁽³⁰²⁾ about 4.1 million accidents, resulting in more than three days of absence from work, occurred in the EU-15 in 2003. Some 685 689 accidents, or 16.4 % of the total, happened to young workers, aged 24 and younger.

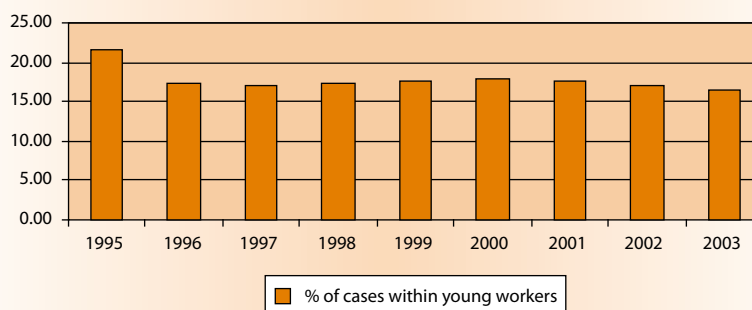
The proportion of young workers involved in accidents decreased between 1995 and 2003. Nevertheless, the decrease in the incidence rate from 1996–2003 was somewhat smaller for young workers than overall, or for older workers ⁽³⁰³⁾ (see Table 14).

Young workers up to the age of 24 account for 16.4 % of all occupational accidents in Europe.

Table 14: Occupational accidents with more than three days lost, by age category, 1995–2003 (EU-15), ESAW

EU-15	< 18	18–24	< 25	All ages	% with young workers
1995	59 414	981 504	1 040 918	4 820 451	21.59
1996	55 245	769 480	824 725	4 757 611	17.33
1997	41 541	741 476	783 017	4 620 395	16.95
1998	45 028	764 107	809 135	4 678 586	17.29
1999	47 960	801 447	849 407	4 786 898	17.74
2000	45 881	821 790	867 671	4 815 629	18.02
2001	42 927	789 199	832 126	4 702 295	17.70
2002	41 439	714 432	755 871	4 408 616	17.15
2003	33 536	652 153	685 689	4 180 836	16.40

Figure 18: Occupational accidents with more than three days lost 1995–2003 (EU-15), ESAW



The ESAW data indicate that young workers have higher non-fatal accident rates compared to the average working population. In 2003, 4.7 % of young workers aged 18–24 years had an occupational accident with more than three days lost, compared to 3.3 % of workers overall. The incidence rate of non-fatal accidents at work per 100 000 workers was more than 40 % higher among those aged 18–24 years,

The decrease in the incidence was smaller among young workers than overall.

⁽³⁰²⁾ Data are available for the EU-15 and Norway. The methodology is being implemented in the new Member States and in the candidate countries with first data due for the reference year 2004.

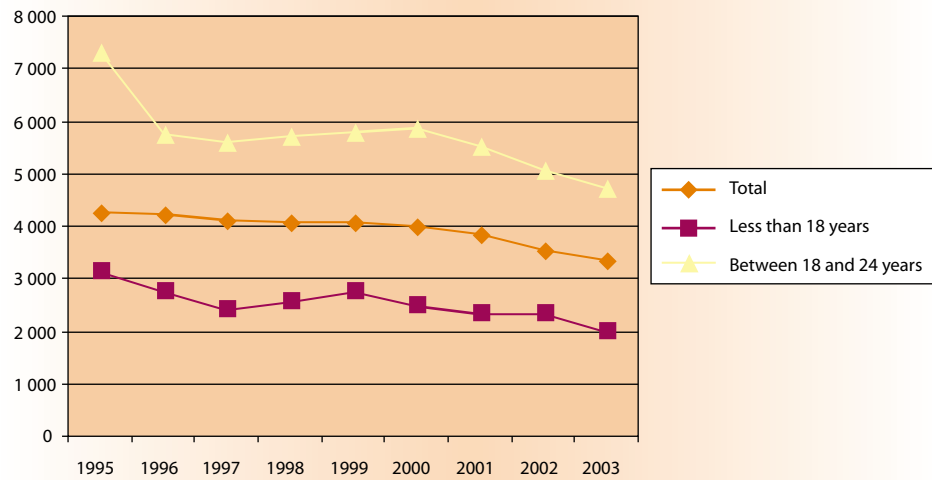
⁽³⁰³⁾ Eurostat, 'European statistics on accidents at work'. http://epp.eurostat.ec.europa.eu/portal/page?_pageid=0,1136184,0_45572595&_dad=portal&_schema=PORTAL&screen=ExpandTree&open=/popul/health/hsw/hsw_acc_work&product=EU_population_social_conditions&nodeid=66713&vindex=6&level=4&portletid=39994101_QUEENPORTLET_92281242&scrollto=0



compared to the total workforce or those aged 55–64 years. This phenomenon is observed in all sectors of economic activity.

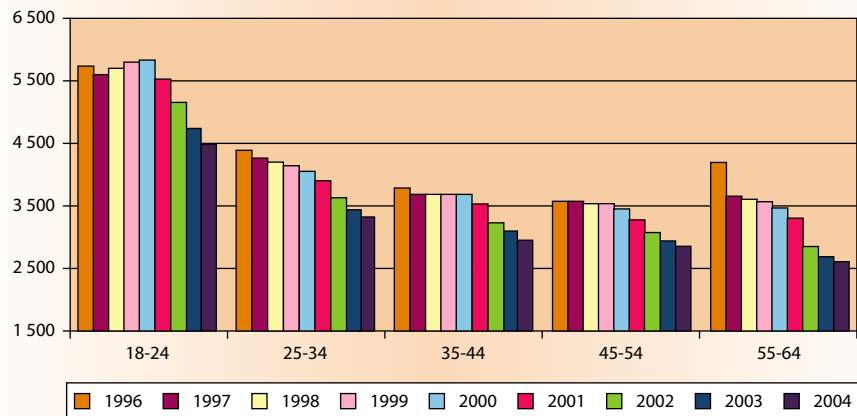
As with the total EU-15 working population, the rate of accidents with more than three days lost has been decreasing since 1995, but the decrease is less pronounced for young workers than it is for all other age groups.

Figure 19: Standardised incidence rate of accidents at work with more than three days lost and age (per 100 000 workers), ESAW



The incidence rate of non-fatal accidents at work was more than 40 % higher among those aged 18–24.

Figure 20: Standardised incidence rate of accidents at work with more than three days lost and age (per 100 000 workers) data 1996–2004, nine main branches, ESAW



4.1.2. Occupational accidents among young workers — data from the Member States

The proportion of young workers experiencing an occupational accident in 2003 ranged from 9.59 % in Sweden to 20.58 % in France.

National data indicate that young workers are at greater risk of having an occupational accident, but that the average severity rate is lower.



The countries with the lowest proportion of young workers suffering an occupational accident in 2003 are Finland, Italy and Denmark. Austria, the Netherlands, Belgium and Spain have a high share of young workers experiencing an occupational accident; the percentage of accidents was above the average of the EU-15 (Table 15).

Table 15: Occupational accidents with more than three days lost, young workers aged up to 24, by country (2003), ESAW

2003	< 18	18–24	< 25	All ages	% with young workers
EU-15	33 536	652 153	685 689	4 180 836	16.40
Belgium	698	14 451	15 149	77 807	19.47
Denmark	678	6 951	7 629	62 076	12.29
Germany	—	—	—	—	—
Greece	89	4 912	5 001	36 150	13.83
Spain	5 948	138 202	144 150	792 565	18.19
France	9 538	136 641	146 179	710 282	20.58
Ireland	151	2 975	3 126	21 547	14.51
Italy	4 620	68 983	73 603	599 708	12.27
Luxembourg	83	1 655	1 738	11 305	15.37
Netherlands	1 198	12 274	13 472	69 240	19.46
Austria	3 559	13 881	17 440	88 792	19.64
Portugal	—	—	—	—	—
Finland	156	6 074	6 230	58 504	10.65
Sweden	82	4 845	4 927	51 387	9.59
United Kingdom	6 738	50 777	57 515	399 763	14.39

National data indicate that young workers are at greater risk of having an occupational accident, but that the average severity rate is lower.

4.1.2.1. Austria ⁽³⁰⁴⁾ ⁽³⁰⁵⁾

Between 1995 and 2003, there was a declining number of accidents requiring three or more days absence in under 18-year-olds. In 1995, there were 9 812 incidents, but in 2003, there were only 3 559, 2.75-times less. Work accidents leading to more than three days absence also declined in 18–24-year-old employees. In 1995, there were 39 080, while in 2003, there were only 13 881 incidents, i.e. two thirds less. The rate of occupational and commuting accidents for young workers between 15 and 25 years old is 6.9 % on average between 2000 and 2004. The decrease had been steady in the intervening years. Nevertheless, 20–25-year-old male and female employees still have fewer accidents compared to their younger colleagues (8.9 % as compared to 6.2 %).

From 1995 to 2003, work accidents with more than three days of absence have decreased.

High number of fatal work accidents in 1995

The highest number of fatal work accidents for workers younger than 18 years occurred in 1995, with 11 cases. In 1998 and 2001, one case was recorded. On average, 3.6 fatal work accidents occur among under-18 year-olds every year.

⁽³⁰⁴⁾ AUVA, department on statistics.

⁽³⁰⁵⁾ Eurostat. http://epp.eurostat.ec.eu.int/portal/page?_pageid=1996,45323734&_dad=portal&_schema=PORTAL&screen=welcomeref&open=/popul/labour/employ/lfsq/empasoc_q&language=d&product=EU_MAIN_TREE&root=EU_MAIN_TREE&scrollto=849



Male young workers are at more risk of accidents.

Workers aged 18–24 years suffered the most fatal work accidents in 1995, with 57 cases. The fewest fatal work accidents occurred in 1999 and 2001, with 13 cases each. On average, there were 20.4 fatal work accidents annually among 18–24-year-olds ⁽³⁰⁶⁾.

Young workers new to the workplace face a risk of accidents that is twice as high as that of experienced employees. About 30 000 accidents involved 15–25-year-olds. This means that 30 % of recorded work accidents involved 20 % of employees. The risk for young male workers between 19 and 20 years appears to be particularly clear. In the case of female workers, the risk of accident decreases continuously, and at 25 years reaches a level which remains practically unchanged for the remainder of working life. In 2000, 78.9 % of all acknowledged accidents involved young men, in 2001 78.4 %, in 2002 79 %, in 2003 79.2 % and in 2004 likewise 79 % ⁽³⁰⁷⁾.

In the case of young male workers the accident risk increases after military national service. Every year 120 accidents per 1 000 employees occur among 19-year-old male workers, but there are only 30 accidents per 1 000 employees among 60-year-old male workers. The annual accident rate among males is 50 accidents per 1 000 employees. Reasons for the higher accident risk among young workers are lack of professional experience, increased readiness to take risks, absent-mindedness and over-enthusiasm ⁽³⁰⁸⁾.

4.1.2.2. Belgium

Young workers, aged 15–24 years, account for 20 % of the total number of occupational accidents with more than three days lost.

The number of accidents has been decreasing since 1995. This is not the case with fatalities. Here the accident trend is increasing, except for 2003 ⁽³⁰⁹⁾.

4.1.2.3. Finland

Occupational accident statistics indicate that there is a greater risk of young workers having occupational accidents than older workers.

In Finland in 2002, for those occupational accidents leading to disabilities lasting at least three days, the incidence rate per 1 000 wage-earners was 30.9 among those aged 15–24, while the rate for all age categories was 27.9 ⁽³¹⁰⁾.

4.1.2.4. France ⁽³¹¹⁾

Young workers accounted for 23 % of reportable occupational accidents in 2003. Following a decline between 1993 and 1997, when the relative risk fell from 2.19 to 2.01, the accident rate has been rising constantly since 1997, reaching 2.67 in 2003. The likelihood of under-25s having an accident is three times greater than that of the

Young workers accounted for 23 % of reportable occupational accidents in 2003.

⁽³⁰⁶⁾ Eurostat. http://epp.eurostat.cec.eu.int/portal/page?_pageid=1996,45323734&_dad=portal&_schema=PORTAL&screen=welcomeref&open=/popul/labour/employ/lfsq/empasoc_q&language=d&product=EU_MAIN_TREE&root=EU_MAIN_TREE&scrollto=849

⁽³⁰⁷⁾ AUVA Abteilung Statistik.

⁽³⁰⁸⁾ AUVA project 'Prävention bei jungen Arbeitnehmern' Paukovits, K. (2002). Minus zehn Prozent. Mehr Sicherheit für junge Arbeitnehmer. *Sichere Arbeit*, 4, 29–32., AUVA, (2003). *Gib acht. Sicherheitsmagazin*, 5, 8–9.

⁽³⁰⁹⁾ Statusrapport Jonge werknemers in België, Prevent, 2006.

⁽³¹⁰⁾ Accidents at work 2002. Statistics Finland. Labour Market 2004.

⁽³¹¹⁾ Statistiques CNAMTS 2003 (Remarques) and Document de travail EPRP, JC Bastide, INRS.



overall average age. The average duration of temporary disability is less among young people (< 30 days, compared with over 37 days for all other age groups). This could indicate that the ability to recover diminishes with age.

The frequency rate of accidents among workers aged up to 24 is higher, but the average severity rate is lower. Accident severity is declining despite the increase in number — there are fewer cases of permanent disability, half as many severe accidents, and fewer work days lost, which is perhaps attributable to the shorter recovery time of young people, or to under-reporting in work with little job security ⁽³¹²⁾.

However, young workers account for 26 % of all accidents and 27 % of all fatal accidents occurring during travel to and from work.

When applied to the percentage of the workforce that they represent, it can be seen that **the likelihood of under 25s having an accident is three times greater than that of the overall average age** (a relative risk of 2.67).

Workers aged 15–24 are much more likely to be apprentices than executives or supervisory staff. As they are inexperienced, their working practices expose them to more risk than in the case of experienced staff. Apprentices are exposed to a higher accident risk compared to other age groups (relative risk of 2.58, which has been stable since 2001, and is down on 1998), though slightly lower than that of young workers (2.67) ⁽³¹³⁾.

Exposure to occupational risks is determined more by workers' level of qualification than by their age. However, age is a determining factor in terms of work organisation (deadlines, collective pressure of the workforce, limited scope for initiative, more frequent inspection by management, more frequent time constraints, etc.): under 25s have to cope with greater stresses than their older colleagues. It appears that young workers have to contend with virtually all the factors increasing the likelihood of an accident: lack of experience, little seniority in the position, often no job security but also a different kind of employment structure. Such is the conclusion reached by DARES on the basis of the 1998 national working conditions survey ⁽³¹⁴⁾ ⁽³¹⁵⁾.

4.1.2.5. Hungary

In the case of young workers, rates of serious and fatal accidents are 2 % higher, and total accidents around 6 % higher than for the 15–64 age group ⁽³¹⁶⁾.

4.1.2.6. Poland

27.1 % of all occupational accidents happen to young workers aged up to 29 years.

In 2004, 941 workers younger than 20 and 22 754 workers aged between 20 and 29 were the victims of occupational accidents. This represents 27.1 % of the total number

⁽³¹²⁾ Comité National pour l'Enseignement en Santé et Sécurité au Travail, rapport 2002 (www.cerp.prd.fr).

⁽³¹³⁾ Statistiques CNAMTS 2003 (Remarques) and Document de travail EPRP, JC Bastide, INRS.

⁽³¹⁴⁾ Hamon-Cholet, S., Moins qualifiés, plus exposés. Données statistiques sur les moins de 25 ans; Santé et Travail, No 33, octobre 2000.

⁽³¹⁵⁾ DARES, mai 2002, Accidents, accidentés et organisation du travail, résultats de l'enquête sur les conditions de travail de 1998. Premières informations, premières synthèses. http://www.travail.gouv.fr/IMG/pdf/publication_pips_200205_n-20-1_accidents-accidentés-et-organisation-travail.pdf

⁽³¹⁶⁾ Hungarian Labour Inspectorate, Statistics for accidents at work by age and severity.

Young workers account for 27 % of all fatal accidents occurring during travel to and from work.



of persons injured in an accident at work. The number of accidents at work affecting workers younger than 20 years has been decreasing. For workers aged between 20 and 29, the number of accidents has been increasing since 2001, as it has for the working population as a whole ⁽³¹⁷⁾.

4.1.2.7. Netherlands

The risk for young people, aged 20–24, experiencing an accident at work is twice as high as the average.

Possible causes of accidents are inexperience and recklessness. The number of accidents involving young people increased in 2003, by 0.2%, in comparison with 2002 ⁽³¹⁸⁾.

4.1.2.8. Slovenia

The incidence rate of accidents at work for young workers aged 18–24 years in 2003 was almost twice as high as the average.

It amounted to 6 452 per 100 000 workers, while for all workers it amounted to 3 375 per 100 000 workers. The incidence rate among young workers has been increasing since 1998, while this is not the case for all workers. Also, the incidence rate of fatal accidents at work among young workers increased (from 2.8 per 100 000 workers in 1999 to 5.9 per 100 000 workers in 2003) ⁽³¹⁹⁾.

4.1.2.9. Spain

The incidence rate of occupational accidents (leading to more than one day's absence) is 1.5 times higher than the national average, although those accidents are less serious than in the other age groups.

The most common non-fatal accidents are strain/overload problems, although the rates are lower for young workers than the national average, followed by cuts and blows from objects or tools.

The fatal accident rates are lower for young workers compared to the average. Accidents related to transport account for 32% of all fatal accidents suffered by young workers ⁽³²⁰⁾.

4.1.2.10. United Kingdom

The rate of overall workplace injury is substantially higher in young men aged 16–24, compared to men aged 45–54.

From the 1996/97 LFS, the rate is 6.7 per 100 men aged 16–19 and 8.4 for men aged 20–24, compared with 4.9 for men aged 45–54. The rate is 37% higher for young workers aged 16–19 and over 70% higher in young workers aged 20–24. Young men, aged 16–24, still face a 40% higher relative risk of all workplace injury than men aged 45–54 ⁽³²¹⁾.

Accidents related to transport account for 32% of all fatal accidents suffered by young workers.

⁽³¹⁷⁾ Accidents Statistical Card (Z-10).

⁽³¹⁸⁾ Arbobalans 2003. <http://www.arbo.nl/content/network/szw/docs/balans2003.pdf>

⁽³¹⁹⁾ Data on occupational injuries (DOI).

⁽³²⁰⁾ Data extracted from Estadísticas de accidentes de trabajo (Ministerio de Trabajo y Asuntos sociales) by INSHT.

⁽³²¹⁾ Health and Safety Executive, Health and Safety Statistics 2000/01. <http://www.hse.gov.uk/statistics/pdf/hss0001.pdf>



The rate of fatal injury is lowest in young men.

Comparing 1996/97 data and 2000/01 data, the rate of fatal injury is lowest in younger workers aged 16–24 and 25–34 ⁽³²²⁾.

4.1.3. Fatalities among young workers

In a Canadian company that makes concrete blocks for patios, a worker aged 23 died as a result of being crushed while trying to fix a jammed machine that stacks the blocks. A new report from the province's workplace health and safety board has placed the blame squarely on company negligence, noting that the worker had not been properly trained, the firm had no maintenance programme, and the machinery's safety mechanism had been disabled ⁽³²³⁾.



Young workers aged up to 24 accounted for 8.9% of all fatal accidents at work in Europe in 2002.

In 2002, Ireland was the country in the EU-15 with the lowest percentage of fatal accidents among young workers aged up to 24, while Belgium had the highest. Finland, Italy, Portugal, Austria, France, Greece and Germany had accident rates below the EU-15 average (Table 16).

Young workers aged up to 24 accounted for 8.9% of all fatal accidents at work in Europe in 2002.

Table 16: Fatalities among young workers aged up to 24, by country (2002), ESAW

2002	< 18	18–24	< 25	All ages	% young workers
EU-15	25	402	427	4 790	8.91
Belgium	0	17	17	103	16.50
Denmark	1	5	6	57	10.53
Germany	0	67	67	947	7.07
Greece	0	5	5	70	7.14
Spain	8	100	108	805	13.42
France	2	68	70	803	8.72
Ireland	0	1	1	53	1.89
Italy	6	60	66	967	6.83
Luxembourg	0	1	1	10	10.00
Netherlands	3	10	13	91	14.29
Austria	4	15	19	218	8.72
Portugal	0	23	23	339	6.78
Finland	0	3	3	48	6.25
Sweden	1	5	6	60	10.00
United Kingdom	0	22	22	219	10.05

⁽³²²⁾ Health and Safety Executive, Health and Safety Statistics 2000/01.
<http://www.hse.gov.uk/statistics/pdf/hss0001.pdf>

⁽³²³⁾ <http://www.cbc.ca/canada/montreal/story/2006/06/28/qc-safety.html>



For fatal accidents at work the incidence rate is greater among older workers, and the decrease in 1996–2002 has been quite uniform across the age categories. In 2003, 2.6 out of every 100 000 young workers aged 18–24 years had a fatal accident, compared to 4 out of 100 000 workers as a whole (see Figure 21).

Figure 21: Standardised incidence rate of fatal accidents at work (per 100 000 workers), ESAW

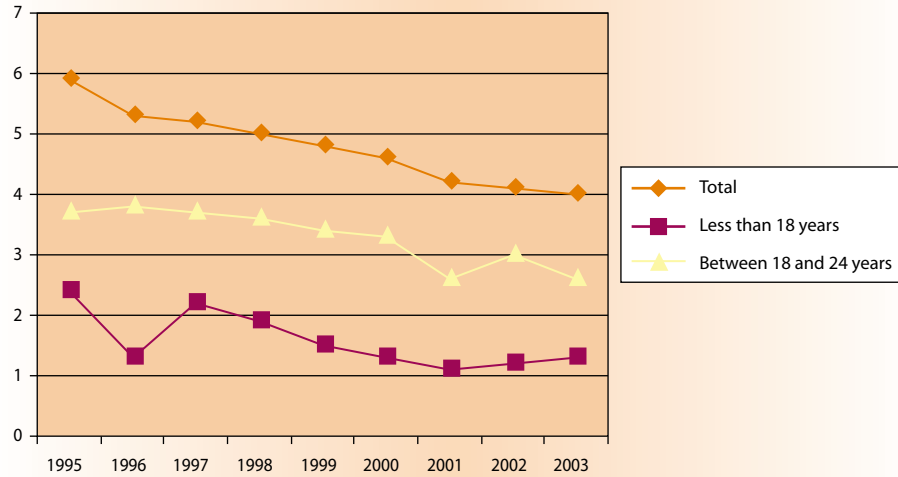
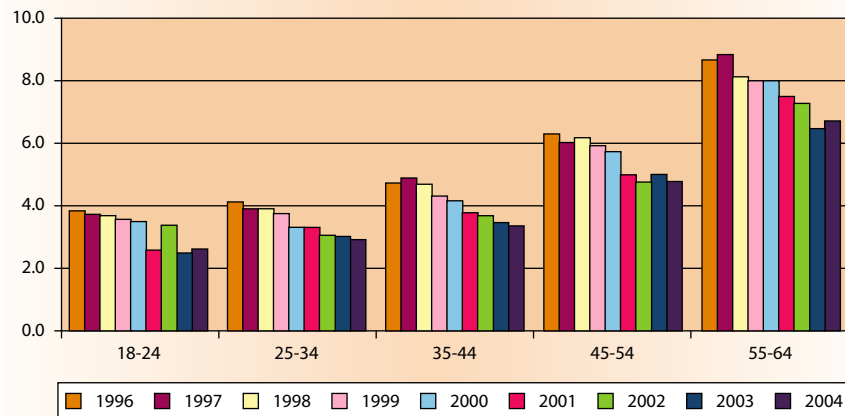


Figure 22: Standardised incidence rate of fatal accidents by age per 100 000 workers (nine main branches), ESAW



4.1.4. Study: do young workers have more injuries than older ones?



According to a thorough literature review by Salminen ⁽³²⁴⁾, young workers have a higher occupational accident rate than older workers, but these accidents are less likely to be fatal. Young men particularly appear to be a risk group for safety at work.

⁽³²⁴⁾ Salminen, S., 'Have young workers more injuries than older ones? An international literature review'. *Journal of Safety Research*, 2004, 35, pp. 513–521.



The results of this review are shown in Table 17, and can be considered fairly universal: they cover a time period of 62 years, 18 countries, and five languages. Most of the studies were peer-reviewed and published in well-respected journals. The majority (56 %) of 63 studies on non-fatal accidents reported that young workers had a higher accident rate than older workers. Twenty-nine out of 45 studies (64 %) on fatal occupational accidents indicated that young workers had a lower fatality rate than older workers. Young men seemed to have a higher accident rate than older men, as compared to young women versus older women. Hence, this review confirms that young men are a risk group for occupational safety. The accidents of young workers however, are less often fatal than those of older workers.

Table 17: Literature review on occupational accidents involving young workers (adapted from Salminen, 2004)

Type of injury	Result – Percentage of studies confirming			N
	Young workers had a higher rate (%)	No difference (%)	Young workers had a lower rate (%)	
Non-fatal	56	27	17	63
Fatalities	16	20	64	45
Non-fatal				
Men	70	15	15	26
Women	44	26	30	23
Fatalities				
Men	44	12	44	9
Women	17	50	33	6

Salminen provides three explanations for the higher accident rates among young workers:

- the accident and fatality rate is in most studies based on the number of workers in full-time work, many young people, however, work in part-time jobs;
- young workers are less experienced than older workers;
- young workers sometimes work on more dangerous jobs, even if these are prohibited by law ⁽³²⁵⁾.

The fact that young workers seem to have a lower fatality rate is explained by the fact that young workers may have a better impact resistance than older workers, so that the same impact that could kill an old worker would only injure a young worker. Young workers would also recover better from trauma than older workers.

For this literature review, Salminen collected studies of fatal and non-fatal injuries based on the following criteria:

- the studies were published, most of them in peer-reviewed journals;
- workers under 25 years of age were classified as young workers;
- there was information about the injury rate or fatality rate of young workers and older workers, or the overall injury rate regardless of age;
- there was enough information on the population and the number of injuries on which the calculations of injury rate were based.

⁽³²⁵⁾ For example, Council Directive 94/33/EC of 22 June 1994 on the protection of young people at work, Article 7.



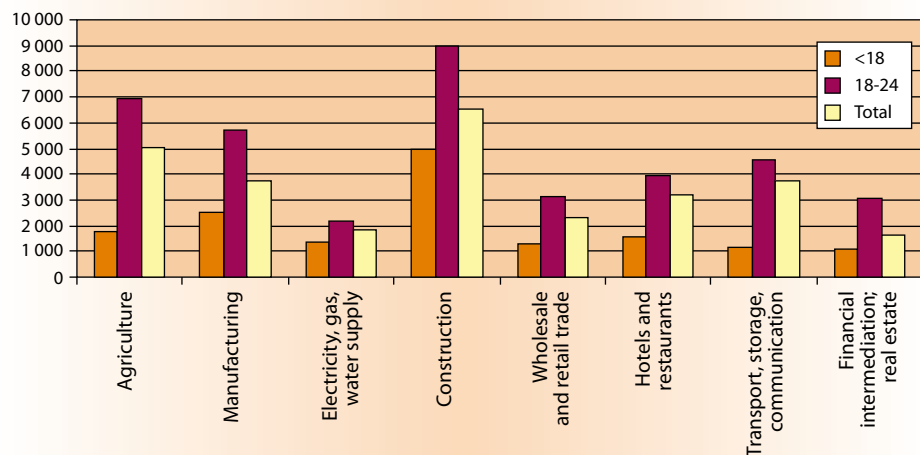
4.1.5. Accidents and economic sectors



Daniel was just 17 at the time of his death. The accident happened when he fell from a roof he had been working on. It was his first week at work and he had never received any training in working at heights, or in roofing, nor was he ever provided with any safety equipment. Daniel was working for a roofing company, which was subcontracted to a construction company. Working from scaffolding, this involved re-cladding the roof and side of a store which was situated next to a large retail store. Timber was being stored on the roof of the building. In order to access the timber, Daniel could walk over the section of the roof covering the retail store. The section of the roof contained skylights. These were not cordoned off nor were there any designated walkways on the roof; there were also no safety barriers ⁽³²⁶⁾.

A sectoral breakdown of the incidence rate of occupational accidents where more than three days are lost shows a higher incidence rate for young workers in all sectors. Especially in construction, agriculture and manufacturing, young workers are at a greater risk compared to the average worker.

Figure 23: Standardised incidence rate of accidents resulting in more than three days lost at work by economic activity, severity and age (per 100 000 workers), ESAW, 2003



The accident trend is decreasing slightly in agriculture, manufacturing and construction. The electricity, gas and water supply sector is the sector with the lowest number of occupational accidents; the accident trend in this sector is increasing, however (Table 18).

The opposite appears true for fatal accidents at work. A sectoral breakdown of the incidence rate of fatal occupational accidents shows a lower incidence rate for young workers in all sectors. Agriculture has the highest incidence rate of fatal accidents among young workers, followed by construction and transport and communication.

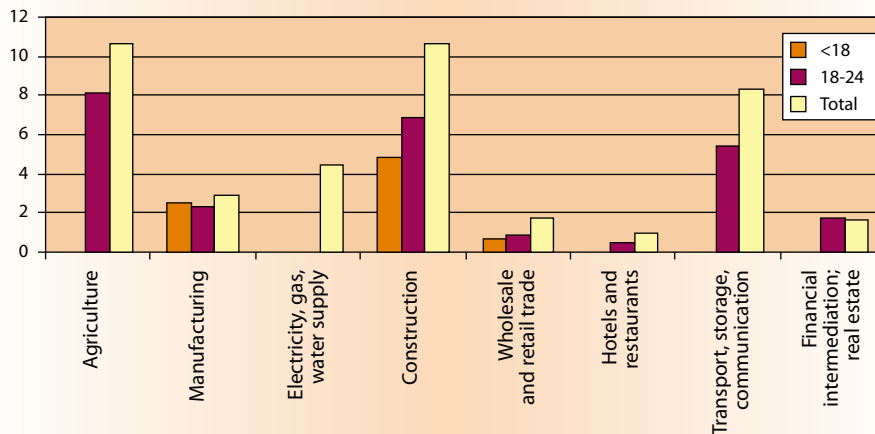
The construction sector has the highest number of fatalities involving young workers aged up to 24 years. The accident figures show a decreasing trend since 1995, with the exception of 1998. The manufacturing sector also has a high number of fatalities; the trend has been decreasing since 1995 with the exception of 1998 and 2002 (Table 19).

⁽³²⁶⁾ Source: <http://www.thompsons.law.co.uk/ntext/family-from-bridgend.htm>



Table 18: Occupational accidents with more than three days lost among 18–24-year-olds, by activity sector and year (EU-15), ESAW

Sectors	1995	1996	1997	1998	1999	2000	2001	2002	2003
A: Agriculture, hunting and forestry	46 371	37 077	37 328	37 073	38 801	35 401	32 036	28 104	27 456
D: Manufacturing	306 149	230 484	221 581	228 373	225 885	228 215	217 600	182 168	161 423
E: Electricity, gas and water supply	1 781	1 290	1 135	1 128	993	978	879	1 702	1 823
F: Construction	184 962	143 926	140 351	143 466	150 373	153 433	146 735	143 224	133 410
G: Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods	127 883	102 174	98 083	101 346	107 872	114 291	112 853	114 515	105 577
H: Hotels and restaurants	53 059	45 075	45 990	48 929	53 291	56 559	52 286	52 089	49 764
I: Transport, storage and communication	62 845	48 178	48 882	50 988	52 384	52 363	51 110	36 456	31 773
J-K: Financial intermediation; real estate, renting and business activities	65 675	54 890	58 806	61 849	77 521	83 818	79 529	67 274	60 609

Figure 24: Standardised incidence rate of fatal accidents at work by economic activity, severity and age (per 100 000 workers), ESAW, 2003


Agriculture has the highest incidence rate of fatal accidents among young workers, followed by construction and transport and communication.

Table 19: Fatalities involving workers aged 18–24 years, by activity sector and year (EU-15), ESAW

Sectors	1995	1996	1997	1998	1999	2000	2001	2002	2003
A: Agriculture, hunting and forestry	49	36	37	24	29	36	26	34	32
D: Manufacturing	135	119	117	128	112	101	77	80	66
E: Electricity, gas and water supply	5	3	1	1	2	1	0	0	
F: Construction	141	135	127	134	116	112	106	105	102
G: Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods	59	48	44	45	41	55	31	45	31
H: Hotels and restaurants	16	9	11	10	8	11	7	6	6
I: Transport, storage and communication	83	59	60	53	69	69	63	73	38
J-K: Financial intermediation; real estate, renting and business activities	52	40	34	28	40	27	19	29	33



4.1.5.1. Agriculture



A 16-year-old trainee on a placement at a farm overturned an all-terrain vehicle (ATV or 'quad-bike'). She was riding the ATV downhill when she lost control and struck a tree. The machine overturned, landing on top of her, injuring her shoulder and trapping her leg ⁽³²⁷⁾.

Accident rates in agriculture are comparable to those concerning motor vehicle accidents in the general population.

A recent study focused on agricultural work accidents in Europe ⁽³²⁸⁾. It comes to the conclusion that farming is one of the most dangerous occupational activities with a well-recognised high severity in terms of morbidity and mortality. Figures concerning the burden of these injuries in the United States show a high mortality rate of 22 deaths per 100 000 farm workers, while in the EU countries (EU-15) the corresponding rate is 11 per 100 000 farm workers. The authors also stated that these numbers are comparable to those concerning motor vehicle accidents in the general population, which are considered to be the injuries responsible for the highest public health burden (16 deaths per 100 000 US citizens and 11 deaths per 100 000 EU citizens, respectively). Concerning the morbidity associated with farm activities, it was reported that each year one in three farmers will sustain an injury. Use of modern machinery in farming increases the severity of these injuries, whereas children are exposed to increased hazards (heavy machinery, pesticides, etc.). Certain populations at high risk of sustaining such accidents have been defined, for example, children, young migrant workers or pensioners. Agents such as farm vehicles, tractors, and farm structures have been reported as the most common causes of fatal farm occupational injuries, while drowning and vehicle accidents were among the most common mechanisms of fatal injuries for non-work-related farm deaths. The number of occupational farm injuries (fatal and non-fatal ones) was higher in farms with less than 10 employees and among employers and self-employed.

The report provides data for children and adults from national injury databases from Austria, Denmark, France, Greece, Portugal, the Netherlands and Sweden.



© Norwegian Labour Inspection Authority

In France, young workers accounted for 36 % of all accidents in the agriculture sector in 2004. The percentage had remained unchanged since 2000. Young workers accounted for 15 % of serious accidents (unchanged since 2002), and for 15 % of fatal accidents (up since 2001). Young workers are more likely than older workers to be injured while working with animals (12 % of young workers, as against 6 % of those aged 25+). They have more finger injuries (17 % as against 14 %) and ankle injuries (10 % as against 8 %). Injuries include superficial contusions (25 %

⁽³²⁷⁾ RoSpa Young Workers resources. http://www.youngworker.co.uk/young/c_farm.html

⁽³²⁸⁾ Trichopoulos, D., et al., *The magnitude and spectrum of farm injuries in the European Union countries*. Department of Epidemiology, Athens University Medical School, Center for Research and Prevention of Injuries (CE.RE.PR.I), Athens, Greece, 2004, Final report prepared for Health and Consumer Protection DG. http://ec.europa.eu/health/ph_projects/2002/injury/fp_injury_2002_frep_02_en.pdf



among young workers, as against 23 % among the others), wounds or cuts (21 % as against 18 %) and sprains (15 % as against 12 %). They suffer less from back pain or lumbago (9 % of young workers as against 15 % of those aged 25+) ⁽³²⁹⁾.

4.1.5.2. Construction and the metalworking industry

Two workers aged 21 and 29 were killed whilst erecting scaffolding. On arrival at the upper part of an installation, a platform slid along a guide, causing a fall and the death of the two young men ⁽³³⁰⁾.



In France, in the construction sector, the accident rate among apprentices is much higher (3.36) than the average. The risk of young workers having an accident in this sector is 2.3 times higher than the average for all sectors ⁽³³¹⁾.

In Belgium, in 2003, 16.8 % of accidents with more than three days lost occurred in young workers aged 15–24 years in the construction industry. This is the sector with the third highest proportion of occupational accidents involving young workers ⁽³³²⁾.

In the Netherlands, young people working in metallurgy and construction have an increased risk of having an occupational accident. A study by the Ministry of Employment and Social Affairs indicated that young workers in the metalworking and construction industries who had flexible contracts (covering temporary work, apprenticeships and seasonal work), and who had long working hours (more than 40 per week), as well as young workers in small companies, have an increased risk of having an occupational accident ⁽³³³⁾.

In the UK, the highest fatality rates are amongst the 16–24 and over 65 age ranges, the former due to inexperience and the latter to physical fragility. The mean rate for 16–34 year old men is 3.9, for 35–54 the rate is 3.8, and for 55+ the rate is 6.7 per 100 000 in 2002/3. Overall, the figures show a higher proportion of small sites/small firms in refurbishment/repair activities and conversely a higher proportion of large sites/large firms in new build activities. Almost half of all fatal accidents occur in refurbishment/maintenance/repair projects, which tend to attract the smaller, less experienced contractors and includes the vast proportion of the informal construction economy (which is estimated to be worth GBP 10 billion each year) ⁽³³⁴⁾.

4.1.5.3. Manufacturing

An apprentice mechanic, aged 18, died four days after becoming engulfed in flames in an explosion. The worker was helping his manager empty a mixture of petrol and diesel from a dustbin into a waste oil disposal tank on a garage



⁽³²⁹⁾ Caisse centrale de Mutualité Sociale Agricole — Observatoire des risques professionnels — Système d'information décisionnel SST des salariés agricoles.

⁽³³⁰⁾ Spain, El Nervi3n, 2 March 2005.

⁽³³¹⁾ Statistiques CNAMTS 2003 (Remarques) and Document de travail EPRP, JC Bastide, INRS.

⁽³³²⁾ Prevent. Statusrapport Jonge werknemers in België, 2006.

⁽³³³⁾ Arbobalans 2003. <http://www.arbo.nl/content/network/szw/docs/balans2003.pdf>

⁽³³⁴⁾ Health and Safety Executive, *Construction intelligence report*. Analysis of construction injury and ill health intelligence. HSE 2006. <http://www.hse.gov.uk/construction/pdf/conintrep0405.pdf>



forecourt, when the petrol exploded. A flue pipe outlet from a gas boiler was situated next to the tank and was switched on at the time. The petrol vapour was consequently sucked into the flue of the boiler, and ignited in a massive fireball. The young man was learning the trade and so was heavily reliant on the duty of care owed to him by his manager and the garage owner, while the attitude of the company was that health and safety was a matter of common sense, left to the experience of employees. Petrol is highly flammable, but minimal attempts had been made to overcome the hazards associated with its handling. No formal procedures were in place for transferring and storing highly flammable liquids or draining fuel from cars ⁽³³⁵⁾.



© INSHT, Instituto Nacional de Seguridad e Higiene en el Trabajo, Spain

In Poland, most of the accidents at work affecting young workers aged less than 30 years were registered in the manufacturing sector (12 018 persons were injured in 2004, representing over 50 % of all accidents in this age group), the wholesale and retail trade, the repair of motor vehicles, motorcycles and personal and household goods (3 913 in 2004) and in real estate, renting and business activities (1 304 in 2004) ⁽³³⁶⁾.

In Belgium, 28.8 % of accidents with more than three days lost occurred in young workers aged 15–24 years in the manufacturing industry in 2003. This is the sector with the highest proportion of occupational accidents involving young workers ⁽³³⁷⁾.

In a Finnish study investigating accidents at work for which an insurance company paid compensation, it was found that in manufacturing the incidence rate per 1 000 wage-earners was about 30 % higher among those aged 15–24 than in any other age category ⁽³³⁸⁾.

4.1.5.4. The catering and service sector



A 16-year-old, who was working in a road-side restaurant owned by a large restaurant and hotel chain, was seriously burned by hot fat while preparing a customer's fried breakfast. As he put some bread in a deep-fat-fryer, the fryer fell from its support without warning and a wave of scalding oil poured over the young worker's leg and foot. The trainee had not completed his training, but the

⁽³³⁵⁾ Health and Safety Executive press release 11.3.2005. HSE issues warning on safe use of petrol after sentencing. <http://www.hse.gov.uk/press/2005/e05020.htm>

⁽³³⁶⁾ Accidents Statistical Card (Z-10).

⁽³³⁷⁾ Statusrapport Jonge werknemers in België, Prevent, 2006.

⁽³³⁸⁾ Palukka, P. and Salminen, S., Työturvallisuustilanne 2001 (Occupational safety in 2001). Helsinki: Työturvallisuus kohti maailman kärkeä — työtaturmaohjelma; 2004.

local management had decided that he was competent to use the fat fryer. Some staff knew that the fat fryer was unstable. An investigation by labour inspectors also found that there had been a previous incident involving hot oil burns to a young worker, when the trainee was transferring hot fat from one receptacle to another.

The company has since brought in a rule that nobody under the age of 18 is allowed to work with hot fat, and taken other steps, including carrying out checks of cooking appliances in its restaurants nationwide ⁽³³⁹⁾.

In France, the accident rate among young workers is higher than the average (23 %) in the catering sector (30 %) and the service sector, including temporary work (26 %). Taking all sectors together, young workers account for 9 % of all fatalities. This percentage is higher in the catering sector (12 %) and the service sector, including for temporary workers (13 %) ⁽³⁴⁰⁾.

In the Netherlands, the proportion of accidents among young workers aged 15–24 amounts to 46 % in this sector. This is much higher than the average of 26 % for all accidents involving young workers aged 15–24 years. The number of accidents involving cuts increased to 51 % ⁽³⁴¹⁾.

4.1.5.5. The wholesale and retail trade

While working as a packer stacking pallets for a reserve parts-wholesale/retail warehouse, a 17-year-old boy was killed when the pallet stack toppled over and fell on top of him ⁽³⁴²⁾.



In Belgium in 2003, 18.9 % of accidents with more than three days lost happened to young workers aged 15–24 years in the wholesale and retail trade. This sector has the second-highest proportion of occupational accidents involving young workers ⁽³⁴³⁾.

⁽³³⁹⁾ Source: Safety and Health Practitioner, UK, June 2005.

⁽³⁴⁰⁾ Statistiques CNAMTS 2003 (Remarques) and Document de travail EPRP, JC Bastide, INRS.

⁽³⁴¹⁾ Arbobalans 2003. <http://www.arbo.nl/content/network/szw/docs/balans2003.pdf>

⁽³⁴²⁾ Source: Arbejdstilsynet, the Agency's Danish Focal Point.

⁽³⁴³⁾ Statusrapport Jonge werknemers in België, Prevent, 2006.



4.2. OCCUPATIONAL DISEASE AND HEALTH PROBLEMS

The assessment of the non-accidental work-related health burden is complicated. The national recognition systems for occupational diseases are at least indirectly linked to the social security systems, and they differ much more than the national data collection systems for accidents at work. Surveys assessing work-related health problems can be carried out in a harmonised way, but they need to rely on the respondent's own assessment concerning the work-related cause of the health problem. The overall incidence and prevalence of diseases increases with age. Furthermore, older workers have on average a longer exposure to risk factors at work, and therefore a greater probability of developing occupational diseases simply because of their longer working careers. Therefore, the comparison of incidence or prevalence of occupational or work-related diseases by age does not necessarily reflect correctly the effect of work-related factors on the health of young workers ⁽³⁴⁴⁾. Furthermore, occupational diseases also refer to diseases with a long latency effect, meaning that exposure at a young age may constitute a substantially higher risk than the same exposure occurring later in life, simply because it is more likely that a young person will live long enough for the disease to emerge. For example, the mesothelioma risk for exposure starting at age 20 is around twice as high as for the same exposure starting at age 30.

4.2.1. Occupational disease among young workers in Europe



The top five occupational diseases among workers aged 15–35: allergic effects, irritant effects of the skin, pulmonary disorders, infectious diseases and musculoskeletal disorders.

According to the European Occupational Diseases Statistics (EODS) ⁽³⁴⁵⁾, young workers aged up to 24 account for 7.3–7.5 % of all occupational diseases in Europe.

⁽³⁴⁴⁾ Karjalainen, A., European Agency for Safety and Health at Work. A statistical portrait of the health and safety at work of young workers, *Magazine 9*, 2006, pp. 6–7.
<http://osha.europa.eu/publications/magazine/9?language=en>

⁽³⁴⁵⁾ Coverage: for incident occupational diseases data are available for the EU-15, as well as 1995 pilot data, and data for 12 Member States combined (Belgium, Denmark, Spain, Ireland, Italy, Luxembourg, the Netherlands, Austria, Portugal, Finland, Sweden and United Kingdom) for 2001. From 2002 onwards data are available for the same countries, except Ireland.

For deaths due to occupational disease 2001 data are available for six Member States combined (Belgium, Denmark, Italy, Luxembourg, Austria, and Finland) and from 2002 onwards for seven Member States combined (Belgium, Spain, Italy, Luxembourg, Austria, Portugal, Finland). The EODS methodology is being implemented in the new Member States and in the candidate countries, with first data due for the reference year 2004.

Data characteristics: the data refer to incident occupational diseases recognised for the first time during the reference year and to deaths due to occupational disease. The deaths due to occupational



The figure has been slightly increasing since 2001. The incidence rate for workers less than 18 years old is 27.5 — for the age band 18–24 years it is 38.9, as compared to 62.8 in every 100 000 workers of all ages ⁽³⁴⁶⁾.

Table 20: Number of non-fatal occupational diseases, EODS obligatory list, 2002–04

	< 18	18–24	< 25	All ages	% of diseases of young workers
2001	120	2 212	2 332	31 945	7.30
2002	151	3 549	3 700	50 049	7.39
2003	368	3 722	4 090	54 250	7.54

Table 21: Incidence of non-fatal occupational diseases, EODS obligatory list, 2002–04

	< 18	18–24	All ages
2001	8.3	22.7	37
2002	10.9	36.6	58.2
2003	27.5	38.9	62.8

Young workers have a lower average risk of occupational diseases than older workers. This can be explained by the fact that occupational diseases:

- often need a cumulative exposure and/or latency period to develop — young people, however, usually have a short employment history;
- may not always be recognised because of short-term work contracts.

In comparison with chronic occupational diseases, the prevalence of acute diseases, such as allergic and toxic reactions, may be higher among young workers. This is because typical selection and the ‘healthy worker effect’ ⁽³⁴⁷⁾ do not have enough time to take effect ⁽³⁴⁸⁾.

According to the pilot study of the EODS in 1995, the top five occupational diseases among workers aged 15–35 years are: allergic effects, irritation of the skin, pulmonary disorders, infectious diseases and finally musculoskeletal disorders. Although these results do not show the precise figures for young workers, they can be used as an indication (Table 22).

disease are included if the person died because of an occupational disease during the reference year, regardless of when the occupational disease had been recognised for the first time.

The indicators used are the number and incidence rate of incident and fatal occupational diseases. The incidence rate of incident occupational diseases is the number of incident occupational diseases per 100 000 persons in employment during the reference year. The incidence rate of deaths due to occupational diseases is the number of deaths due to occupational disease per 100 000 persons in employment during the reference year.

The national EODS sources are based on the recognition of occupational diseases by the public (Social Security) or private specific insurance bodies for occupational diseases, or by other relevant national authorities for countries having a universal Social Security system.

⁽³⁴⁶⁾ Eurostat, European Occupational Diseases Statistics, 2001–03. http://epp.eurostat.ec.europa.eu/portal/page?_pageid=0,1136184,0_45572595&_dad=portal&_schema=PORTAL&screen=ExpandTree&open=/popul/health/hsw/hsw_occ_dis&product=EU_population_social_conditions&nodeid=66735&windex=8&level=4&portletid=39994101_QUEENPORTLET_92281242&scrollto=0

⁽³⁴⁷⁾ The healthy worker effect is a form of selection bias frequently seen in occupational mortality rates, in which mortality among a healthy working population compares favourably to the general population that includes people who are unable to remain employed due to ill health.

⁽³⁴⁸⁾ Rantanen, J. How to ensure decent work for the young people in the 21st century? In: Rantanen, J. et al., FIOH. *Proceedings of the International Symposium on Youth and Work*, 2003, pp. 2–9.



Table 22: Number of occupational diseases by diagnosis group and age, EODS 1995

	<36 years	Total
Allergic effects	2 517	5 429
Cancer	11	2 144
Cardiovascular disorders	22	263
Eye disorders	10	50
Gastrointestinal disorders	10	26
Haematological disorders	30	112
Hearing disorders	477	17 207
Hepatic disorders	17	82
Irritation of the skin	1 783	3 713
Neurological disorders	753	3 049
Pulmonary disorders	1 136	9 653
Musculoskeletal disorders	810	4 090
Infectious diseases	831	1 911

4.2.2. Self-reported work-related health problems among young workers in the EU

Skin problems are most prevalent among work-related health problems.

Recognition of safety risks at work is the prerequisite for effective prevention. According to the 2000 ESWC, it is slightly more common for workers aged 18–24 years to feel that their health is at risk because of work (8 %) than it is among all workers (7 %).

The 1999 labour force survey ad hoc module ⁽³⁴⁹⁾ assessed the prevalence of self-reported health problems caused or made worse by work. The prevalence rate per 100 000 workers was lower among those aged 15–24 (3 450) compared to all workers (5 370). Of the three main types of health problems, young workers had a lower prevalence of musculoskeletal problems (1 460 among those aged 15–24 vs 2 650 overall) and of stress, depression or anxiety (540 among those aged 15–24, vs 1 180 overall) while young workers had a slightly higher prevalence of pulmonary disorders (320 among those aged 15–24, vs 300 overall) ⁽³⁵⁰⁾.

According to the ad hoc module of the 1999 labour force survey ⁽³⁵¹⁾, skin problems (16.32 %), headache and eye strain (11.23 %), infectious diseases (10.76 %) and

⁽³⁴⁹⁾ Eurostat, Work-related health problems and accidental injuries (ad hoc module of the 1999 labour force survey). http://epp.eurostat.ec.europa.eu/portal/page?_pageid=0,1136184,0_45572595&_dad=portal&_schema=PORTAL&screen=ExpandTree&open=//health/hsw/hsw_inj_pb/hsw_healthpb&product=popul&nodeid=66761&vindex=11&level=5&portletid=39994101_QUEENPORTLET_92281242&scrollto=0

⁽³⁵⁰⁾ Karjalainen, A., European Agency for Safety and Health at Work . A statistical portrait of the health and safety at work of young workers. *Magazine 9*, 2006, pp. 6–7.
<http://osha.europa.eu/publications/magazine/9?language=en>

⁽³⁵¹⁾ Coverage: Denmark, Germany, Greece, Spain, Hungary, Ireland, Italy, Luxembourg, Portugal, Finland, Sweden, United Kingdom.

Data characteristics: for accidental injuries the indicators used are the percentage distribution of accidents and the relative incidence rate of accidents (relative to the rate in the total of all participating countries, which is given the value 100). The incidence rate is the number of accidents at work per 100 000 employed workers.



pulmonary disorders (9.46 %) are the main self-reported health problems among young workers under the age of 25 years in Europe.

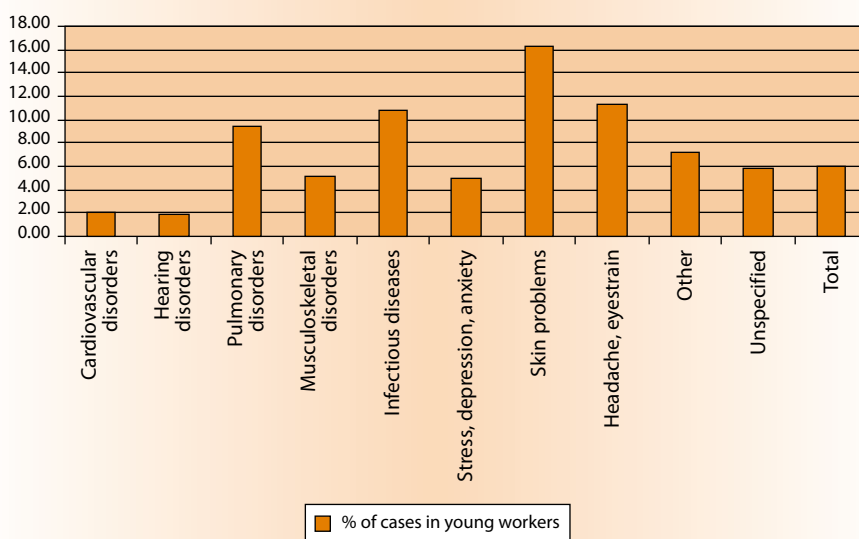
Severity of work-related health problems: short absences

For 8.3 % of young workers aged under 25 years, work-related health problems are responsible for 1–3 days off work, and for 8.2 % health problems are responsible for 4–6 days lost (Table 24).

Table 23: Work-related health problems by diagnosis group and age, LFS ad hoc module 1999

	15–24 years	All ages	% with young workers
Cardiovascular disorders	2 125	107 476	1.98
Hearing disorders	1 623	85 797	1.89
Pulmonary disorders	22 499	237 759	9.46
Musculoskeletal disorders	91 853	1 791 718	5.13
Infectious diseases	11 550	107 338	10.76
Stress, depression, anxiety	36 738	732 224	5.02
Skin problems	15 828	96 981	16.32
Headache, eyestrain	15 585	138 755	11.23
Other not elsewhere mentioned	14 521	199 843	7.27
Unspecified	35 230	598 674	5.88
Total	247 553	4 096 564	6.04

Figure 25: Work-related health problems by diagnosis group, LFS ad hoc module 1999



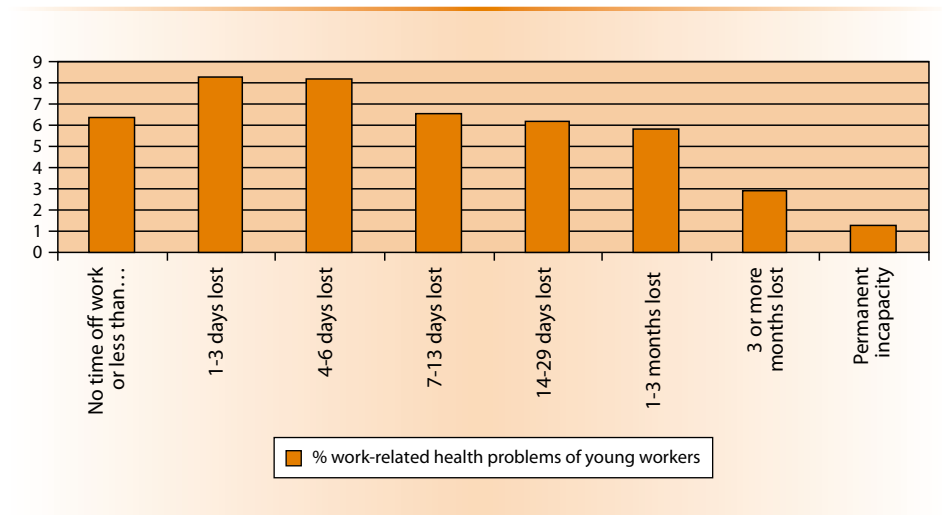
For non-accidental health problems the indicators used are the percentage distribution, number, prevalence rate and relative prevalence rate of health problems (relative to the rate in the total of all participating countries, which is given the value 100). The prevalence rate is the number of people suffering from the health problem during the last 12 months per 100 000 employed workers.



Table 24: Work-related health problems by severity and age, LFS ad hoc module 1999

	15–24 years	All ages	% young workers
No time off work or less than one day lost	95 798	1 516 165	6.32
1–3 days lost	25 334	305 371	8.30
4–6 days lost	25 123	306 260	8.20
7–3 days lost	22 974	349 241	6.58
14–29 days lost	27 813	449 686	6.18
1 month lost - 3 months lost	26 303	455 391	5.78
3 or more months lost	15 959	550 753	2.90
Permanent incapacity	634	51 204	1.24

Figure 26: Work-related health problems by severity, LFS ad hoc module 1999



Some 86.5 % of all self-reported health problems that are due to pulmonary disorders, and cause more than two weeks' absence, are reported by young workers aged 24 years and younger. Nearly half of all self-reported health problems due to stress, depression and anxiety, and which cause more than two weeks' absence, are reported by young workers aged 24 years and younger (48.9 %) (Table 25).

Table 25: Standardised prevalence rate of work-related health problems by severity, diagnosis group and age (per 100 000 workers), LFS ad hoc module 1999

	More than 14 days lost (2 weeks' absence or more)	
	15–24 years	All ages
Pulmonary disorders	71	82
Musculoskeletal disorders	299	817
Stress, depression, anxiety	218	445
Other not mentioned elsewhere	170	294
Total	842	1 746



4.2.3. Work-related health problems among young workers — data from the Member States

4.2.3.1. Musculoskeletal disorders



A 20-year-old woman was working as a graphic designer with a multinational company. Just two years after joining the company she began to develop RSI, which developed into a serious condition. A contributory factor was that she was never shown how to use a computer mouse properly. She took her employers to court and won. Claiming she was never shown how to use a computer mouse, she was awarded GBP 25 000 damages for repetitive strain injury (RSI) ⁽³⁵²⁾.



- **France** — Young workers under the age of 25 account for 1 % of all lower back disorders (17 cases). They also account for 3 % of all disorders due to repetitive movements (658 cases processed in 2003) ⁽³⁵³⁾.
- **Finland** — Some 279 occupational disease cases involving workers aged 15–24 were reported to the Finnish Register of Occupational Diseases in 2002 (138 male workers and 149 female workers). Most were cases either of a repetitive strain injury or a skin disease ⁽³⁵⁴⁾. A quarter (18/74) of hairdressers' occupational diseases in 2002 were caused by repetitive strain ⁽³⁵⁵⁾.
- **Netherlands** — The number of occupational diseases for young people between 15 and 24 years is limited. 4.6 % of the number of musculoskeletal disorders involves this age group. The age group also accounts for 1.2 % of hearing disorders and 2.5 % of mental disorders ⁽³⁵⁶⁾.
- **Spain** — More than 75 % of the newly declared occupational diseases among young workers in 2004 are categorised as musculoskeletal diseases. This is higher than the average ⁽³⁵⁷⁾.
- **The UK** — Some 301 000 males and 309 000 females developed a work-related illness in 2003/04. Males and females aged 16–24 had the lowest rates (1.4 per 100 000 workers, compared to 2 for the total working population). The incidence rate was slightly higher for females than for males. The 16–24 age group accounted for fewer days lost per worker than the other age groups (0.66 for males, 0.86 for females).

In Spain, more than 75 % of the newly declared occupational diseases among young workers in 2004 are categorised as musculoskeletal diseases.

⁽³⁵²⁾ 'When work is a pain: young workers face a terrible strain injuries risk, Hazards, No 73, 16 February 2001. <http://www.hazards.org/strainpain.htm>

⁽³⁵³⁾ Statistiques nationales, CNAMTS 2003.

⁽³⁵⁴⁾ Finnish Register of Occupational Diseases.

⁽³⁵⁵⁾ FIOH. Occupational Diseases in 2002, 2003.

⁽³⁵⁶⁾ Arbobalans 2004. http://docs.minszw.nl/pdf/35/2004/35_2004_3_6157.pdf

⁽³⁵⁷⁾ Data extracted from Estadísticas de enfermedades profesionales (Ministerio de Trabajo y Asuntos sociales) by INSHT.



Likewise, in 2003/04, 1 108 000 people in the UK believed they were suffering from a musculoskeletal disorder (MSD) caused or made worse by current or past work. Among the 617 000 males cases, the 16–24 age group accounts for 19 000. Among the 490 000 females cases, the 16–24 age group accounts for 23 000. Males and females aged 16–24 had the lowest rate (0.81 for males, compared to 3.0 for all males, 0.99 for females, compared to 2.2 for all females). The average days lost per worker was lower for males aged 16–34 (0.28) than for females aged 16–34 (0.31).

In 2003/04, an estimated 468 000 people in the UK believed they were suffering from an MSD, mainly affecting the back, that was caused or made worse by their current or past work. For both males and females, the rate was lower for the 16–34 age class, the females' (0.58) being lower than the males' (0.83). The age group with the highest rates was the oldest (55–64 for males and 55–59 for females).

In 2003/04, an estimated 448 000 people believed they were suffering from an MSD affecting the upper limbs or neck. For males and females, the 16–34 age band carried the lowest rate (0.52 % for all workers, 0.48 for males, 0.56 for females). The rates were similar in 2001/02 ⁽³⁵⁸⁾.



4.2.3.2. Respiratory diseases



A 20-year old man was admitted to hospital from work with an acute asthmatic attack caused by flour dust inhalation. In the previous 12 months he had been absent from work for 25 days with chest symptoms. His exposure to flour dust was dramatically reduced by engineering controls and better work methods and he was able to go back to work. In the following three years he did not have any time off with chest problems ⁽³⁵⁹⁾:

In Germany, the second occupational disease among young workers is allergic diseases of the respiratory tract.

- **Germany** — The second-largest proportion of occupational disease among young workers aged 15–19 and 20–24 (1980–2004) is due to allergic diseases of the respiratory tract, at 5.6 % for the 15–19 age group and 14.7 % for the 20–24 age group ⁽³⁶⁰⁾.
- **Ireland** — Workers aged 15–24 frequently have chest or breathing problems (27 %, more than the 16–20 % found in other age bands) and skin problems (24 %, compared to 22 % for 25–34-year-olds, and < 20 % for older groups) ⁽³⁶¹⁾. Some 6 % of the working population have a longstanding health problem or disability. Workers aged 15–24 account for 10 %, with the other age bands accounting for more than 20 % (up to a maximum of 26 % for the 45–54 group). The relative risk (% disability/% employment) shows a low risk for those aged 15–24 (0.58) ⁽³⁶²⁾.

⁽³⁵⁸⁾ Health and Safety Executive, Self-reported work-related illness in 2003/2004 — Results of the labour force survey. <http://www.hse.gov.uk/statistics/causdis/swi0304.pdf>

⁽³⁵⁹⁾ Provided by Health and Safety Executive. <http://www.hse.gov.uk/food/experience.htm#asthma>

⁽³⁶⁰⁾ BK DOK, HVBG. Confirmed cases of occupational disease amongst young employees aged 15 to 19 (1980–2004).

⁽³⁶¹⁾ Central Statistical Office, Quarterly National Household Survey, 2002.

⁽³⁶²⁾ As above.



- **Canada** ⁽³⁶³⁾ — A recent study of the IRSST focused on the rehabilitation of workers who have suffered a permanent injury to their physical or psychological integrity, or who have permanent functional limitations. The authors produced an updated statistical portrait of workers undergoing rehabilitation. The person's gender and age, the size of the companies, back pain and musculoskeletal disorders, relapse, and jobs in the secondary sector emerge as the main aspects characterising the clients in the rehabilitation programme.

Observations include:

- Young workers and older workers represent a more prevalent group for rehabilitation, the main cause being MSDs and back pain.
- Young workers are less likely to be reimbursed (Number of days for rehabilitation financed is much lower) and there is a higher risk of relapse.
- The level of impairment (damage caused to physical and mental integrity) is also higher.

4.2.3.3. Skin diseases

A young female employee handling spices in the development kitchen of a food factory developed dermatitis on her hands, arms, neck and face. The condition improved when she took a week off work but worsened immediately upon her return, necessitating redeployment ⁽³⁶⁴⁾.



- **Austria** — Young women in particular aged 15–25 are frequently affected by skin diseases. A concentration of work-related sickness was evident particularly among hairdressers, cosmeticians and in the wood and metal-processing industries ⁽³⁶⁵⁾.
- **France** — There is a high proportion of young workers with disorders due to exposure to chemical substances. Young workers account for 15 % of disorders due to mineral oils and grease (12 cases), 46 % of disorders due to aromatic amines (11 cases), 16 % of disorders due to liquid organic solvents (10 cases), 14 % of all diseases due to epoxy resins (7 cases), and 11 % of all allergies due to latex ⁽³⁶⁶⁾.
- **Germany** — Between 1980 and 2004, of the confirmed cases of occupational disease among employees aged 15–19 and 20–24, by far the largest proportion involved skin disease (89.7 % for the age group 15–19, and 77.3 % for the age group 20–24). The figures for all other categories of occupational diseases were substantially lower ⁽³⁶⁷⁾.
- **Ireland** — Workers aged 15–24 frequently report skin problems (24 %, compared to 22 % for those aged 25–34, and < 20 % for those older than 34).
- **Spain** — In 2004, 10 % of newly-declared occupational diseases among young workers were skin problems. This is higher than the average ⁽³⁶⁸⁾.

⁽³⁶³⁾ Institut de recherche Robert Sauvé en Santé et Sécurité au travail, Montréal, IRSST 2005. Godin, J-F., Baril, R., Massicotte, P., Portrait statistique des travailleurs en réadaptation pour 2001–02 (Statistical portrait of workers undergoing rehabilitation for 2001–02) Études et recherches/Rapport R-440.

⁽³⁶⁴⁾ Provided by Health and Safety Executive. <http://www.hse.gov.uk/food/experience.htm#dermatitis>

⁽³⁶⁵⁾ AUVVA project 'Prävention bei jungen Arbeitnehmern' Paukovits, K. (2002). Minus zehn Prozent. Mehr Sicherheit für junge Arbeitnehmer. Sichere Arbeit, 4, 29–32.

⁽³⁶⁶⁾ Statistiques nationales CNAMTS 2003.

⁽³⁶⁷⁾ Source: BK DOK, HVBG, Confirmed cases of occupational disease amongst young employees aged 15 to 19 (1980–2004).

⁽³⁶⁸⁾ Data extracted from Estadísticas de enfermedades profesionales (Ministerio de Trabajo y Asuntos sociales) by INSHT.



4.2.3.4. Stress, depression and anxiety



Sean is a 17-year-old cashier who works about 40 hours a week at a large discount store. Lately it seems that he is always being yelled at by customers. When the boss gets involved, he always says the customer is right, which makes Sean angry. His boss is also always on at him to work faster and ring up purchases more quickly. Not only is Sean feeling stressed out all the time, he is also starting to feel some pain in his wrist from working the cash register ⁽³⁶⁹⁾.

Simone, 17, had been working for eight months in a bakery as an apprentice vendor. She worked for 53 hours a week and was constantly intimidated by her boss. After she went on sick leave, her mother was verbally attacked by the employer. He also refused to pay her salary. Simone is now receiving union advice on how to proceed. Her case has been posted along with others on the youth section of the DGB website, with detailed information on young workers' rights ⁽³⁷⁰⁾. Other examples can be found in the publication '*Blacklist apprenticeship*'; in which 23 of the 77 selected cases related to bullying and intimidation. These cases relate mostly to retail, offices, media communications and hotels and restaurants ⁽³⁷¹⁾.

- **Spain** — Young workers are subject to stress due to work overload, and incompatible demands made of them. This is despite the fact that levels of stress among young people are not especially high, and young people generally feel competent to perform their jobs ⁽³⁷²⁾ ⁽³⁷³⁾.
- **UK** — In 2003/04, an estimated 557 000 people believed that they were suffering from work-related stress, depression or anxiety. The rate for the youngest group (aged 16–24) and the oldest group (55+) was lower than for other groups (0.71 % for the youngest, 0.69 % for the oldest). Young males were least likely to be affected (0.53 %, compared to 0.88 % for young females). In 2003/04, the estimated total number of days lost for males and females was of a similar order (6.4 million). The rate for male workers aged 16–34 was similar to that for all male workers (0.46). Females aged 16–34 had the lowest rate (0.50, as against 0.72 for all female workers). Rates were higher in 2003/04 than in 2001/02 for the 16–34 age group, and this increase was not observed in the other age groups ⁽³⁷⁴⁾.

⁽³⁶⁹⁾ Source: Young Worker Safety Resource Center.

[http://socrates.berkeley.edu/~safejobs/downloads/word/YWTRC %20Presentation.ppt](http://socrates.berkeley.edu/~safejobs/downloads/word/YWTRC%20Presentation.ppt)

⁽³⁷⁰⁾ DGB youth pages of Germany. <http://www.dgb-jugend.de/UNI115988498727423/doc630722A.html>

⁽³⁷¹⁾ Das Schwarzbuch Ausbildung, 22 aus der Praxis der Online-Beratung Dr. Azubi, www.doktor-azubi.de.
<http://www.dgb-jugend.de/mediabig/4830A.pdf>

⁽³⁷²⁾ Autoeficacia, implicación y estrés en los primeros trabajos. Capital Humano, www.ivie.es.
<http://obrasocial.banaja.es>

⁽³⁷³⁾ Instituto Nacional de Seguridad e Higiene en el Trabajo, *V Encuesta Nacional de Condiciones de Trabajo*.
http://www.mtas.es/insht/statistics/enct_5.htm

⁽³⁷⁴⁾ Health and Safety Executive, Self-reported work-related illness in 2003/2004 — Results of the labour force survey. <http://www.hse.gov.uk/statistics/causdis/swi0304.pdf>



4.2.4. Studies and initiatives — health outcomes

4.2.4.1. Working conditions and health among female and male employees at a call centre in Sweden

The call centre industry is one of the fastest-growing labour market sectors in Sweden today. The purpose of this study ⁽³⁷⁵⁾ was to investigate working conditions and symptoms among employees at a call centre in Sweden. Fifty-seven call centre workers were compared with a reference group of 1 459 professional computer users in other occupations.



The study concluded that the call centre operators were exposed to working conditions that in other studies have indicated an increased risk of developing musculoskeletal disorders. The study also shows that young computer operators in the call centre group with a short working career had a higher prevalence of neck and upper extremity symptoms than older computer workers in other labour market sectors.

4.2.4.2. Symptoms of musculoskeletal disorders among apprentice construction workers ⁽³⁷⁶⁾

Musculoskeletal disorders (MSDs) are a major cause of work-related disability and lost-time illnesses in many occupational groups. This study determined the prevalence of musculoskeletal symptoms among young construction workers. A symptom and job factors survey was self-administered to 996 construction apprentices. Prevalence was determined by the percentage of positive responses to musculoskeletal symptom questions. The lower back was the site most commonly reported for job-related musculoskeletal symptoms (54.4 %), and low back pain was also the most common reason for consulting a physician (16.8 %) and missing work (7.3 %). The number of years worked in the construction trade was significantly associated with knee and wrist/hand MSD symptoms and with low back pain. 'Working in the same position for long periods' was the job factor identified as most problematic, with 49.7 % of all construction apprentices rating it as a moderate/major problem contributing to musculoskeletal symptoms. Musculoskeletal symptoms are a significant problem among young construction workers at the beginning of their careers. Prevention strategies are needed early in the apprentice-training programme to reduce the potential disability associated with work-related musculoskeletal symptom disorders.



⁽³⁷⁵⁾ Norman, K. et al., 'Working conditions and health among female and male employees at a call center in Sweden', *Am J Ind Med.*, Vol. 46, No 1, July 2004, pp. 55–62.

⁽³⁷⁶⁾ Merlino, L. A. et al. 'Symptoms of musculoskeletal disorders among apprentice construction workers', *Applied Occupational and Environmental Hygiene*, 2003, Vol. 18(1), pp. 57–64.



4.2.4.3. Carpal tunnel syndrome among apprentice construction workers ⁽³⁷⁷⁾



In terms of lost work time and restricted working, surgery, and rehabilitation, one of the most costly occupational musculoskeletal disorders is carpal tunnel syndrome (CTS). The purpose of this study was to determine the prevalence of CTS among apprentice construction workers. This cross-sectional study included apprentices from four construction trades. Apprentices completed a self-administered questionnaire and received electrophysiologic assessments of median nerve function across the carpal tunnel. A surveillance case definition for CTS was based on characteristic hand symptoms and the presence of median mononeuropathy across the carpal tunnel. Of the 1 325 eligible apprentices, 1 142 (86.2 %) participated in the study. The prevalence of CTS among apprentices was 8.2 %; sheet metal workers had the highest rate (9.2 %). The prevalence of CTS was significantly higher among heavy equipment mechanics than among drivers. Body mass index, age, and working overhead were all associated with the prevalence of CTS. Less than 15 % of the apprentices with CTS sought medical attention for their disorder. Many construction workers begin developing CTS before or during their apprenticeship. Few apprentices seek medical attention for the hand symptoms that are characteristic of CTS. The results of this study indicate that there is a public health need for the implementation of prevention strategies for CTS in the construction industry.

4.2.4.4. Work is a risk factor for musculoskeletal pain in adolescents ⁽³⁷⁸⁾



Work has been associated with adult musculoskeletal pain, but has not received much attention among adolescents, even though more teens are working. The prevalence of musculoskeletal pain in adolescents is reported to be high (>30 %). The objectives of this study were to determine the incidence of musculoskeletal pain in a cohort of adolescents and to investigate whether work is a risk factor for its development. A cohort of 502 seventh- to ninth-graders in Montreal, Canada, were followed three times, six months apart over a 12-month period. Students responded to a questionnaire addressing musculoskeletal health and lifestyle factors (including work). Musculoskeletal pain was defined as occurring at least once a week in the past six months. Work was measured by frequency level and was also classified by type of job. The researchers, speaking at the November 2000 American Public Health Association conference, concluded: 'Prevention strategies in the workplace should include working teens, even if they only work part-time'.

⁽³⁷⁷⁾ Rosecrance, J. C. et al. 'Carpal tunnel syndrome among apprentice construction workers', *American Journal of Industrial Medicine*. August 2002, Vol. 42, No 2, pp. 107–16.

⁽³⁷⁸⁾ Ehrmann Feldman, D. et al., 'Work is a risk factor for musculoskeletal pain in adolescents', 128th Annual Meeting of APHA, Boston, MA (12–16 November 2000).
http://apha.confex.com/apha/128am/techprogram/paper_7318.htm



4.2.4.5. Prevalence of allergic problems in a population of student cooks ⁽³⁷⁹⁾

A total of 272 students from a professional catering school were enrolled in this study, which aimed to define useful parameters to estimate the risk of a future rise in occupational allergies. Some 203 were first-year students and 69 fifth-year students. A control group of 39 19-year-old students was not exposed to the allergen. The incidence of dermatitis, urticaria, asthma, rhinoconjunctivitis and nickel allergy was 5.9 %, 16.7 %, 11.8 %, 23.6 %, 14.8 % respectively in group of first year students, 7.2 %, 20.3 %, 23.2 %, 30.4 %, 14.5 % in the fifth-year students, and 5.1 %, 12.8 %, 25.6 %, 23.1 % and 7.7 % in the control group. The higher incidence of allergic pathology among fifth-year students, first-year students and the control group was probably due to practical activity at school.



4.2.4.6. Allergy to α -amylase in apprentice bakers — prevalence, incidence, risk factors and clinical symptoms



© Central Labour Inspectorate, Ministry of Economics and Labour, Austria

The aim of the study ⁽³⁸⁰⁾ was to evaluate the prevalence, incidence and risk factors of hypersensitivity to α -amylase, and to identify allergy-related clinical symptoms in apprentice bakers. A group of 287 apprentice bakers was examined by questionnaire, skin prick tests of reactions to common and occupational allergens and evaluation of total serum IgE level, specific anti-flour and α -amylase IgE. Tests were carried out before the onset of vocational training and one and two years later.



Respiratory disease was diagnosed by spirometry and inhalation challenge tests. Some 28 apprentices (9.8 %) showed hypersensitivity to α -amylase after two years of exposure. Of those, 17 had allergic rhinitis and 15 had asthma. Results indicate that the incidence of allergy to α -amylase increases with increasing duration of exposure. Hypersensitivity to common allergens, especially moulds, is a risk factor for occupational allergy to α -amylase. It is recommended that skin prick tests for reactions to common allergens, particularly moulds, should be performed among bakers before they are exposed to work conditions.

⁽³⁷⁹⁾ <http://www.ttl.fi/NR/rdonlyres/596602BE-E8FC-4D90-81C6-A7786F749B06/0/montaltiweb.pdf>

The full text of an article retrieved from the Proceedings of the International Symposium on Youth and Work Culture 2005 in Espo, Finland.

⁽³⁸⁰⁾ Allergy to α -amylase in apprentice bakers — prevalence, incidence, risk factors and clinical symptoms. (Polish: Uczulenie na α -amylazę u uczniów szkół piekarskich — zapadalność, czynniki ryzyka i obraz kliniczny) Walusiak, J. et al., *Medycyna pracy*, Vol. 56, No 2, 2005, pp. 121–130. 17 ref. (In Polish), http://www.ilo.org/dyn/cisdoc/cisdoc_bull.bulletin?p_vol=200601EE1-250



4.2.4.7. Time control, catecholamines and back pain among young nurses (Switzerland) ⁽³⁸¹⁾



This study had two objectives. First, it addressed concerns regarding the contribution of work stressors and resources to the development of back pain, over and above the influence of biomechanical work factors. Second, using recent models, it tested whether low back pain is associated with higher levels of catecholamines. Altogether 114 nurses filled out a questionnaire in their first year of practice, and again one year later. In addition, in a sub-sample of 24 nurses studied intensively at follow-up, urinary catecholamines were assessed at noon, before the end of work, in the evening, and at corresponding times on a day off. Daily stressful experiences and daily mood were also recorded. With control for baseline pain, biomechanical workload, and other potentially confounding variables, time control at the beginning of the study predicted low back pain a year later. In the sub-sample, the epinephrine and norepinephrine levels were higher in those reporting more frequent episodes of back pain, the largest differences occurring at the end of work. In addition, control over stressful events at work was lower in this group. The authors conclude that time control is a risk factor for low back pain among nurses beyond the influence of physical work load. Low control at work may increase the activity of the sympathetic-adrenal medullar system, which seems to play an important role in the development of musculoskeletal pain. The same study group investigated the link between workplace stress and the 'non-singularity' of patient safety-related incidents in the hospital setting ⁽³⁸²⁾. Job stressors and low job control were shown to be risk factors for patient safety. The most frequent safety-related stressful events included incomplete or incorrect documentation (40.3 %), medication errors (21 %), delays in delivery of patient care (9.7 %), and violent patients (9.7 %).

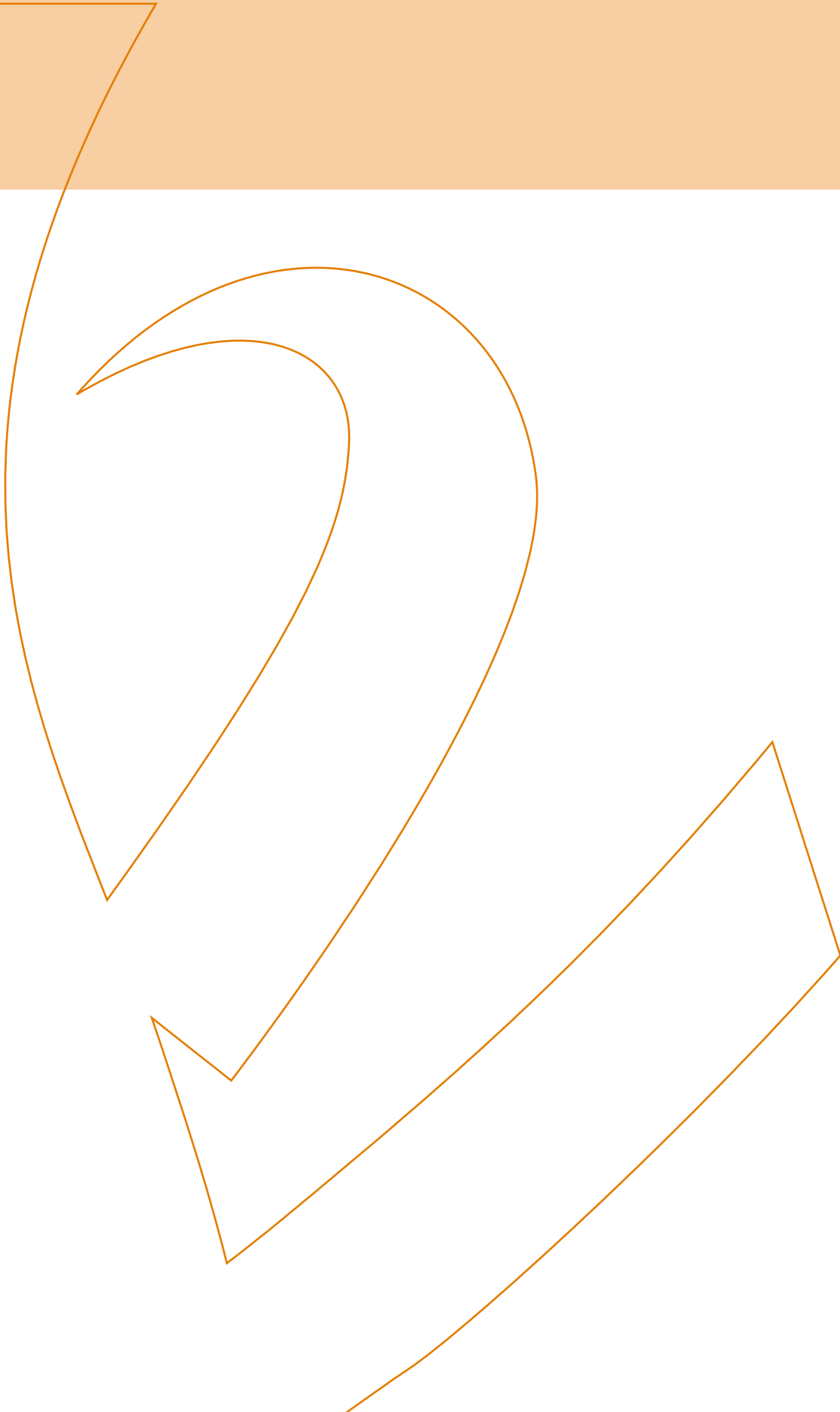
⁽³⁸¹⁾ Elfering, A. et al., *Scandinavian Journal of Work, Environment & Health*, Vol. 28, No 6, pp. 386–393, December 2002. http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=12539798&dopt=

⁽³⁸²⁾ Elfering, A. et al., 'Work stress and patient safety: observer-related work stressors as predictors of characteristics of safety-related events reported by young nurses', *Ergonomics*, Vol. 49, No 5–6, April/May 2006, pp. 457–69.



5.

LEGISLATION



This section gives an overview of European and international policies aimed at young workers. A more detailed description and examples of national and sectoral policies are addressed in the Agency's report 'Preventing risks to young workers: policy, programmes and workplace practice' (in print).

5.1. EUROPEAN WORKPLACE LEGISLATION PROTECTING YOUNG WORKERS

The European workplace legislation regarding the protection of young workers is based on two Directives: 89/391/EEC ⁽³⁸³⁾ and 94/33/EC ⁽³⁸⁴⁾. The latter, Directive 94/33/EC of 22 June 1994 on the protection of young people at work, defines some specific categories, namely young persons, children and adolescents:

- young person: someone who has not reached the age of 18;
- child: any young person under the age of 15 or a person who is still subject to compulsory full-time schooling under national law;
- adolescent: any young person of at least 15 years of age but less than 18 years of age who is no longer subject to compulsory full-time schooling under national law.

These definitions may differ slightly between the EU Member States, depending on national law (school systems). For example in Malta, Spain and the Netherlands the minimum working age is 16 years, which is stricter than the minimum in the Directive.

5.1.1. Directive 89/391/EEC — protection for all

The framework Directive 89/391/EEC stipulates that every workplace should have a good health and safety management system which protects everyone. Within that system particular attention should be paid to the vulnerability of young workers and new starters. Employers' duties to their workers, regardless of age, include:

- identifying hazards and carrying out a risk assessment. This should include not only youngsters working full-time, but also any casual labour, for example young people hired to help at weekends or school holidays, and those on vocational training or work experience placements;
- putting in place arrangements for ensuring safety and health at work, based on the risk assessment. This includes any special arrangements for young workers or new

⁽³⁸³⁾ Council Directive 89/391/EEC of 12 June 1989 on the introduction of measures to encourage improvements in the safety and health of workers at work. http://europa.eu.int/smartapi/cgi/sga_doc?smartapi!celexapi!prod!CELEXnumdoc&lg=EN&numdoc=31989L0391&model=guichett

⁽³⁸⁴⁾ Council Directive 94/33/EC of 22 June 1994 on the protection of young people at work. http://europa.eu.int/smartapi/cgi/sga_doc?smartapi!celexapi!prod!CELEXnumdoc&lg=EN&numdoc=31994L0033&model=guichett



- recruits, and arrangements with recruitment agencies, work experience and placement organisers, vocational training organisers, etc.;
- providing the necessary organisation, including making specific supervision arrangements, and ensuring that supervisors have the competence and time to carry out their duties;
 - identifying any special measures required for vulnerable individuals, including young workers and new recruits, such as prohibiting them from using dangerous equipment;
 - providing information on the possible risks that young people face in their jobs, and the prevention measures adopted;
 - providing adequate training, instruction and information when young people are recruited, and following any change of job or changes in the workplace;
 - protecting particularly vulnerable groups, including young workers with special needs;
 - consulting with young workers and their representatives on health and safety matters, including arrangements for young people.

5.1.2. Directive 94/33/EC — special protection for under-18s

Children and adolescents, thus all under-18-year-olds (including those on vocational training and work experience placements and those doing casual work while still at school or college), are considered to be at particular risk. In addition to the provisions of Directive 89/391/EEC, they are protected by the young workers Directive 94/33/EC, which sets minimum requirements for the protection of young people at work. Each Member State is responsible for defining the measures to be taken in the event of infringement of the provisions of this directive. These measures must be effective and proportionate to the offence. The law in a particular Member State may be stricter, e.g. regarding the minimum age at which children may work, the hours they may work and prohibited tasks.

5.1.2.1. Prohibition of work by children



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The directive's main objective is to prohibit the employment of children, with certain exceptions. Children are at particular risk because they are often curious and have a limited sense of danger and react in unforeseeable ways in an emergency. Exceptions are stipulated for:

- children employed for the purposes of cultural, artistic, sporting or advertising activities, subject to prior authorisation by the competent authority in each specific case;
- children aged 14 years or over who work as part of a work/training scheme or traineeship, provided that this work is carried out in accordance with the requirements laid down by the competent authority;
- children aged 14 years or over performing light work not covered by the first point above. Children over 13 may perform light work for a limited number of hours per week in categories of employment defined in national legislation.



5.1.2.2. Employers' general obligations

Employers should guarantee young people working conditions appropriate to their age. Their general obligation is to protect the health and safety of young workers in every aspect related to their work.

A risk assessment must be carried out before young people start work, covering: the workplace; physical, biological and chemical agents; work equipment and its use; work processes, operations and work organisation, and training and instruction.

In most of the EU Member States employers must conduct a risk assessment before the young worker starts a new job. In France the risk assessment for young people is carried out by an authority and not by the employers. In countries such as Germany and Portugal, young workers must have a medical examination before starting their job. In others (Finland, Italy, etc.) employers have to inform the young workers' parents of any possible risks, as well as all the measures which have been put in place regarding health and safety ⁽³⁸⁵⁾.

5.1.2.3. Prohibition of work

As a general rule, under-18s must not be allowed to carry out tasks which:

- exceed their physical or mental capacities;
- expose them to substances which are toxic or which cause cancer;
- expose them to radiation;
- involve extreme heat, noise or vibration;
- involve risks that they are unlikely to recognise or avoid because of their lack of experience or training or their insufficient attention to safety.

Those who are under 18 but over the minimum school-leaving age can carry out these tasks under very special circumstances, where:

- the work is indispensable for their vocational training;
- the work is performed under the supervision of a competent person;
- risks are reduced to the lowest level possible.

5.1.2.4. Working time — Night work — Rest periods

There are restrictions on the working hours of young workers. Young people are also allowed more generous rest periods than other workers, and they are not typically allowed to work nights.

5.1.2.5. Implementation of Directive 94/33/EC in the EU Member States

The young workers directive was issued in 1993, with the implementation period fixed at two years. The directive obliges the Member States to report every five years on its practical implementation, indicating the view of the social partners. The report from 2004 updates the first report from 2001 on the 15 Member States ⁽³⁸⁶⁾. Whereas the first report from 2001 treated mainly the implementation in the EU-15, the second focuses

⁽³⁸⁵⁾ Transposition of Directive 94/33/EC concerning the protection of young people in the 15 Member States of the European Union. http://ec.europa.eu/employment_social/labour_law/docs/10_youngpeople_implreport_en.pdf

⁽³⁸⁶⁾ Report from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of Regions on the application of Directive 94/33/EC on the protection of young people at work. <http://europa.eu.int/eur-lex/pri/en/dpi/rpt/doc/2004/act0105en01/1.doc>



mainly on two aspects: the transposition of the directive and its practical application in the EU-15 on the basis of reports made by the national authorities.

In most Member States, similar legislation had already been in force. The transposition therefore seems to have been conducted without major difficulties. The national reports confirm that the implementation of the directive has not led to any reduction in the existing level of protection for young workers. In some countries, the directive has led to a considerably higher level of protection for young workers. For example, some additions were made in Belgium regarding the work prohibited for young workers, and in Germany more precise rules were introduced concerning the work that children are allowed to do. Some points concerning the minimum age of employment, rest periods and risk assessment for employers were modified in the Austrian legislation.

Many Member States have emphasised that the directive and its transposition have increased the awareness of the need to protect young people at work. Practically all have issued publications and made information available on the Internet. Most Member States assess the situation as being satisfactory and do not see any need for Community action. This point of view is supported by the social partners at national level. Some suggestions have been put forward from two Member States as regards amendments to the directive. One Member State believes the scope could be stricter, and the other suggests a clarification as regards dangerous work. Two Member States claim that measures for exchanging best practices would be useful.

5.1.3. Other directives

The 1989 framework directive gave rise to further ‘daughter directives,’ applying its general principles to specific areas and aspects of health and safety. These include minimum safety and health requirements (Directive 89/654/EEC), work equipment (Directive 89/655/EEC), personal protective equipment (Directive 89/656/EEC), manual handling of heavy loads (Directive 90/269/EEC), display screen equipment (VDUs) (Directive 90/270/EEC), carcinogens (Directive 90/394/EEC), biological agents (Directive 90/679/EEC), temporary and mobile construction sites (Directive 92/57/EEC), mineral-extracting: drilling (Directive 92/91/EEC) and mineral-extracting: surface and underground (Directive 92/104/EEC), fishing vessels (Directive 93/103/EC), explosive atmospheres (Directive 99/92/EC) and chemical agents (Directive 98/24/EC) and vibration. All these directives provide for the protection of vulnerable groups, which have to be taken into account when workplace risk assessments are carried out. Specific measures relate to the protection of young workers.

Directives adopted under the Euratom Treaty (e.g. Directive 96/29/Euratom) lay down the basic safety standards for the protection of workers and the general public against the dangers arising from ionising radiation. The regulatory basis is the Euratom Treaty (1957). Article 2 stipulates that the European Community shall ‘establish uniform safety standards to protect the health of workers and of the general public and ensure that they are applied’. The requirements for radiation protection are laid down in Title II, Chapter 3 ‘Health and Safety’, Articles 30 to 39 of the Euratom Treaty. In line with the Treaty, a comprehensive set of directives, regulations, recommendations and decisions has been elaborated and adopted. The full texts of all Community-level provisions currently valid in the area of radiation protection are provided by the European Commission’s Directorate-General for Energy and Transport ⁽³⁸⁷⁾.

⁽³⁸⁷⁾ See http://ec.europa.eu/energy/nuclear/radioprotection/legislation_en.htm



Article 17(a) of Directive 96/29/Euratom requires a prior evaluation of the radiological risk to exposed workers. This should be seen as the first step in identifying the protection measures required, including the classification of workplaces and workers.

The directive ⁽³⁸⁸⁾ lays down specific dose limits for apprentices and students. Those for apprentices between 16 and 18 years of age, for example, are lower than for other workers. Exceptional exposure beyond limit values (which can be granted by authorities under specific conditions laid down in the directive) is expressly excluded for these young workers in the directive.

5.2. EUROPEAN INITIATIVES

5.2.1. White Paper — ‘A new impetus for European youth’

The European Commission’s White Paper ‘A new impetus for European Youth’ (2001) marks a new approach to youth policy ⁽³⁸⁹⁾. In order to help the Member States and the regions of Europe to take action for young people in Europe, the White Paper proposes a new framework for cooperation, consisting of two components: increasing cooperation between Member States, and taking greater account of the youth factor in sectoral policies. The White Paper identifies four main themes: young people’s participation in the exercise of active citizenship; enhancing the information addressed to young people and existing information services for young people; promoting voluntary activities among young people, and encouraging greater understanding of young workers’ needs.

5.2.2. The framework of European cooperation in the youth field

The framework of European cooperation in the youth field is established by the Council Resolution of June 2002, which is based on the Commission White Paper ⁽³⁹⁰⁾. It has two complementary strands:

- applying the open method of coordination (OMC) to specific priorities in the youth field;
- taking better account of the youth dimension in other policies.

⁽³⁸⁸⁾ Council Directive of 13 May 1996 laying down basic safety standards for the health protection of the general public and workers against the dangers of ionizing radiation (OJ L 159).

⁽³⁸⁹⁾ European Commission White Paper: ‘A New Impetus For European Youth’, 2001. http://ec.europa.eu/youth/whitepaper/download/whitepaper_en.pdf

⁽³⁹⁰⁾ See also: communication from the Commission to the Council of 30 April 2004. *Follow-up to the White Paper on a new impetus for European youth*. <http://europa.eu/scadplus/leg/en/cha/c11055.htm>



5.2.3. European Youth Pact

On 21 February 2005 the Youth Ministers of the Member States of the European Union adopted conclusions calling for the establishment of a European Youth Pact ⁽³⁹¹⁾. This initiative will mean a more unified and coherent approach to youth issues. The Lisbon strategy (which aims at making Europe the most competitive knowledge-based economy in the world) is relevant for young people since it addresses issues which affect them directly, such as education, employment and social inclusion.

5.2.4. Children's environment and health action plan for Europe (CEHAPE)

The Children's environment and health action plan for Europe (Cehape) was developed at the request of Member States, and adopted by European Ministers at the fourth Ministerial Conference on Environment and Health (2004) on 'The future for our children' ⁽³⁹²⁾. Cehape is a document for policymakers addressing the environmental risk factors that most affect the health of European children. It identifies risk factors and environmental health objectives, and lists possible actions to achieve each objective. It includes occupational risks as one of the risk factors, and preventing and reducing exposure to hazardous working conditions is defined as an environmental health objective. To achieve this, Cehape lists among others the following objectives:

- ratifying ILO Convention 182 concerning the worst forms of child labour, including a 'determination of hazardous types of work';
- creating programmes and enacting legislation to eliminate hazardous forms of child labour or remove children from hazardous working conditions;
- promoting awareness among employers of the specific occupational risks to children and adolescents;
- promoting awareness among young working people of their safety rights and the occupational risks present in various forms of work.

INTERNATIONAL

5.3.

5.3.1. Convention on the Rights of the Child (UN)

The United Nations Convention on the Rights of the Child is an international convention setting out the civil, political, economic, social and cultural rights of children ⁽³⁹³⁾. The

⁽³⁹¹⁾ Council of the European Union. Council conclusions on youth in the framework of the mid-term review of the Lisbon strategy. 21 February 2005.
http://europa.eu.int/comm/youth/whitepaper/download/st06609-re01_en.pdf

⁽³⁹²⁾ Fourth Ministerial Conference on Environment and Health Budapest, 23–25 June 2004.
http://www.euro.who.int/eprise/main/who/progs/eehc/20030213_1

⁽³⁹³⁾ UN Convention on the Rights of the Child. <http://www.ohchr.org/english/law/pdf/crc.pdf>





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United Nations General Assembly agreed to adopt the Convention into international law on 20 November 1989; it came into force in September 1990. The main aim of the Convention is the protection and care of children below the age of 18 regardless of race, colour, sex, language, religion, political or other opinion, national, ethnic or social origin, property, disability, birth or other status. It states that all children have the same rights,

and all rights are interconnected and of equal importance. They include the right to develop to the fullest, the right to protection from harmful influences, abuse and exploitation, and the right to participate fully in family, cultural and social life.

Gender is a crucial determinant of whether a child engages in labour.

According to a recent Unesco study ⁽³⁹⁴⁾,

‘gender is a crucial determinant of whether a child engages in labour. While child labour is an infringement of the rights of all children — boys and girls alike — girls often start working at an earlier age than boys, especially in the rural areas where most working children are found. Girls also tend to do more work in the home than boys. As a result of adherence to traditional gender roles, many girls are denied their right to an education or may suffer the triple burden of housework, schoolwork and work outside the home, paid or unpaid.

The different experiences of girls and boys make it important to integrate gender concerns into child labour research, advocacy, programmes and policies. Research that reflects gender disparities will provide a more solid basis for actions aimed at reducing child labour. Gender-sensitive programmes and policies that combat and prevent child labour are essential to fulfilling the rights of boys and girls, including the right to an education, a healthy childhood, protection from violence, abuse and exploitation, and rest and recreation.’

A recent study highlights child work in industrialised countries and mentions agriculture, hospitality and retail as some of the sectors where children below 15 work.

A recent study highlights child work in industrialised countries and mentions agriculture, hospitality and retail as some of the sectors where children below 15 work ⁽³⁹⁵⁾.

5.3.2. ILO labour standards (Conventions and Recommendations) ⁽³⁹⁶⁾

The ILO instruments regarding child labour focus on four main areas:

- establishing a minimum age for admission to employment;
- ensuring that children are given a medical examination when they are employed;
- limiting or gradually prohibiting night work among young people;
- eliminating the worst forms of child labour.

The main ILO standards on this matter are the following:

- Convention No 78 (1946) on Medical Examination of Young Persons (non-industrial occupations);

⁽³⁹⁴⁾ The state of the world’s children 2007. <http://www.unicef.org/sowc07/report/panels.php>

⁽³⁹⁵⁾ Paone, G., ‘Working children in Europe’, In ‘Young workers: health at risk!’ *HESA Newsletter*, No 30, December 2006. http://hesa.etui-rehs.org/uk/newsletter/newsletter.asp?nle_pk=23

⁽³⁹⁶⁾ Adapted from: <http://www.un.ro/Study%20on%20legislation%20ROMANIA.doc>



- Convention No 79 (1946) on the Restriction of the Night Work of Children and Young Persons in Non-industrial Occupations;
- Convention (revised) No 90 (1948) on the Night Work of Young Persons (industry);
- Convention No 138 (1973) on Minimum Age of Admission to Employment;
- Recommendation No 146 (1973) on minimum age for admission to employment;
- Convention No 182 (1999) on Prohibition of the Worst Forms of Child Labour and immediate Action for their Elimination ⁽³⁹⁷⁾.

⁽³⁹⁷⁾ ILO Worst Forms of Child Labour Convention.
<http://www.ilo.org/public/english/standards/ipecc/ratification/convention/text.htm>



6.

METHODOLOGY



The data used in this report have been collected from published statistical sources, and those that are available online. Existing tables and graphics have been used in this presentation. Not all sources present the data in a similar way or use the same breakdown criteria, as a result of which the data can be difficult to compare.

Statistics from these sources were complemented by analytical studies and literature reviews. The aim of the studies is to provide some interpretation and background information on the statistical data. A number of research studies have been used to complement the European survey data, mainly originating from the European Foundation for the Improvement of Living and Working Conditions and the European Agency for Safety and Health at Work.

Where they are available, efforts have been made to use raw data sources, which are then treated according to the expected output. This is the case, for example, for the data from the European working conditions survey (with regard to European, Belgian and Austrian data).

The sources are both statistical and analytical background documents. The statistical sources are a combination of administrative registers and statistics (occupational disease registers, exposure registers), surveys, voluntary reporting systems and inspection reports. A global risk picture can thus be presented by combining different sources.

The data collection mainly depends upon the availability of harmonised administrative data (occupational accident and disease registers) and self-reported data from worker surveys. These data sources are available both at European level and in most European countries.

A study on national and EU monitoring systems (Issue 406, 'A review and analysis of a selection of OSH monitoring systems' (working paper)) was commissioned by the Agency, and is available for download from the Agency website <http://osha.europa.eu/publications/reports/406/>. The Agency has also prepared detailed descriptions of national OSH monitoring systems on its website.

6.1. ADMINISTRATIVE DATA SOURCES

6.1.1. Accidents at work

The European Statistics on Accidents at Work (ESAW) have been used to collect statistical data on accidents at work from 1994 onwards. They allow a uniform presentation of European and Member State statistics, and a comparison between Member State statistics.

A harmonised methodology for data collection has been created. Information is collected on the following: the employer's area of economic activity, occupation of the victim; age and sex of the victim; type of injury; the part of body injured; time of the accident; size of the enterprise; employment status of the victim, and days lost. Phase 3 of the ESAW methodology is gradually being implemented, from the



reference year 2001 onwards. This also includes information concerning the circumstances and events leading to accidents ⁽³⁹⁸⁾.

The details of the ESAW methodology are described in detail in publications available from Eurostat ⁽³⁹⁹⁾. A résumé of the concepts and the coverage of the data can also be found in *Work and health in the EU: a statistical portrait, 1994–2002*.

6.1.2. Occupational diseases

Both the European statistics on occupational diseases (ESOD) and the national data sources have been used to collect statistical data on occupational diseases. The project on European statistics on occupational diseases (EODS) started with a pilot data collection for the reference year 1995 and the first data according to the Phase 1 methodology were collected for the year 2001.

The Phase 1 methodology of EODS includes detailed information on the causative agent of the occupational diseases and collection of information on the use and purpose of these causative agents is planned as well. The main drawback of both of these data collection systems is that not all workers are covered by the national data collection systems in all the Member States. For occupational diseases, problems arise also from under-reporting and differences between the national social security systems.

6.1.3. Inspections

In some countries, the medical inspections carried out by the labour inspectorate play an essential role in ensuring that laws and regulations governing workers' health surveillance are properly applied. Arbomonitor in the Netherlands provides representative information on working conditions in Dutch companies: risks, policies and (preventive) practices. The information is gathered through the labour inspectors on their company visits.

SURVEYS

6.2.

6.2.1. Labour force survey

The European labour force survey (LFS) has been used to collect data on employment and related factors in Europe. Information has been obtained with regard to the labour market in the EU, as well as employment status, demographical characteristics and company size and turnover. Data are available from 1983 onwards.

⁽³⁹⁸⁾ European Communities, Eurostat *Work and health in the EU: a statistical portrait, 1994–2002*, Catalogue No KS-57-04-807-EN-N.

⁽³⁹⁹⁾ *European statistics on accidents at work (ESAW) — Methodology*, 2001 edition. European Communities, Directorate-General for Employment, Social Affairs and Equal Opportunities, Catalogue No KE-36-019-60EN-C.



Epidemiological surveys, as well as studies and research in occupational health and safety, are very useful in the surveillance of work-related diseases. European data have been collected from two major sources: the European working conditions survey and the labour force survey.

6.2.2. Surveys on work-related diseases and working conditions

The European working conditions survey, edited by the European Foundation for the Improvement of Living and Working Conditions, monitors trends in working conditions for employees and those who are self employed, throughout the European Union. The survey provides information on the occurrence of exposure to risk factors and on perceived work-related health risks.

The 1999 labour force survey contained an ad hoc module on accidents at work and work-related health problems. Eleven questions were added to those that the LFS put to respondents, concerning the occurrence of occupational accidents or work-related health problems during the last 12 months. The detailed methodology of the 1999 LFS ad hoc module is described in *European social statistics — accidents at work and work-related health problems* ⁽⁴⁰⁰⁾.

6.3. ADDITIONAL SOURCES

Statistics from these sources were complemented by analytical studies. The aim of the studies is to give some interpretation and background information on the statistical data. A number of research studies have been used to complement the European survey data, mainly originating from the European Foundation for the Improvement of Living and Working Conditions and the European Agency for Safety and Health at Work.

6.4. COMPARABILITY OF DATA

The comparability of ESAW and EODS is dealt with in *Work and health in the EU: a statistical portrait, 1994–2002* ⁽⁴⁰¹⁾. The comparability of national working conditions surveys has been studied in *Working conditions surveys: a comparative analysis*, European Foundation for the Improvement of Living and Working Conditions, 2003. Despite the differences, it is interesting how frequently the surveys repeat certain aspects or characteristics.

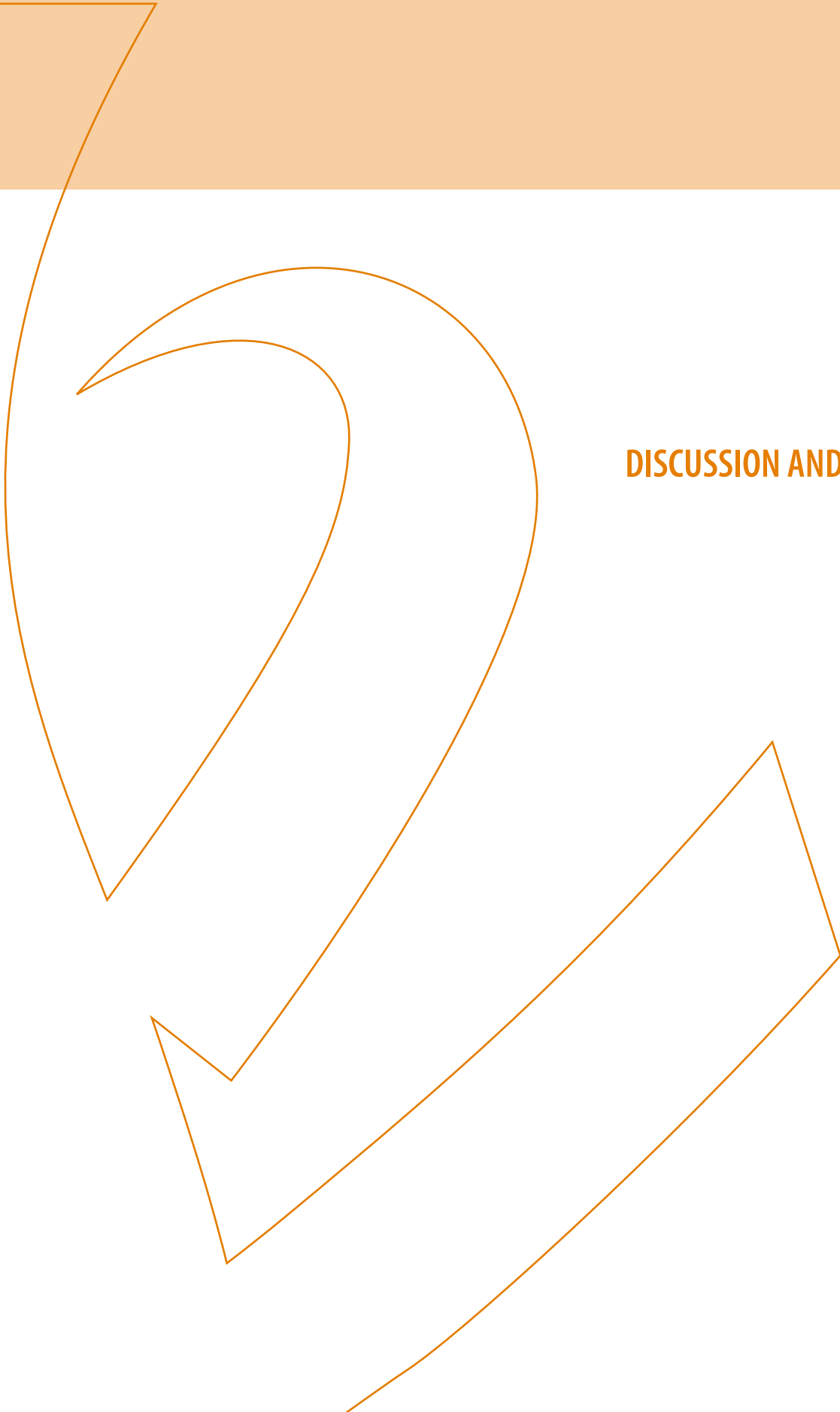
⁽⁴⁰⁰⁾ *European social statistics — accidents at work and work-related health problems*, European Commission, ISBN 92-894-3601-8.

⁽⁴⁰¹⁾ Eurostat, *Work and health in the EU: a statistical portrait, 1994–2002*. Catalogue No KS-57-04-807-EN-N.



7.

DISCUSSION AND CONCLUSIONS



7.1. EMPLOYMENT AND UNEMPLOYMENT OF YOUNG WORKERS

Employment rates of young people tend to be much lower than for older workers.

Many of the contextual features addressed in this report, including unemployment and employment figures and information on the type of contractual relations, influence and interact with the OSH situation of young workers. The statistical portrait of young workers within the workforce helps to clarify and to some extent to explain their occupational safety and health situation at work.

Employment rates of young people tend to be much lower than for older workers. The employment rate ⁽⁴⁰²⁾ (EU-25) reached 36.3 % for young workers, compared to 63.6 % for the population aged 15–64 in 2005. The proportion of young workers in the EU workforce has decreased by 0.9 % since 2000 and there were important differences between the Member States: in 2005, young workers accounted for about 7 % of the workforce in Hungary, Lithuania, Italy, Greece and the Czech Republic, through to about 19 % in Malta.

Low representation in the working population is partly due to the fact that many young people are still on training or in full-time education.

However, unemployment figures indicate yet another trend: **in many EU Member States unemployment rates of young workers have increased over the last years, while there are less and less young people in an overall ageing population.** In the EU-25, unemployment rates of young workers are on average twice as high as the total unemployment rates. There are also substantial differences across regions: regional unemployment rates for young people varied from 6.2 % to 59.1 %. In two thirds of EU-25 regions the unemployment rate for young people was at least twice that for total unemployment. In this context it is important to note that according to the ESWC 3 % of women and 2.8 % of men report they have been subject to age discrimination over the past 12 months. The rate is so low it is difficult to assess exactly the differences between groups. There seems to be no important difference by sector or by size of the company, while obvious differences exist between different age categories. The occurrence is the highest in the youngest, followed by the oldest age categories.

According to national figures, in some Member States, young women are considerably more affected by unemployment than young men.

According to national figures, in some Member States, young women are considerably more affected by unemployment than young men. That might increase their readiness to accept precarious working conditions and at least partly explain why they work in lower hierarchy levels and more unskilled, low-paid jobs.

National figures also indicate that young people are typically low-wage earners and that they have less access to social benefits.

Contractual relationships and working time distributions reflect yet another factor contributing to the workplace situation of young people — which is marked by high accident rates and higher exposure to some workplace risks — as well as contributing to their lack of training and experience. In comparison to the overall workforce, **workers aged 15–24 years are less often in full-time employment**

⁽⁴⁰²⁾ The employment rate represents the total number of persons in employment as a percentage of the population of that age group.



(72 % vs 82 %), more often on temporary contracts (39 % vs 14 %), and more often salaried workers (94 % vs 83 %).

Most temporary workers in the EU-25 are under 25. In 2005, 37.5 % of young workers in the EU-25 had a temporary contract and there were large differences between Member States. The percentage of young workers in temporary employment ranged from 6.8 % in Ireland to 59.4 % in Spain. This figure is partly related to the use of fixed-term contracts to cover periods of training or probation. According to data on temporary agency work and to national survey data on young workers, people employed on temporary contracts have less access to training and to participation in long-term competence development than workers with permanent contracts. Temporary workers also have less control over the order of tasks, pace of work and work methods, they have lower job demands, and are less informed about risks at work.

Most temporary workers in the EU-25 are under 25.

In 2005, one in four young workers had a part-time job within the EU-25 and part-time work is increasing. Age analysis shows an uneven distribution of working time over the lives of individuals. The highest number of part-timers are employees at the beginning or at the end of their working lives. A report on part-time work in Europe indicates that there are fewer opportunities for training and career progression ⁽⁴⁰³⁾. The level of salaries and social security benefits is often lower and jobs are typically monotonous. Employees with part-time contracts tend to have the following characteristics: working under more favourable ambient conditions, working fewer non-standard hours, having less control over working time, carrying out less skilful work, receiving less training, working in the social and hotel/restaurant sector rather than in construction, and working in service/sales occupations rather than as managers. National data also indicate that young workers often involuntarily work under such part-time contracts.

According to the results of the ESWC 2000, young employees in the EU-15 were working fewer hours per week than the average employee: 35 hours compared to 37.74 hours. As for the total working population, the number of working hours per week has declined sharply since 1990. Young workers were more likely to report working less than 30 hours per week —19.6 % as against 16.7 % within the total working population. On the other hand, young workers were less likely to report working more than 45 hours per week —10.5 % against 14.3 %. However, it is hard to define working time, considering the informal work arrangements that are common among young workers (e.g. volunteer jobs, working for a family business, apprenticeships).

Saturday work is more common among young workers: 53.9 % work at least one Saturday per month. Equally, young workers are more likely to work in shifts (22.4 % as compared to 19.3 % in the general working population). As with other shift workers, alternating morning, afternoon (and night) are the most common shifts with young workers. Unusual working hours or shift work can influence the risk of accidents at work by affecting concentration. Working at night leads to a 1.4 to 1.5 higher rate of accidents, and working at times that go against the body's biological rhythm can also cause digestive problems, sleep disturbance, physical and mental fatigue and cardiovascular problems. At night, poor lighting conditions and the lower number of workers and supervisors (particularly important for young workers) can also lead to a higher accident risk.

More than half of the young workers work at least one Saturday per month. Young workers are more likely to work in shifts.

Studies also indicate that businesses pay less attention to these workers and they themselves tend to accept poorer working conditions and higher levels of stress, and

⁽⁴⁰³⁾ European Foundation for the Improvement of Living and Working Conditions, Dublin. *Part-time work in Europe*, 2005. <http://www.eurofound.eu.int/ewco/reports/TN0403TR01/TN0403TR01.pdf>



are less motivated to take an interest in OSH issues. One study reports that in drop-outs with considerable prior exposure to shift work, strikingly high rates of absence due to sickness and excess rates of cardiovascular disease were observed.

As a consequence of their low involvement in the labour market highlighted by the abovementioned employment and unemployment figures, many young workers will therefore start working for the first time when they are over 18. While being vulnerable, they are then outside of the young worker Directive's scope.

At the same time, many of these workers move into temporary and part-time jobs, working irregular working hours. That means they are difficult to reach with information, training measures and OSH education. High unemployment rates will influence their readiness to accept unfavourable working conditions. And they might also be less willing to raise problems.

If these workers stay longer in education, mainstreaming OSH into education at all levels becomes an even more important vehicle for their training.

In 2005, 11.1 million young males and 9.3 million young females were working within the EU-25. As for the general working population, there are gender differences: for all the different types of hazards, both physical and psychosocial, job segregation strongly contributes to exposure to hazards and therefore to health outcomes. This is also true for young workers. Women are more likely to work in jobs involving caring, nurturing and service activities, associated with people, while men are more likely to work in management and manual and technical jobs associated with machinery or plant operation. Even within sectors, there is horizontal segregation — for example in the manufacturing sector women are concentrated in textiles and food processing. This segregation is also vertical — men are more likely to work in jobs higher up the occupational hierarchy. For example, while men hold the majority of skilled agricultural jobs, in the lowest level, unskilled occupations, women are disproportionately represented. Even where men and women appear to be employed to do the same job, in practice, the tasks they carry out can often be segregated by gender.

For all the different types of hazards, both physical and psychosocial, gender issues strongly contribute to different hazard exposure and therefore to different health outcomes. Nevertheless, data on exposures and health outcomes, which differentiate between young women and men, are difficult to find.

Gender differences will affect the risks that young men and young women are exposed to.

Gender differences will affect the risks that young men and young women are exposed to. OSH therefore needs to be well integrated into training courses for traditional work areas which young men go into, such as construction or



manufacturing professions, but it is not clear that **equal attention needs to be given to 'typically female' vocational training.** Some, such as hairdressing are covered, but is information about musculoskeletal disorders included in secretarial courses? If young men enter at a higher skills level, they will also be more likely to receive vocational training than more unskilled female workers. Equally, where young men are higher up the

hierarchy, they will have more opportunity to raise problems and thus have more control over their jobs. Moreover, if prevention focuses mainly on accident risks (and thus on the more exposed young male workers), health problems and risks to female young workers will be excluded.

Within the EU-25 in 2005, the sector with the highest proportion of young workers ⁽⁴⁰⁴⁾ is 'Hotels and restaurants' (22.7 %), followed by 'Trade' (16.3 %), 'Other community, social, personal service activities' (13.7 %) and 'Construction' (12.5 %). An overview of the three top sectors in Member States for youth employment also highlights agriculture and manufacturing as important sectors. From 2000 until 2005, the largest increase in the number of young workers was in 'Service workers and shop and market sales workers' (+ 0.38 million), followed by those in 'Elementary occupations' (+0.15 million) and 'Technicians and associated professionals' (+0.13 million). Many of these sectors and occupations are characterised by high accident risks, exposure to many workplace risks or, as is the case for the service professions, precarious employment situations.

According to data from national sources, in many Member States the most economically active workers are both men and women with upper secondary and post-secondary non-tertiary education.

From 2000 until 2005, the largest increase was in 'Service workers and shop and market sales workers' followed by 'Elementary occupations' and 'Technicians and associated professionals.'

HEALTH PROBLEMS AND OCCUPATIONAL ACCIDENTS

7.2.

National data suggest that young workers are at greater risk of having an occupational accident but that the average severity of these accidents is lower. Nevertheless, accident rates and causes of accidents vary greatly for different sectors and occupations.

Compared to the average working population young workers have higher non-fatal accident rates. The incidence rate of non-fatal accidents at work per 100 000 workers was more than 40 % higher among those aged 18–24 years as compared to the total workforce or those aged 55–64 years.

Overall, EU figures indicate that accident risks to young workers are decreasing more slowly than for other age groups. Accident prevention measures seem not to have been as effective as for other workers. This is especially true for accidents in certain sectors, such as fatalities in construction or agriculture. It is a worrying fact that fatal accidents of women in retail are due to a high extent to violence.

European and some national sources suggest that young workers are more exposed to the following physical work factors in comparison with the average working population: noise, vibrations, heat and cold, and the handling of dangerous substances.

National figures indicate that they are also more exposed to carcinogens in the workplace. This is to be seen against the background that carcinogens exposure has been identified as one of the major concerns, for example by the EU Health and Safety

EU figures indicate that accident risks to young workers are decreasing more slowly than for other age groups.

National figures indicate that they are also more exposed to carcinogens in the workplace.

⁽⁴⁰⁴⁾ Proportion of young workers = number young workers/working population 15–64 years *100.



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at Work Strategy 2002–06. Also, infectious diseases, allergies and respiratory diseases are some of the major health problems that young workers reported, which could be related to substantial exposure to chemical and biological agents. A more thorough assessment of these exposures specifically for young workers would be needed to assess these effects.

Young workers are at considerable risk of developing musculoskeletal disorders (including low back pain).

According to survey results, physically demanding work factors (such as working in awkward positions, handling heavy loads, and repetitive work) seem to be more common among young workers than in the average workforce. As a result, young workers are at considerable risk of developing musculoskeletal disorders (including low back pain). This is in line with surveys indicating that musculoskeletal disorders (MSDs) are reported to be one of the major health complaints by young workers. Considering the fact that musculoskeletal disorders are already today one of the major health problems in Europe’s workplaces, action needs to be taken to avoid an ‘epidemic’ of the future.

A recent Canadian study focused on the rehabilitation of workers who have suffered a permanent injury to their physical or psychological integrity, or who have permanent functional limitations. The authors produced an updated statistical portrait of workers undergoing rehabilitation. The authors found that young workers and older workers represent a more prevalent group for rehabilitation, the main cause being MSDs and back pain. They also found that young workers are less likely to be compensated (number of days for rehabilitation financed is much lower), that there is a higher risk of relapse and that the level of impairment (damage caused to physical and mental integrity) is also higher.

Some of the major health problems identified for young people in work are skin problems, allergies, infectious diseases and musculoskeletal disorders.

Some of the major health problems identified for young people in work are skin problems, allergies, infectious diseases and musculoskeletal disorders. These health problems correlate with the exposures mentioned above.

Some 86.5 % of all self-reported health problems that are due to pulmonary disorders, and cause more than two weeks’ absence, are reported by young workers aged 24 years and younger. Nearly half of all self-reported health problems due to stress, depression and anxiety, and which cause more than two weeks’ absence, are reported by young workers aged 24 years and younger (48.9%). Another example is the high risk of sexual harassment that young women especially are exposed to in the hospitality sector. Targeted prevention measures are needed to combat all these problems.



PREVENTION

7.3.

Possible reasons for higher occupational accident rates and the health problems identified above include young workers' lack of experience, physical and psychological immaturity, their lack of awareness of health and safety issues and the failure of employers to allow for these factors by providing appropriate training, supervision and safeguards, and placing young people in work situations that are appropriate to them.

Work-related risks to young workers need to be taken seriously. Still many of the risk factors are being seen as inherent to their risk-taking behaviour or the temporal nature of their involvement in work. If they are not in work on a permanent basis, young workers' presence might receive less attention and less training and guidance will be given to them, investment in their capabilities tends to be lower. This is illustrated by surveys, which indicate that young workers receive less training and information on workplace risks. But accident rates and figures on the health impact show us that young workers are at high risk.

A recent study by ETUC comes to the following conclusion:

'A look at the working conditions in activities with high concentrations of youth employment is highly enlightening. They tend to make a combination of exacting requirements in different areas. Physical endurance, manual dexterity and precision in building trades, multitasking and extreme time pressure in call centres, a combination of physical constraints, repetitive work and a smiling, likeable, laid back demeanour in fast food and holiday villages. The list of examples could go on. All have one thing in common: the work done by these young people is seen as unskilled because much of it is not seen as really work at all. It is deskilled because a big part of the real skills is dismissed. Or, more precisely, it is presented as inherent to, and normal for, young people. There is a phenomenon at work here very similar to that seen in the undervaluing of the real skills of many predominantly female occupations. It is "normal" for young leisure industry workers to move to the music and seem to revel in their job even if the bright and breezy facade belies long hours of heavy work, overwhelming fatigue and splitting head pains. It is "normal" for a building apprentice to lug back-breaking bags of cement, not ask questions about paint solvents and teeter perilously along unsecured scaffolding to prove themselves up to the job. It is "normal" for young motorcycle couriers to weave in and out of traffic, risking a dozen accidents a day to deliver packages safely to customers. But the fact is that there is nothing normal in any of that' ⁽⁴⁰⁵⁾.



If they are not in work on a permanent basis, young workers' presence might receive less attention and less training and guidance will be given to them.

⁽⁴⁰⁵⁾ Laurent Vogel, *Health and work in the 'contingent' generation*. <http://hesa.etui-rehs.org/uk/newsevents/files/Vogel-en.pdf>



Prevention measures need to be targeted at young workers, at their trainers and employers. A sectoral approach could be beneficial.

Prevention measures therefore need to be targeted at young workers, at their trainers and employers. A sectoral approach could be beneficial in that respect. It is the Agency's experience that this is one of the most successful approaches to workplace prevention ⁽⁴⁰⁶⁾. This can be explained fairly easily: the risks inherent to a sector can be clearly identified, the enterprises targeted are easier to reach via the trade federations in particular, and people in the same sector 'speak the same language'. So, action can be better targeted, more precise and more sector relevant. Knowing where young workers are working also suggests that these are the sectors that should be targeted with help on their OSH training and protection. Knowing which are the main health risks that young workers face equally suggests that employers and workers need awareness raising about these risks

Rehabilitation, back-to-work-policies and guidance for how to keep injured workers at work need to include young workers.

It is important to keep in mind the diversity of a young working population. For example, young male workers and young female workers carry out different work. Targeting mainly accident risks for prevention, which mainly male young workers are exposed to, would mean neglecting the risks of young female workers. In the same way, targeting high-accident risk sectors such as construction and agriculture would imply taking into account a potentially high proportion of young immigrant workers and finding appropriate ways to raise awareness of their specific problems, and to reach and protect them.

Prevention should also target employment agencies, to raise awareness about the specific conditions that young workers are exposed to.

Some research indicates that young workers might be less targeted by rehabilitation measures, and lower recuperation times of young workers might also indicate a lack of awareness about the risks they are exposed to and their consequences. Therefore, rehabilitation, back-to-work-policies and guidance for how to keep injured workers at work also need to be refocused to include young workers, especially when they have suffered an injury that leads to a permanent impairment, irrespective of the origin of the injury, and whether it is due to psychosocial or physical risks.

7.4. TRAINING AND EDUCATION

Work-based training, which would contribute to practical experience of young people, is relatively little used compared to classroom training.

Specific targeted measures need to be taken in education and training as well as in daily workplace practice. To reach a younger working population in temporary work situations that are constantly changing and influence their trainers', employers' and individual risk-taking behaviour, a tailored strategy needs to be put in place. Cooperation with other policy areas (public health, safety of children, accident prevention in transport) could be beneficial in that respect.

The Agency has addressed these issues by collecting, providing and analysing information on how to mainstream occupational safety and health into education at all levels, from kindergartens through schools and vocational training to universities ⁽⁴⁰⁷⁾

⁽⁴⁰⁶⁾ See for example the conclusions of the Agency's study on successful OSH interventions in SMEs: European Agency for Safety and Health at Work, 2003. *Improving occupational safety and health in SMEs: examples of effective assistance*, pp.131–137. http://osha.europa.eu/publications/reports/311/index_24.htm

⁽⁴⁰⁷⁾ OSH and education: start young — stay safe. European Agency for Safety and Health at Work dedicated web section. http://osha.europa.eu/good_practice/sector/osheducation/



and providing good practice examples ⁽⁴⁰⁸⁾. Integrating or ‘mainstreaming’ OSH into education forms a key part of developing a prevention culture by teaching children and young adults to live and work safely. The Agency’s work in this area supports the recent Commission strategy on safety and health, which recommends education be part and parcel of the school curriculum, either with a view to making people more aware of the problem (much like road safety is taught in some countries) or as a vocational subject in its own right.

There are positive impulses to be observed: According to a Eurostat study, **almost 30 % of all EU labour market training measures are targeted at young people aged under 25.**

Nevertheless, **work-based training, which would contribute to practical experience of young people, is relatively little used compared to classroom training.** Work-based training (other than apprenticeship) accounts for less than 4 % of training expenditure or around 7 % including integrated training, where a significant part of the training must be in the workplace. Special support for apprenticeship amounts to just over a quarter (27 %) of EU-15 labour market training expenditure and most of this support is provided by just four countries.

There are some evident occupational safety and health consequences:

- Those entering work who have not undergone formal vocational training are probably less likely to arrive with OSH knowledge.
- **Attention should be paid to improving labour market training:**
 - Shorter courses for unemployed should include occupational safety and health aspects.
 - Attention should also be paid to training creating no formal qualifications, which increasingly concerns female workers, for example in service sectors such as home care or other similar professions, to include OSH.
 - Workplace training needs to be further enhanced.

It is also evident that there is a need for targeting employment agencies, in order to improve the effectivity of training measures for young workers financed by public funds.



There is a need for targeting employment agencies, in order to improve the effectivity of training measures for young workers.

⁽⁴⁰⁸⁾ European Agency for Safety and Health at Work, 2004. *Mainstreaming occupational safety and health into education.* <http://osha.europa.eu/publications/reports/313>



7.5. RESEARCH NEEDS

More research is needed in order to:

- obtain a profile of risks to young workers and the extent they are exposed to workplace factors such as dangerous substances, and here specifically carcinogens and reprotoxicants, noise and vibration, physically strainful working conditions and psychosocial risks;
- assess the gender differences in these risks and the relative importance of the respective risks to young women and men;
- include diversity issues, for example regarding young migrant workers, into awareness raising, training and prevention;
- adjust awareness raising, training and prevention to the differences identified above;
- assess the importance of specific risks to young workers in service sectors;
- effectively target risk reduction policies for work-related accidents to young workers. Cooperation across policy areas (e.g. public health, combating child labour, transport safety) could also be beneficial in that respect.

Existing studies looking at occupational risks (such as noise, vibrations, pace of work) facing young people have some methodological problems ⁽⁴⁰⁹⁾.

- It is hard to define employment, considering the informal work arrangements that are common among young workers (e.g. volunteer jobs, working for a family business, apprenticeships).
- Under-reporting may occur due to young workers' lack of knowledge of the reporting process and hesitation to report hazards and risks.
- Statistics giving an overview at the EU level, that can be broken down by age, can be limited or lacking, and the numbers available for analyses in some fields can be small.

There are a number of confounding factors. It is also not always easy to distinguish whether young workers are generally more exposed to a particular risk factor — this could be the case if they are given particular tasks that involve greater exposure, e.g. unskilled manufacturing tasks — or if they appear to be more exposed because their proportion in the working population is higher in these sectors. This is the case in particular in the services, hospitality and the retail sectors. For example, the highest rates of workers being exposed to noise are in construction, industry, agriculture and transport, while the highest absolute numbers of workers exposed are in the tertiary sector (sales, personal services, education, health and social work).

Information is scarce as to the relative importance of risk factors in specific sectors and occupations. Specific data on exposure of young workers are also hard to obtain, especially when it is to be more specific to sectors and occupations they are mostly employed in.

⁽⁴⁰⁹⁾ Breslin, F. C. et al., Toronto: Institute for Work and Health. *Systematic review of risk factors for work injury among youth*, 2005.



Therefore, in this report non-comparable data, examples from one Member State only, one-off studies, and studies from outside national official data fill in the gaps and show some of the complexity of the situation of young workers' exposure to risk.

Some recommendations for prevention and research:

- target sectors where young workers are most at risk;
- target the most prevalent risks for awareness raising among employers and the young workers themselves;
- target employment agencies to raise awareness about the risks young workers are exposed to;
- train inspectors on where most young workers are employed and which risks they face;
- remember that it is not a homogenous group, specific needs of specific groups (male/female, migrant, etc.);
- pay special attention to part-timers and temporary workers: advice should mention the importance of special attention to young workers; specific guidance should be given to employers, inspectors and preventive services;
- include young workers' issues into guidelines on shift working;
- mainstream OSH into education at all levels. To include OSH in education is particularly important for those entering precarious jobs, who receive less training at work and are hard to reach.



MORE INFORMATION

This report will be complemented by a risk observatory website section presenting detailed information from many of the EU-25 Member States ⁽⁴¹⁰⁾.

The Agency has in 2006 dedicated its yearly campaign, the European Week on Safety and Health at Work to young workers' protection and has identified good practice and guidance for employers, trainers, supervisors, parents and the young workers themselves ⁽⁴¹¹⁾. More information on specific measures to prevent risks to young workers is available on the Agency's website: the Agency has compiled resources and links to sources of information related to young people and occupational safety and health at work ⁽⁴¹²⁾. These sources are continuously being updated. A separate prevention-focused report presents and analyses in detail examples of successful good practice in this respect ⁽⁴¹³⁾.

The Agency has also undertaken specific measures to improve education and training of young people. The European Agency for Safety and Health at Work started its project 'Mainstreaming occupational safety and health into education' in 2002 with the slogan 'Start young, stay safe'. The thinking behind the project is that the sooner children and young people get acquainted with the concept of safety and health, the sooner they can develop risk awareness, and the better they can shape their own safety and health environment in their future working and private lives.

The report *Mainstreaming occupational safety and health into education. Good practice in school and vocational education* ⁽⁴¹⁴⁾ gives a comprehensive overview of good practice examples throughout Europe and outlines steps toward a systematic strategy to integrate occupational safety and health into education at European level. More information about policies and practices in the Member States and discussions with relevant stakeholders is available in a dedicated web section of the Agency's website ⁽⁴¹⁵⁾.

⁽⁴¹⁰⁾ European Agency for Safety and Health at Work. Young workers. Dedicated section at <http://riskobservatory.osha.europa.eu/topics>

⁽⁴¹¹⁾ For further information see the dedicated European Week 2006 web section of the Agency's website which provides links to all other information resources. <http://ew2006.osha.europa.eu/whyyoungpeople>

⁽⁴¹²⁾ European Agency for Safety and Health at Work, Young People — Resources. http://osha.europa.eu/good_practice/person/young_people/

⁽⁴¹³⁾ European Agency for Safety and Health at Work, 2007. Preventing risks to young workers: policy, programmes and workplace practice (in print).

⁽⁴¹⁴⁾ European Agency for Safety and Health at Work, 2004. *Mainstreaming occupational safety and health into education*. <http://osha.europa.eu/publications/reports/313>

⁽⁴¹⁵⁾ All related information is at http://osha.europa.eu/good_practice/sector/osheducation/



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In order to improve the working environment, as regards the protection of the safety and health of workers as provided for in the Treaty and successive Community strategies and action programmes concerning health and safety at the workplace, the aim of the Agency shall be to provide the Community bodies, the Member States, the social partners and those involved in the field with the technical, scientific and economic information of use in the field of safety and health at work.

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