



### Key messages

- ▶ About 14 % of women and 20 % of men consider their working conditions to be a serious or very serious threat to their health.
- ▶ An impaired working atmosphere is felt by women and men to be especially stressful compared to other types of stress.
- ▶ Full-time employees feel stressed by work more often than part-timers.
- ▶ Subjective stress caused by work varies between sectors and occupational status groups.

## Work stress and health

Gainful employment plays a key role in the lives of populations in all modern societies. For many people of working age it represents the most important way of making a living. At the same time, in Germany it also largely finances the rest of the population via the welfare state's social security systems, whose aim it is to achieve social balance. Gainful employment not only provides the material advantages of a regular income, it also generates a sense of purpose and is associated – in varying degrees – with social status. Through their work, people in gainful employment are also tied into fixed time structures and social relationship networks that are independent of family and friends.

In addition to its individual importance, gainful employment's social significance is increasingly becoming a focus of public debate against the background of demographic ageing. In view of the shortage of skilled employees predicted for the future, it is of particular importance that qualified employees can work as long as possible (Fuchs, Zika 2010). However, this objective needs to be balanced against work-related health risks which may force employees to give up their jobs prematurely (RKI 2006).

Stress at the workplace can be caused by the physical and intellectual activities that characterize every job in varying degrees, or by the way in which work is organized, the working environment or social relationships at the workplace (Griefahn 1996, Schlick et al. 2010).

If stress at work becomes too much for an individual worker to bear, it can lead to strain and damage to health, absenteeism at work, occupational diseases, disability or premature retirement (Dragano 2007, Boedeker et al. 2008). Work stress causes significant subsequent corporate and societal costs and marks an important starting point for prevention and health-promotion measures.

In this issue of GBE kompakt we present topical results from the 2010 German Health Update (GEDA) study on the extent of work stress and its consequences for people's health. The study was conducted between September 2009 and July 2010 as an interview survey in the context of the Robert Koch Institute's health monitoring (Kurth et al. 2009). Altogether, the data of 20,050 people were available on this basis. The data of 13,767 women and men aged between 18 and 64 who were in gainful employment at the time of the survey were used for the following analysis. People who were not in gainful employment were excluded from the analysis.

## The majority of Germans do not believe that their work causes serious health hazards

By European comparison, Germany has a well developed system of industrial safety measures, strong organizations representing employees' interests, and a large number of highly qualified and socially secure jobs (BAuA 2010). On the other hand, there is an increasing number of jobs in under-regulated sectors of the labour market which are supposed to make it easier for the unemployed to re-enter the labour market. However, if employees permanently earn their living with jobs that do not pay into social insurance schemes, this can have considerable financial disadvantages for their pension entitlements and cause problems if they lose their job.

### How the GEDA study measures work-related strain

Stress research usually distinguishes between environmental stress (e.g. noise, fumes, extreme temperatures), physical stress (e.g. lifting and moving heavy loads, ergonomically unfavourable working positions), and psychological and social stress (e.g. time pressure, pressure to perform, conflicts at work) (Federal Statistical Office 1998). A module consisting of nine questions was developed for the 2010 GEDA study covering each of these dimensions with two indicators respectively.

The respondents were asked about lifting and carrying heavy loads (over 20kg for men, over 10kg for women); working in uncomfortable positions; exposure to noise, cold, heat, etc. at work; a stressful working atmosphere; stress caused by job insecurity; long working hours; shift work; working under time pressure and/or pressure to perform; and working according to strict instructions.

Each respondent was asked whether he or she was exposed to these conditions »frequently«, »sometimes«, »rarely« or »never« in the course of their work. In addition, a question was included on the respondent's subjective perception of health risks at work: »Do you believe that your health is at risk because of your work?« Here, respondents could grade their answers according to the categories »not at all«, »moderately«, »greatly« and »very greatly«.

Table 1 shows how the employees themselves see the health risks associated with their work. The overwhelming majority of working women and men in Germany stated that their health was endangered either 'not at all' or at most 'moderately' by their work. However, one seventh of employed women and one fifth of working men believe their health was greatly or even very greatly endangered by their work.

A comparison of three age groups – corresponding to the early (18 to 29), main (30 to 44) and late (45 to 64) phases in people's occupational lives – revealed differences in the levels of strain felt by employees. The percentage of people who believed their health was greatly or very greatly at

Table 1

Employees' subjective view of how much their health is threatened by their work Arbeit

Data basis: GEDA 2010

	Is your health endangered by your work?			
	not at all	moderately	greatly	very greatly
<b>Women</b>				
18–29 years	44.2 %	42.1 %	11.8 %	1.8 %
30–44 years	44.1 %	41.0 %	12.2 %	2.7 %
45–64 years	44.9 %	41.8 %	11.0 %	2.3 %
Total	44.5 %	41.6 %	11.6 %	2.3 %
<b>Men</b>				
18–29 years	39.5 %	44.6 %	12.4 %	3.4 %
30–44 years	26.3 %	50.2 %	18.6 %	4.9 %
45–64 years	34.4 %	46.4 %	15.7 %	3.5 %
Total	32.4 %	47.5 %	16.1 %	4.0 %

risk was especially large among working women and men between the ages of 30 and 44. These differences between the age groups were more evident in men than in women, however. Table 2 shows the ways in which the health of working women and men in Germany is put at risk by their work. It shows the percentage of women and men who were frequently exposed to certain sources of stress in their jobs.

The most common form of stress at work was working under time pressure or under pressure to perform. 36 % of the women and 44 % of the men stated that they often had to work under time pressure or under pressure to perform. The second most common source of stress among women and men was time pressure caused by overtime or long working hours/commuting times, and working under adverse environmental conditions such as noise, heat or cold. Adverse environmental conditions at work were more common among men than women. Health risks caused by an impaired working atmosphere or job insecurity were relatively rare, however.

Taken together, the results of the 2010 GEDA study show that, despite the advancing structural transformation of the economy from an industrial to a service-oriented economy, a considerable percentage of employees in Germany are still affected by physical and environment-related stress.

### An impaired working atmosphere is perceived as particularly stressful

Table 3 shows how the various forms of work stress correlate with people's perception of health risks caused by their work. It shows the results as odds ratios of the risk of feeling that one's health is 'greatly' or 'very greatly' endangered by one's work when the corresponding form of stress occurs 'frequently'. The results were controlled for the age of the respondents, for the time they had been working for their current employer, their actual number of weekly working hours and the presence of other forms of stress.

**Table 2**  
Frequent causes of work stress among 18- to 64-year-old employees  
Data basis: GEDA 2010

Type of stress	Women	Men	Total
Lifting/carrying heavy loads	23.3 %	30.7 %	27.3 %
Working in a stooped or other uncomfortable position	23.6 %	28.0 %	26.0 %
Noise, cold, heat, etc.	25.2 %	41.7 %	34.2 %
Impaired working atmosphere	5.3 %	5.8 %	5.6 %
Job insecurity	6.8 %	7.2 %	7.0 %
Overtime, long working hours/commuting time	27.5 %	40.5 %	34.6 %
Shift work	20.1 %	21.5 %	20.8 %
Working under time pressure or pressure to perform	35.9 %	44.1 %	40.4 %
Working according to strict instructions	17.8 %	19.1 %	18.5 %

It became clear that, regardless of the employees' gender, the risk of feeling that one's work was a health hazard was significantly increased in the presence of all forms of stress. In the case of women, an impaired working atmosphere, time pressure and pressure to perform at work were especially closely associated with the perception of work as a health hazard. An impaired working atmosphere was also the most common factor in the case of men, followed in second place by adverse environmental conditions.

**Table 3**  
Correlation between forms of work stress and perceived health risks among 18- to 64-year-old employees  
Data basis: GEDA 2010

Type of stress	Women	Men
	OR (95 %-CI)	OR (95 %-CI)
Lifting/carrying heavy loads	2,20 (1,73 – 7,80)	1,49 (1,18 – 1,89)
Working in a stooped or other uncomfortable position	2,19 (1,74 – 2,76)	1,36 (1,07 – 1,72)
Noise, cold, heat, etc.	1,84 (1,49 – 2,27)	2,63 (2,12 – 3,27)
Impaired working atmosphere	2,51 (1,79 – 3,51)	2,91 (2,04 – 4,16)
Job insecurity	1,37 (0,98 – 1,90)	1,62 (1,17 – 2,23)
Overtime, long working hours/commuting time	2,11 (1,73 – 7,8)	1,65 (1,34 – 2,04)
Shift work	1,89 (1,49 – 2,39)	2,05 (1,64 – 2,56)
Working under time pressure or pressure to perform	2,32 (1,87 – 2,89)	1,99 (1,62 – 2,44)
Working according to strict instructions	1,90 (1,51 – 2,38)	1,50 (1,19 – 1,89)

\*Odds Ratios from logistic regression models controlled for age, weekly working hours and how long the person has been working for their current employer. All factors were considered simultaneously in the logistic regression model.

## German Health Update (GEDA)

<b>Data holder:</b>	Robert Koch Institute
<b>Objectives:</b>	To provide up-to-date data on health-related issues, to analyse temporal developments and trends
<b>Survey method:</b>	Computer-assisted telephone interviews (CATI)
<b>Population:</b>	Residential population of Germany aged 18 and over
<b>Sample:</b>	21,262 women und men
<b>Cooperation rate:</b>	55,8 %
<b>Survey period:</b>	July 2008 to June 2009

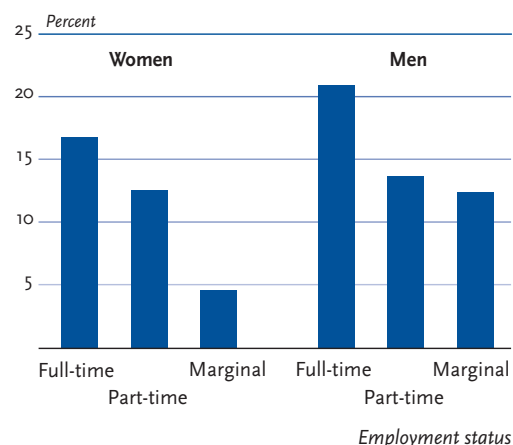
## Full-time employees feel stressed by work more often than part-timers

There were considerable differences between different kinds of employees as regards their perception of health issues at work. The number of hours worked was an especially important factor affecting a person's perception of stress (Figure 1). Full-time employees spend much more time at their workplace than part-timers or persons in marginal employment, and are exposed to the conditions there for longer periods.

According to the results of the 2010 GEDA study, people in full-time gainful employment noticed strains on their health as a result of their work much more frequently than the other groups of employees. 17 % of women and 21 % of men working full-time noticed that their health was 'greatly' or 'very greatly' affected, compared to only 5 % of women 12 % of men who were marginally employed.

Job profiles and working conditions are largely determined by the industry in which people are employed. Figure 2 shows the percentage of employees in different sectors of the economy who feel that their health is greatly/very

**Figure 1**  
Employees' subjective feeling that their health is (greatly/very greatly) affected by their work – classified by employment status (full-time, part-time, marginal employment)  
Data basis: GEDA 2010



greatly affected. Women working in healthcare indicated especially often that their health was put under great strain by their work. In this sector it is above all the great physical and emotional strain of looking after the sick and elderly that affects employees (RKI 2009).

Among men, by contrast, it was people working in construction, related trades and transport (freight and passenger traffic) who particularly often reported health strain due to their physically strenuous work. The gender-specific correlation between the economic sector and perceived work stress must also be interpreted with a view to the job profiles.

For example, analyses on the basis of the 2006 Labour Force Survey show that women and men in the same industry often do jobs with different physical and psychosocial stress profiles (Kroll 2011). For example, in a certain industry men might do mainly manual forms of work, while women work more in the administrative field.

### There are marked social differences relating to work stress

Social differences in exposure to forms of work stress become evident when the percentage of the women and men who feel that their health is greatly/very greatly affected by their work is analysed in a differentiated way according to occupational status.

Health hazards at work were reported much more frequently by women and men employed as wage-earners

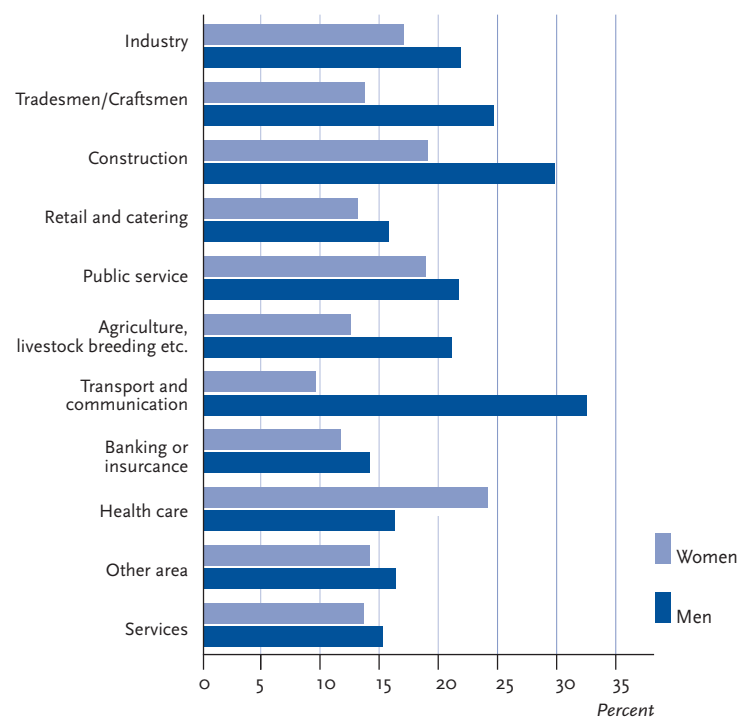
than by salaried employees, freelancers or the self-employed (Figure 3). After statistical control for age, the number of weekly working hours and how long the person had been working for their current employer, wage-earners reported serious health hazards caused by their work 1.7 times (women) and 2.0 times (men) more frequently than salaried employees. Wage-earners also reported health hazards more frequently than public servants. Female wage-earners' risk was 2.0 times higher – male wage-earners 1.4 times higher – than that of public servants. When people's position within the respective groups was examined, a social gradient in perceived work stress also became evident between wage-earners, salaried employees and public servants.

### Conclusion

The results presented here from the 2010 GEDA study suggest that the overwhelming majority of people in gainful employment in Germany do not perceive any marked health risks at their workplaces. On the other hand, a significant percentage of employees feel that their health is greatly or even very greatly endangered by their work, despite well-established and well-developed occupational safety and health (OSH) protection in Germany.

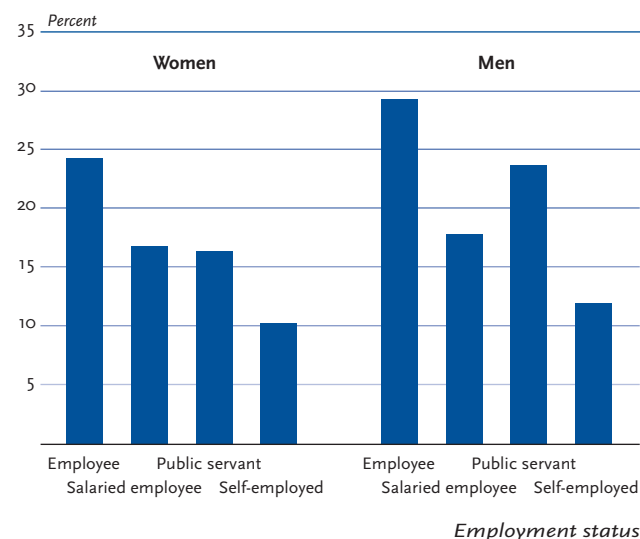
Perceptions of health hazards at the workplace are based on environment-related, physical and psychosocial forms of strain. Furthermore, perceived strain varies with

**Figure 2**  
18- to 64-year-old full-time employees' subjective feeling that their health is greatly/very greatly affected by their work – classified by economic sector  
Data basis: GEDA 2010



**Figure 3**  
**18- to 64-year-old full-time employees' subjective feeling that their health is affected by their work – classified by professional status**

Data basis: GEDA 2010



the number of hours worked, the economic sector and the employee's occupational status.

The findings based on the data from the 2010 GEDA study are consistent with the results of other studies – i. e. there is considerable potential for preventive and health-promotion measures at the workplace. The percentage of employees who feel burdened by psychosocial pressures at work has increased considerably (Lehnhart 2007) over the last few decades. In the 2010 GEDA study, 36 % of the women and as many as 44 % of the men indicated that they often had to work to tight deadlines and often felt under pressure to perform. The growing relative importance of psychosocial strains at work corresponds with an increase in mental-health diagnoses leading to early retirement.

According to data from the German Federal Pension Insurance scheme, 80,702 women and 90,427 men retired early in 2009 because of a reduction in their ability to work due to illness or accident (BAuA 2010). Together, they accounted for about 14 % of all new pensioners. The percentage of early retirees who had been diagnosed with a mental-health condition rose from 33 % to 38 % between 2006 and 2009 alone. It is estimated that the annual direct and indirect costs of illness-related early retirements amount to more than €10 billion (Boedeker et al 2008). The highest costs are caused by diseases of the skeleton, muscles and connective tissue (€3.5 billion), followed by the circulatory system (€1.9 billion), psychiatric conditions (€1.6 billion) and malignant neoplasms (€1 billion).

In addition to the early retirements, in 2009 there were a further 16,657 recognized cases of occupational diseases and about 975,000 notifiable occupational accidents, only a small minority of which led directly to retirement (BAuA 2010, RKI 2007). According to data from the 2009 GEDA study, about one in five accidents among adults occurs at the

workplace (Sass 2010). Occupational diseases are diseases for which work-related causes have been legally established and which have been medically substantiated and recognized in each specific case. The distribution of occupational accidents and diseases can be mapped using data from health- and pension-insurance providers, and they are also most common in industries in which women and men frequently do manual work (BAuA 2010).

In view of the findings presented, it becomes clear that reducing work-related health risks must remain an important objective of the various stakeholders in the labour market and the healthcare system. Efforts in this field were combined for the first time under the Joint German Occupational Safety and Health (OSH) Strategy agreed in 2007 by federal, state and accident insurance providers (National OSH Conference 2007). The current strategy covers the period from 2008 to 2012. It aims to reduce the frequency and severity of work accidents, musculoskeletal disorders and skin diseases.

Its other health-and-safety aims in Germany are to reduce harmful psychological stress and to promote systematic action on occupational safety in companies. The goal is to reach the OSH objectives through joint campaigns by federal and state governments in cooperation with employers' and employees' representatives in areas such as technical safety, accident prevention, health protection, corporate health promotion and the ergonomic organization of work. The Occupational Safety and Health Strategy is to be updated every three to five years. Monitoring of safety and health at work by Federal Health Reporting is designed to continuously provide additional data on the relation between work and health.

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GBE kompakt

**Published by**

Robert Koch Institute  
Nordufer 20  
13353 Berlin

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**How to quote the title**

Kroll LE, Müters S, Dragano N (2011)  
Work stress and health.  
Published by Robert Koch Institute Berlin,  
GBE kompakt 2(5)  
[www.rki.de/gbe-kompakt](http://www.rki.de/gbe-kompakt) (last revised: 28.06.2011)

ISSN 2191-4974

The Robert Koch Institute is a federal institute  
within the portfolio of the Federal Ministry of Health