

## Fall accidents

### Introduction

More than 9.7 million people were injured in Germany in 2014 due to accidents, according to estimates by the German Federal Institute for Occupational Safety and Health (Bundesanstalt für Arbeitsschutz und Arbeitsmedizin 2016). According to the Federal Statistical Office, nearly 21,000 people were killed in accidents (Statistisches Bundesamt 2015). Accident prevention is an important task in the realm of public health, because accident injuries are of major significance for those affected and their families as well as for society in general. The prerequisite for accident prevention is a detailed overview of accidents in Germany. Representative surveys of the parties involved with regard to accident locations and mechanisms (e.g. falling, colliding, trapping) constitute important additional information to official statistics which fail to provide a complete picture. For example, accidents which occur at home or during leisure time do not feature in official statistics.

A large proportion of accidents trace back to falls. Especially in older age, they can have far-reaching consequences such as fractures and hospital admissions (Robert Koch-Institut 2013, Robert Koch-Institut 2015). But falls are also common in young and middle adulthood. This fact sheet looks at the prevalence and the consequences of fall accidents in adulthood, i.e. 18 years and older. There is a focus on differences between the sexes. Data has been evaluated from the population-representative survey “German Health Update” (GEDA) 2010, which included an accident module with questions about fall accidents.

### Indicator

The assessment of the prevalence of fall accidents in GEDA 2010 was carried out in several stages. Initially the survey asked: “Have you, in the past 12 months, had an injury or case of poisoning, which required medical treatment? Note: By this we mean internal and external injuries or poisonings.” By means of a second question, a differentiation was made between intentional (deliberate) or unintentional (accidental) injuries. Then, people who stated they have suffered accidental injuries, were interviewed via an “accident module” by means of 19 accident-specific ques-

tions exploring details of the accident and its consequences. Twelve categories were determined for the collection of information regarding accident mechanisms. The categories “fall on a flat surface, e.g. falling on the street on black ice” and “fall from a height, for example from a ladder” were grouped for the following analysis as “various accidental falls”. As an indicator, the proportion of people was evaluated who, within the past 12 months, had suffered an accidental fall and as a result had sought medical help. In addition to the indicator selected details of the accident were analysed. These include bone fractures as a form of serious accidental injury and hospitalizations. All analyses were performed separately according to age and gender.

### Key results

- ▶ 2.6% of adults had had an accidental fall within the past 12 months and were therefore medically treated; at 2.4%, women were found to suffer accidental falls almost just as often as men at 2.8%.
- ▶ The highest prevalence of accidental falls is to be found in 18 - 29-year-old men (5.3%).
- ▶ Women suffer a clearly higher share of accidental falls in relation to their total number of accidents, compared to the share among men - 38.0% compared to 24.8%.
- ▶ The percentage of accidental falls as a share of total accidents increases with age: In men aged 70 and above it increases to over 50% and in women of the same age to over 60%.
- ▶ 34.4% of accidental falls result in bone fractures and a quarter (26.8%) of all falls require a stay in hospital.

### Classification of findings

According to GEDA 2010, a total of approximately 8% of all adults suffered a non-fatal accidental injury that required medical treatment within the 12 months prior to the survey (Robert Koch-Institut 2012). An accident caused by a fall was suffered by 2.6% of adults, with

barely any difference between men and women (2.4% versus 2.8%). The highest prevalence was calculated at 5.3% for young men aged between 18 and 29 years. The comparability of results is limited, since other surveys conducted in Germany regarding falls only include some of the accident locations or are limited to specific populations - in particular the elderly. Also, comparability is made more difficult due to the fact that the target populations (age, where they live, state of health) and methods differ, so that the fall prevalence figures vary greatly. In GEDA, 3.0% of all women and 1.8% of all men over 70 years old reported having a fall requiring subsequent medical treatment within the 12-month period prior to the survey. In the German Health Interview and Examination Survey for Adults (DEGS1) conducted by the Robert Koch Institute, it was established that for the 65 to 79-year-old age group living at home, the prevalence of falls within a year was 25.7% for women and 16.3% for men (Rapp et al. 2014). A survey with slightly older participants (65-89 years) yielded even higher prevalence figures of 38.7% for women and 29.7% for men (Rapp et al. 2014). The significantly higher prevalences are probably due to the fact that, compared to the GEDA study, less severe accidental falls where no medical treatment was necessary were also recorded.

With regard to accidents in general, the GEDA data shows that falls are the most significant accident mechanism: 29.8% of all non-fatal accidents are due to a fall. Women are significantly more commonly affected than men - 38.0% compared to 24.8%. The percentage increases with age in both sexes: In men aged 70 and above it increases to over 50% and in women of the same age to over 60%. Also in the home and during leisure time, accidents due to falls dominate the statistics (27.0% of all accidents). Falls were also identified as the most frequent accident mechanism for domestic and leisure time accidents in a representative survey conducted by the Federal Institute for Occupational Safety and Health (BAuA) in the year 2000 (Kreileder and Holeczek 2002). This is confirmed in analyses of accidents within the European Union (Angermann et al. 2007). Especially with regard to older women the European data, analogous to our own results, suggest a high risk of falling (EuroSafe 2013).

The GEDA data clarify the prevalence and severity of non-fatal accidents due to falls and show clear age and gender-specific patterns. The elderly are therefore no more at risk of falling than younger people, but falls represent the dominant accident mechanism in old age. In addition, the consequences of falls are often serious and the proportion of accidental falls with severe consequences (fractures, hospital admissions) even increases with age (Robert Koch-Institut 2013). Nevertheless - the GEDA data does show that the prevention of falls ("fall prophylaxis") is an important issue in all age groups.

Note: A detailed description of the study, as well as methodological notes can be found on the GEDA study website at [www.geda-studie.de](http://www.geda-studie.de) - as well as under RKI (2012).

Additional results regarding accidents and injuries in adults and children in Germany can be found under RKI (2013), RKI (2015), Saß et al. (2016), Saß et al. (2014), Varnaccia et al. (2014a) and Varnaccia et al. (2014b).

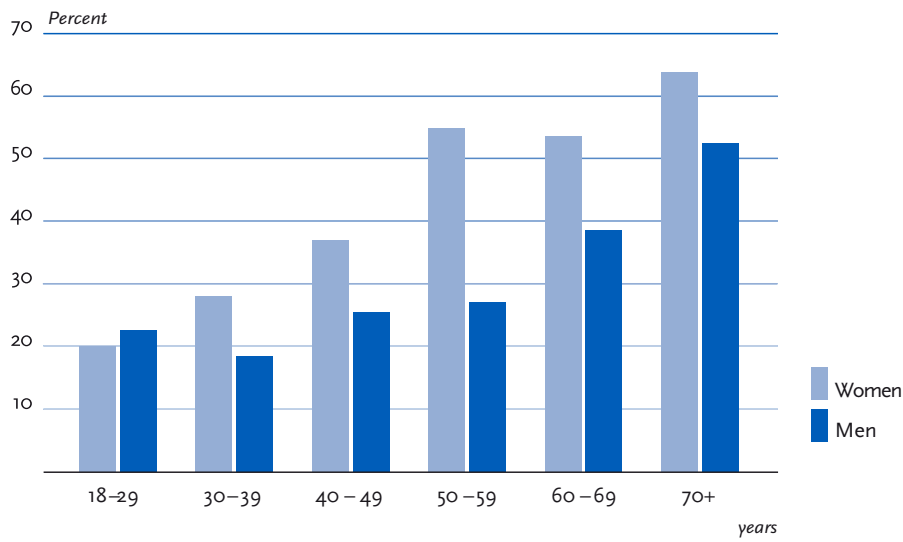
## References

- Angermann A, Bauer R, Nossek G et al. (2007) Injuries in the European Union: Summary 2003–2005. Working together to make Europe a safer place. Kuratorium für Verkehrssicherheit (KfV), Vienna
- Bundesanstalt für Arbeitsschutz und Arbeitsmedizin (2016) Unfallstatistik: Unfalltote und Unfallverletzte 2014 in Deutschland.  
<http://www.baua.de/de/Informationen-fuer-die-Praxis/Statistiken/Unfaelle/Gesamtunfallgeschehen/Gesamtunfallgeschehen.html> (Accessed: 23.06.2016)
- EuroSafe (2013) Injuries in the European Union, Report on injury statistics 2008-2010. EuroSafe, Amsterdam
- Kreileder M, Holeczek M (2002) Unfallverletzungen in Heim und Freizeit im Jahr 2000. Repräsentativbefragung in Deutschland. Schriftenreihe der Bundesanstalt für Arbeitsschutz und Arbeitsmedizin. BAuA, Dortmund, Berlin, Dresden
- Robert Koch-Institut (Publ.) (2012) Daten und Fakten: Ergebnisse der Studie »Gesundheit in Deutschland aktuell 2010«. Beiträge zur Gesundheitsberichterstattung des Bundes. RKI, Berlin
- Robert Koch-Institut (Publ.) (2013) Das Unfallgeschehen bei Erwachsenen in Deutschland. Ergebnisse des Unfallmoduls der Befragung »Gesundheit in Deutschland aktuell 2010«. Beiträge zur Gesundheitsberichterstattung des Bundes. RKI, Berlin
- Robert Koch-Institut (Publ.) (2015) Gesundheit in Deutschland. Gesundheitsberichterstattung des Bundes. Gemeinsam getragen von RKI und DESTATIS. RKI, Berlin
- Statistisches Bundesamt (2015) Gesundheit: Todesursachen in Deutschland 2014. Fachserie 12 Reihe 4. Statistisches Bundesamt, Wiesbaden
- Saß A, Schmitz R, Gutsche J et al. (2016) Unfälle in Deutschland – Woran verletzten sich Kinder und Jugendliche? GBE kompakt 7(2). Robert Koch-Institut (Publ.), Berlin.  
[www.rki.de/gbe-kompakt](http://www.rki.de/gbe-kompakt) (Accessed: 24.06.2016)
- Saß AC, Poethko-Müller C, Rommel A (2014) Das Unfallgeschehen im Kindes- und Jugendalter – Aktuelle Prävalenzen, Determinanten und Zeitvergleich. Bundesgesundheitsbl - Gesundheitsforsch - Gesundheitsschutz 57(7):789-797
- Varnaccia G, Rommel A, Saß AC (2014) Das Unfallgeschehen bei Erwachsenen in Deutschland. Bundesgesundheitsbl - Gesundheitsforsch - Gesundheitsschutz 57:604-612
- Varnaccia G, Saß AC, Rommel A (2014) Das Unfallgeschehen bei Kindern und Jugendlichen in Deutschland Bundesgesundheitsbl - Gesundheitsforsch - Gesundheitsschutz 57:613-620

**Table 1**  
**People suffering accidental falls requiring medical treatment (percentage; within past 12 months)**

Age group	Women		Men		Total	
	%	(95% CI)	%	(95% CI)	%	(95% CI)
18–29 years	2.7	(2.0–3.6)	5.3	(4.2–6.7)	4.0	(3.3–4.9)
30–39 years	1.8	(1.2–2.6)	3.0	(2.1–4.1)	2.4	(1.8–3.0)
40–49 years	1.9	(1.4–2.6)	2.4	(1.7–3.5)	2.2	(1.7–2.8)
50–59 years	3.0	(2.3–4.0)	1.9	(1.2–2.9)	2.4	(1.9–3.1)
60–69 years	2.1	(1.5–2.9)	1.9	(1.0–3.3)	2.0	(1.4–2.7)
70 years and older	3.0	(2.0–4.5)	1.8	(1.0–3.3)	2.5	(1.8–3.5)
<b>Total</b>	<b>2.4</b>	<b>(2.1–2.8)</b>	<b>2.8</b>	<b>(2.4–3.2)</b>	<b>2.6</b>	<b>(2.3–2.9)</b>

**Figure 1**  
**Proportion of falls as percentage of all accidents by age and sex**



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