

# Smoking

**Field of action 1: Reducing the risk of diabetes****Children and adolescents**

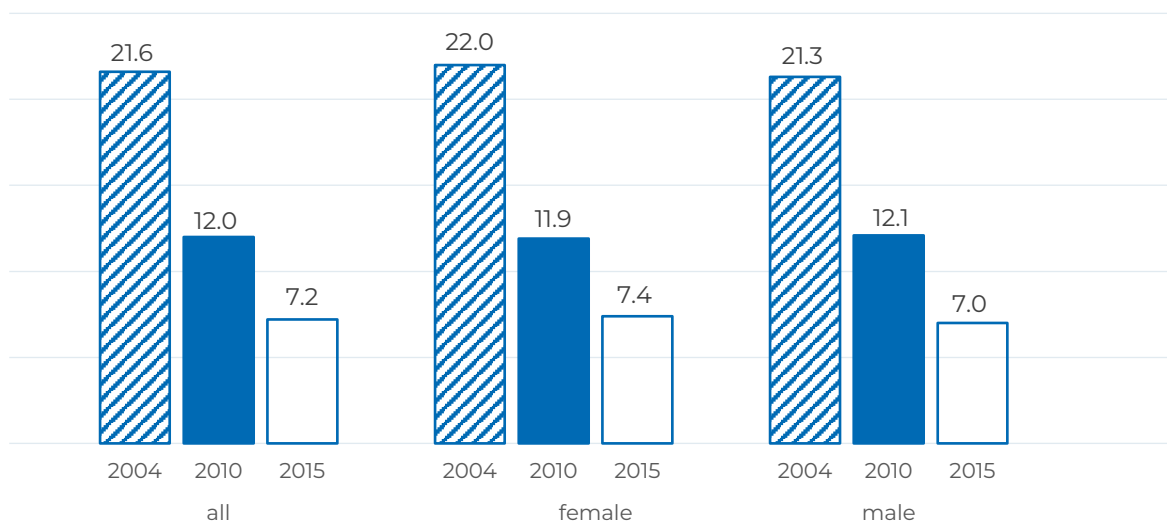
## Background

Smoking is one of the most important risk factors associated with the development of chronic non-communicable diseases, especially cancer, cardiovascular and respiratory diseases and diabetes [1]. The risk of tobacco-associated illnesses increases significantly when smokers start at a young age, as younger people are particularly susceptible to damage from the harmful substances contained in tobacco smoke [2]. In addition, studies show that people who start smoking early demonstrate a greater level of dependence on tobacco and this makes it more difficult to stop smoking later in life [3].

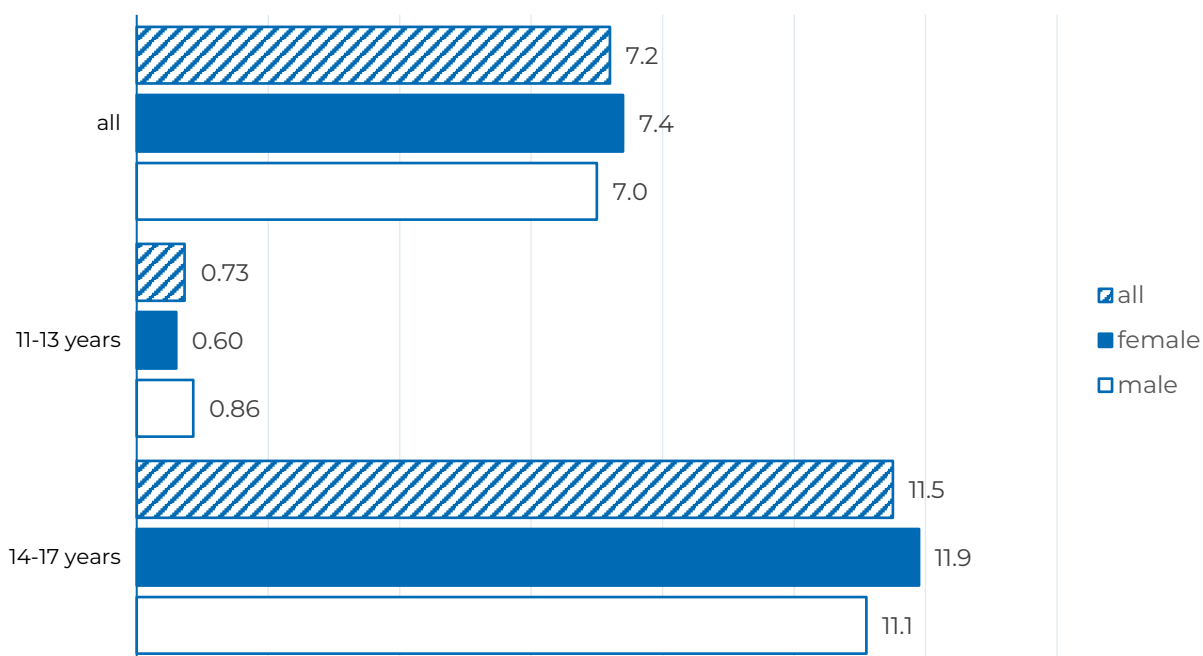
### Key messages

- ▶ Around 7 out of 100 girls and boys at age 11 to 17 years smoke.
- ▶ Smoking prevalence in children and adolescents has decreased significantly over time.
- ▶ The proportion of children and adolescents that smoke increases with age.

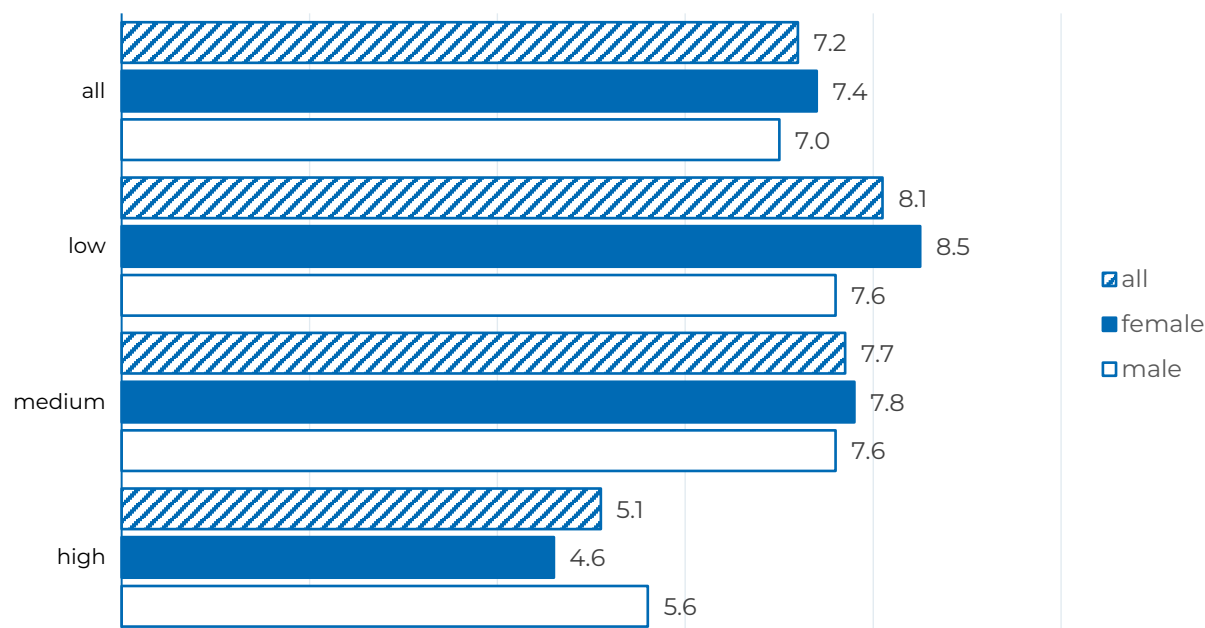
**Figure 1:** Temporal development of the prevalence of smoking among children and adolescents (11 – 17 years) in % by sex between 2004 and 2015.



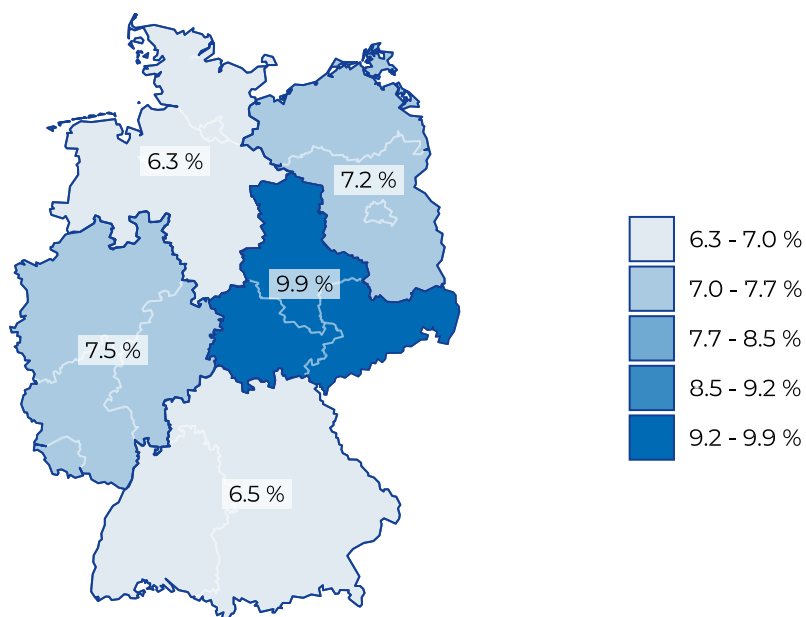
**Figure 2:** Prevalence of smoking among children and adolescents (11 – 17 years) in 2015 in % by age and sex.



**Figure 3:** Prevalence of smoking among children and adolescents (11 – 17 years) in 2015 in % by education group and sex.



**Figure 4:** Prevalence of smoking among children and adolescents (11 – 17 years) in 2015 in % by region (north east, north west, middle east, middle west, south).



## Results

In 2015, 7.2% of children and adolescents aged 11 to 17 years smoke (girls: 7.4%, boys: 7.0%). In contrast, three times as many children and adolescents (21.6%) smoked in 2004. In terms of age, smoking prevalence is significantly higher among 14- to 17-year-olds at 11.5% than among 11- to 13-year-olds at 0.7%. This age-specific pattern is evident among both sexes. In 2015, no pronounced differences in smoking behaviour among children and adolescents were observed by region or parental education.

## Conclusion

Although smoking prevalence in late childhood and adolescence has decreased over time, in 2015, one in every fourteen 11- to 17-year-olds in Germany smoked [4]. There is no noticeable association between the prevalence of smoking and parental education. However, significant differences in smoking behaviour by the type of secondary school the respondents attended were identified and the prevalence was highest among children attending schools not geared towards university entry qualifications [5]. Therefore, measures to prevent children and adolescents from smoking, as set out in the “reducing tobacco consumption” national health goal [6], remain an important aspect of diabetes prevention. These measures also need to consider newer forms of nicotine consumption such as e-cigarettes and (e-)shishas.

## Methodology and data sources

### Definition

The indicator smoking is defined as the proportion of children and adolescents in the population who smoke daily or occasionally.

### Operationalisation

Information on smoking behaviour was collected as self-reported data provided by children and adolescents aged between 11 and 17 years.

#### **German Health Interview and Examination Survey for Children and Adolescents (KiGGS) baseline study, KiGGS wave 2:**

- ▶ “Do you currently smoke?”
  - “No”, “Daily”, “Several times a week”, “Once a week”, “Less often”.

#### **KiGGS Wave 1:**

- ▶ “Have you ever smoked?”
  - “Yes”, “No”. Respondents who answered “Yes” were then asked “How often do you currently smoke?” - “Daily”, “Several times a week”, “Once a week”, “Less than once a week”, “Not at all”.
- ▶ Smoking is defined as “daily”, “Several times a week”, “Once a week” or “Less often” ((KiGGS baseline study, (KiGGS Wave 2) or “Less than once a week” (KiGGS Wave 1)

### Reference population

Children and adolescents with permanent residence in Germany, aged 11-17 years.

## Data source

Nationwide interview and examination surveys 2003 – 2006 (KiGGS baseline study), 2009 – 2012 (KiGGS Wave 1) and 2014 – 2017 (KiGGS Wave 2) of the Robert Koch Institute (RKI) based on a registry office sample with data collected using self-administered questionnaires.

## Number of cases

- ▶ KiGGS baseline study: n = 17,641, of which 6,729 aged between 11 and 17 years
- ▶ KiGGS Wave 1 (cross-sectional survey): 12,368, of which 4,944 aged between 11 and 17 years
- ▶ KiGGS Wave 2 (cross-sectional survey): 15,023, of which 4,747 aged between 11 and 17 years

## Calculation

- ▶ **Description:** For the indicator, the figures for total, girls and boys are provided and stratified by age group, residential area and parental education as far as the number of cases available for the figure is  $\geq 5$  and the statistical uncertainty in the estimate of the indicator is not considered too large (a coefficient variation  $\leq 33.5\%$ ).
- ▶ **Stratification:** The geographical classification of the residence of the participating person was carried out by region (north-east, north-west, middle-east, middle-west and south). Educational status of the parents was determined using the Comparative Analysis of Social Mobility in Industrial Nations (CASMIN) index, which takes information on both school and vocational training into account and allows a categorisation into a low, medium and high education group.
- ▶ **Weighting:** In order to correct for deviations from the underlying reference population due to different participation rates or sampling probabilities, weighting factors were used when calculating the indicator. These adjust the surveys to the population structure of the reference population with regard to sex, age, federal state and German citizenship (yes/no) as of 31 December 2004 (KiGGS Baseline survey), 31 December 2010 (KiGGS Wave 1) and 31 December 2015 (KiGGS Wave 2) as well as to the distribution of parental education in the microcensus 2005 (baseline survey), 2009 (wave 1) and 2013 (wave 2). In KiGGS Wave 1, the weighting also took into account the different probability of participation of re-participants from the KiGGS Baseline survey.

## Data quality

The RKI surveys for children and adolescents provide representative results for the 0 to 17-year-old resident population in Germany. Various measures (including oversampling of children and adolescents without German citizenship), enabled migrants to be included in the KiGGS sample approximately in line with their proportion of the population. Nevertheless, further efforts are necessary in the future, especially for children and adolescents with little knowledge of German.

## Data download

Robert Koch Institute. (2024). Results of the National Diabetes Surveillance 2015 – 2024 [Data set]. Zenodo. <https://doi.org/10.5281/zenodo.14935276> (in German)

## References

1. GBD 2015 Tobacco Collaborators. Smoking prevalence and attributable disease burden in 195 countries and territories, 1990-2015: a systematic analysis from the Global Burden of Disease Study 2015. *Lancet*. 2017;389(10082):1885-906. doi: 10.1016/S0140-6736(17)30819-X.

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## External links

- ▶ Robert Koch Institute. Information on the study German Health Interview and Examination Survey for Children and Adolescents (KiGGS) 2024 [cited 30.01.2025]. Available from: <http://www.rki.de/kiggs>.

## Imprint

### Editor

Robert Koch Institute · Department of Epidemiology and Health Monitoring  
National Diabetes Surveillance · Nordufer 20 · 13353 Berlin

### Citation

National Diabetes Surveillance at the Robert Koch Institute (2024)  
Results of the Diabetes Surveillance 2015 – 2024. Smoking–Children and adolescents.  
Robert Koch Institute, Berlin. doi: 10.25646/12274.

### Open access

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### Funding

The project Developing National Diabetes Surveillance at the Robert Koch Institute with expansion to an NCD Surveillance (2015 – 2024) was funded by the Federal Ministry of Health (funding references: GE20150323, GE20190305, 2522DIA700, 2523DIA002).

Supported by:



on the basis of a decision  
by the German Bundestag