

Sugar-sweetened beverages



Field of action 1: Reducing the risk of diabetes



Adults

Background

Sugar-sweetened beverages such as lemonades and fruit drinks contain industrially added sugar and thus usually have a high energy content and a high glycaemic index with a low satiety effect. These drinks should be distinguished from beverages sweetened with sugar substitutes and from fruit and vegetable juices containing natural fructose [1, 2]. According to meta-analyses, people with a regularly higher consumption of sugar-sweetened beverages have a higher risk of developing type 2 diabetes [3]. Furthermore, these beverages are part of dietary patterns that have been linked to an increased risk of type 2 diabetes in epidemiological studies [4].

Key messages

- ▶ In 2010, around one in six adults drank sugar-sweetened beverages at least once a day.
- ▶ Men are almost twice as likely as women to consume sugar-sweetened beverages every day.
- ▶ Considerably more women and men in the lower education group have a daily consumption of sugar-sweetened beverages compared to the higher education group.

Figure 1: Temporal comparison of the proportion of persons in the population (18 – 79 years) who consume sugar-sweetened beverages in % by sex between 1998 and 2010 (age-standardised).

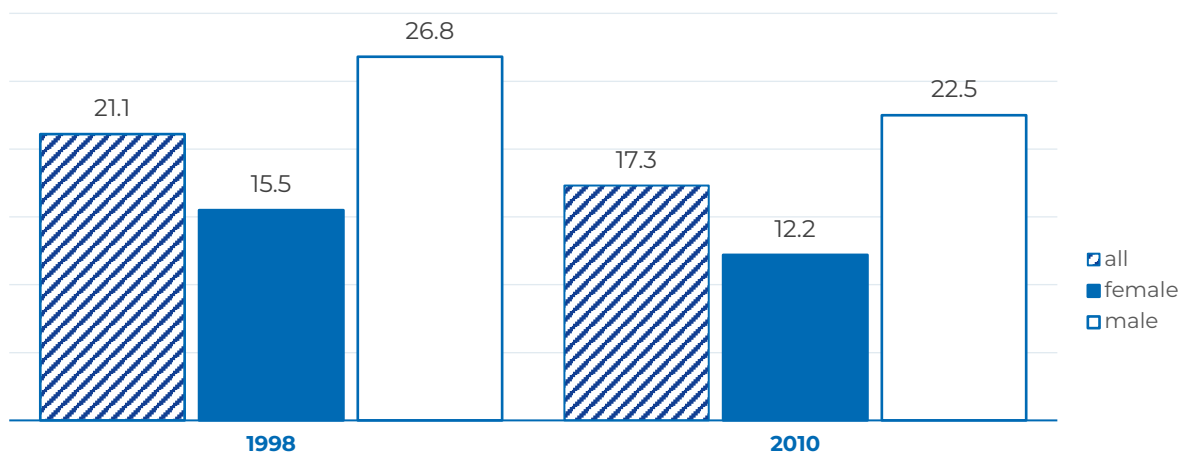


Figure 2: Proportion of persons in the population (18 – 79 years) who consume sugar-sweetened beverages in % by age and sex in 2010.

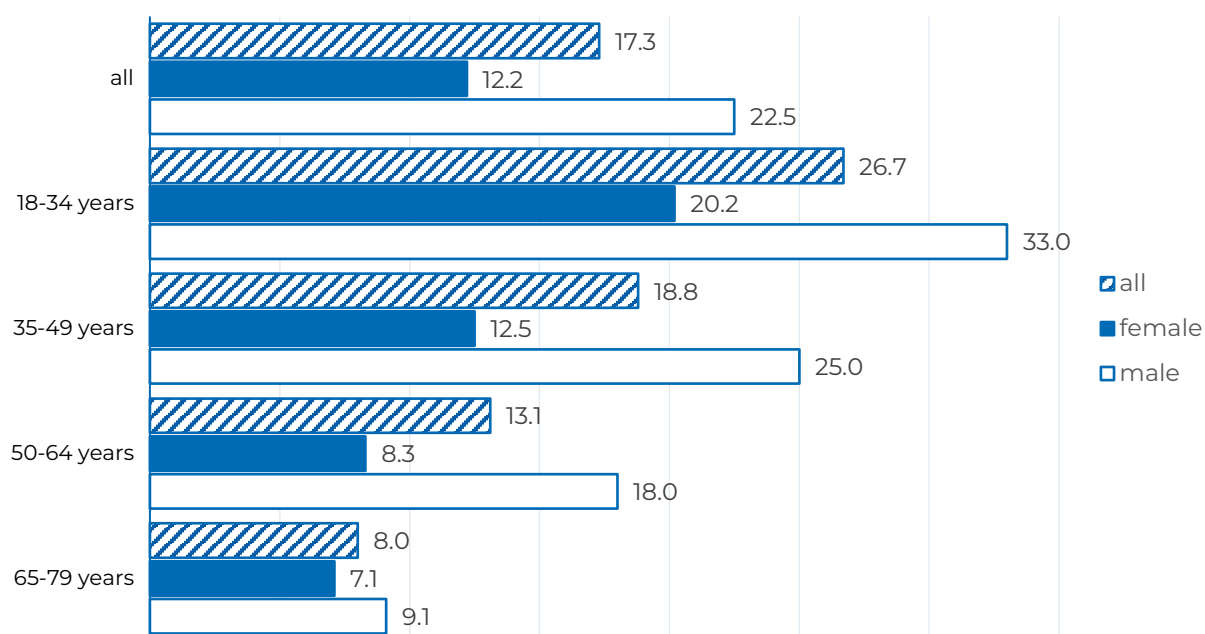


Figure 3: Proportion of persons in the population (18 – 79 years) who consume sugar-sweetened beverages in % by education group and sex in 2010.

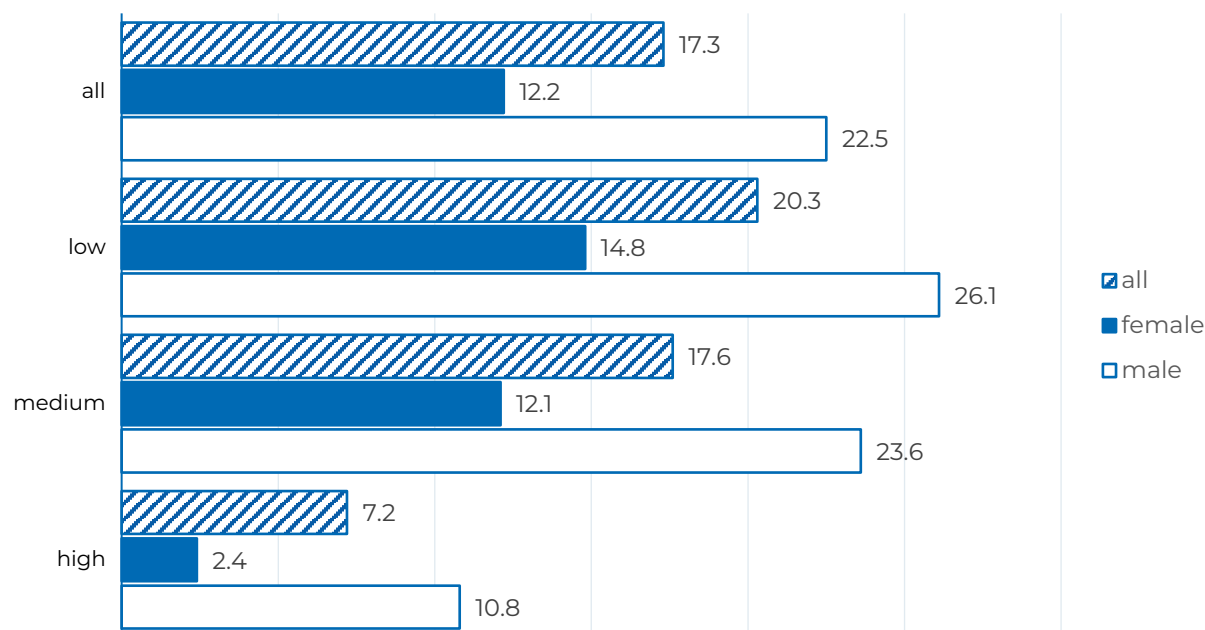
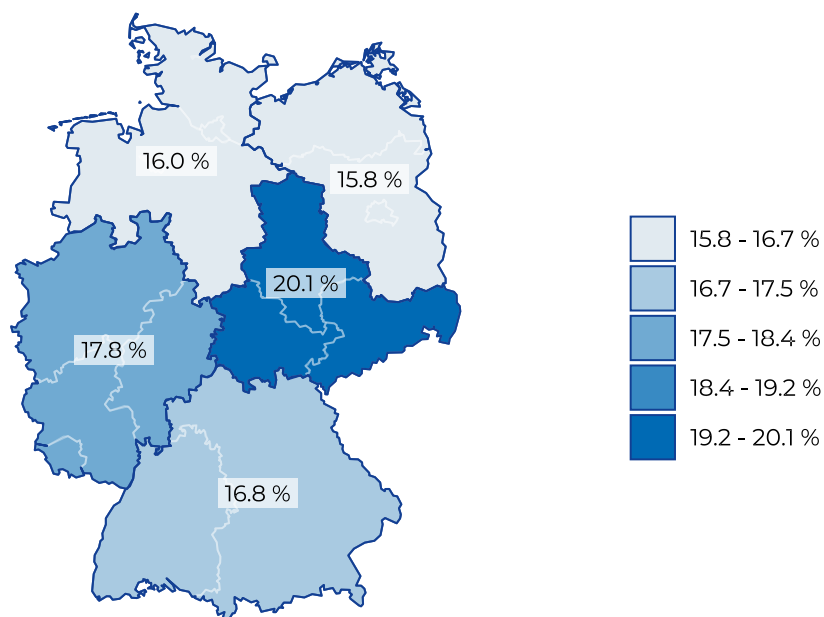


Figure 4: Proportion of persons in the population (18 – 79 years) who consume sugar-sweetened beverages in % by region (north east, north west, middle east, middle west, south) in 2010.



Results

In 2010, 17.3% of 18- to 79-year-olds consumed sugar-sweetened beverages every day (women: 12.2%; men: 22.5%). The corresponding proportion of persons is highest in the youngest age group of 18- to 34-year-olds (26.7%) and decreases with increasing age up to the highest age group of 65- to 79-year-olds (8.0%). Persons in the lower education group consume sugar-sweetened beverages more often on a daily basis than persons in the higher education group. Compared to 1998, the proportion of persons in the adult population with a daily consumption of sugar-sweetened beverages has decreased for both sexes.

Conclusion

In contrast to previous years (1990-92 to 1998), no further increase in the proportion of people with a daily consumption of sugar-sweetened beverages can be observed between 1998 and 2010 [5]. However, around one in six people in Germany aged 18 to 79 years still consumes sugar-sweetened beverages once or several times a day. Therefore, sugar-sweetened beverages are a modifiable risk factor for type 2 diabetes with considerable prevention potential through behaviour- and context-based preventive measures. The observed differences in education indicate that these measures need to target all population groups.

Methodology and data sources

Definition

The indicator sugar-sweetened beverages is defined as the proportion of people in the population who consume sugar-sweetened beverages daily.

Operationalisation

The consumption of sugar-sweetened beverages is assessed using self-reported data collected using a food frequency questionnaire:

German National Health Interview and Examination Survey 1998 (GNHIES98)

- ▶ 'How often do you drink the following beverages? Please think about the past 12 months.'
Soft drinks (lemonade, fruit juice, effervescent drinks, cola, tonic water):
 - Several times a day
 - Daily or almost daily
 - Several times a week
 - About once a week
 - Two to three times a month
 - Once a month or less
 - (Almost) never

German Health Interview and Examination Survey for Adults (DEGS1)

- ▶ ‘How often during the past four weeks have you drunk sugar-sweetened beverages (such as cola, lemonade, iced tea, malt beer or energy drinks)? This does not include diet beverages.’
 - Never
 - Once per month
 - 2-3 times per month
 - 1-2 times per week
 - 3-4 times per week
 - 5-6 times per week
 - Once per day
 - 2 times per day
 - 3 times per day
 - 4-5 times per day
 - More than 5 times per day

Reference population

Resident population in Germany, aged 18 to 79 years.

Data source

Nationwide interview and examination surveys 1997-1999 (GNHIES98) and 2008-2011 (DEGS1) of the Robert Koch Institute (RKI) based on a population registry sample and self-completed questionnaire, medical interview, automated medication recording program, and examination.

Number of cases

- ▶ GNHIES98: n = 7,124
- ▶ DEGS1: n = 7,115 (of which n = 2,923 had also participated in GNHIES98)

Calculation

- ▶ **Description:** For the indicator, the figures for total, women and men are provided and are stratified by age group, residential area and education as far as the number of cases available for the figure is ≥ 5 and the statistical uncertainty in the estimate of the indicator is not considered too large (a coefficient of 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 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, German citizenship (yes/no), community type and education as of 31 December 1997 (GNHIES98) and 31 December 2010 (DEGS1). In DEGS1, the different participation probability of re-participants from GNHIES98 was also taken into account in the weighting.
- ▶ **Age standardisation:** Age standardisation and trend weighting was carried out by calculating the weighting factor in GNHIES98 using the age, sex and federal state structure of the reference population as of 31 December 2010.

Data quality

RKI interview and examination surveys provide representative results for the 18- to 79-year-old resident population of Germany. The population aged 80 years and over will only be included in future survey waves. As is the case in all population-based studies, underrepresentation of the seriously ill and those living in institutions must be assumed.

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

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External links

- ▶ Robert Koch Institute. Information on the German Health Interview and Examination Survey for Adults (DEGS) 2013 [cited 30.01.2025]. Available from: https://www.rki.de/EN/Topics/Non-communicable-diseases/Health-surveys/Studies/DEGS/degs_content.html?nn=16782096.
- ▶ Rabenberg M, Mensink G. Limo, Saft & Co – Konsum zuckerhaltiger Getränke in Deutschland. *GBE kompakt* 2013;4(1):9. <http://dx.doi.org/10.25646/3036>.

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