DIABETES
surveillance

ROBERT KOCH INSTITUT

Physical inactivity

**Field of action 1: Reducing the risk of diabetes**

Adults

Background

Physical activity describes any form of movement that increases energy metabolism. This can take place in different areas: as recreation, in the work environment, at home or as movement from one place to another. The indicator used here focusses exclusively on physical activities during leisure time and movement from one place to another [1]. Work-related physical activity is not included. Physical inactivity (that is failure to meet the recommendations mentioned below) is a major risk factor for the development of non-communicable diseases such as type 2 diabetes.

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Key messages

▸ In 2019, about half of all adults do not meet the World Health Organization's (WHO) recommendations of 2.5 hours of moderate-intensity aerobic physical activity per week.

▸ The proportion of physically inactive adults increases by rising age.

▸ The prevalence of physical inactivity varies according to education level and federal state.

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Figure 1: Prevalence of physical inactivity among adults in % by age and sex in 2019.
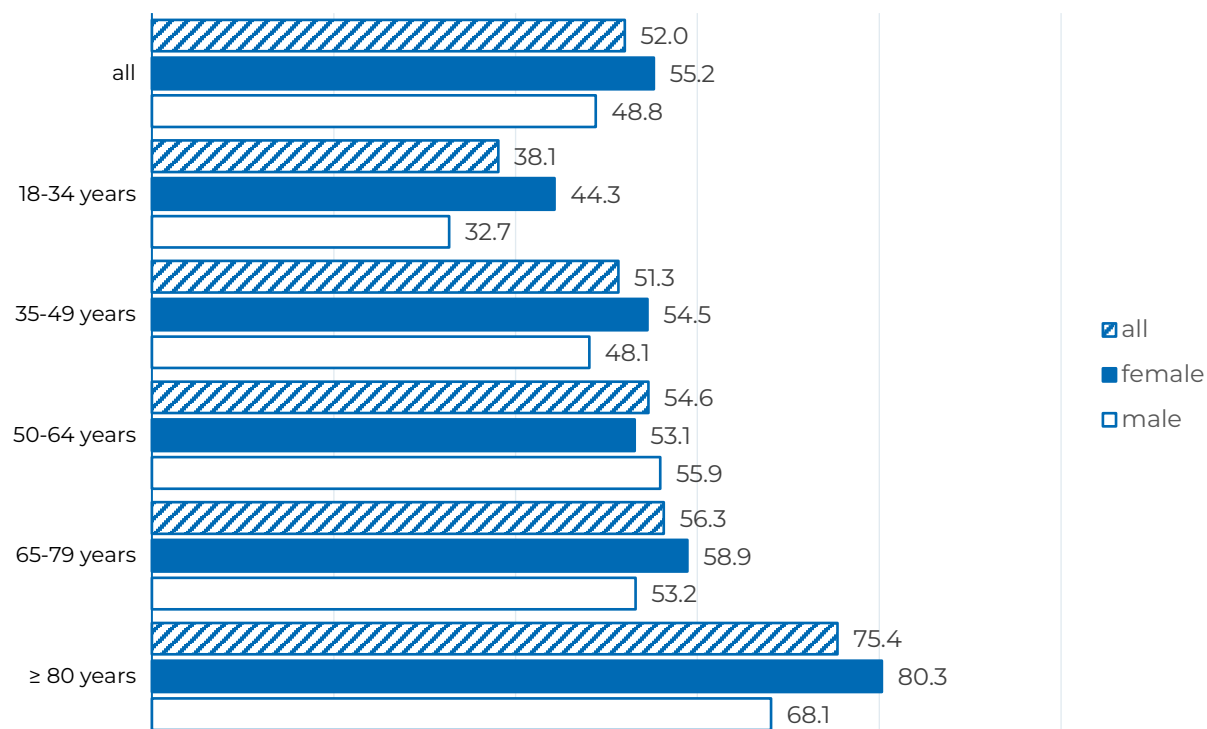
Figure 2: Prevalence of physical inactivity among adults in % by education group and sex in 2019.
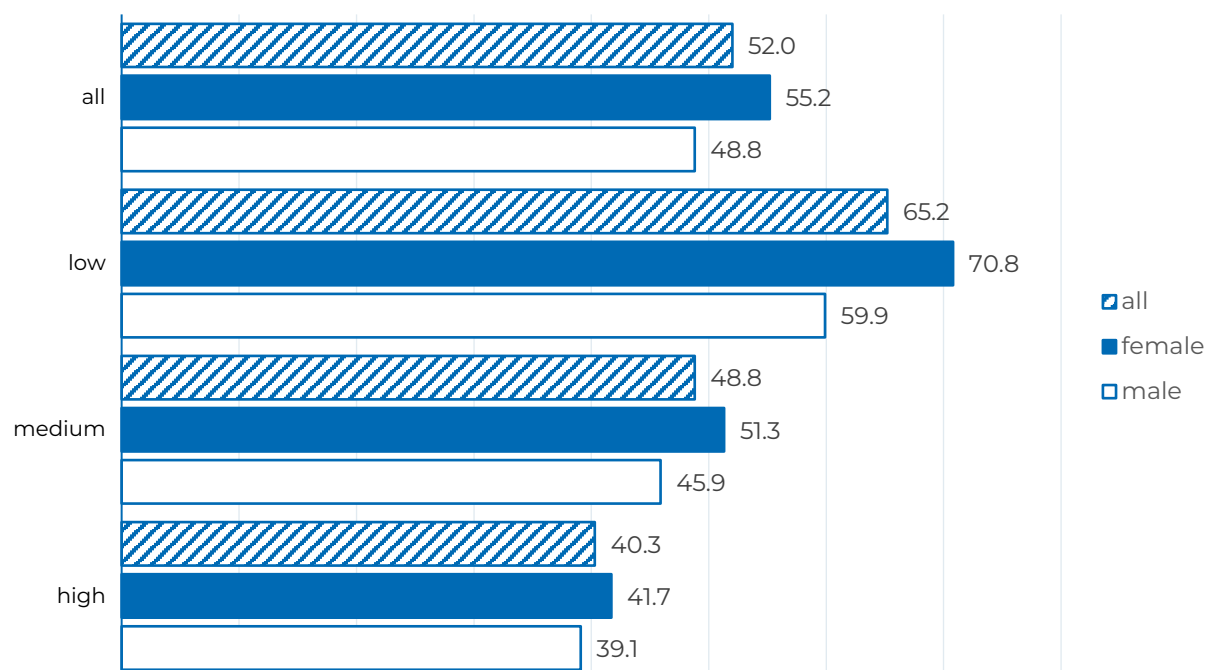
Figure 3: Prevalence of physical inactivity among adults in % by federal state in 2019.
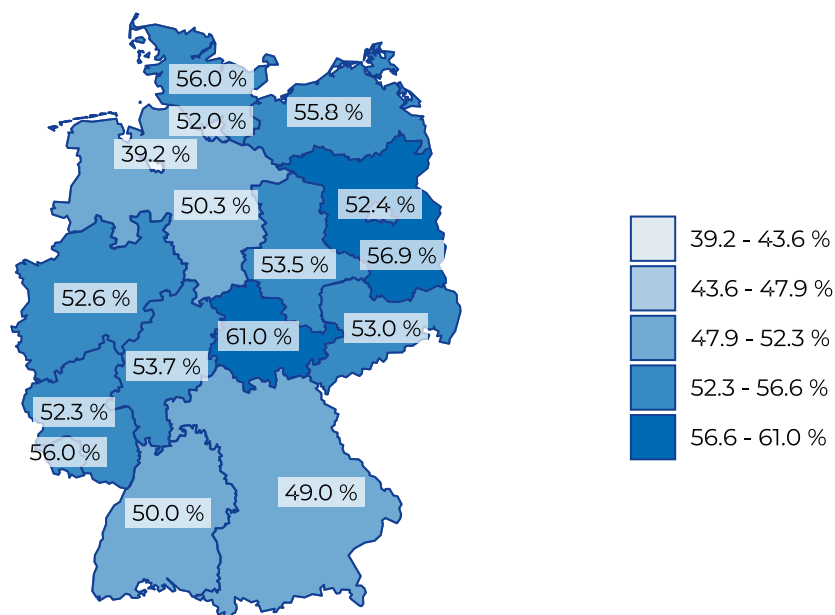
Results

In 2019, the prevalence of physical inactivity in the adult population was 52.0% (women: 55.2%; men: 48.8%). The prevalence increases with age and is lowest at age 18 to 34 years (38.1%) and highest at age 80 years and over (75.4%). In the high-education group, fewer people are physically inactive in their leisure time (40.3%) than those in the low-education group (65.2%). Compared to the total prevalence in Germany, Thuringia (61.0%), Brandenburg (56.9%) and Saarland (56,0%) show higher prevalences of physical inactivity whereas Bremen (39.2%) and Bavaria (49.0%) show lower prevalences.

Conclusion

More than half of all adults in Germany do not meet the WHO recommendation of at least 2.5 hours of aerobic physical activity per week. As a result, it is vital that public health measures promoting physical activity, such as those included in the National Recommendations for Physical Activity and Physical Activity Promotion, will be further expanded [2].

Methodology and data sources

Definition
The indicator physical inactivity is defined as the proportion of the population who do not meet WHO recommendations [3] on moderate-intensity aerobic physical activity (≥ 2.5 hours per week) during leisure time and movement from one place to another.

Operationalisation

A variable is composed of self-reported data on leisure activities and covering distances between places by cycling. The time spent on leisure activities and cycling are summed up and the results are compared with WHO recommendations.

Leisure activities:

▶ *'For the following questions, think of sports, fitness and physical activity in your leisure time that cause at least a small increase in breathing or heart rate. For example, nordic walking, ball games, jogging, cycling, swimming, aerobic, rowing or badminton. How much time do you spend in a typical week on sports, fitness or physical activity for at least 10 minutes continuously in your free time?'*
  - Days per week
  - Never or less than 1 day per week

Cycling:

▶ *'How many days in a typical week do you ride a bike for at least 10 minutes without stopping to get from place to place?'*
  - Days per week
  - Never or less than 1 day per week

▶ *'How long do you ride a bike for on a typical day to get from place to place?'*
  - 10 – 29 minutes a day
  - 30 – 59 minutes a day
  - 1 hour to less than 2 hours a day
  - 2 hours to less than 3 hours a day
  - 3 hours a day or more

Calculation of physical activity:

Physical activity (min) = leisure activity (min) + days cycling (d) x duration of cycling per day (min/d)

Reference population

German-speaking resident population in Germany, aged 18 years and over

Data source

Nationwide interview survey German Health Update/European Health Interview Survey 2019/2020 (GEDA 2019/2020-EHIS) of the Robert Koch Institute (RKI) based on telephone sample (landline and mobile phone) and a telephone-based questionnaire.

Number of cases

▶ GEDA 2019/20-EHIS: n = 22,708 (18 years and over)

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 ≤ 33.5%).

▸ **Stratification:** The geographical classification of the residence of the participating person was carried out by federal state. 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, a weighting factor was used when calculating the indicator. This adjusts the survey to the structure of the resident population in Germany of the reference population in terms of sex, age, federal state and district type as of 31 December 2019 as well as of the distribution of education levels in the 2017 microcensus.

Data quality

RKI interview surveys provide representative results for the resident population of Germany aged 18 years and over. As is the case in all population-based studies, underrepresentation of the seriously ill and those living in institutions must be assumed. Furthermore, all information is self-reported and not based on personal interviews conducted by study physicians or standardized measurements or examinations. Comparisons of findings to previous GEDA surveys are limited due to differences in methodology.

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. Finger JD, Tafforeau J, Gisle L, Oja L, Ziese T, Thelen J, et al. Development of the European Health Interview Survey - Physical Activity Questionnaire (EHIS-PAQ) to monitor physical activity in the European Union. Arch Public Health. 2015;73:59. doi: 10.1186/s13690-015-0110-z.
2. Rütten A, Pfeifer K. Nationale Empfehlungen für Bewegung und Bewegungsförderung. Köln; 2017 [cited 26.11.2024]. Available from: https://shop.bzga.de/sonderheft-03-nationale-empfehlungen-fuer-bewegung-und-bewegungsfoerd-60640103/.
3. World Health Organization (WHO). WHO guidelines on physical activity and sedentary behaviour Geneva: WHO; 2020 [cited 25.11.2024]. Available from: https://iris.who.int/bitstream/handle/10665/336656/9789240015128-eng.pdf?sequence=1.

External links

▸ Robert Koch Institute. Information on the study German Health Update (GEDA) 2024 [cited 30.01.2025]. Available from: https://www.rki.de/EN/Topics/Noncommunicable-diseases/Health-surveys/Studies/geda-german-health-update.html?nn=16782096.

▸ Richter A, Schienkiewitz A, Starker A, Krug S, Domanska O, Kuhnert R, et al. Health-promoting behaviour among adults in Germany – Results from GEDA 2019/2020-EHIS. J Health Monit. 2021(3):26--44. https://doi.org/10.25646/8553.2.

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