

Years lived with disability (YLD)



Field of action 4: Reducing the burden and costs of disease



All age groups

Background

Due to its severe complications, diabetes can be associated with impairment and limitations of the quality of life and subsequently a loss in symptom-free life years [1]. The number of years lived with disability (YLD) is an indicator of the morbidity-related contribution to the overall burden of disease of diabetes. YLD is therefore an important indicator for the continuous monitoring of the cause-specific burden of disease.

Key messages

- ▶ In 2017, a total of 526,823 life years were lost due to disability related to diabetes, which corresponds to 637.4 YLD per 100,000 persons.
- ▶ This burden of disease is higher in men than in women and rises with increasing age.
- ▶ Type 2 diabetes accounts for the highest share of 96.4% of the morbidity-related burden of diabetes.

Figure 1: Number of years lived with disability of people with diabetes overall per 100,000 persons by age and sex in 2017.

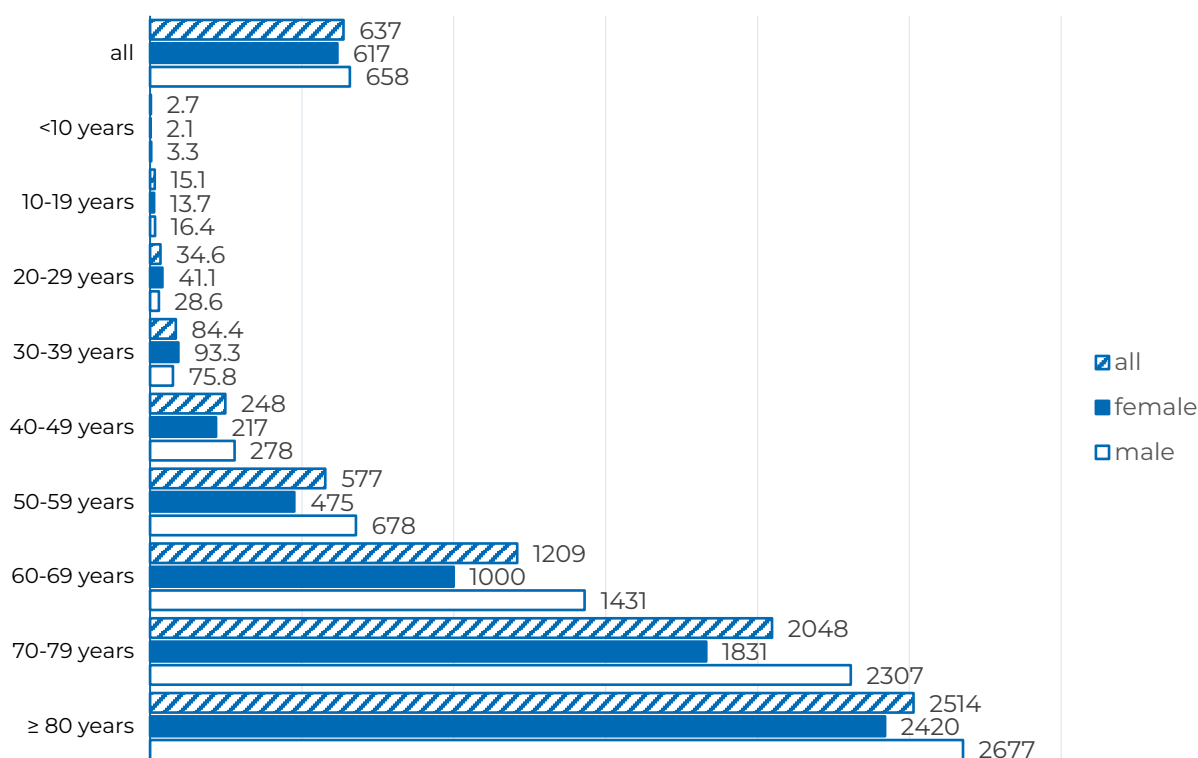


Figure 2: Number of years lived with disability of people with type 1 diabetes and type 2 diabetes per 100,000 persons by age in 2017.

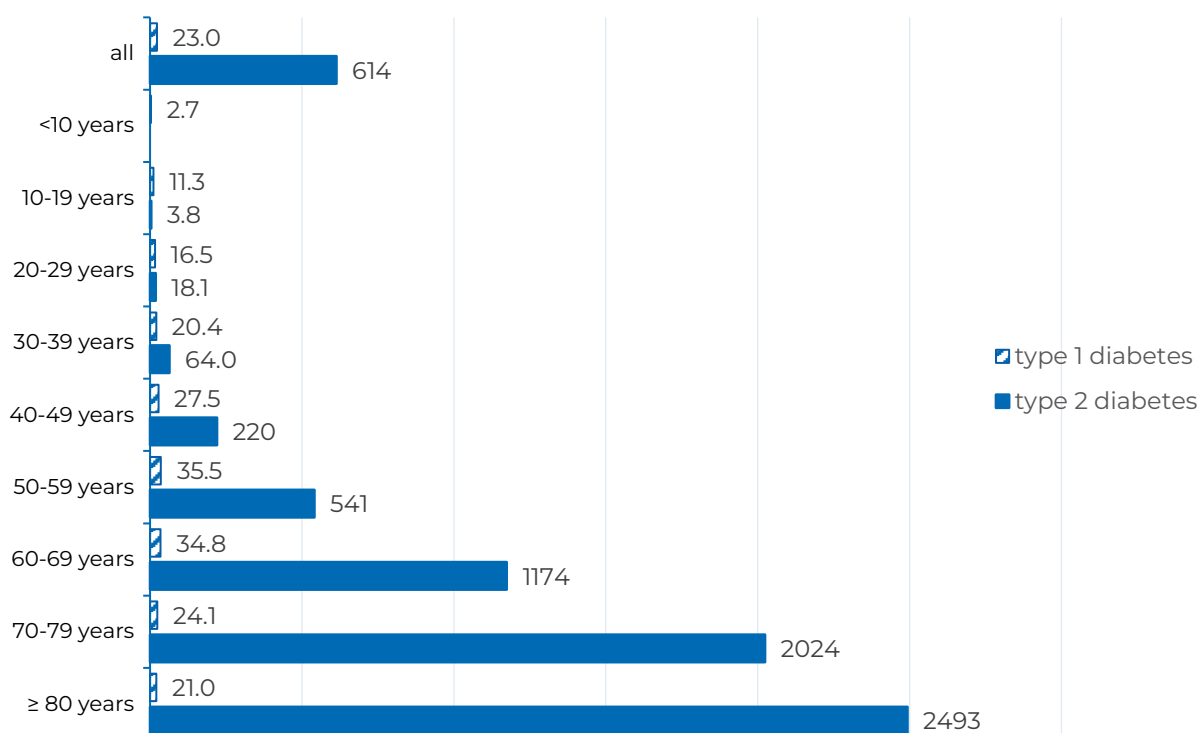
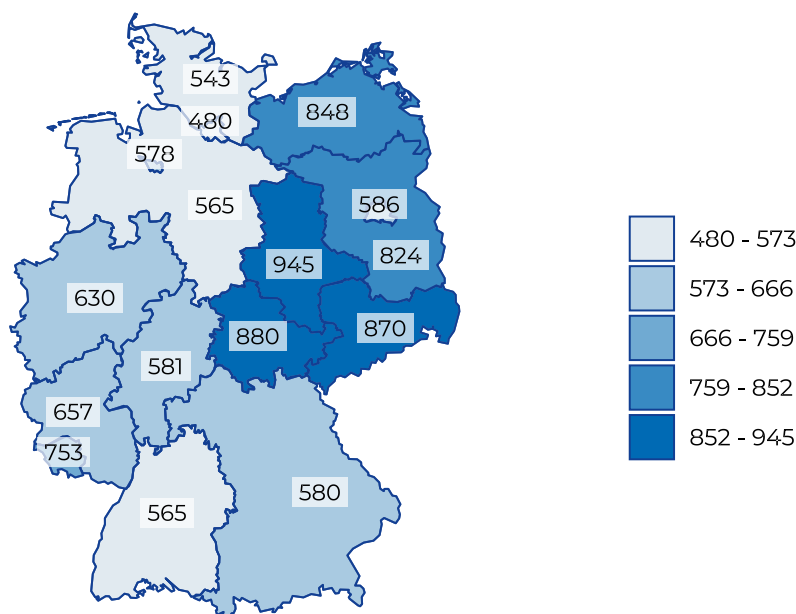


Figure 3: Number of years lived with disability of people with diabetes overall per 100,000 persons (all age groups) by federal state in 2017.



Results

In total, 526,823 years lived with disability (YLD) were related to diabetes in 2017. In relative terms, this equals 637.4 YLD per 100,000 persons, whereas the burden of disease in women is somewhat lower than in men (women: 616.9 YLD; men: 658.4 YLD). With increasing age, it becomes apparent that more and more years of life are lost due to health disabilities. Approximately 96.4% of this burden of disease is related to type 2 diabetes (type 2: 614.4 YLD; type 1: 23.0 YLD per 100,000 persons). Moreover, differences between the old and new federal states in Germany are evident: Whereas the lowest number of years lived with disability due to diabetes is lost in Hamburg (480.0 YLD), the burden in Saxony-Anhalt is nearly twice as high (945.1 YLD).

Conclusion

The morbidity-related burden of disease shows a correlation with age: Both the prevalence and the complications associated with diabetes are increasing with age which leads to higher years lived with disability. The contribution of type 2 diabetes, which is associated with a multitude of behavioural risk factors [2], to the overall burden of disease is much higher. The prevention of new cases as well as complications should therefore be central objectives.

Methodology and data sources

Definition

The indicator years lived with disability is defined as the number of years of life lost due to disability (YLD) as a result of diabetes in the overall population. The indicator is calculated from

information concerning the prevalence of diabetes in the general population, the severity distribution in the diseased population and the severity-specific weights for the extent of disability (disability weights). The severity distribution is based on the frequency of complications associated with diabetes, such as diabetic neuropathy, diabetic foot syndrome or severe visual impairments. The larger the disability due to a secondary disease, the higher is the disability weight and the more years lived with disability are considered by the indicator [3].

Reference population

Resident population in Germany.

Data source

The data are based on the national burden of disease study BURDEN 2020 – Burden of disease in Germany at the national and regional level [4]. The calculation of prevalence and severity distribution was based on the claims data of the Scientific Institute of the AOK (WIdO). The prevalence was extrapolated from the persons insured by AOK to the overall population using the Diagnosis-related Groups (DRG) statistics [5]. The disability weights from the Global Burden of Disease study were applied [6].

Calculation

The calculation of the indicator involves multiple steps: (1) Estimation of the prevalence and/or prevalent cases, (2) estimation of the severity distribution (secondary diseases), (3) application of the severity-specific disability weights, (4) estimation of the YLD and (5) adjustment for multimorbidity. The YLD are calculated as the product of the number of prevalent cases multiplied by a disability weight averaged across degrees of severity. This calculation is done separately by age and sex and can be added up into total values.

Data quality

The burden of disease study BURDEN 2020 yields results on selected YLD in Germany [4]. BURDEN 2020 utilises the claims data of the AOK for estimation of the prevalence of diabetes. The prevalence depends on the selection and combination of the applied criteria [7]. Claims data in public health may be limited by aspects of invoicing. Moreover, the cohort of persons insured by AOK does not reflect a representative cross-section of the population. This aspect was addressed through a morbidity-adjusted extrapolation [5].

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)

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External links

- ▶ Robert Koch-Institut. Information on the study BURDEN 2020. Berlin: Robert Koch Institute; 2021 [cited 28.08.2024]. Available from: <https://www.daly.rki.de/en>.

Imprint

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