

Diabetic kidney disease



Field of action 3: Reducing the complications of diabetes

Adults

Background

Inadequate control of blood glucose levels can lead to inflammation and damage of the small blood vessels in the kidneys. These changes are termed diabetic nephropathy and are diagnosed by histological examination of kidney tissue [1]. Diabetic nephropathy can cause chronic kidney disease, which has several causes apart from diabetes and therefore reflects a broader definition. Hypertension, in particular, is a common comorbidity of diabetes that increases the risk of chronic kidney disease.

Key facts

- ▶ In 2013, 15.1% of adults with diabetes had documented chronic kidney disease.
- ▶ The proportion of people with diabetes and chronic kidney disease increases markedly with age.

Figure 1: Temporal comparison of the prevalence of documented diabetic kidney disease among adults with diabetes covered by statutory health insurance in % by sex between 2012 and 2013 (age-standardised).

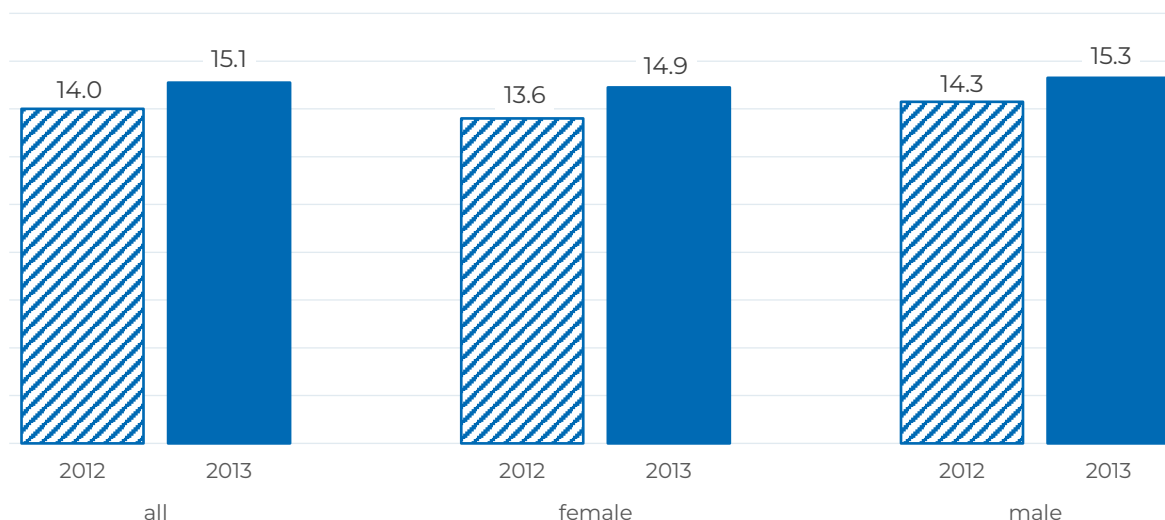
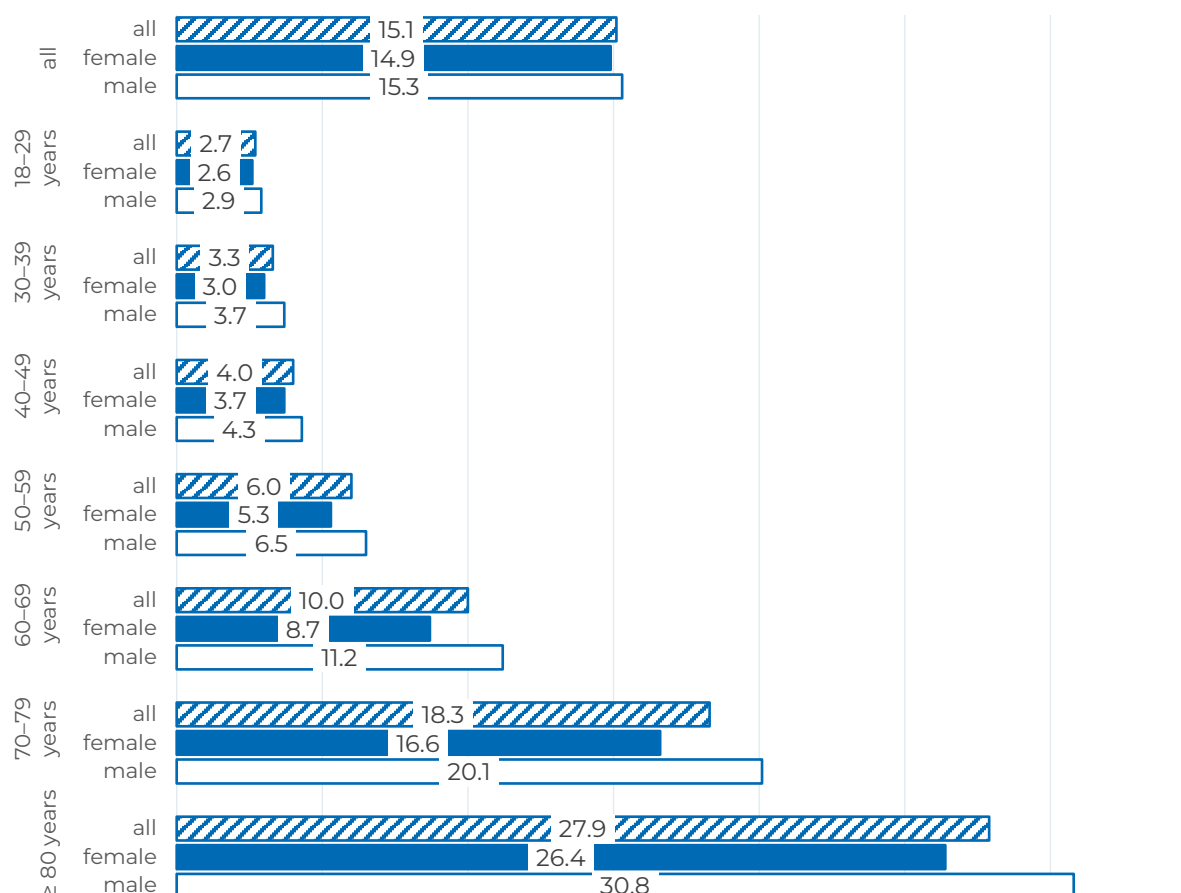


Figure 2: Prevalence of documented diabetic kidney disease among adults with diabetes covered by statutory health insurance in % by age and sex in 2013.



Results

In 2013, 15.1% of adults with diabetes presented with documented chronic kidney disease (women: 14.9%; men: 15.3%). This figure increases markedly above the 50 to 59 age group and peaks at 27.9% in the 80-plus age group (women: 26.4%; men: 30.8%).

Conclusion

Data Transparency Ordinance (DaTraV) data indicate that one in seven people has impaired kidney function, a figure comparable with Disease Management Programs (DMP) data for type 2 diabetes in North Rhine-Westphalia [2]. Higher figures are indicated by analyses from Robert-Koch-Institute (RKI) studies and DPV registry studies that use laboratory values to estimate kidney function [3, 4]. The higher figures in these studies can be partially explained by the inclusion of people with previously undetected chronic kidney disease. Unlike data from studies, DaTraV data enable a regionalised, time series analysis of chronic kidney disease in patients with diabetes.

Methodology and data sources

Definition

The indicator diabetic kidney disease is defined as the proportion of persons with diabetes (indicator „prevalence of documented diabetes“) who also present with documented chronic kidney disease (N18.-).

Reference population

Adults are included in the analysis if they have statutory health insurance (SHI) and documented diabetes (in accordance with the definition of the indicator “prevalence of documented diabetes”), have been insured for at least 360 days in the respective year, reside in Germany and have their health benefits fully reimbursed by the statutory health insurance.

Data source

Claims data from approximately all of the 70 million people with statutory health insurance collected in accordance with the Data Transparency Ordinance (DaTraV data). Around 55 million are at least 18 years old, of which around 6.6 million have documented diabetes.

Calculation

- ▶ **Observed relative values:** The quotient of the number of people with documented diabetes and documented chronic kidney disease in relation to the population with SHI and with documented diabetes.
- ▶ **Observed absolute values:** Number of persons covered by SHI with documented diabetes and documented chronic kidney disease.
- ▶ **Age standardisation:** Direct age standardisation used 18- to 24-year-olds as one age group, five-year age groups for the ages 25 to 29 until 80 to 84, and then a separate group for the ages 85 and over. The DaTraV population with documented diabetes in 2013 was used as the reference population.

Data quality

DaTraV data are claims data on all people covered by SHI. DaTraV data include documented out-patient and inpatient diagnoses as well as information on prescribed medications. The quality of claims data from SHI depends on conduct of documentation. DaTraV data do not cover people insured by private health insurance and do not provide information on inpatient or outpatient care.

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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4. Du Y, Heidemann C, Schaffrath Rosario A, Buttery A, Paprott R, Neuhauser H, et al. Changes in diabetes care indicators: findings from German National Health Interview and Examination Surveys 1997–1999 and 2008–2011. *BMJ Open Diabetes Res Care*. 2015;3(1):e000135. doi: 10.1136/bmjdr-2015-000135.

External links

- ▶ Federal Institute for Drugs and Medical Devices (BfArM). Information on the SHI health data by the health data lab. [cited 19.02.2025]. Available from: <https://www.healthdatalab.de/data>.
- ▶ Reitzle L, Schmidt C, Du Y, Icks A, Hagen B, Ziese T, et al. [Estimating prevalent microvascular complications of diabetes mellitus in Germany. Analysis of statutory health insurance data in 2012 and 2013]. *Bundesgesundheitsbl*. 2020;63(10):1219-30. <https://doi.org/10.1007/s00103-020-03211-x>.

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