

Diabetic kidney disease



Field of action 3: Reducing the complications of diabetes



Children and adolescents

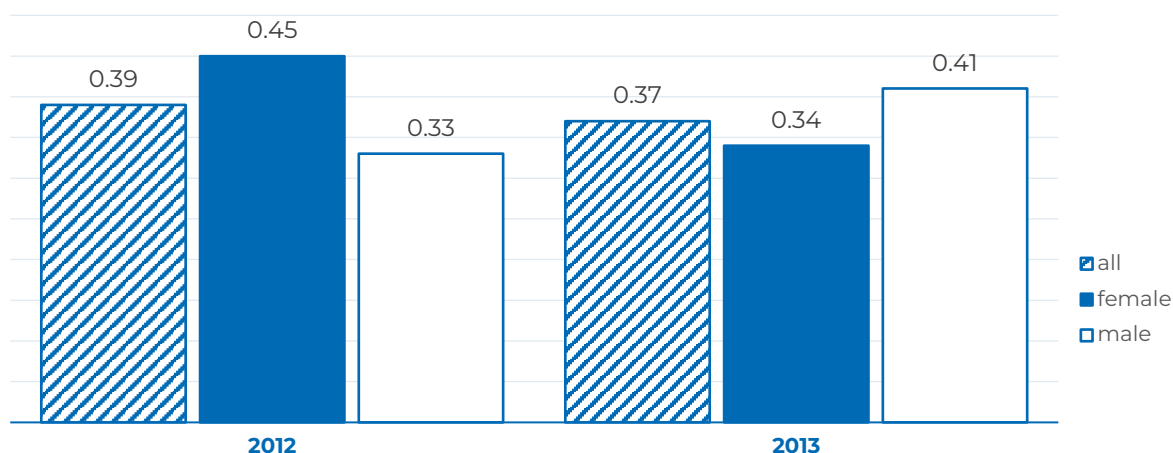
Background

Inflammatory damage to the small blood vessels of the kidney can occur if blood sugar levels are not properly controlled in the long term. This condition is known as diabetic nephropathy [1] and can result in impaired kidney function (chronic kidney disease). However, chronic kidney disease, especially in childhood and adolescence, is often caused by other conditions such as congenital anomalies and hereditary diseases. Unlike in adults, diabetes in childhood and adolescence is less likely to result in chronic kidney disease, because it develops over time. Therefore, the treatment guidelines of diabetes mellitus for children and adolescents recommend regular examinations for the early detection of nephropathy from the age of 11, or 5 years after diagnosis [2].

Key messages

- ▶ Chronic kidney disease was documented in 0.37% of all children and adolescents with diabetes in 2013.
- ▶ Chronic kidney disease in diabetes is rare in children and adolescents and the prevalence only increases with the duration of diabetes in adulthood.

Figure 1: Temporal comparison of the prevalence of documented diabetic kidney disease among children and adolescents with diabetes covered by statutory health insurance in % by sex between 2012 and 2013.



Results

In 2013, 0.37% of children and adolescents with diabetes had documented chronic kidney disease (girls: 0.34%; boys: 0.41%). This figure is comparable to the previous year's and means that around 100 children and adolescents had documented chronic kidney disease.

Conclusion

Children and adolescents with diabetes rarely have chronic kidney disease. Figures from the disease management programme for type 1 diabetes in North Rhine-Westphalia also show a low prevalence of diabetic nephropathy; however, the prevalence was slightly higher compared to the present analysis [3]. The duration of diabetes and the level of blood sugar control are particularly important risk factors for chronic kidney disease [4, 5]. Around one third of people with type 1 diabetes and up to half of those with type 2 diabetes develop diabetic kidney disease during the course of their life [6]. As such, there is a steady increase in the prevalence of renal insufficiency in adulthood (diabetic kidney disease in adults).

Methodology and data sources

Definition

The indicator diabetic kidney disease is defined as the proportion of persons with documented diabetes and chronic kidney disease (N18.-).

Reference population

Children and adolescents with statutory health insurance (< 18 years of age) with documented diabetes (in accordance with the definition of the prevalence of documented diabetes) who were insured for at least 360 days in the respective year, reside in Germany and have their health benefits fully covered by statutory health insurers.

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 10 million of the persons covered are aged between 0 and 17, and 25,000 of these persons have documented diabetes.

Calculation

- **Observed values:** The quotient of the number of people with documented diabetes and chronic kidney disease in relation to the total number of statutory insured people with documented diabetes.

Data quality

Data Transparency Ordinance (DaTraV) data are claims data on all people covered by Statutory Health Insurance (SHI). DaTraV data include documented outpatient 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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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>.

Imprint

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