

Diabetic polyneuropathy



Field of action 3: Reducing the complications of diabetes



Children and adolescents

Background

Long-term elevated blood sugar levels can lead to autonomic and somatic nerve damage. The most common form of nerve damage is distal sensorimotor polyneuropathy, i.e. damage to the nerves that run away from the centre of the body. This condition primarily affects the feet and increases the risk of diabetic foot syndrome. The diabetes mellitus therapy guidelines for children and adolescents recommend that a screening for neuropathy be carried out annually from the age of 11, or 5 years after diagnosis in children with elevated A1c [1].

Key messages

- ▶ In 2013, diabetic polyneuropathy was documented for 0.31% of all children and adolescents with diabetes.
- ▶ Diabetic polyneuropathy is rare among children and adolescents with diabetes and the prevalence only increases in adulthood due to the longer duration of diabetes.

Results

In 2013, 0.31% of children and adolescents with diabetes had documented polyneuropathy (girls: 0.28%; boys: 0.34%). As such, fewer than 100 children and adolescents with diabetes have the condition.

Conclusion

Diabetic polyneuropathy is rare in children and adolescents. The disease management programme for type 1 diabetes in North Rhine-Westphalia also reports the prevalence of diabetic neuropathy as being lower than 1% [2]. However, comparability between studies is difficult due to variations in documentation and diagnostic standards. This can lead prevalences to differ significantly [3]. Poor blood sugar control and the duration of diabetes are the most important risk factors associated with diabetic neuropathy. Over 50% of people with diabetes are expected to develop diabetic neuropathy over the course of their life and the condition becomes successively noticeable with increasing prevalence in adulthood (diabetic polyneuropathy).

Methodology and data sources

Definition

The indicator diabetic polyneuropathy is defined as the proportion of persons with documented diabetes and diabetic polyneuropathy (G63.2).

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 diabetic polyneuropathy in relation to the total number of statutory insured people with documented diabetes.

Data quality

DaTraV data are claims data on all people covered by 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)

References

1. Deutsche Diabetes Gesellschaft (DDG). S3-Leitlinie Diagnostik, Therapie und Verlaufskontrolle des Diabetes mellitus im Kindes- und Jugendalter (Version 4.0). 2023. Available from: <https://register.awmf.org/de/leitlinien/detail/057-016>.
2. Zentralinstitut für die kassenärztliche Versorgung (ZI). DMP-Atlas Nordrhein-Westfalen: Regionalisierte Darstellung der Disease-Management-Programme. Berlin 2019 [cited 17.09.2019]. Available from: https://www.zi-dmp.de/dmp-atlas_nrw/.
3. Feldman EL, Callaghan BC, Pop-Busui R, Zochodne DW, Wright DE, Bennett DL, et al. Diabetic neuropathy. Nat Rev Dis Primers. 2019;5(1):41. doi: 10.1038/s41572-019-0092-1.

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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