

# Prevalence of gestational diabetes



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

**Adults**

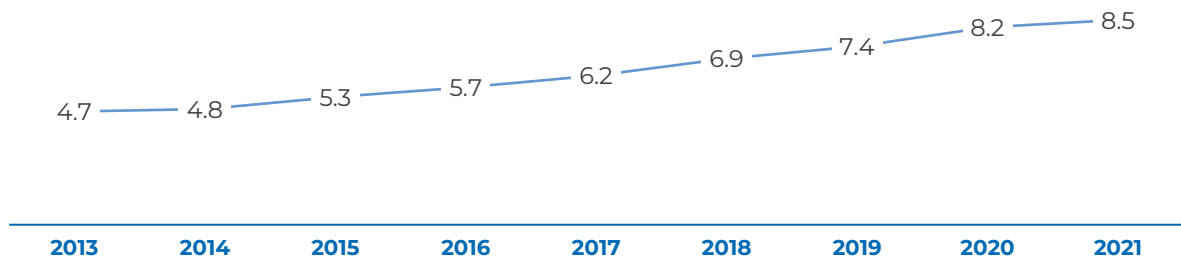
## Background

Gestational diabetes is a blood sugar disorder first diagnosed during pregnancy. In most women it disappears after birth, but increases the risk of pregnancy complications for mother and child [1] and the mother's risk of developing type 2 diabetes at a later stage [2].

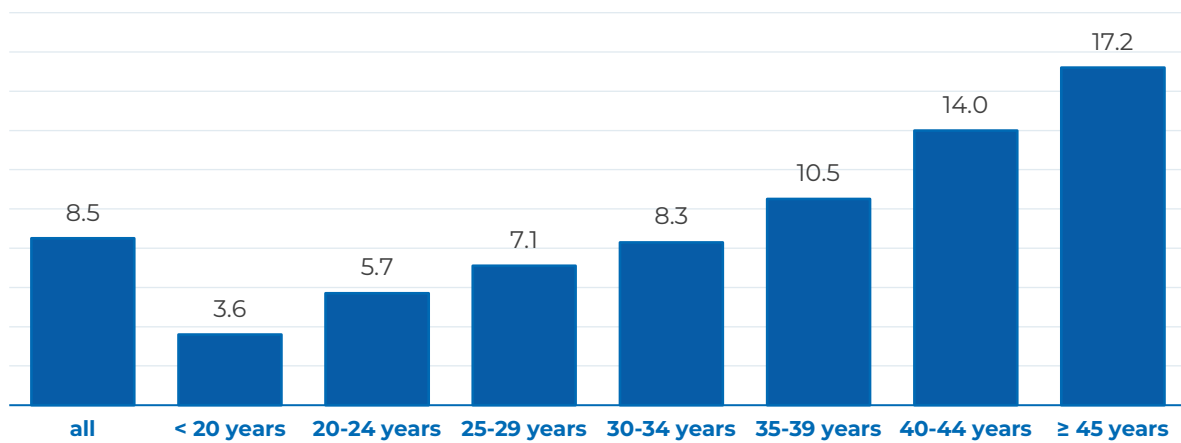
## Key messages

- ▶ More than 63,000 pregnant women were affected by gestational diabetes in 2021.
- ▶ Data from quality assurance in inpatient obstetrics demonstrate an increase in gestational diabetes among women who have given birth in hospital since 2013.
- ▶ The prevalence of gestational diabetes in regions with high socioeconomic deprivation (9.3%) is higher than the prevalence in regions with low deprivation (7.0%).

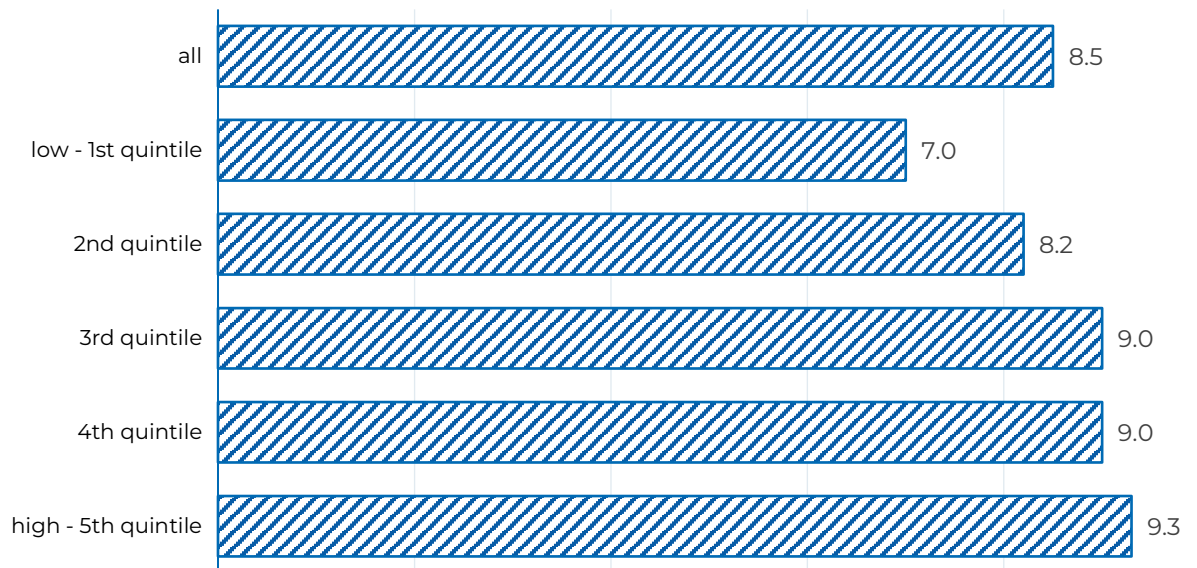
**Figure 1:** Temporal development of the proportion of women giving birth in hospital who have documented gestational diabetes between 2013 and 2021, in % (age-standardised).



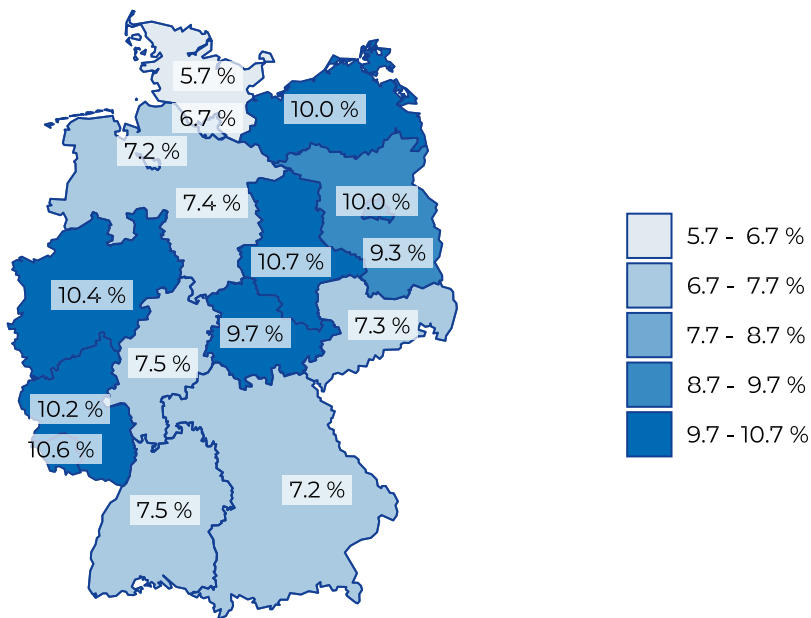
**Figure 2:** Proportion of women giving birth in hospital who have documented gestational diabetes by age (in years) in 2021, in %.



**Figure 3:** Proportion of women giving birth in hospital who have documented gestational diabetes by regional socioeconomical deprivation in 2021, in %.



**Figure 4:** Proportion of women giving birth in hospital who have documented gestational diabetes by federal state in 2021, in %.



## Results

In 2021, gestational diabetes was identified among 63,563 of the 749,690 (8.5%) women who gave birth in hospital in Germany. The figures demonstrate a steady increase from 4.6% in 2013 to 8.5% in 2021. Furthermore, the prevalence of gestational diabetes increases significantly with increasing maternal age at birth: in 2021, while 3.6% of women under 20 were affected by gestational diabetes, for women aged 45 or over it was 17.2%. There are differences between the federal states. While the prevalence of gestational diabetes is below 7% in Hamburg and Schleswig-Holstein, it is above 10% in Saxony-Anhalt, North Rhine-Westphalia, Rhineland-Palatinate, and Saarland. In regions with high socioeconomic deprivation, the prevalence of gestational diabetes is higher (9.3%) than in regions with low deprivation (7.0%).

## Conclusion

There has been an increase in the prevalence of gestational diabetes, which may be influenced by various factors. On the one hand, the average age at birth and the frequency of obesity, which are risk factors for gestational diabetes, have increased among mothers [3, 4]. On the other hand, the guideline for gestational diabetes was changed in 2012 and screening was introduced as a statutory health insurance benefit, which may have led to an increase in diagnosis and documentation (indicator: “screening for gestational diabetes”). Analyses based on outpatient claims data provide higher estimates of gestational diabetes, but also with an increasing trend [5]. The increasing prevalence of gestational diabetes over time and the higher prevalence in regions with high socioeconomic deprivation underscore the need for an appropriate prevention strategy.

## Methodology and data sources

### Definition

The indicator prevalence of gestational diabetes is defined as the proportion of women giving birth in hospital (including stillbirths) in a given year with a diagnosis of gestational diabetes documented in their maternity log or an International Classification of Diseases-10 (ICD-10) diagnosis O24.4 documented during their hospital stay.

### Reference population

All women who gave birth in hospital in Germany after exclusion of women with pre-existing diabetes mellitus (approximately 1% of all women).

### Data source

Quality assurance perinatal medicine (obstetrics) at the Institute for Quality and Transparency in Health Care (IQTIG) since 2015 based on the perinatal statistics provided by the federal states. This source provides data on all of the approximately 700,000 births that occur in German hospitals annually.

### Calculation

- **Observed relative values:** The quotient of the number of women who gave birth in hospital with gestational diabetes recorded in relation to all women who gave birth in hospital after exclusion of women with pre-existing diabetes.

- ▶ **Observed absolute value:** Number of women, who gave birth in hospital, with gestational diabetes recorded in their maternity log or a documented ICD-10 diagnosis O24.4 during their hospitalization.
- ▶ **Age standardisation:** Direct age standardisation is performed using age groups <20 years, from 20-24 years to 40-44 years in five-year increments, and older than ≥45 years with the 2021 hospital birth population.
- ▶ **Stratification:** The stratification by federal state reflects the location of the hospital in which the birth took place. Stratification by regional socioeconomic deprivation is based on the German Index of Socioeconomic Deprivation (GISD) [6, 7]. The GISD provides information on all rural and urban districts and divides them into quintiles from lowest to highest socioeconomic deprivation. We calculated the prevalence for each quintile linking the GISD with the place of residence of the pregnant woman at the level of the four-digit postal code (ecological correlation).

## Data quality

As the data set is provided by hospitals, it only contains information on births that occurred in a hospital setting, as the data is entered by the hospitals. Therefore, the data of births that take place outside of hospitals, which are less than 2% of all birth, are not included. As documentation of gestational diabetes in maternity logs might be incomplete, it is possible that prevalence is being underestimated.

## 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

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6. Michalski N, Reis M, Tetzlaff F, Herber M, Kroll LE, Hövener C, et al. German Index of Socioeconomic Deprivation (GISD): Revision, update and application examples. *J Health Monit*. 2022(S5):23. doi: 10.25646/10641.
7. Michalski N, Reis M, Tetzlaff F, Nowossadeck E, Hoebel J. German Index of Socioeconomic Deprivation (GISD) Release Berlin: Zenodo; 2022 [cited 22.08.2024]. Available from: <https://doi.org/10.5281/zenodo.6840304>.

## External links

- ▶ Reitzle L, Schmidt C, Heidemann C, Icks A, Kalthener M, Ziese T, et al. Gestational diabetes in Germany: Development of screening participation and prevalence. J Health Monit. 2021;6(2):3-18. <http://dx.doi.org/10.25646/8325>.

## Imprint

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