DIABETES surveillance

ROBERT KOCH INSTITUT

# Premature birth

## Pregnancy complications

**Field of action 3: Reducing the complications of diabetes**

**Adults**

## Background

Diabetes mellitus is an important risk factor for complications during pregnancy and at birth. A distinction is made between type 1 or type 2 diabetes that already existed before pregnancy (pregestational diabetes) and diabetes occurring for the first time during pregnancy (gestational diabetes). Both the St. Vincent Declaration [1] and the maternity guideline of the Federal Joint Committee [2] aim to prevent pregnancy complications associated with diabetes.
Both gestational diabetes (indicator "prevalence of gestational diabetes") and pregestational diabetes present a risk for complications during pregnancy and birth [3, 4]. Thus, diabetes increases the risk of premature birth, which can subsequently affect the health of the newborn and later child development.

## Key facts

- In 2021, the proportion of premature singletons is 6.1%.
- The proportion of preterm births is higher in the presence of gestational diabetes (6.5%) or pregestational diabetes (14.3%) than among women without diabetes (5.9%).
- Between 2013 and 2021, the proportion of premature births among women with pregestational diabetes increases, while it decreases slightly among women with gestational diabetes and women without diabetes.

**Figure 1:** Temporal development of the proportion of premature births among women with hospital birth of singletons in % by pregestational diabetes, gestational diabetes or no diabetes between 2013 and 2021 (age-standardised).

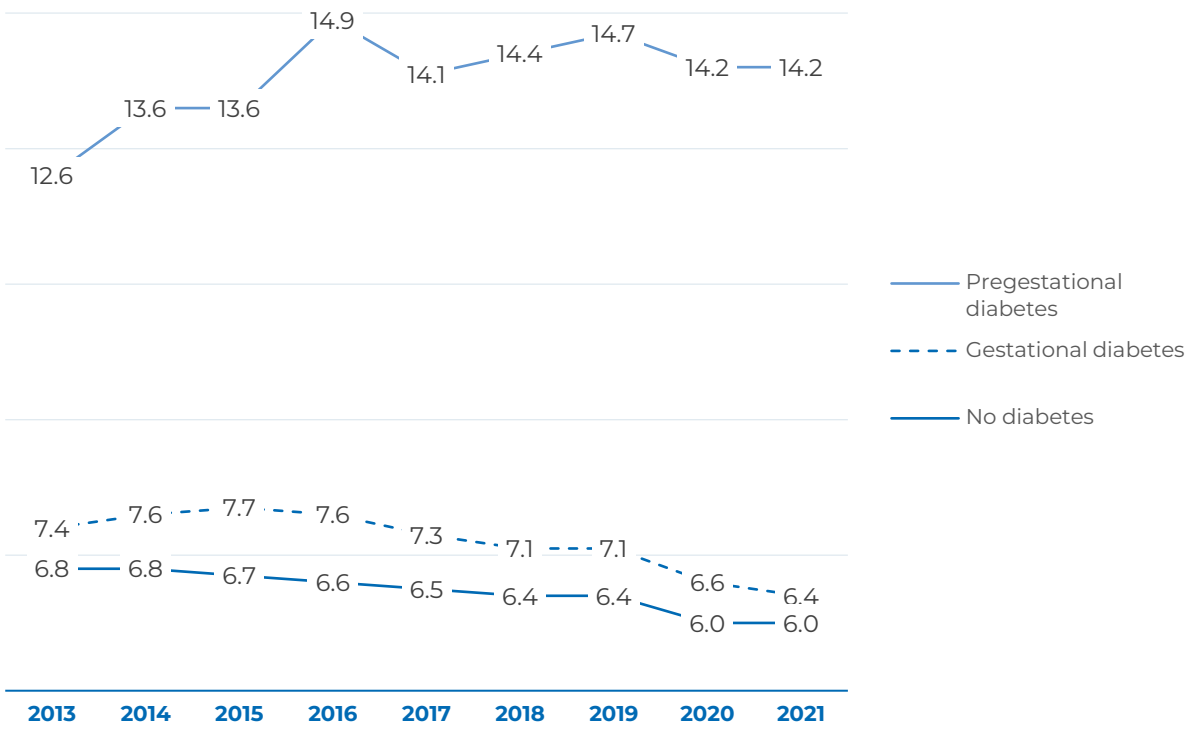
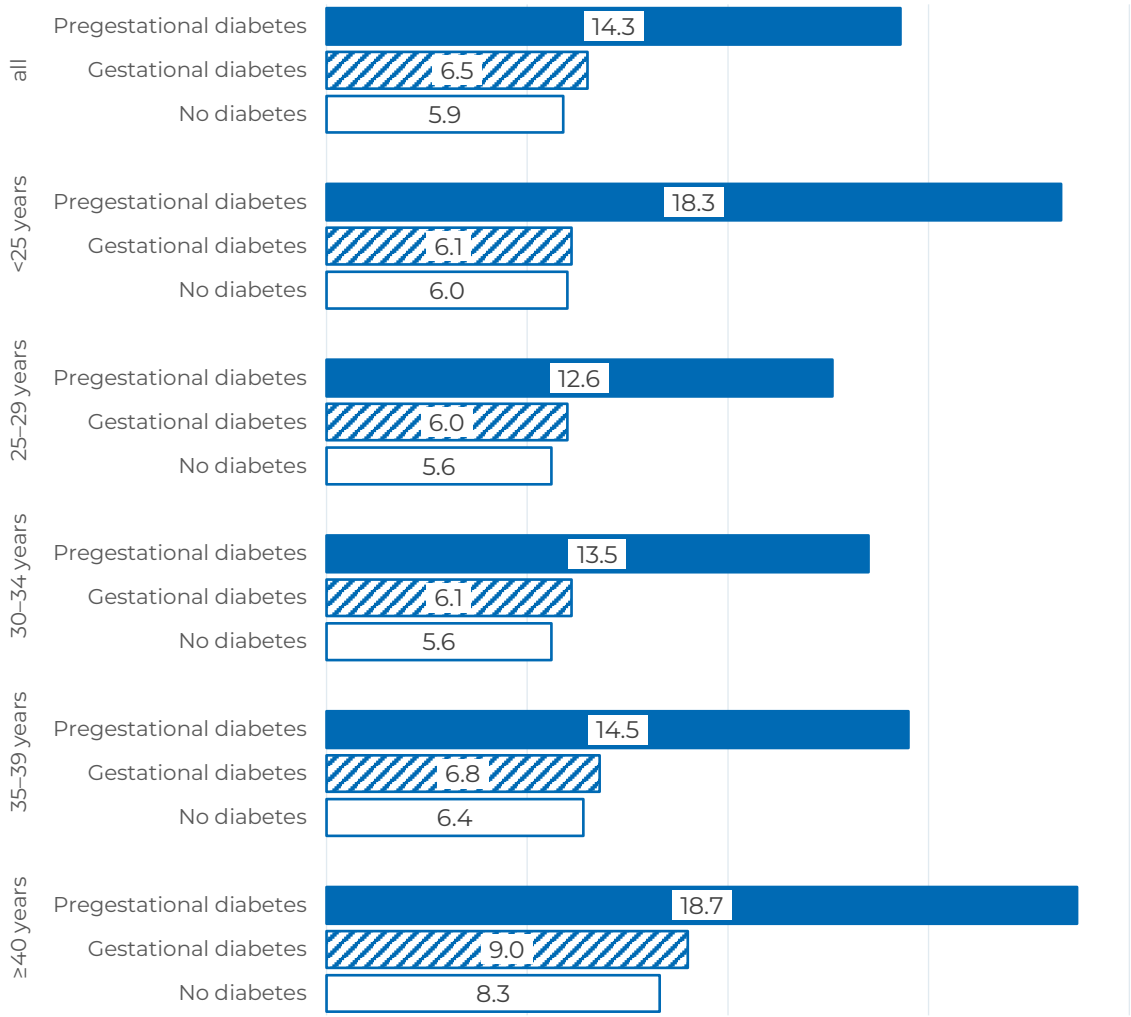


**Figure 2:** Temporal development of the proportion of premature births among women with hospital birth of singletons in % by pregestational diabetes, gestational diabetes or no diabetes and maternal age in 2021.




# Results

In 2021, 6.1% of all singletons are born before the completed 37th week of gestation. The proportion of premature births is higher in women with gestational diabetes (6.5%) and pregestational diabetes (14.3%) than in women without diabetes (5.9%). Over time from 2013 to 2021, the proportion of premature births decreased in women without diabetes and women with gestational diabetes, but increased in women with pregestational diabetes). Differentiated by age group, a higher proportion of preterm births is seen in women aged 40 years and older and in women under 25 years of age compared to women in the middle age groups, with these differences being particularly pronounced in the presence of pregestational diabetes.

# Conclusion

While there is a decrease in premature births over time among women without diabetes or with gestational diabetes, the proportion of premature births increases for women with pregestational diabetes. According to the National Health Goal “Gesundheit rund um die Geburt” (Health around

Childbirth), the proportion of premature births should be reduced [5]. However, the analysis shows that this goal is not yet achieved for women with pregestational, even when considering the increase in maternal age. The relatively high proportion of premature births in women with pregestational diabetes under 25 years of age, suggests that particular emphasis should be on the care of pregnant women with type 1 diabetes.

# Methodology and data sources

## Definition

The indicator premature birth is defined as the proportion of women with hospital births in a given year whose child was born before the completed 37th week of pregnancy.

## Reference population

All women with inpatient singleton births in Germany.

## Data source

Perinatal medicine quality assurance data (domain of obstetrics) at the Institute for Quality and Transparency in Health Care (IQTIG) [6] 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:** Quotient of the number of women with birth before the completed 37th week of pregnancy and the number of all women with hospital birth.
- **Stratification:** The analysis distinguishes between women with pregestational diabetes (documented in Catalog A: "Medical History and General Findings/First Screening Examination" in the maternity log), gestational diabetes, and no diabetes.
- **Age standardisation:** Direct age standardisation is performed using age groups < 25, 25 – 29, 30 – 34, 35 – 39, and ≥ 40 years with the 2021 hospital birth population.

## Data quality

The data only contains information on in-hospital birth, as the data is provided by the hospitals. Therefore, data from out-of-hospital births, which represent a very small proportion (less than 2%), are not included. As documentation of gestational diabetes in maternity logs might be incomplete, it is possible that prevalence is being underestimated. Furthermore, no distinction between type 1 and type 2 diabetes is possible in pregestational diabetes.

## 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. Diabetes Care and Research in Europe: The Saint Vincent Declaration. Diabetic Medicine. 1990;7(4):360. doi: 10.1111/j.1464-5491.1990.tb01405.x.
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## External links

- Reitzle L, Heidemann C, Baumert J, Kaltheuner M, Adamczewski H, Icks A, et al. Pregnancy complications in women with pregestational and gestational diabetes mellitus. Dtsch Arztebl Int. 2023;120(6):81-6. https://doi.org/10.3238/arztebl.m2022.0387.

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