



## Prevalence of Diabetes During Pregnancy in Georgia

### Overview

Diabetes mellitus, or simply diabetes, is a group of diseases marked by high blood sugar levels due to defects in insulin production, insulin action, or both. Diabetes is a systemic and progressive chronic disease common in both Georgia (about 1 in 10 adults) and the United States (about 1 in 12 adults) (1). It can cause serious complications and premature death, but people with diabetes can take steps to control the disease and lower the risk of complications.

Among three major types of the disease, type 1 diabetes is due to an autoimmune disorder that causes absolute insulin deficiency by destruction of pancreatic beta cells—the body's only insulin-producing cells. To survive, people with type 1 diabetes must have insulin delivered by injection or a pump. Type 1 diabetes accounts for 5% to 10% of all diagnosed cases of diabetes (2). Type 2 diabetes usually starts as insulin resistance in which the body cannot use insulin properly, leading to relative insulin deficiency. As the need for insulin rises over time, the pancreas gradually loses its ability to produce enough insulin. Type 2 diabetes is the most common form, accounting for 90% to 95% of all diagnosed cases of diabetes (2). Depending on the stage of disease progression and severity, management of type 2 diabetes can include diet regulation with or without medications, either oral pills or insulin, and appropriate physical activity.

The third most common form, gestational diabetes mellitus (GDM), is a state of glucose intolerance that is first recognized during pregnancy. GDM complicates 4% to 7% of all pregnancies (2). Although GDM usually resolves after childbirth, women who have had GDM have a 20% to 50% chance of developing type 2 diabetes in the next 5 to 10 years (3).

### Diabetes and Pregnancy

Pregnancy has a profound effect on maternal carbohydrate metabolism, which must meet the demands of a developing fetus. Gestational diabetes is defined as any degree of glucose intolerance with first recognition during pregnancy (4). A pregnant woman may have diabetes diagnosed before becoming pregnant (pre-gestational diabetes), or undiagnosed, pre-existing diabetes (either type 1 or type 2) that becomes worse and noticeable during pregnancy, or new onset diabetes that develops during pregnancy for the first time. In fact, diabetes is the most common medical complication of pregnancy (4). About 150,000 pregnancies are complicated by diabetes each year in the United States, including 135,000 pregnancies in which the mothers develop GDM and another 12,000 and 7,000 pregnancies in which the mothers have pre-existing type 2 diabetes and type 1 diabetes, respectively (5, 6).

Diabetes during pregnancy poses serious risks to the mother and the fetus. If diabetes is poorly controlled, the risk of spontaneous abortion is increased. If diabetic ketoacidosis occurs, it can threaten both maternal and fetal lives. GDM can increase the risk of fetal macrosomia (large baby weighing more than 9 pounds) with secondary complications such as shoulder dystocia and birth trauma or the need for operative delivery. Following birth, neonatal complications can occur, including hypoglycemia, respiratory distress syndrome, and jaundice (4).

### Diabetes during Pregnancy—Georgia

To determine the prevalence of diabetes during pregnancy in Georgia, we used birth certificate data from the CDC WONDER natality data set (7). These data are

publicly available and are accessible on the Internet at <http://wonder.cdc.gov/natality>. Currently, the latest year for which the data are available is 2004.

The 2004 national vital records data showed that the prevalence of diabetes during pregnancy in Georgia and the U.S. were 2.3% and 3.6%, respectively (Figure 1). The prevalence in Georgia has consistently been lower than that in the U.S. since 1995. In 2004, 3,125 Georgia women with live births had pregnancies complicated by diabetes, an 11.6% increase from 2003. The occurrence of diabetes in pregnancy has been increasing nationally as well as in Georgia during 1995 to 2004 (Figure 1).

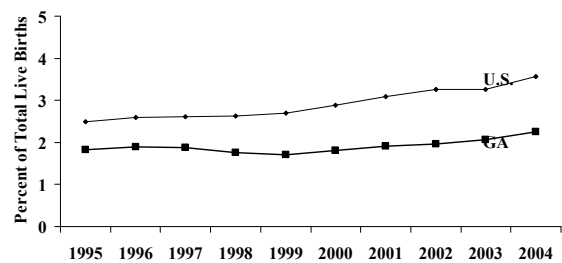
In 2004, the lowest prevalence of diabetes during pregnancy in Georgia was noted among young women aged 15 to 19 years. The older the pregnant mother, the higher the prevalence of diabetes (Figure 2). Among racial and ethnic groups, pregnant women with Asian or Pacific Islander racial background had the highest prevalence of diabetes (4.2%), i.e., nearly twofold higher than pregnant women in other racial or ethnic groups (Figure 3).

Infants of Georgia mothers who had diabetes during pregnancy were more likely to be either low birth-weight or very large babies compared to those of non-diabetic mothers (Figure 4). Serious pregnancy complications such as eclampsia, pregnancy-associated high blood pressure, and hydramnios or oligohydramnios (an excess or deficiency in the amount of amniotic fluid) were also 3 to 4 times more common in diabetic mothers than their non-diabetic counterparts (Figure 5).

### Prevention and Control of Diabetes in Pregnancy

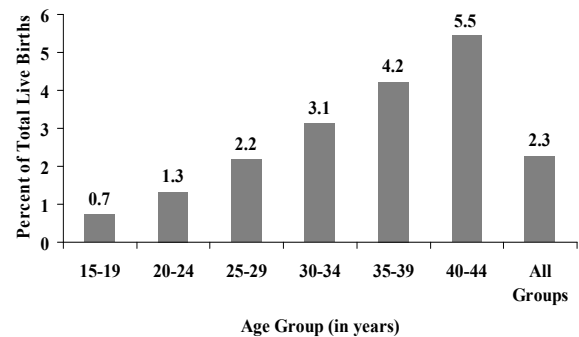
Diabetes in pregnancy, both pre-gestational and gestational, affects the health of the mother and the baby and can have a serious impact on birth outcomes. Diabetes is controllable and, in many instances,

**Figure 1. Prevalence of Diabetes in Pregnancy among Women of Childbearing Age\*, Georgia versus U.S. (1995-2004)**



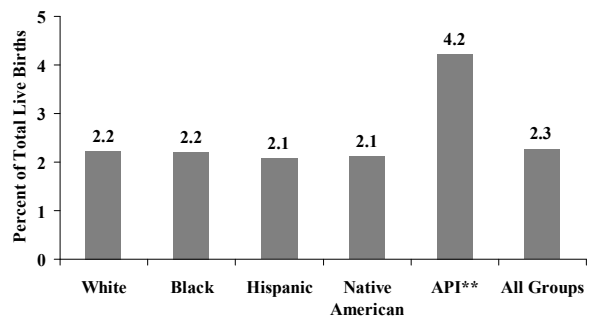
**Note:** \* Women aged 15-44  
Total live births in 2004: GA = 138,401; U.S. = 4,099,149  
**Source:** CDC WONDER, Natality data, 1995-2004

**Figure 2. Prevalence of Diabetes in Pregnancy among Women\*, by Age Group, Georgia (2004)**



**Note:** \* Women of childbearing age Total live births in 2004 = 138,401  
**Source:** CDC WONDER, Natality data, 2004

**Figure 3. Prevalence of Diabetes in Pregnancy among Women\*, by Race/Ethnicity, Georgia (2004)**



**Note:** \* Women of childbearing age \*\* Asian/Pacific Islander  
**Source:** CDC WONDER, Natality data, 2004

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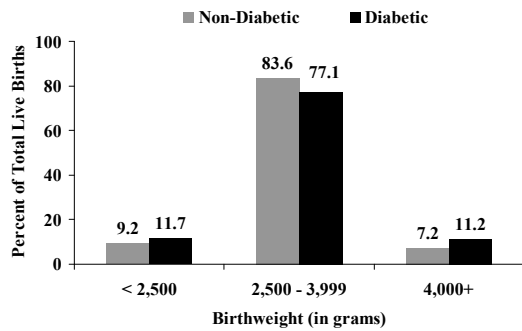
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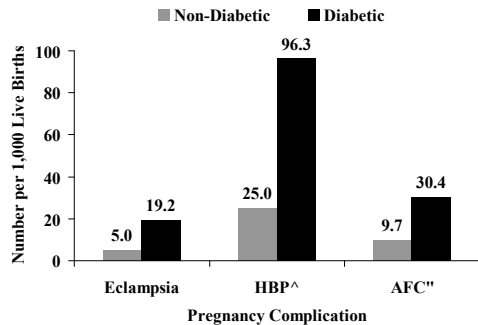
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**Figure 4. Distribution of Birthweight Groups among Women\*, by Diabetes Status during Pregnancy, Georgia (2004)**



**Note.** \* Women of childbearing age  
**Source.** CDC WONDER, Natality data, 2004

**Figure 5. Prevalence of Complications among Pregnant Women\*, by Diabetes Status during Pregnancy, Georgia (2004)**



**Note.** \* Women of childbearing age ^ Pregnancy-associated hypertension  
<sup>''</sup> Amniotic fluid content (either too much or too little)  
**Source.** CDC WONDER, Natality data, 2004

### Box 1. Risk Factors for Developing Gestational Diabetes

1. Obesity
2. Family history of diabetes
3. Advancing age (older than 25 years)
4. Past history of gestational diabetes
5. Member of a high-risk racial/ethnic group
6. History of a stillbirth or delivering a large baby
7. History of abnormal glucose tolerance

preventable. Pre-conception counseling and care are important for all women of childbearing age, particularly for those with increased risks (Box 1). Proper screening can detect pre-gestational and gestational diabetes and helps primary care providers and their patients take appropriate interventions such as tight blood glucose control, medical nutrition therapy, exercise, and insulin, as needed. It is possible for women with GDM to have healthy pregnancies, healthy babies, and healthy lives.

### References

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**Reported Cases of Selected Notifiable Diseases in Georgia, Profile\* for February 2008**

| Selected Notifiable Diseases             | Total Reported for March 2008 | Previous 3 Months Total Ending in March |       |      | Previous 12 Months Total Ending in March |       |       |
|--|-------------------------------|---|-------|------|--|-------|-------|
|  | 2008                          | 2006                                    | 2007  | 2008 | 2006                                     | 2007  | 2008  |
| Campylobacteriosis                       | 33                            | 133                                     | 124   | 119  | 624                                      | 571   | 686   |
| <i>Chlamydia trachomatis</i>             | 39                            | 10535                                   | 11573 | 4596 | 35450                                    | 41048 | 36243 |
| Cryptosporidiosis                        | 31                            | 43                                      | 38    | 54   | 173                                      | 276   | 256   |
| <i>E. coli</i> O157:H7                   | 1                             | 7                                       | 5     | 1    | 32                                       | 41    | 44    |
| Giardiasis                               | 45                            | 120                                     | 135   | 130  | 713                                      | 694   | 674   |
| Gonorrhea                                | 19                            | 5014                                    | 4526  | 1675 | 16940                                    | 19914 | 15041 |
| <i>Haemophilus influenzae</i> (invasive) | 13                            | 40                                      | 38    | 54   | 110                                      | 121   | 143   |
| Hepatitis A (acute)                      | 3                             | 8                                       | 18    | 12   | 109                                      | 66    | 61    |
| Hepatitis B (acute)                      | 9                             | 34                                      | 37    | 30   | 168                                      | 200   | 149   |
| Legionellosis                            | 5                             | 1                                       | 9     | 9    | 36                                       | 46    | 43    |
| Lyme Disease                             | 0                             | 1                                       | 0     | 0    | 6  | 7     | 11    |
| Meningococcal Disease (invasive)         | 2                             | 5                                       | 6     | 5    | 16                                       | 21    | 23    |
| Mumps                                    | 0                             | 0                                       | 0     | 0    | 1  | 4     | 0     |
| Pertussis                                | 2                             | 7                                       | 4     | 5    | 44                                       | 28    | 16    |
| Rubella                                  | 0                             | 0                                       | 0     | 0    | 0  | 0     | 0     |
| Salmonellosis                            | 78                            | 206                                     | 296   | 218  | 1950                                     | 1930  | 1955  |
| Shigellosis                              | 107                           | 186                                     | 226   | 293  | 757                                      | 1421  | 1714  |
| Syphilis - Primary                       | 6                             | 27                                      | 23    | 15   | 130                                      | 120   | 93    |
| Syphilis - Secondary                     | 37                            | 107                                     | 132   | 130  | 523                                      | 507   | 582   |
| Syphilis - Early Latent                  | 21                            | 96                                      | 116   | 80   | 412                                      | 405   | 391   |
| Syphilis - Other **                      | 76                            | 271                                     | 293   | 264  | 998                                      | 1041  | 1131  |
| Syphilis - Congenital                    | 0                             | 3                                       | 3     | 1    | 5  | 10    | 8     |
| Tuberculosis                             | 41                            | 110                                     | 108   | 110  | 500                                      | 505   | 474   |

\* The cumulative numbers in the above table reflect the date the disease was first diagnosed rather than the date the report was received at the state office, and therefore are subject to change over time due to late reporting. The 3 month delay in the disease profile for a given month is designed to minimize any changes that may occur. This method of summarizing data is expected to provide a better overall measure of disease trends and patterns in Georgia.

\*\* Other syphilis includes latent (unknown duration), late latent, late with symptomatic manifestations, and neurosyphilis.

**AIDS Profile Update**

| Report Period       | Disease Classification | Total Cases Reported* |         |        | Percent Female | Risk Group Distribution (%) |     |         |    |         |           | Race Distribution (%) |       |          |       |
|---------------------|------------------------|-----------------------|---------|--------|----------------|-----------------------------|-----|---------|----|---------|-----------|-----------------------|-------|----------|-------|
|                     |                        | <13yrs                | >=13yrs | Total  |                | MSM                         | IDU | MSM&IDU | HS | Unknown | Perinatal | White                 | Black | Hispanic | Other |
| Latest 12 Months**: | HIV, non-AIDS          | 28                    | 3,170   | 3,198  | 27             | 21                          | 2   | 1       | 4  | 72      | <1        | 22                    | 72    | 4        | 2     |
| 2/06-1/07           | AIDS                   | 8                     | 1,971   | 1,979  | 27             | 27                          | 2   | 1       | 7  | 63      | <1        | 19                    | 73    | 5        | 3     |
| Five Years Ago:     | HIV, non-AIDS          | -                     | -       | -      | -              | -                           | -   | -       | -  | -       | -         | -                     | -     | -        | -     |
| 2/02-1/03           | AIDS                   | 7                     | 1,948   | 1,955  | 29             | 36                          | 7   | 2       | 16 | 38      | <1        | 19                    | 75    | 5        | 1     |
| Cumulative:         | HIV, non-AIDS          | 221                   | 11,549  | 11,770 | 32             | 27                          | 6   | 2       | 11 | 52      | 2         | 21                    | 74    | 4        | 1     |
| 07/81-1/07          | AIDS                   | 240                   | 32,565  | 32,805 | 20             | 44                          | 15  | 5       | 14 | 22      | <1        | 30                    | 66    | 3        | 1     |

Yrs - Age at diagnosis in years      MSM - Men having sex with men      IDU - Injection drug users      HS - Heterosexual

\* Case totals are accumulated by date of report to the Epidemiology Section    \*\* Due to a change in the surveillance system, case counts may be artificially low during this time period

\*\*\*HIV, non-AIDS was not collected until 12/31/2003