

Diabetes in Georgia, 2007

Health Behaviors, Chronic Conditions and Preventive Health Practices

Diabetes is a common, serious and costly chronic disease that consists of a group of disorders marked by high blood glucose levels due to defects in insulin production, insulin action or both. The two major types of diabetes are type I and type II. Type I diabetes occurs when the pancreas does not produce enough insulin to properly control blood sugar levels. It accounts for 5% to 10% of all diagnosed cases of diabetes.¹ Type II diabetes usually begins as insulin resistance, a disorder in which the body cells cannot use insulin properly. As the need for insulin rises, the pancreas gradually loses its ability to produce insulin. Type II diabetes accounts for the remaining 90% to 95%.¹

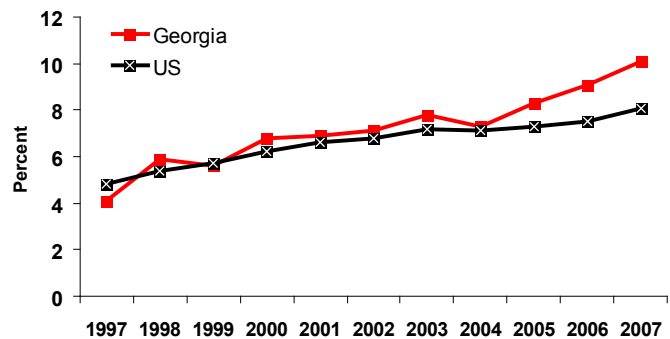
Diabetes in Georgia

There has been a steady increase in the prevalence of diabetes among adults in Georgia. Approximately 700,000 adults aged 18 years and over in Georgia were diagnosed with diabetes in 2007. Diabetes was the seventh leading cause of death, killing more than 1,600 Georgians, equivalent to five deaths per day. In Georgia, the cost of diabetes due to medical care, lost productivity and premature death is estimated to be over \$5 billion per year. Moreover, the burden of diabetes in Georgia is proportionately greater than the national average. In 2007, 10% of adults in Georgia had diabetes compared to 8% in the United States (U.S.) (Figure 1).

	N	%	95% CI
Total	1,072	10.1	9.3-11.0
Sex			
Male	404	9.8	8.6-11.3
Female	668	10.4	9.4-11.5
Race/Ethnicity			
White NH	749	9.3	8.5-10.1
Black NH	239	12.5	10.5-14.9
Hispanic	23	8.2	4.8-13.8
Other	37	9	5.8-13.7
Age			
18-34 yr	34	3.5	2.2-5.4
35-44 yr	62	5.1	3.8-6.9
45-54 yr	188	11.4	9.6-13.5
55-64 yr	305	19.1	16.8-21.6
65+ yr	476	23.8	21.6-26.2

- The prevalence of diabetes in men (9.8%) was not statistically different from women (10.4%)
- Blacks were 1.3 times more likely to have diabetes (12.5%) compared to Whites (9.3%) and 1.5 times more likely compared to Hispanics (8.2%) (results are statistically significant)
- Adults aged 65 years and older (23.8%) were 7 times more likely to have diabetes compared to adults under 35 years of age (3.5%) (Table 1)

Figure 1: Prevalence of diagnosed diabetes Georgia and US BRFSS 1997 - 2007



	2000 - 2003	2004 - 2007	% Change
1-1 Rome	9.1	8.2	-9.9
1-2 Dalton	6.3	8.2	30.2
2 Gainesville	5.7	7.4	29.8
3-1 Cobb-Douglas	4.8	5.6	16.7
3-2 Fulton	4.5	5.4	20.0
3-3 Clayton	5.1	7.2	41.2
3-4 Lawrenceville	4.5	6.3	40.0
3-5 DeKalb	5.0	9.6	18.0
4 LaGrange	5.9	9.6	66.1*
5-1 Dublin	8.7	10.0	14.9
5-2 Macon	8.2	9.4	14.6
6 Augusta	6.8	10.3	51.5*
7 Columbus	7.6	8.5	11.6
8-1 Valdosta	8.9	9.3	4.5
8-2 Albany	8.1	9.8	21.0
9-1 Savannah	6.6	9.3	40.9*
9-2 Waycross	8.3	8.9	7.2
10 Athens	6.2	7.8	25.8

* Percent change is statistically significant

Based on the Behavior Risk Factor Surveillance Survey (BRFSS) there has been a steady increase in diabetes prevalence in Georgia and the U.S. since 1997. However, since 2004 the burden of diabetes has been higher in Georgia than in the U.S. (Figure 1). The overall four year prevalence of diabetes (2000 - 2003 and 2004 - 2007 time periods) increased in 17 out of 18 Georgia Public Health Districts. The highest increases were in Districts 4, 6, and 9-1 while District 1-1 had a decrease in diabetes prevalence (Table 2).

Risk Behaviors among people with Diabetes

Risk factors such as unhealthy eating habits, physical inactivity, and smoking can be modified to reduce the risk for developing diabetes or to improve the overall health status

1. Cigarette Smoking

For adults with diabetes, smoking can elevate the risk of cardiovascular-related complications like heart attack, stroke, poor circulation, kidney damage and vision impairments. There was no significant difference in smoking prevalence between adult diabetics (19%) and non-diabetics (19%) in Georgia (Figure 2)

2. Inadequate Physical Activity

Regular physical activity is important for helping people with diabetes control their blood sugar levels. Moderate exercise such as brisk walking, running, jogging, and biking 30 minutes a day for five or more days of the week is beneficial in successful diabetes management. People with diabetes (38%) were 1.7 times more likely not to exercise moderately or vigorously on a regular basis compared to non-diabetics (23%) (Figure 2)

3. Obesity

Obesity (body mass index [BMI] of 25 or more for adults) is associated with insulin resistance. For people with diabetes, losing excess body weight and maintaining a healthy body weight is crucial for properly managing diabetes, preventing complications and slowing down the disease progress. Diabetic Georgians were twice as likely to be obese (54%) than non-diabetics (26%) (Figure 2)

4. Fruits and Vegetables Consumption

Fruits and vegetables are important components of a balanced, healthy diet. However, most Georgians do not eat adequate fruits and vegetables. There was no significant difference in inadequate fruit and vegetable consumption between diabetics (76%) and non-diabetics (75%) (Figure 2)

5. Cardiovascular Health

Adult Georgians with diabetes were five times more likely to report having coronary heart disease, heart attack and stroke and three times more likely to report having high blood pressure compared to non-diabetics (Figure 3)

Figure 2: Prevalence of modifiable risk behaviors & health conditions among adults by diabetes status, Georgia BRFS 2007

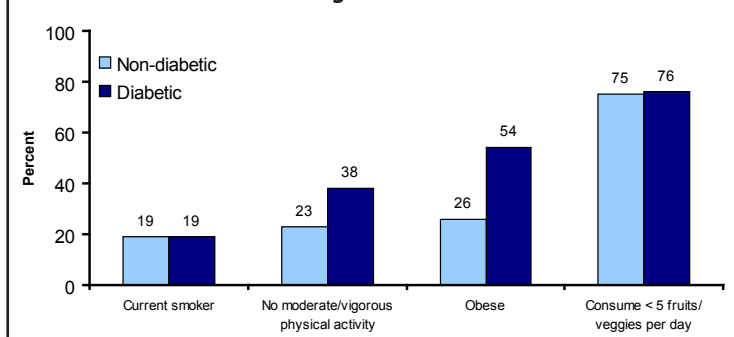
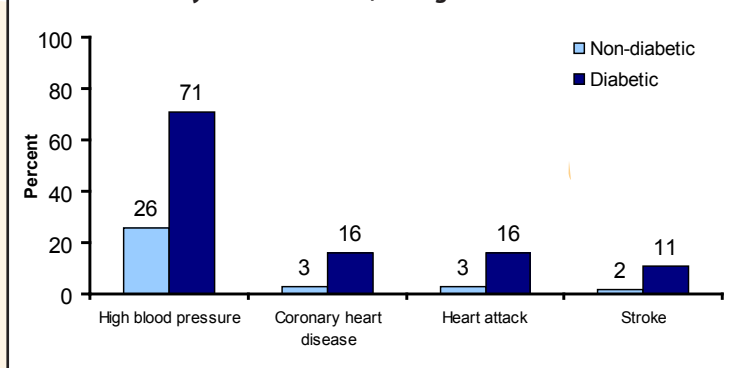


Figure 3: Prevalence of cardiovascular disease among adults by diabetes status, Georgia BRFS 2007



Preventative Care Practices

Many complications of diabetes can be prevented or delayed with early detection, proper intervention, and comprehensive disease management.

Figure 4: Access and utilization of healthcare among adults by diabetes status, Georgia BRFSS 2007

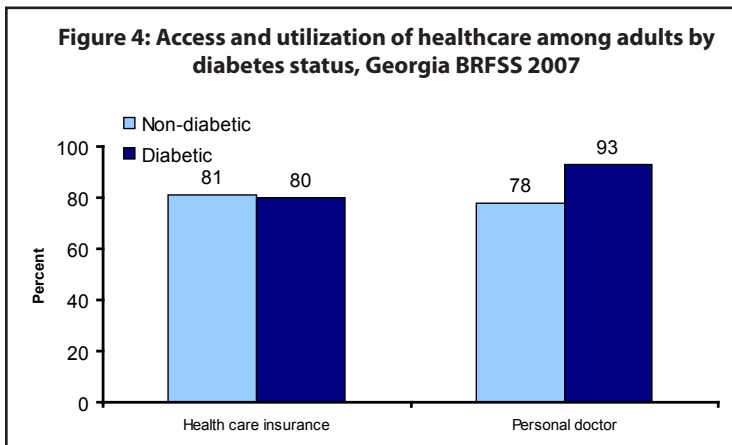


Figure 5: Prevalence of fair or poor health among adults by diabetes status, Georgia BRFSS 2007

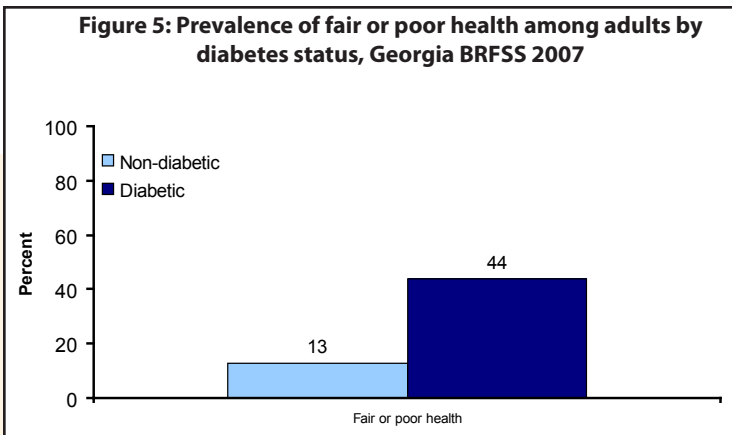
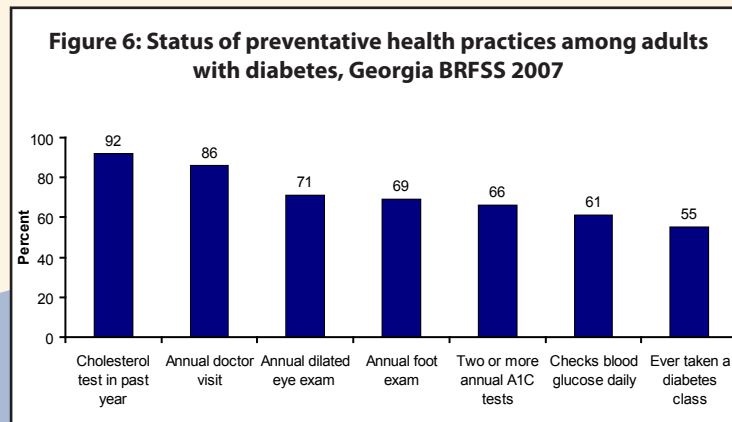


Figure 6: Status of preventative health practices among adults with diabetes, Georgia BRFSS 2007



1. Access to Care

The American Diabetes Association (ADA) recommends several routine care procedures as standard practices for healthcare providers to implement when caring for patients with diabetes. These include daily self-monitoring of blood glucose, regular clinic visits, annual A1C testing, annual dilated eye exam and foot exam, proper immunizations, and receiving diabetes education. Diabetics with health insurance have greater access to the resources necessary for implementing these recommendations. There was no difference in the access to health insurance between people with (80%) and without diabetes (81%). However, people with diabetes were more likely to have a personal doctor (93%) compared to non-diabetics (78%) (Figure 4)

2. General Health Status

Healthy People 2010 objectives recommend that people with diabetes maintain and improve their health status. In Georgia, people with diabetes were three times more likely to report having fair or poor health (44%) compared to non-diabetics (13%) (Figure 5)

3. Cholesterol Test

Healthy People 2010 objectives recommend that 80% of all individuals (diabetic and non-diabetic) receive an annual cholesterol test. Having diabetes can increase the risk of developing other health conditions including high blood cholesterol. High blood cholesterol can lead to heart disease and stroke, which are two major health problems for diabetics. Healthcare professionals recommend that people with diabetes should have their cholesterol checked at least once a year. In 2007, 92% of adult Georgians with diabetes received a cholesterol test in the past year (Figure 6)

4. Doctor Visit

People with diabetes are advised to see a healthcare provider at least once a year for a diabetes management consultation. In 2007, 86% of Georgians with diabetes received diabetes management consultation from their health care providers (Figure 6)

5. Dilated Eye Exam

Healthy People 2010 objectives recommend that 75% of people with diabetes should have an annual dilated eye exam. People with diabetes are at risk of developing diabetic retinopathy, an eye disease that can eventually lead to blindness. In addition to maintaining normal blood glucose levels and keeping blood pressure under control, having an annual dilated eye exam can help find and treat eye problems in diabetics. In 2007, 71% of Georgians with diabetes received a dilated eye exam in the past year (Figure 6)

People with diabetes can control the disease and lower the risk of complications by adopting healthy behaviors such as healthy eating, staying physically active, losing excess body weight and performing proper disease self-management.

6. Foot Exam

Healthy People 2010 objectives recommend that 75% of people with diabetes should have their feet checked by a health care professional once a year to detect any sores or irritation. In 2007, 69% of Georgians with diabetes reported receiving at least one foot exam from a health care professional (Figure 6)

7. A1C Test

Healthy People 2010 objectives recommend that 50% of people with diabetes should receive one or more A1C tests in a year. The purpose of the A1C test is to measure the status of blood glucose control in terms of the average level of blood sugar over the past three months. The majority of people with diabetes received at least one A1C test (85%) and 66% received two or more tests in the past year (Figure 6)

8. Daily Self-monitoring of Blood Glucose

Healthy People 2010 objectives recommend that 60% of people with diabetes should check blood glucose daily. This is a critical preventative measure for diabetics in order to reduce the risk of developing long-term complications such as eye disease, kidney failure, and nerve damage. In 2007, 61% of Georgians with diabetes reported checking their blood glucose daily

9. Diabetes Self-management Education

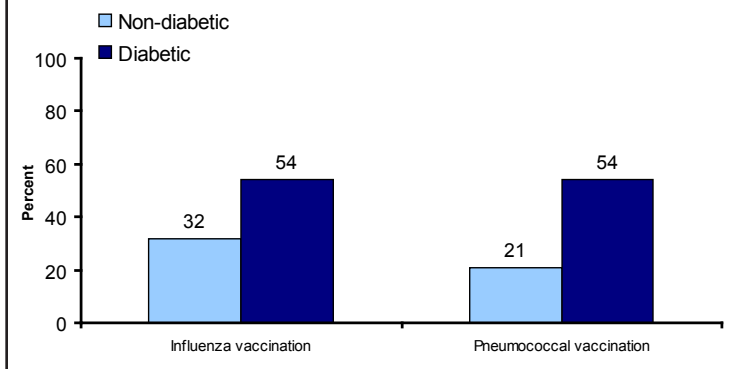
Healthy People 2010 objectives recommend that 60% of people with diabetes should receive diabetes education. In 2007, approximately 55% of people with diabetes reported taking a diabetes education class (Figure 6)

10. Immunizations

Adequate immunization against influenza and pneumococcal disease is an important preventative practice for people with diabetes. Georgians with diabetes were more likely to receive their influenza (54%) and pneumococcal (54%) vaccinations than those without diabetes (32% and 21% respectively) (Figure 7)

All results denoted significant were significant at $\alpha=0.05$

Figure 7: Influenza and pneumococcal vaccination coverage among adults by diabetes status, Georgia BRFSS 2007



About the Georgia Behavioral Risk Factor Surveillance System

The information provided in this newsletter is from the 2007 Georgia BRFSS survey. The Georgia BRFSS is an annual statewide telephone survey of non-institutionalized civilian Georgia residents aged 18 years and older. In 2007, 7,703 individuals were interviewed by telephone about health conditions, behaviors, and the use of preventive services. Respondents were asked the following question: "Have you ever been told by a doctor that you have diabetes?" If they answered "Yes", respondents would be asked additional questions on diabetes. Questions covered topics related to diabetes self-management and health behaviors.

The Georgia Department of Community Health would like to thank the participants of the Georgia BRFSS survey. BRFSS survey results provide valuable information in systematically assessing the burden of chronic diseases and risk behaviors in Georgia.

For more information about the Georgia BRFSS, contact the Georgia BRFSS Program at 1-888-968-0456 or email GA-BRFSS@dhr.state.ga.us.

For more information about diabetes in Georgia, contact the Georgia Diabetes Prevention and Control Program, Office of Healthy Behaviors at 404-657-6313.

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- Centers for Disease Control and Prevention. National Diabetes Fact Sheet: General Information and National Estimates on Diabetes in the United States, 2007. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2008. Available at: http://www.cdc.gov/diabetes/pubs/pdf/ndfs_2007.pdf