

# **Chartbook on Disability in New York State**

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**2007**

**Results from the  
Behavioral Risk Factor Surveillance System**

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Disability and Health Program  
New York State Department of Health

**Author** Larry L. Steele, PhD

**For additional information about this report:**

Larry L. Steele, PhD  
Bureau of Chronic Disease Epidemiology and  
Surveillance  
Division of Chronic Disease and Injury Prevention  
New York State Department of Health  
Empire State Plaza  
Corning Tower, Room 565  
Albany, NY 12237  
518-473-0673  
lls02@health.state.ny.us

**For additional information about the Disability  
and Health Program:**

Theresa Paeglow  
Disability and Health Program  
Bureau of Community Chronic Disease Prevention  
Division of Chronic Disease and Injury Prevention  
New York State Department of Health  
Riverview Center  
150 Broadway  
3<sup>rd</sup> Floor West  
Albany, NY 12204  
518-474-2018  
tnp01@health.state.ny.us

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# Executive Summary

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Disability is a major public health problem in the United States. About one in seven Americans has a disabling condition that interferes with his or her life activities. Disabilities are disproportionately found among the elderly and populations of lower socioeconomic status. The aging of the New York State population, and associated disease and disability, have profound implications for the utilization of medical care and the need for supportive and long-term care. Monitoring the burden of disability in this aging population is essential.

Disability is usually assessed through self-report of difficulty in performing, or need for help in performing, basic self-care activities. A measurable indicator of the prevalence of disability in a given population is limitation in activity caused by chronic health conditions, injuries, and impairments. The *Chartbook on Disability in New York State, 2007* reports results from the 2007 New York State Behavioral Risk Factor Surveillance System (NYS BRFSS) survey. In 2007, the NYS BRFSS questionnaire, administered by the NYS Department of Health, included two disability screener questions and two follow-up questions. Together, these four items permitted assessment of the disability status of the state's noninstitutionalized, civilian adult population through responses to questions on activity limitation, use of special equipment, and need for assistance in performing daily activities. Throughout the chartbook, data are provided for four comparison groups: 1) adults with disabilities who require assistance in daily activities; 2) adults with disabilities who require no assistance; 3) adults with any disability; and 4) adults with no disabilities.

## Prevalence of Disability

In 2007, an estimated 19.5% of adults had disabilities. Of this total, 5.6% required assistance in daily activities and 13.8% needed no assistance. In general, the prevalence of disability increased with age and decreased with reported levels of educational attainment and household income. Women with disabilities were twice as likely as men with disabilities to require assistance in performing daily activities (7.4% vs. 3.7%).

## Health Care Coverage, Screening, and Immunization

Adults with disabilities were more likely than adults without disabilities to have some form of health care coverage: 15.3% of those without disabilities reported no coverage compared to only 8.1% of those with disabilities. Although working-age (aged 18-64 years) adults with disabilities were more likely than the rest of the population to be insured (89.5% vs. 82.4%), they were also more likely to report this coverage as being inadequate; that is, they were more likely to report a time during the prior 12 months when they could not afford a needed doctor visit. Compared to those without disabilities, working-age adults with disabilities were more likely to have at least one person thought of as their personal doctor or health care provider; they were also more likely to report having multiple personal doctors or health care providers. Working-age adults with disabilities requiring assistance were more likely than adults without disabilities to have had a routine physical examination within the past two years. Adults with disabilities were also more likely than the rest of the population to have had their blood cholesterol checked within the previous five years, to have had a flu shot within the previous 12 months, and to have ever had a pneumonia vaccination. Among adults aged 40 years or older, those with disabilities were just as likely as those without disabilities to have health insurance coverage for eye care and to have had a dilated eye examination within the past two years. Among adults aged 65 years or older, those with disabilities requiring assistance were more likely than those without disabilities to have had an eye examination within the past 12 months.

## Chronic Health Conditions

Adults with disabilities were generally more likely than the rest of the population to also have chronic health conditions. Compared to adults without disabilities, those with disabilities were more likely to have arthritis (58.5% vs. 20.7%), diabetes (19.2% vs. 5.5%), asthma (16.1% vs. 7.0%), hypertension (47.2% vs. 22.3%), and high

blood cholesterol (51.9% vs. 34.1%). Adults with disabilities were also more likely to report a history of cardiovascular disease (heart attack, angina, or stroke) (18.2% vs. 4.6%) and a history of epilepsy or seizure disorder (3.4% vs. 0.6%). Lastly, adults with disabilities were more likely to have histories of cataract (27.6% vs. 15.0%), glaucoma (7.6% vs. 3.4%), and age-related macular degeneration (6.1% vs. 3.6%).

### **Health Risk Factors and Behaviors**

Compared to adults without disabilities, adults with disabilities requiring assistance were more likely to be current smokers (25.3% vs. 18.1%). Adults with disabilities were less likely to have engaged in binge drinking in the last 30 days (8.2% vs. 16.8%), but were equally as likely as adults without disabilities to have engaged in heavy drinking in the past 30 days (4.1% vs. 4.8%). Adults with disabilities were more likely than adults without disabilities to be obese (body mass index [BMI] of 30.0 or greater) (39.0% vs. 22.5%). Recent leisure-time exercise or physical activity varied by disability status. Adults with disabilities, particularly those who require assistance, were more likely than the rest of the population to have had no exercise in the previous month. Adults with disabilities were also less likely than adults without disabilities to have had the recommended level of physical activity (moderate-intensity physical activity outside of work of 30 or more minutes a day at least five days a week or vigorous-intensity physical activity outside of work of 20 or more minutes a day at least three days a week). There were no differences by disability status in the consumption of five or more servings of fruits and vegetables per day.

### **Health-Related Quality of Life**

Health-related quality-of-life (HRQoL) information on the BRFSS consisted of subjective ratings of health and perceptions of recent health. The rating items requested that respondents provide their perceptions of emotional support, satisfaction with life, and self-rated health. HRQoL questions on recent health elicited information on respondents' estimates of impaired health days during the prior month by asking respondents to estimate the number of days in the past 30 days that they had experienced a number of specified adverse health events.

Adults with disabilities were far more likely to rate their health status as fair or poor than were those without disabilities: Nearly two-thirds (62.8%) of those with disabilities requiring assistance reported fair or poor health, compared to only 10.8% of adults without disabilities. Adults with disabilities were also more likely than adults without disabilities to report frequent days of impaired health in the previous month on every measure, including physical health, mental health, activity limitation due to poor physical or mental health, activity-limiting pain, depressed mood, worry or anxiety, and insufficient rest or sleep. Adults with disabilities were also less likely to report days of feeling very healthy and full of energy than adults without disabilities. For all measures, adults with disabilities requiring assistance had more symptom days, while adults with disabilities requiring no assistance had fewer symptom days. Lastly, compared to adults without disabilities, adults with disabilities were less likely to get sufficient social and emotional support and less likely to be satisfied with life.

# 1 Introduction

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Disability due to physical, mental, or emotional problems is a major public health problem that reduces quality of life and increases utilization of the health care system. Disabilities are more common among the elderly and populations of lower socioeconomic status. As the number of people living with disabilities increases, maintaining quality of life for people with disabilities becomes even more challenging. The aging of the state's population, and associated disease and disability, have profound implications for the utilization of medical care and the need for supportive and long-term care. In the mid-1980s, there were about 28 million people in the United States aged 65 years or older. The U.S. Bureau of the Census has predicted over twice as many, 59 million, by the year 2025.<sup>1</sup> In New York State, 2000 Census figures show nearly 2.4 million residents aged 65 years or older. By the year 2025, this total is projected to increase by nearly one-third to over 3.2 million. Monitoring the burden of disability in this aging population is essential. This report presents prevalence estimates of disability for various sociodemographic subgroups of New York adults and data on selected health risk factors by disability status.

## Data Source

Data for the chartbook came from the 2007 New York State Behavioral Risk Factor Surveillance System (NYS BRFSS). The NYS BRFSS is a telephone-based surveillance system supported in part by the Centers for Disease Control and Prevention and administered by the New York State Department of Health. The BRFSS is designed to provide information on behaviors and risk factors for chronic and infectious diseases and other health conditions among the noninstitutionalized, civilian adult population aged 18 years and older. The BRFSS monitors modifiable risk behaviors and other factors contributing to the leading causes of morbidity and mortality in the population.

## Defining Disability

In 2007, the NYS BRFSS questionnaire included two questions to assess disability in the adult population:

*"Are you limited in any way in any activities because of physical, mental, or emotional problems?"*

*"Do you now have any health problem that requires you to use special equipment, such as a cane, a wheelchair, a special bed, or a special telephone?"*

A "no" response to both questions assigned the respondent to the group of adults with no disabilities (*No disability*). A "yes" response to at least one of the two items assigned the respondent to the group of adults with disabilities (*Any disability*), and follow-up questions were asked to further assess the respondent's limitation status:

*"Because of any impairment or health problem, do you need the help of other persons with your personal care needs, such as eating, bathing, dressing, or getting around the house?"*

*"Because of any impairment or health problem, do you need the help of other persons in handling your routine needs, such as everyday household chores, doing necessary business, shopping, or getting around for other purposes?"*

A "yes" response to either or both of these items assigned the respondent to the group of adults with a greater degree of disability (*Disability / Assistance*). A negative response to both questions assigned the respondent to the group of adults with a lesser degree of disability (*Disability / No assistance*).

## Data Presentation

The four categories of disability status (*Disability / Assistance; Disability / No assistance; Any disability; No disability*) serve as the primary comparison groups throughout the chartbook. In addition, in section 3 (Health Care Coverage, Screening, and Immunization), disability status is further stratified by age subgroups (younger than 65 years, 65 years or older).

In section 2 (Prevalence of Disability), disability prevalence estimates (percentages) by selected sociodemographic characteristics are presented as a series of vertical bar charts. Throughout the remainder of the chartbook, bar charts are also

used to display prevalence estimates for the various health behaviors, conditions, and risk factors by disability status (and, in section 3, age subgroup).

In addition to percentages, 95% confidence intervals (CIs) were calculated to afford measures of the precision of the estimates and to facilitate group comparisons. The CIs appear as error

bars on the charts. A brief summation of results is presented beneath each chart. All noted differences between groups were statistically significant.

A complete tabulation of all percentages and accompanying CIs that formed the basis for the charts is found in Appendix B: Data Tables.

## 2 Prevalence of Disability

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Estimation of the population with disabilities varies depending on the choice of survey and definition. Disability is generally assessed through self-report of difficulty or need for help in performing self-care activities. Surveys rely upon different conceptual notions of disability, which in turn lead to different population estimates. Even minor differences in how questions or response options are phrased or how data are summarized may yield dissimilar or even inconsistent pictures of a particular aspect of a disability.<sup>2</sup>

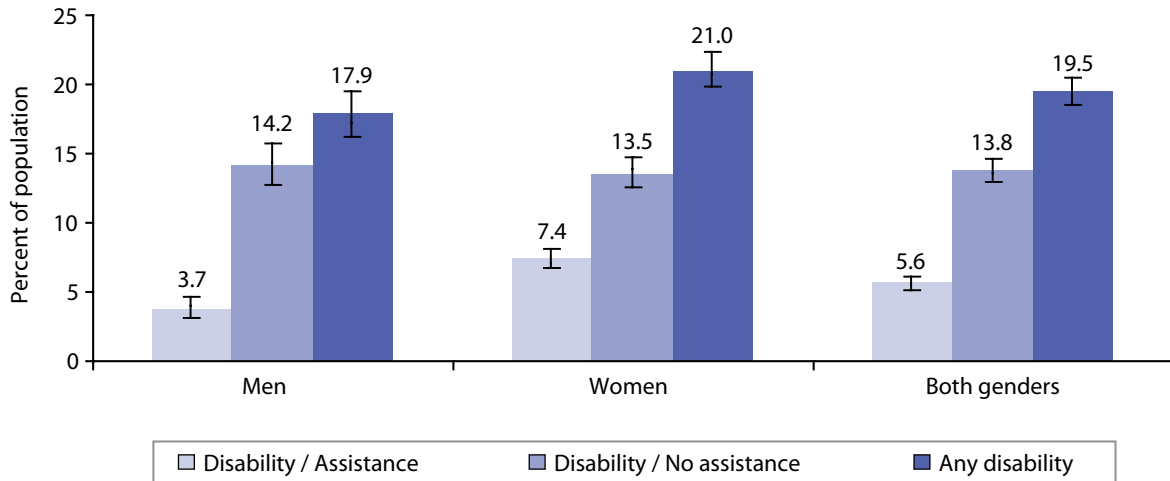
The BRFSS has been shown to yield prevalence estimates consistent with other national surveys such as the National Health Interview Survey (NHIS) and the Survey of Income and Program Participation (SIPP).<sup>3</sup> The BRFSS includes two broad items to identify the adult community-based population with disabilities. The New York State BRFSS includes two additional questions to assess the degree of limitation among adults who have a disability.

# Gender

## BRFSS Question [Asked only if necessary]

- For example: *What is your sex?*

**Figure 1.** Prevalence of disability among New York adults by gender.



Note: Error bars represent 95% confidence intervals.

Source: 2007 NYS BRFSS

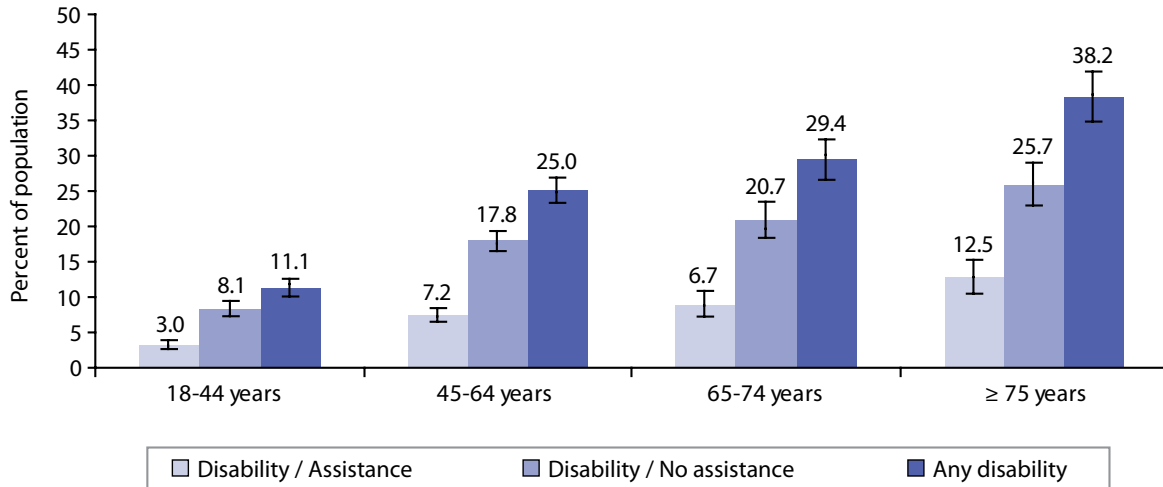
**Overall disability prevalence was greater among women (21.0% vs. 17.9%).  
Women were also more likely than men to require assistance in performing daily activities (7.4% vs. 3.7%).**

# Age

## BRFSS Question

- What is your age?

**Figure 2.** Prevalence of disability among New York adults by age.



Note: Error bars represent 95% confidence intervals.

Source: 2007 NYS BRFSS

**Disability prevalence increased with age, both overall and for each degree of disability.**

# Race/Ethnicity

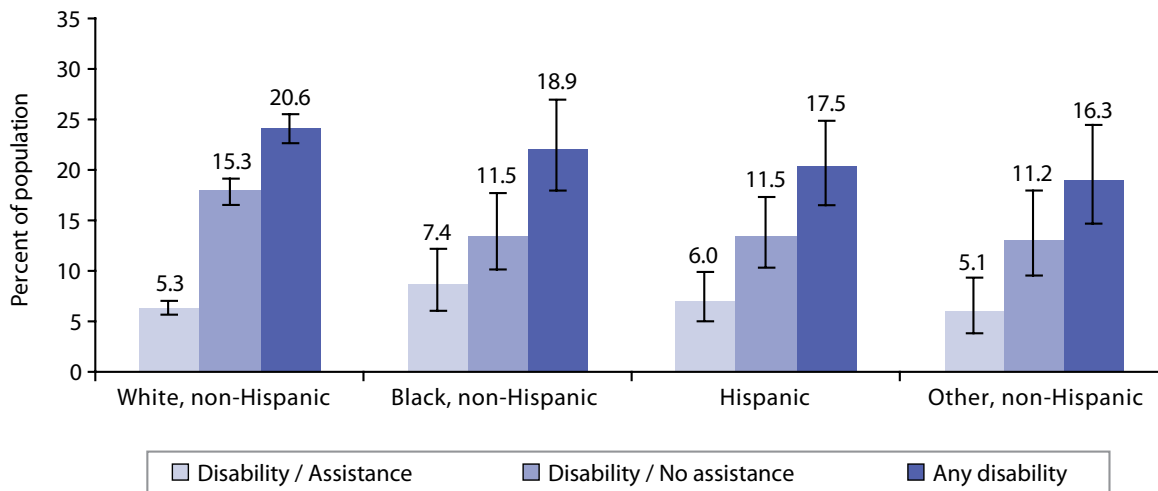
## BRFSS Questions

- Are you Hispanic or Latino?
- Which one or more of the following would you say is your race?

[If more than one response]

- Which one of these groups would you say best represents your race?

**Figure 3.** Prevalence of disability among New York adults by preferred race and Hispanic/Latino ethnicity.



Note: Error bars represent 95% confidence intervals.

Source: 2007 NYS BRFSS

**Disability prevalence did not differ by race/ethnicity.**

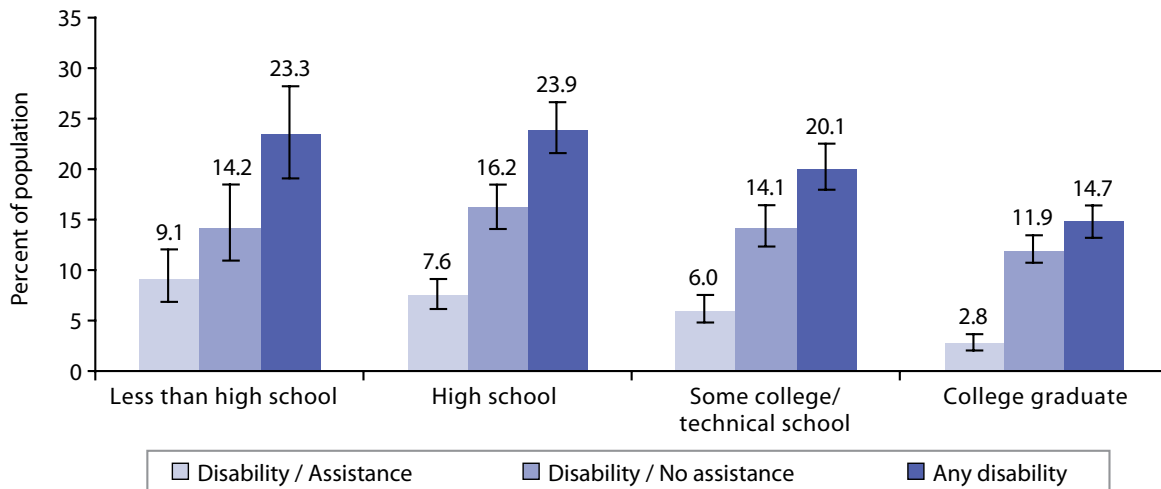


# Educational Attainment

## BRFSS Question

- What is the highest grade or year of school you completed?

**Figure 4.** Prevalence of disability among New York adults by educational attainment.



Note: Error bars represent 95% confidence intervals.

SOURCE: 2007 NYS BRFSS

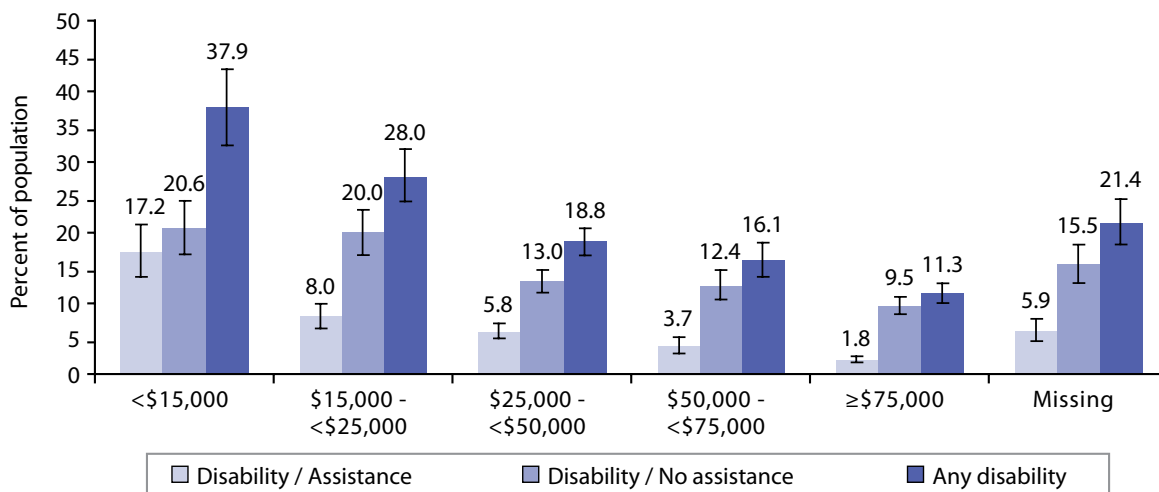
**Among adults with at least a high school degree, disability prevalence decreased with increasing level of educational attainment.**

# Household Income

## BRFSS Question

- Is your annual household income from all sources less than...\$25,000? ... \$20,000? ...\$15,000? ... \$10,000? ...\$35,000? ...\$50,000? ...\$75,000? ...\$75,000 or more?

**Figure 5.** Prevalence of disability among New York adults by annual household income.



Note: Error bars represent 95% confidence intervals

SOURCE: 2007 NYS BRFSS

**Disability prevalence decreased with increasing household income.**

### 3 Health Care Coverage, Screening, and Immunization

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Adults with disabilities are at least as likely as those without disabilities to have access to health care coverage. This coverage, however, is more likely to be inadequate. Those with disabilities are disproportionately poor, making it difficult for them to make required co-payments or to purchase essential services and equipment for their rehabilitation.<sup>4</sup> Moreover, adults with disabilities may have greater difficulty finding physicians who are knowledgeable about their ongoing health care needs. They may also have problems obtaining timely medical care and assistive technology that can help prevent minor health problems from becoming significant complications.<sup>4</sup> Adults with disabilities should have access to appropriate care during the full course of disabling conditions. Such care should be provided in a way that prevents secondary

conditions and maximizes individuals' functional abilities in everyday social and work roles.<sup>4</sup>

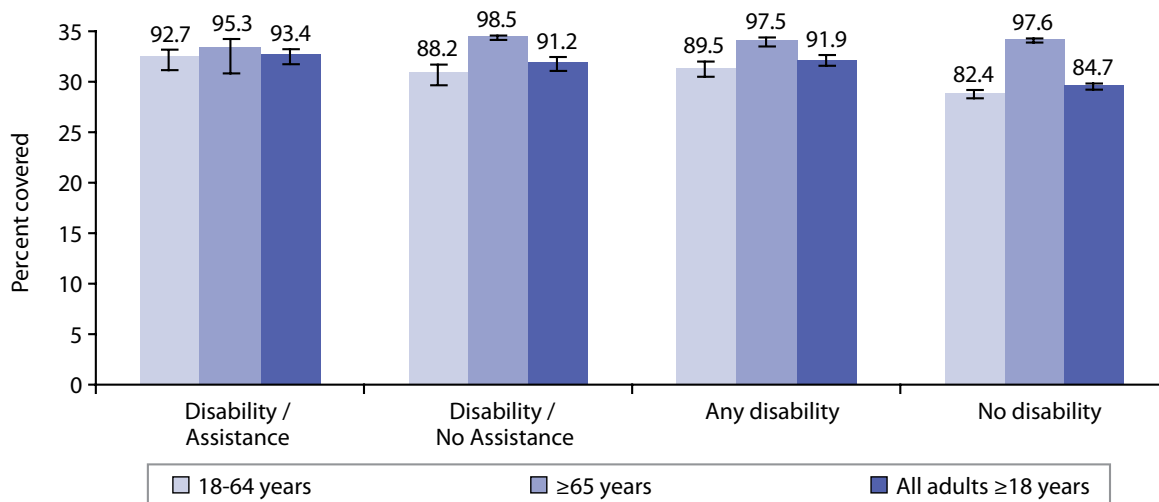
The prevalence estimates in the following section are stratified by two age groups: younger than 65 years, and 65 years or older. Medicare eligibility may influence the estimates for health care coverage and for services dependent on coverage among the population aged 65 years and older. Moreover, age 65 years represents a typical age of retirement for much of the population and, as such, is the age at which job-related health care benefits may become limited or lost. Lastly, because disability increases with age, it is important to report the data for different age groups to reduce the likelihood that certain observed differences are solely a reflection of the age differences in the older and younger populations.

# Health Care Coverage

## BRFSS Questions

- Do you have any kind of health care coverage, including health insurance, prepaid plans such as HMOs, or government plans such as Medicare?

**Figure 6.** Percentage of New York adults who had some kind of health care coverage, by disability status and age.



Note: Error bars represent 95% confidence intervals.

SOURCE: 2007 NYS BRFSS

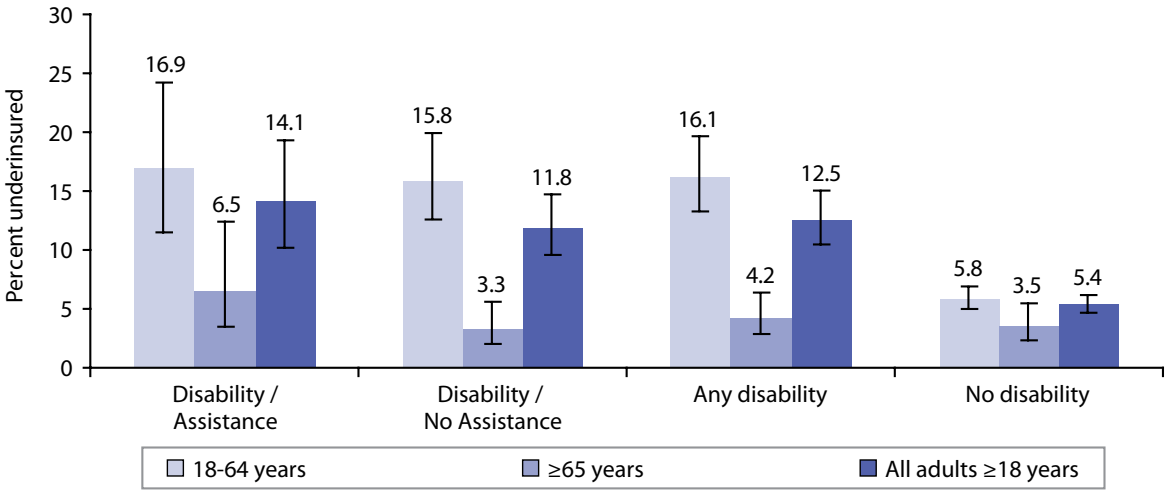
**Among adults aged 18-64 years, those with disabilities were more likely than those without disabilities to be covered by some form of health insurance plan (89.5% vs. 82.4%).**

# Underinsurance

## BRFSS Questions

- Do you have any kind of health care coverage, including health insurance, prepaid plans such as HMOs, or government plans such as Medicare?
- Was there a time in the past 12 months when you needed to see a doctor but could not because of cost?

**Figure 7.** Percentage of New York adults who were underinsured\*, by disability status and age.



\* Insured, but reporting a time in the past 12 months when could not afford a needed doctor visit.

Note: Error bars represent 95% confidence intervals.

SOURCE: 2007 NYS BRFSS

**Among adults aged 18-64 years, those with disabilities were more likely than those without disabilities to be underinsured (16.1% vs. 5.8%).**

# Personal Doctor or Health Care Provider

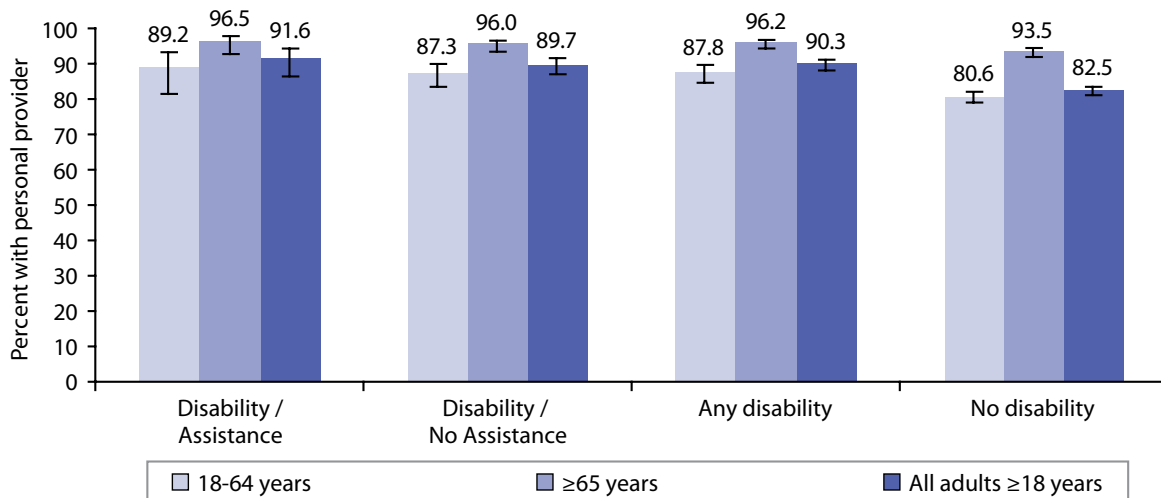
## BRFSS Questions

- Do you have one person you think of as your personal doctor or health care provider?

[If “no”]

- Is there more than one, or is there no person who you think of as your personal doctor or health care provider?

**Figure 8.** Percentage of New York adults who had at least one person thought of as their personal doctor or health care provider, by disability status and age.



Note: Error bars represent 95% confidence intervals.

SOURCE: 2007 NYS BRFSS

**Among adults aged 18-64 years, those with disabilities were more likely than those without disabilities to have at least one person thought of as their personal doctor or health care provider (87.8% vs. 80.6%).**

# Multiple Personal Doctors or Health Care Providers

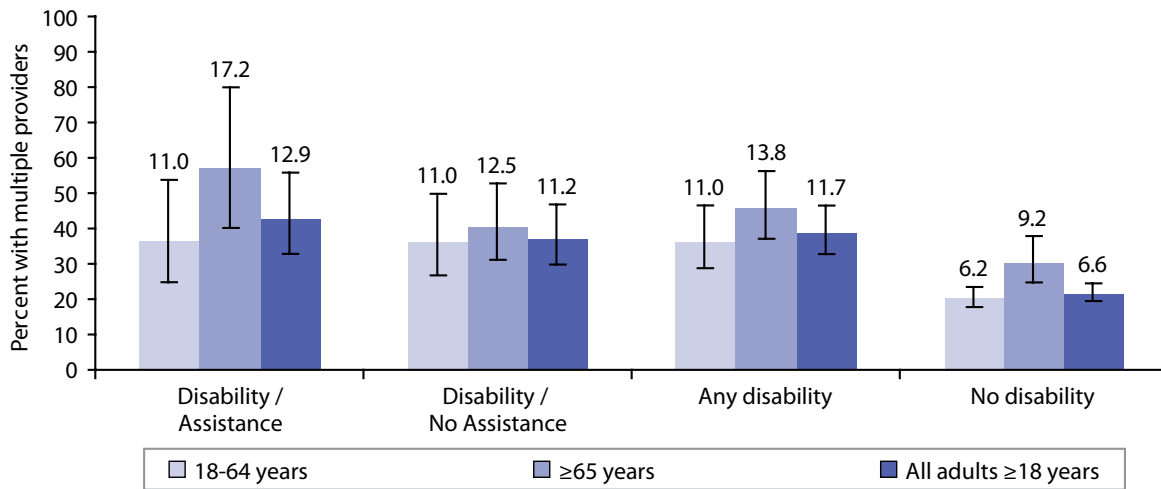
## BRFSS Questions

- Do you have one person you think of as your personal doctor or health care provider?

[If “no”]

- Is there more than one, or is there no person who you think of as your personal doctor or health care provider?

**Figure 9.** Percentage of New York adults who had more than one person thought of as their personal doctor or health care provider, by disability status and age.



Note: Error bars represent 95% confidence intervals.

SOURCE: 2007 NYS BRFSS

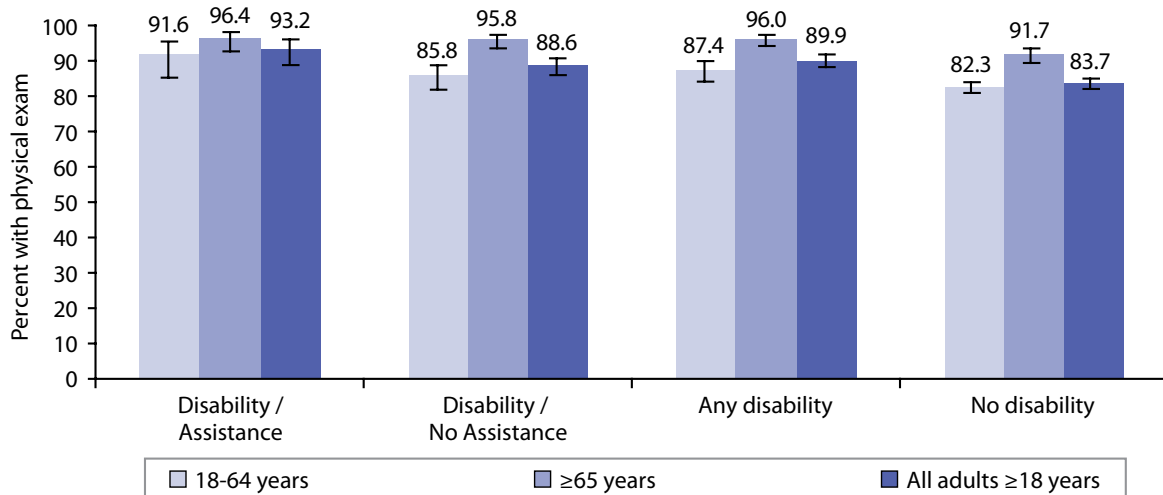
**Among adults aged 18-64 years, those with disabilities were more likely than those without disabilities to report having more than one person thought of as their personal doctor or health care provider (11.0% vs. 6.2%).**

# Routine Physical Examination

## BRFSS Questions

- *About how long has it been since you last visited a doctor for a routine checkup? A routine checkup is a general physical exam, not an exam for a specific injury, illness, or condition.*

**Figure 10.** Percentage of New York adults who had a routine physical examination within the past two years, by disability status and age.



Note: Error bars represent 95% confidence intervals

SOURCE: 2007 NYS BRFSS

**Among adults aged 18-64 years, those with disabilities needing assistance were more likely than those without disabilities to report having had a routine physical examination within the past two years (91.6% vs. 82.3%).**



# Cholesterol Screening: Blood Cholesterol Check

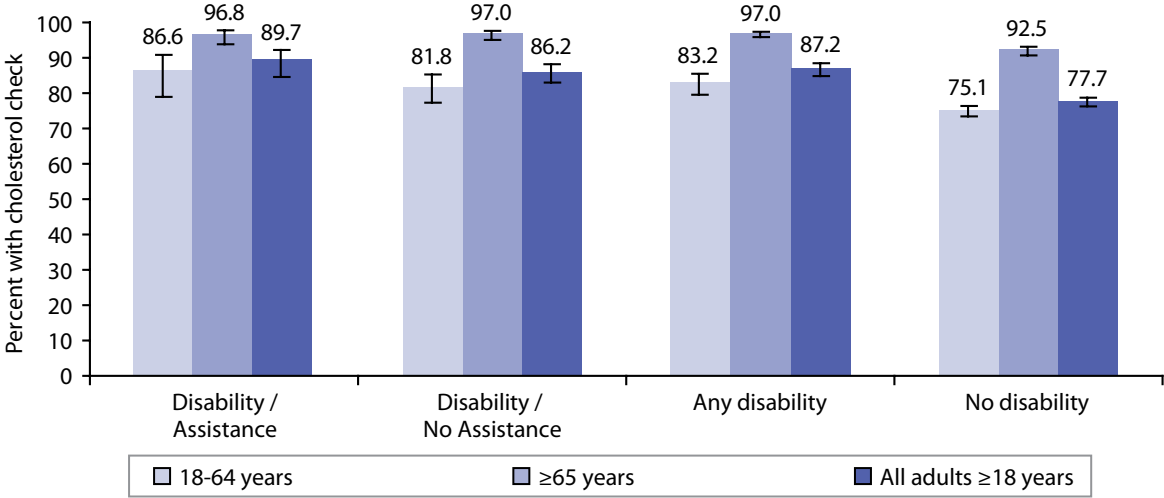
**BRFSS Questions** [Asked of male respondents aged 40 years or older]

- Blood cholesterol is a fatty substance found in the blood.
- Have you ever had your blood cholesterol checked?

[If “yes”]

- About how long has it been since you last had your blood cholesterol checked?

**Figure 11.** Percentage of New York adults who had a blood cholesterol check within the past five years, by disability status.



Note: Error bars represent 95% confidence intervals

SOURCE: 2007 NYS BRFSS

**Adults with disabilities were more likely than adults without disabilities to have had their blood cholesterol checked within the past five years (87.2% vs. 77.7%).**

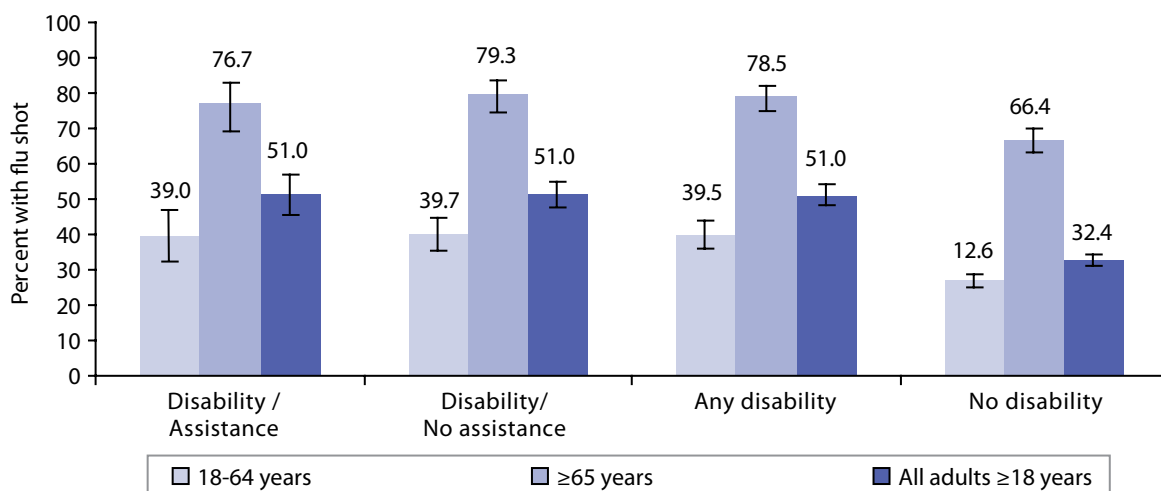
# Immunization: Influenza Vaccination

## BRFSS Questions

A flu shot is an influenza vaccine injected into your arm.

- During the past 12 months, have you had a flu shot?

**Figure 12.** Percentage of New York adults who had a flu shot within the past 12 months, by disability status and age.



Note: Error bars represent 95% confidence intervals.

SOURCE: 2007 NYS BRFSS

**Adults with disabilities were more likely than adults without disabilities to have had a flu shot within the past 12 months (51.0% vs. 32.4%).**

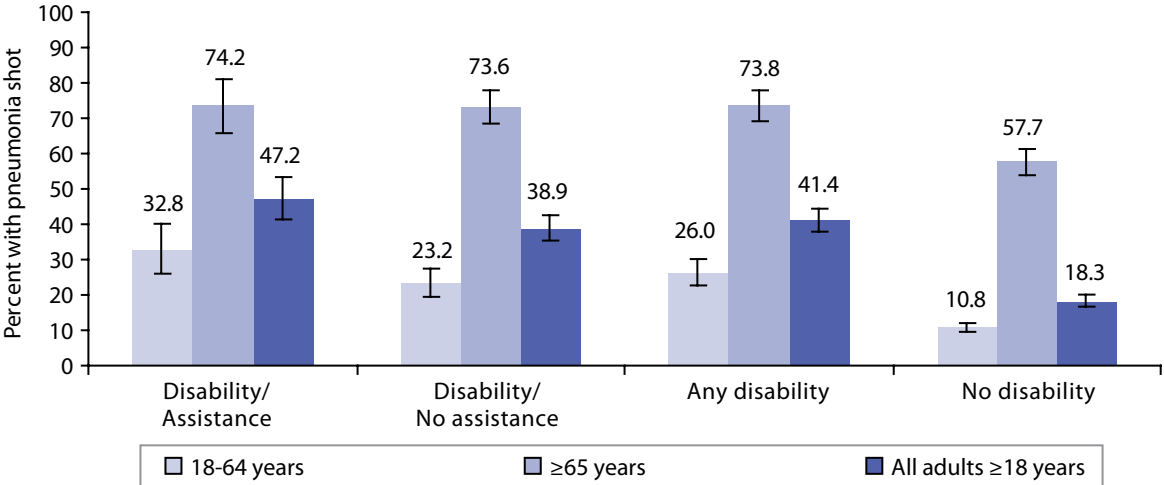
# Immunization: Pneumonia Vaccination

## BRFSS Questions

A pneumonia shot or pneumococcal vaccine is usually given only once or twice in a person’s lifetime and is different from the flu shot.

- Have you ever had a pneumonia shot?

**Figure 13.** Percentage of New York adults who ever had a pneumonia shot, by disability status and age.



Note: Error bars represent 95% confidence intervals

SOURCE: 2007 NYS BRFSS

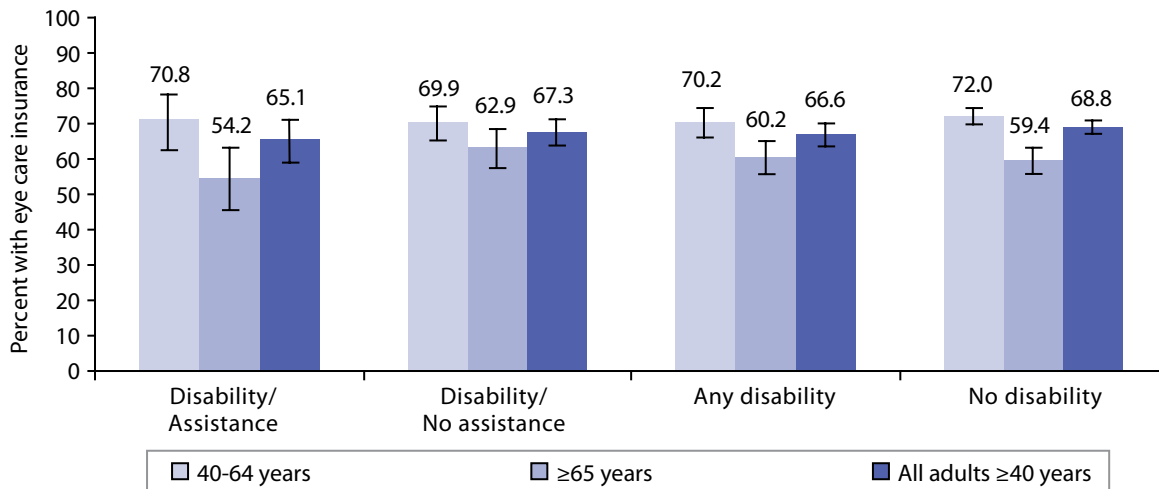
**Adults with disabilities were more likely than adults without disabilities to have ever had a pneumonia shot (41.4% vs. 18.3%).**

# Vision health: Health Insurance Coverage for Eye Care

**BRFSS Questions** [Asked of respondents aged 40 years or older]

- Do you have any kind of health insurance coverage for eye care?

**Figure 14.** Percentage of New York adults aged 40 years or older who had some kind of health insurance coverage for eye care, by disability status and age.



Note: Error bars represent 95% confidence intervals.

SOURCE: 2007 NYS BRFSS

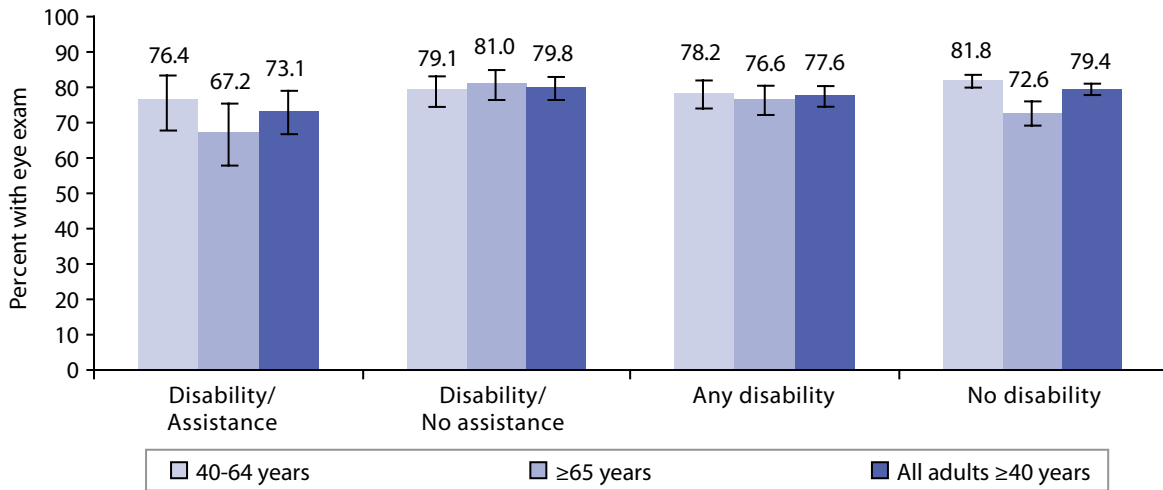
**Among adults aged 40 years or older, there were no differences by disability status in having health insurance coverage for eye care.**

# Vision Health: Eye Examination

**BRFSS Questions** [Asked of respondents aged 40 years or older]

- When was the last time you had your eyes examined by any doctor or eye care provider?

**Figure 15.** Percentage of New York adults aged 40 years or older who had their eyes examined by a doctor or eye care provider within the recommended interval\*, by disability status and age.



\* Within the past two years (ages 40-64 years) or within the past 12 months (ages 65 years and older).

Note: Error bars represent 95% confidence intervals.

SOURCE: 2007 NYS BRFSS

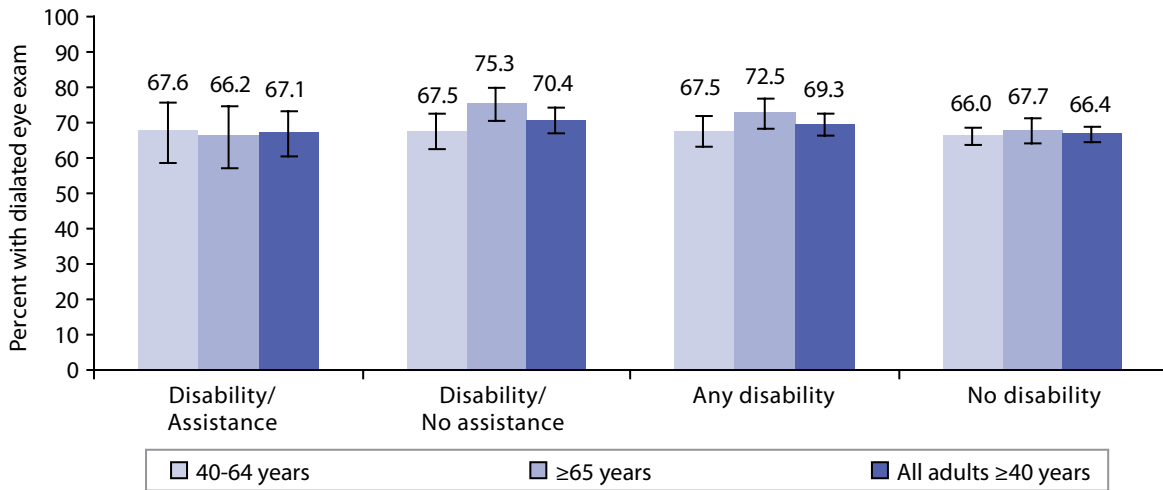
**Among adults aged 65 years or older, those with disabilities requiring no assistance were more likely than those without disabilities to have had an eye examination within the recommended interval (81.0% vs. 72.6%).**

# Vision Health: Dilated Eye Examination

**BRFSS Question** [Asked of respondents aged 40 years or older]

- *When was the last time you had an eye exam in which the pupils were dilated? This would have made you temporarily sensitive to bright light.*

**Figure 16.** Percentage of New York adults aged 40 years or older who had a dilated eye examination within the recommended interval\*, by disability status and age.



\* Within the past two years, or, if a person with diabetes, within the past 12 months [Healthy People 2010].

Note: Error bars represent 95% confidence intervals.

SOURCE: 2007 NYS BRFSS

**Among adults aged 40 years or older, there were no differences by disability status in having had a dilated eye examination within the recommended interval.**

## 4 Chronic Health Conditions

---

This section highlights prevalence by disability status of chronic conditions that are significant causes of disability across the age spectrum, including arthritis, diabetes, asthma, hypertension, high blood cholesterol, history of myocardial infarction (heart attack), and history of stroke. Arthritis has been found to be associated with a broad array of activity limitations. Heart disease has been associated with difficulties in activities requiring endurance, and stroke has been associated with upper extremity and self-care tasks.<sup>5</sup> Diabetes has been found to be a significant cause of mobility impairments.<sup>6,7</sup> Hypertension and high blood cholesterol, although chronic conditions in their own right, are more important as risk factors for other health problems such as cardiovascular disease and stroke. Each condition is presented separately on the following pages, although it is

recognized that the presence of multiple chronic conditions has a significant impact on disability status, and that many people, especially the elderly, have multiple chronic and potentially disabling conditions.<sup>4</sup>

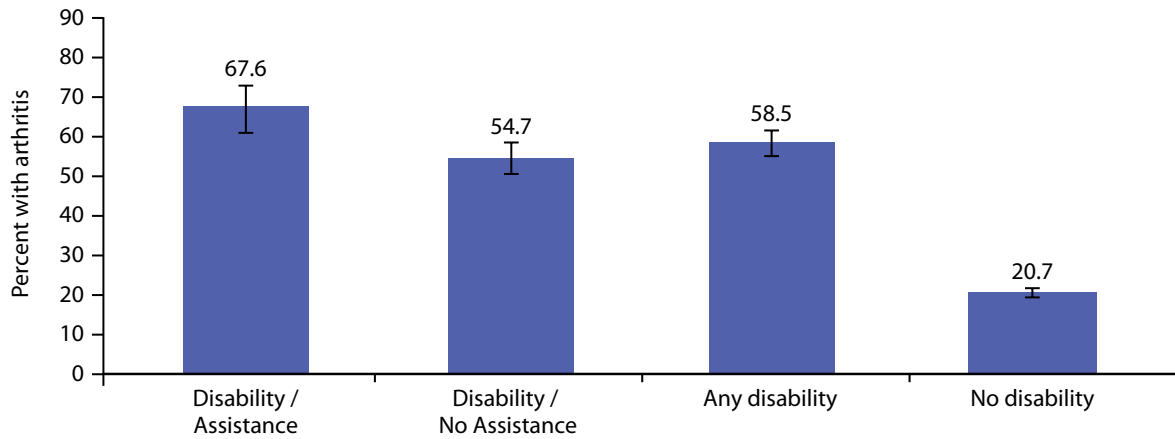
This section also highlights the prevalence by disability status of distance vision impairment and three of the most common eye disorders--cataract, glaucoma, and macular degeneration--based on data from the Visual Impairment and Access to Eye Care module of the BRFSS. Eye disease and visual impairment are among the ten most common causes of disability,<sup>8</sup> affecting people's ability to work and to care for themselves. Eye disease and visual impairment may also result in reduced quality of life and increased risk of premature death.<sup>9</sup>

# Arthritis

## BRFSS Question

- Have you ever been told by a doctor or other health professional that you have some form of arthritis, rheumatoid arthritis, gout, lupus, or fibromyalgia?

**Figure 17.** Percentage of New York adults with doctor-diagnosed arthritis, by disability status.



Note: Error bars represent 95% confidence intervals.

SOURCE: 2007 NYS BRFSS

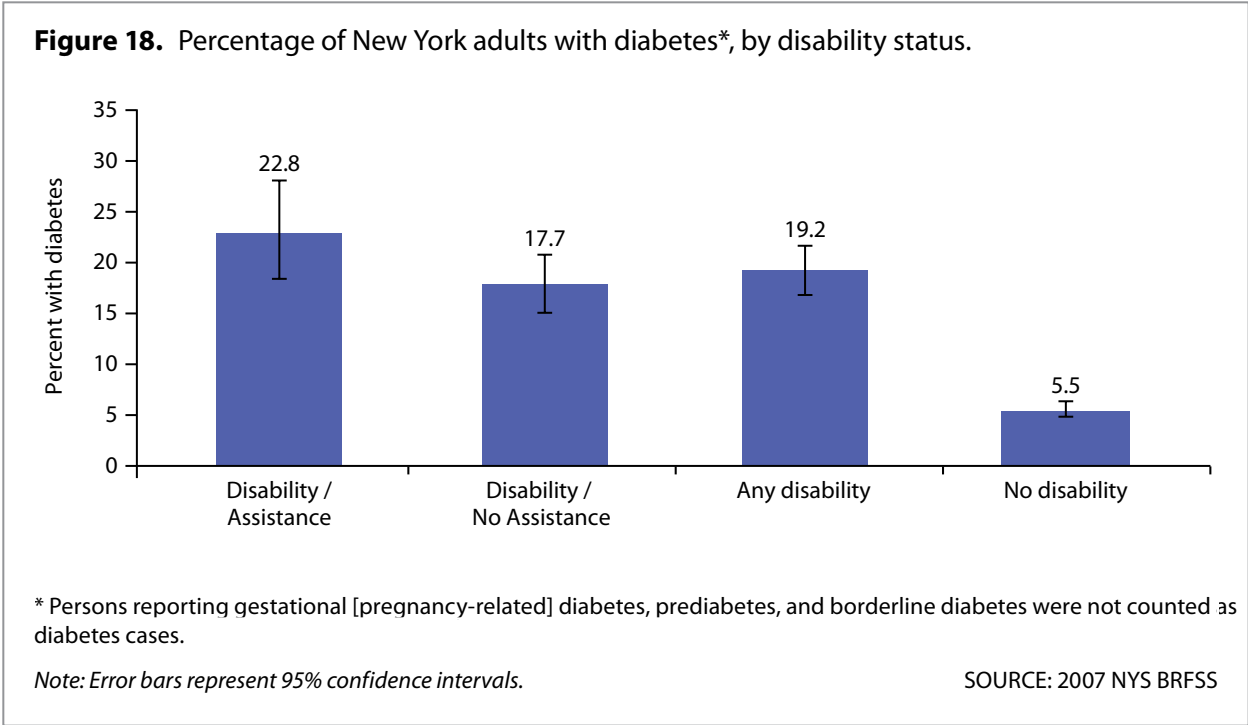
**Adults with disabilities, particularly those who require assistance, were more likely than adults without disabilities to have doctor-diagnosed arthritis (58.5% and 67.6% vs. 20.7%, respectively).**



# Diabetes

## BRFSS Questions

- Have you ever been told by a doctor that you have diabetes?



**Adults with disabilities were more likely than adults without disabilities to have diabetes (19.2% vs. 5.5%).**

# Asthma

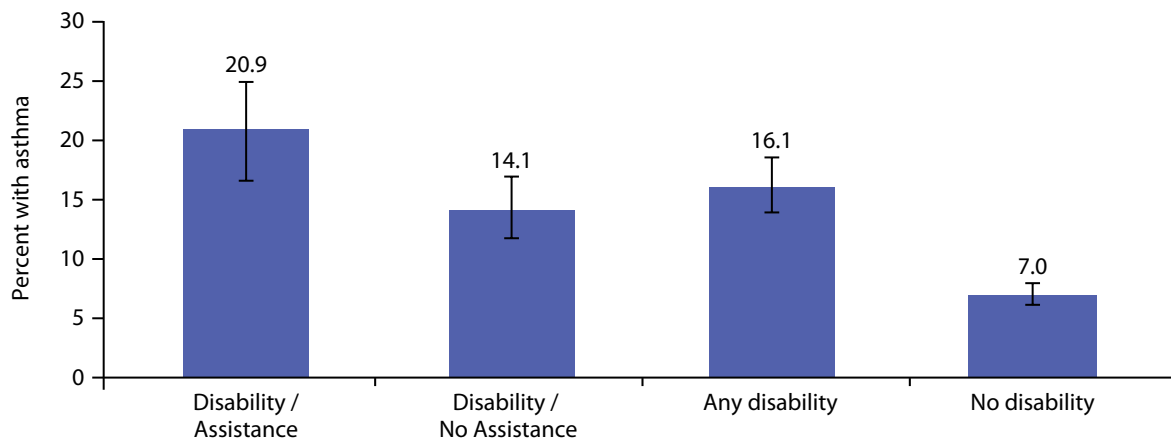
## BRFSS Question

- Have you ever been told by a doctor, nurse, or other health professional that you had asthma?

[If "yes"]

- Do you still have asthma?

**Figure 19.** Percentage of New York adults with current asthma, by disability status.



Note: Error bars represent 95% confidence intervals.

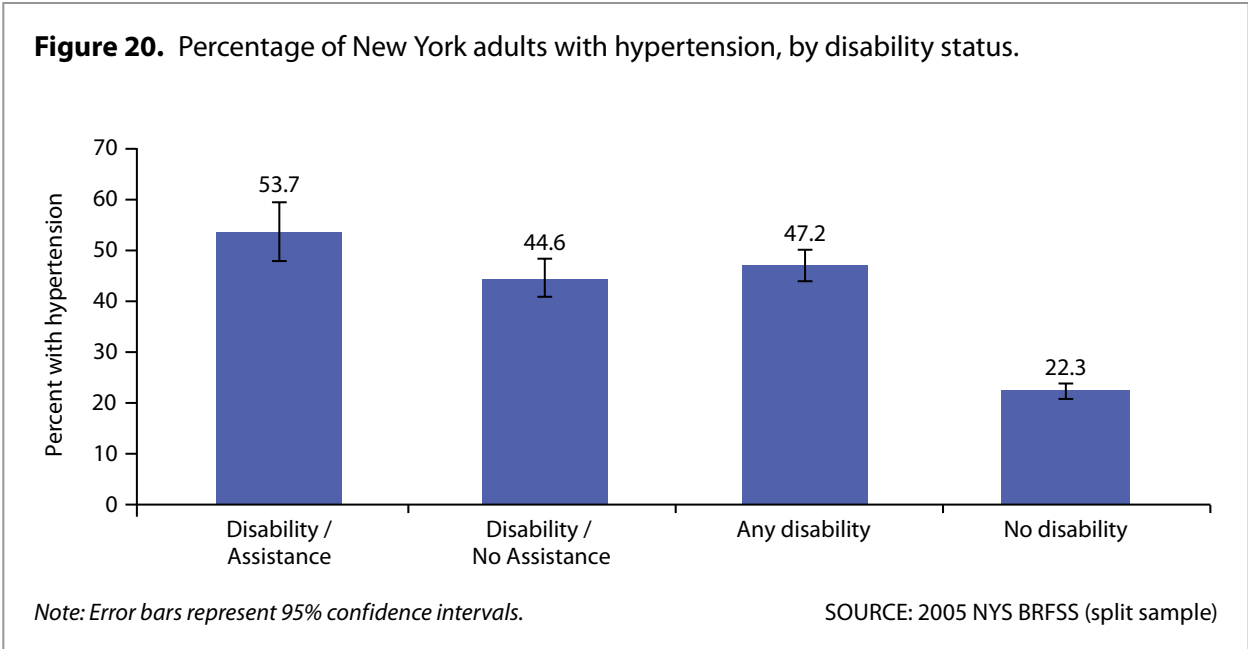
SOURCE: 2007 NYS BRFSS

**Adults with disabilities were more likely than those without disabilities to have current asthma (16.1% vs. 7.0%).**

# Hypertension

## BRFSS Question

- Have you ever been told by a doctor, nurse, or other health professional that you have high blood pressure?



**Adults with disabilities were more likely than adults without disabilities to have high blood pressure (47.2% vs. 22.3%).**

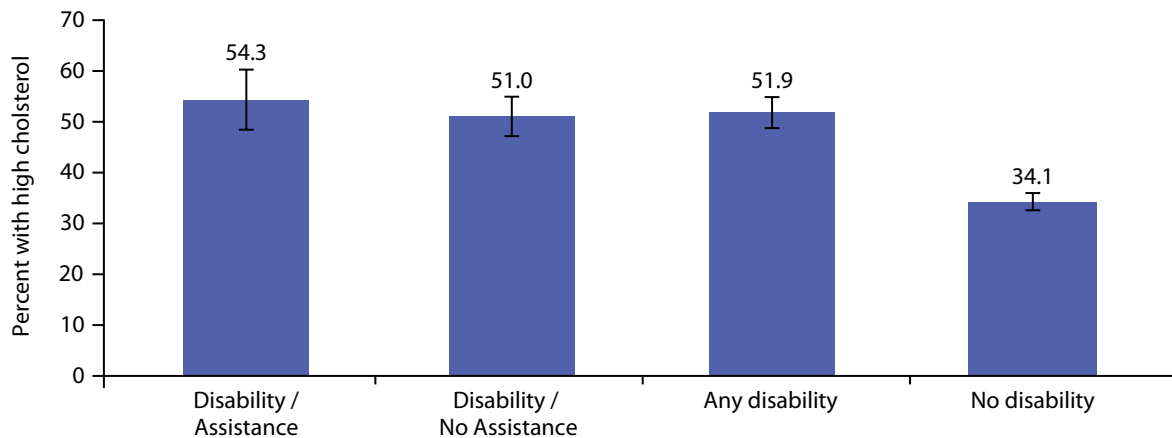
# High Blood Cholesterol

## BRFSS Question

Blood cholesterol is a fatty substance found in the blood.

- Have you ever had your blood cholesterol checked?
- Have you ever been told by a doctor, nurse, or other health professional that your blood cholesterol is high?

**Figure 21.** Of New York adults who ever had their blood cholesterol checked, percentage that were told it was high, by disability status.



Note: Error bars represent 95% confidence intervals.

SOURCE: 2007 NYS BRFSS

**Among adults who have ever had their blood cholesterol checked, those with disabilities were more likely than those without disabilities to have high blood cholesterol (51.9% vs. 34.1%).**

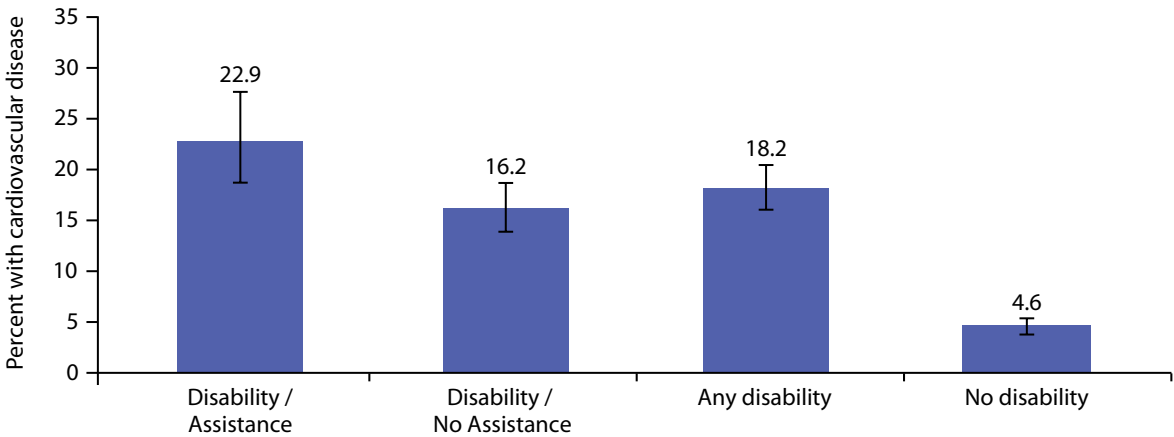
# Cardiovascular Disease

## BRFSS Question

Now I would like to ask you some questions about cardiovascular disease. Has a doctor, nurse, or other health professional ever told you that you had any of the following? For each, tell me "Yes," "No," or you're "Not sure."

- [Ever told] you had a heart attack, also called a myocardial infarction?
- [Ever told] you had angina or coronary heart disease?
- [Ever told] you had a stroke?

**Figure 22.** Percentage of New York adults with a history of cardiovascular disease (heart attack, angina, or stroke), by disability status.



Note: Error bars represent 95% confidence intervals.

SOURCE: 2007 NYS BRFSS

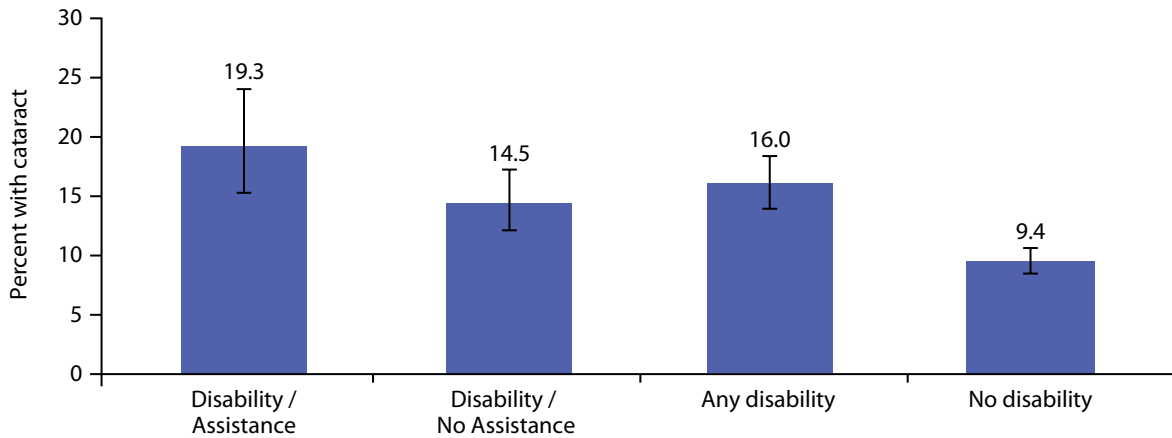
**Adults with disabilities, particularly those who require assistance, were more likely than adults without disabilities to have a history of cardiovascular disease (18.2% and 22.9% vs. 4.6%, respectively).**

# Cataract

**BRFSS Question** [Asked of respondents aged 40 years or older]

- Have you been told by an eye doctor or other health care professional that you now have cataracts?

**Figure 23.** Percentage of New York adults aged 40 years or older (excluding those who were blind) with a history of cataract\*, by disability status.



\* History of cataract includes currently having cataracts or having had them removed.

Note: Error bars represent 95% confidence intervals.

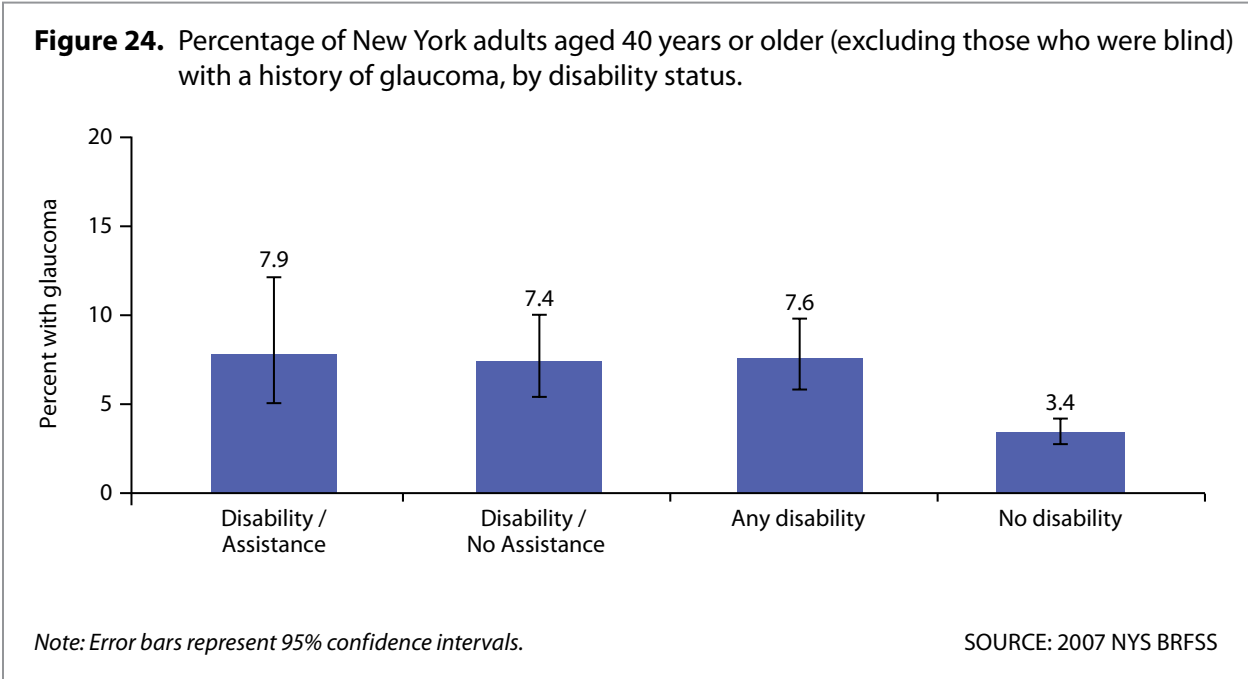
SOURCE: 2007 NYS BRFSS

**Among adults aged 40 years or older, those with disabilities were more likely than those without disabilities to have a history of cataract (27.6% vs. 15.0%).**

# Glaucoma

**BRFSS Questions** [Asked of respondents aged 40 years or older]

- Have you ever been told by an eye doctor or other health care professional that you had glaucoma?



**Among adults aged 40 years or older, those with disabilities were more likely than those without disabilities to have a history of glaucoma (7.6% vs. 3.4%).**

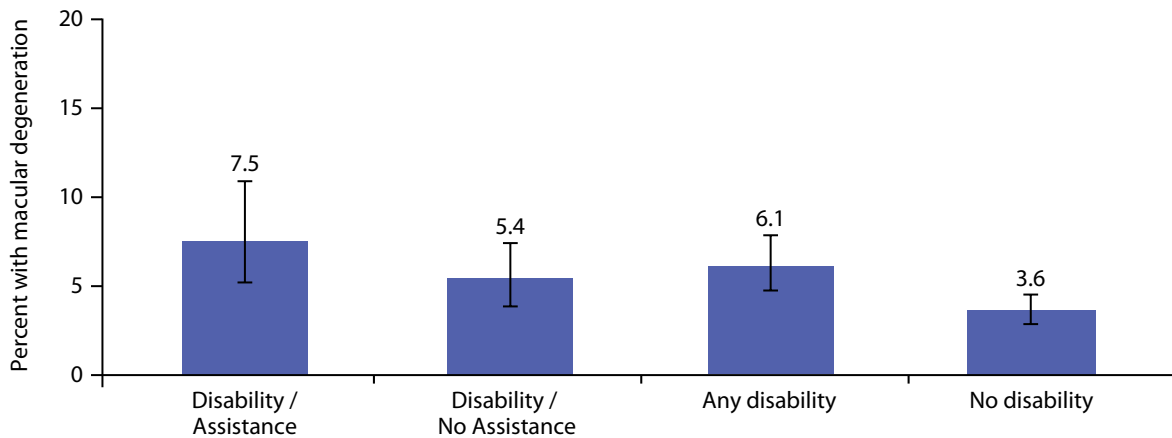
# Age-Related Macular Degeneration

**BRFSS Questions** [Asked of respondents aged 40 years or older]

Age-related macular degeneration (AMD) is a disease that blurs the sharp, central vision you need for “straight-ahead” activities such as reading, sewing, and driving. AMD affects the macula, the part of the eye that allows you to see fine detail.

- Have you ever been told by an eye doctor or other health care professional that you had age-related macular degeneration?

**Figure 25.** Percentage of New York adults aged 40 years or older (excluding those who were blind) with a history of age-related macular degeneration, by disability status.



Note: Error bars represent 95% confidence intervals.

SOURCE: 2007 NYS BRFSS

**Among adults aged 40 years or older, those with disabilities requiring assistance were more likely than those without disabilities to have a history of age-related macular degeneration (7.5% vs. 3.6%).**



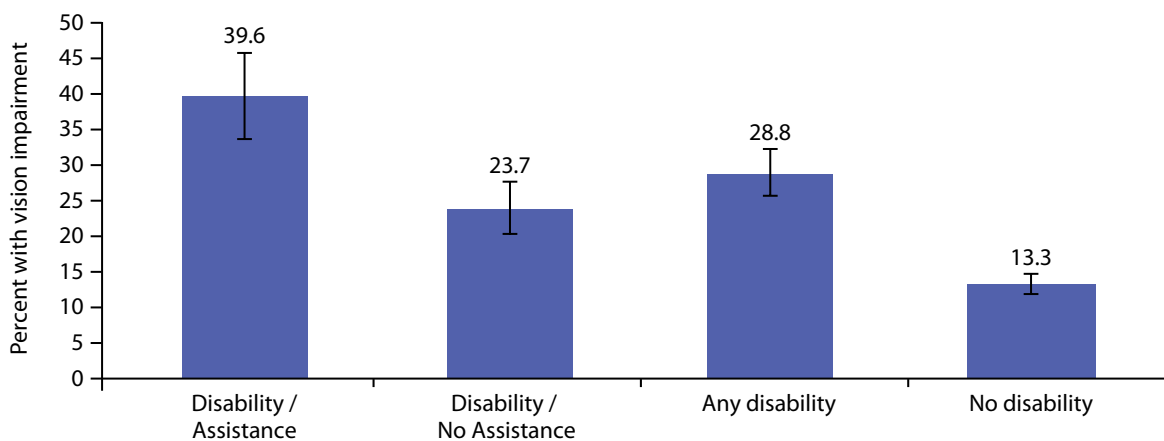
# Distance Vision Impairment

**BRFSS Question**[Asked of respondents aged 40 years or older]

*I would like to ask you questions about how much difficulty, if any, you have doing certain activities. If you usually wear glasses or contact lenses, please rate your ability to do them while wearing glasses or contact lenses.*

- *How much difficulty, if any, do you have in recognizing a friend across the street? Would you say...no difficulty, a little difficulty, moderate difficulty, extreme difficulty, unable to do because of eyesight, [or] unable to do for other reasons?*

**Figure 26.** Percentage of New York adults aged 40 years or older (excluding those who were blind) with distance vision impairment\*, by disability status.



\* Responding "a little difficulty," "moderate difficulty," "extreme difficulty," or "unable to do because of eyesight."

Note: Error bars represent 95% confidence intervals.

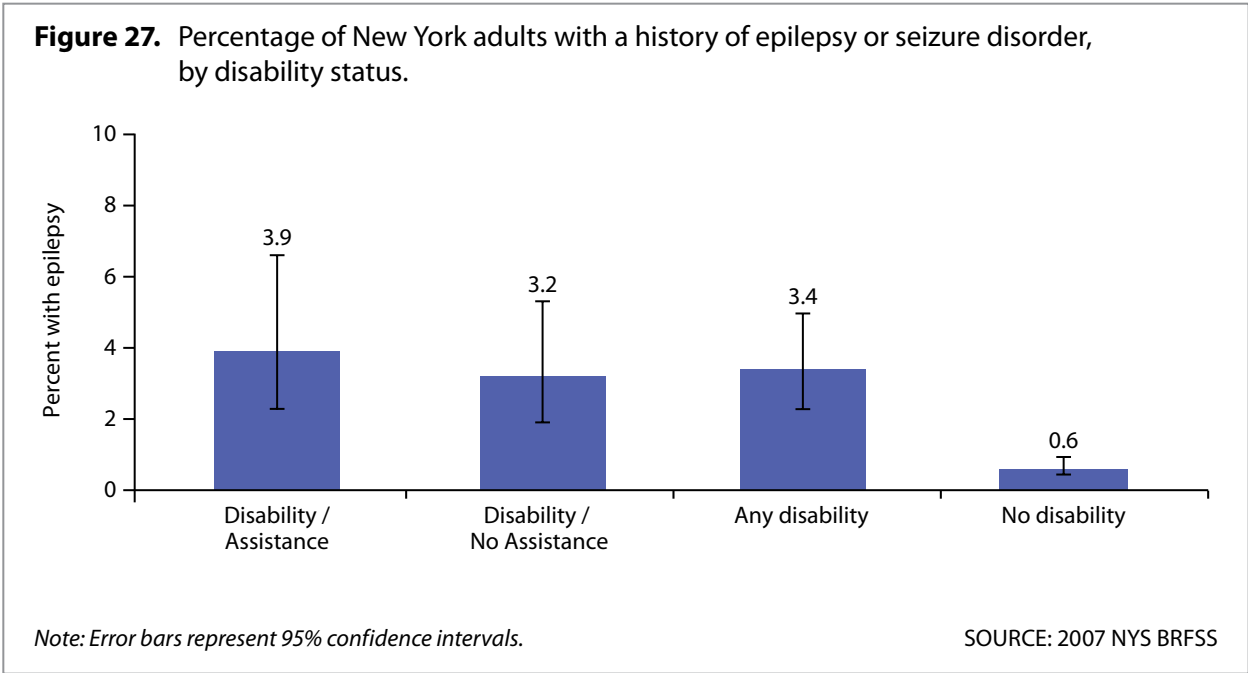
SOURCE: 2007 NYS BRFSS

**Among adults aged 40 years or older, those with disabilities, particularly those who require assistance, were more likely than those without disabilities to have distance vision impairment (28.8% and 39.6% vs. 13.3%, respectively).**

# Epilepsy

## BRFSS Question

- Have you ever been told by a doctor that you have a seizure disorder or epilepsy?



**Adults with disabilities were more likely than adults without disabilities to have a history of epilepsy or seizure disorder (3.4% vs. 0.6%).**

## 5 Health Risk Factors and Behaviors

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Behavioral risk factors consist of personal decisions and habits that affect one's health and over which one has considerable control.<sup>4</sup> Although interventions aimed at promoting more healthful behaviors among the population may prevent or decrease disability, health-damaging behaviors are extremely resistant to permanent change.<sup>10</sup>

Risk-reducing, health-promoting activities are especially important for the elderly with chronic disease because they are already predisposed to functional limitation and disability.<sup>4</sup> Adopting healthful behaviors, even late in life, can be beneficial, perhaps preventing the progression

of impairments to functional limitations and disability. A number of behavioral risk factors have been found to be predictors of disability onset, including smoking, lack of exercise, and excess weight. Smoking has been associated with mobility loss, even after adjustment for presence of chronic conditions. Lack of exercise has been demonstrated to place individuals at increased risk for disability, whereas decreased risk for disability has been demonstrated in individuals who are physically active. In addition, the risk of mobility loss in individuals who are overweight has been clearly demonstrated.<sup>11</sup>

# Smoking

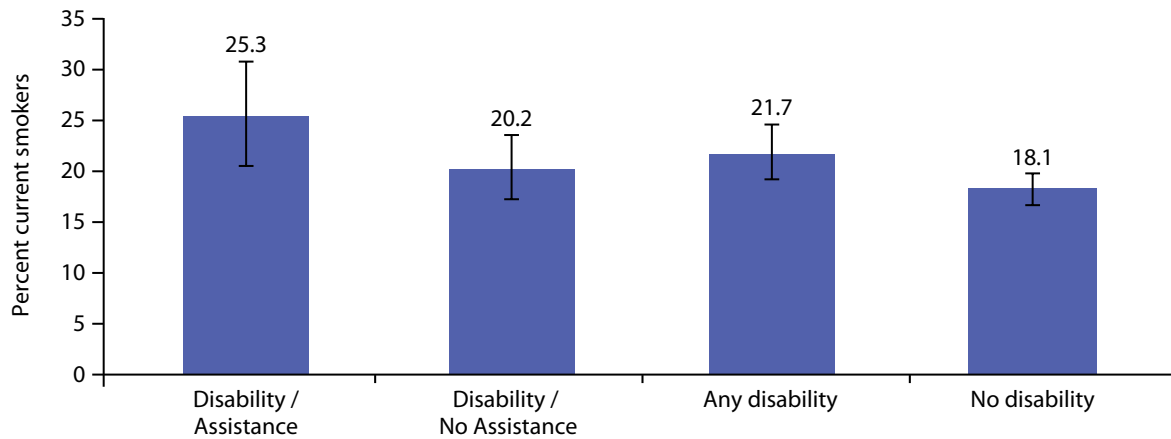
## BRFSS Question

- Have you smoked at least 100 cigarettes in your entire life?

[If “yes”]

- Do you now smoke cigarettes every day, some days, or not at all?

**Figure 28.** Percentage of New York adults who were current cigarette smokers\*, by disability status.



\* Smoked at least 100 cigarettes in their lifetime and currently smoke some days or every day.

Note: Error bars represent 95% confidence intervals.

SOURCE: 2007 NYS BRFSS

**Adults with disabilities who require assistance were more likely than adults without disabilities to be current cigarette smokers (25.3% vs. 18.1%).**

# Alcohol Consumption: Binge Drinking

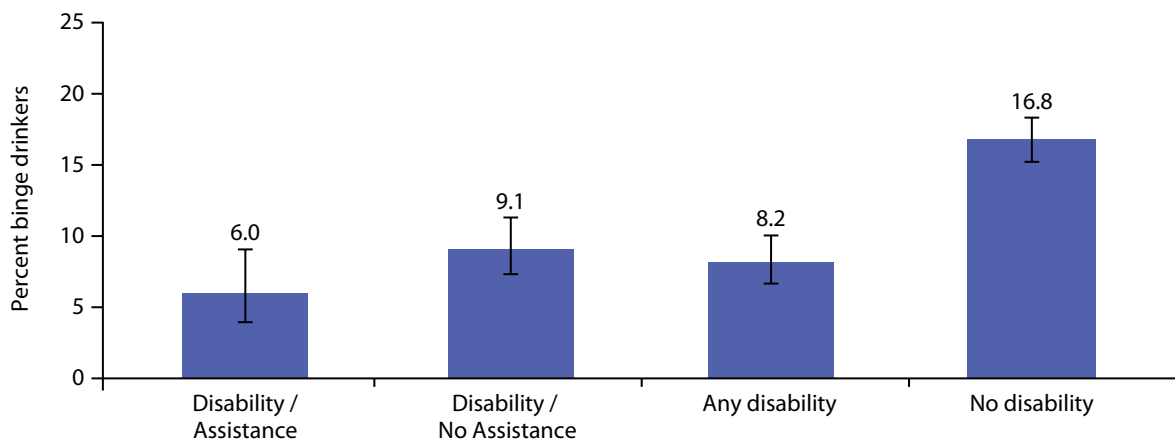
## BRFSS Question

- During the past 30 days, have you had at least one drink of any alcoholic beverage such as beer, wine, a malt beverage or liquor?

[If “yes”]

- During the past 30 days, how many days per week or per month did you have at least one drink of any alcoholic beverage?
- Considering all types of alcoholic beverages, how many times during the past 30 days did you have [five (for men), four (for women)] or more drinks on an occasion?

**Figure 29.** Percentage of New York adults who engaged in binge drinking\*, by disability status.



\* Men who had five or more drinks on one occasion in the past 30 days, and women who had four or more drinks on one occasion in the past 30 days.

Note: Error bars represent 95% confidence intervals.

SOURCE: 2007 NYS BRFSS

**Adults with disabilities were less likely than adults without disabilities to engage in binge drinking (8.2% vs. 16.8%).**

# Alcohol Consumption: Heavy Drinking

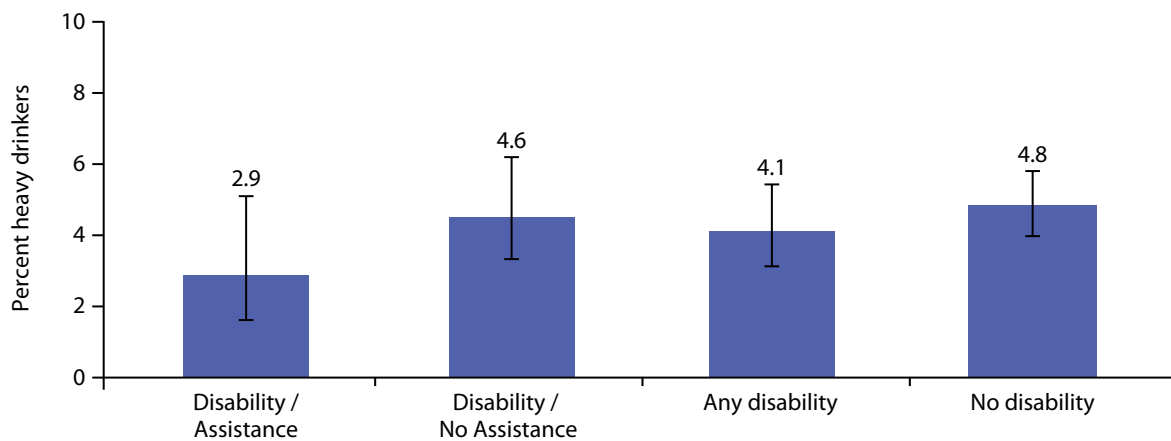
## BRFSS Question

- During the past 30 days, have you had at least one drink of any alcoholic beverage such as beer, wine, a malt beverage or liquor?

[If “yes”]

- During the past 30 days, how many days per week or per month did you have at least one drink of any alcoholic beverage?
- One drink is equivalent to a 12-ounce beer, a 5-ounce glass of wine, or a drink with one shot of liquor. During the past 30 days, on the days when you drank, about how many drinks did you drink on average?

**Figure 30.** Percentage of New York adults who engaged in heavy drinking\*, by disability status.



\* Men who had more than two drinks per day during the past 30 days, and women who had more than one drink per day during the past 30 days.

Note: Error bars represent 95% confidence intervals.

SOURCE: 2007 NYS BRFSS

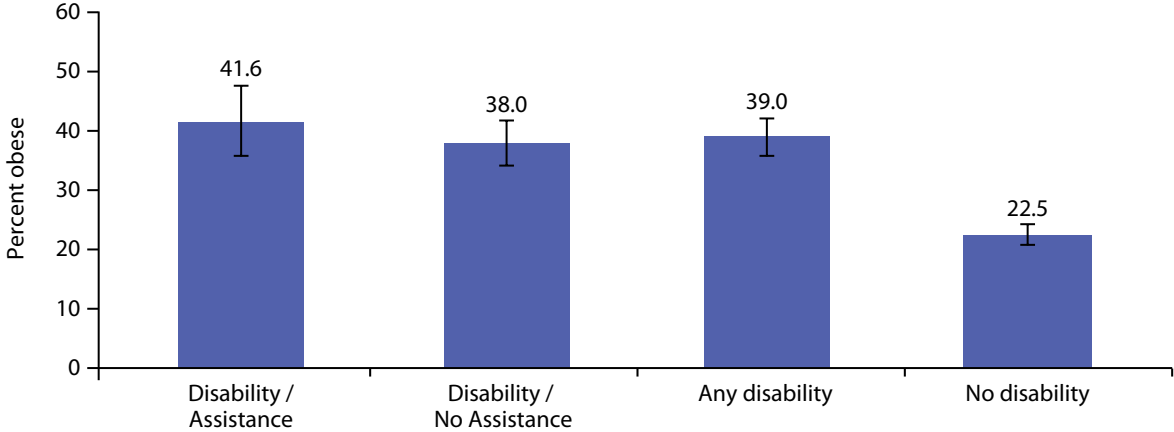
**There were no differences by disability status among adults who engaged in heavy drinking.**

# Obesity

## BRFSS Questions

- About how much do you weigh without shoes?
- About how tall are you without shoes?

**Figure 31.** Percentage of New York adults who were obese\*, by disability status..



\* Body mass index (BMI, calculated as weight in kilograms divided by the square of height in meters) of 30.0 or higher.  
Note: Error bars represent 95% confidence intervals.

SOURCE: 2007 NYS BRFSS

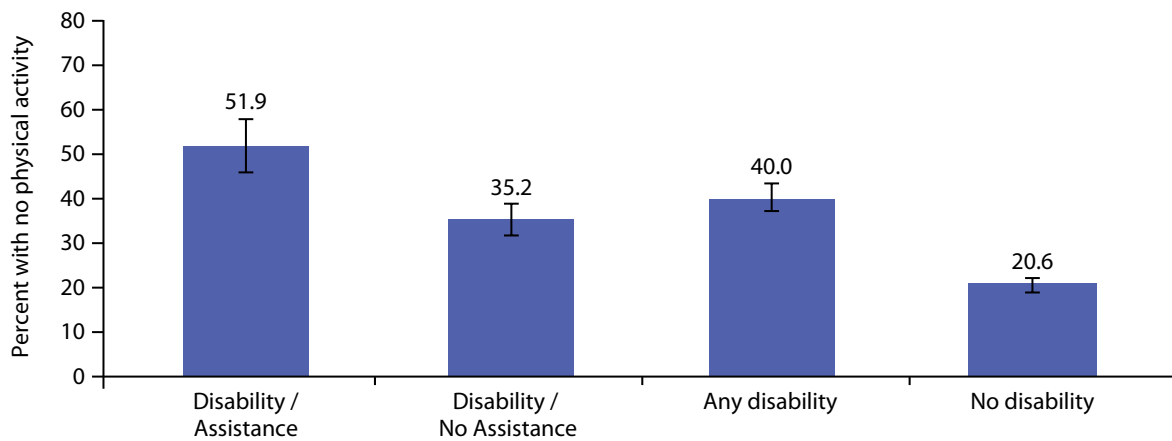
**Adults with disabilities were more likely than adults without disabilities to be obese (39.0% vs. 22.5%).**

# Physical Activity: Leisure-Time Physical Activity

## BRFSS Questions

- During the past month, other than your regular job, did you participate in any physical activities or exercises such as running, calisthenics, golf, gardening, or walking for exercise?

**Figure 32.** Percentage of New York adults with no leisure-time physical activity during the past month, by disability status.



Note: Error bars represent 95% confidence intervals.

SOURCE: 2007 NYS BRFSS

**Adults with disabilities, particularly those who require assistance, were more likely than adults without disabilities to have no leisure-time physical activity during the past month (40.0% and 51.9% vs. 20.6%, respectively).**



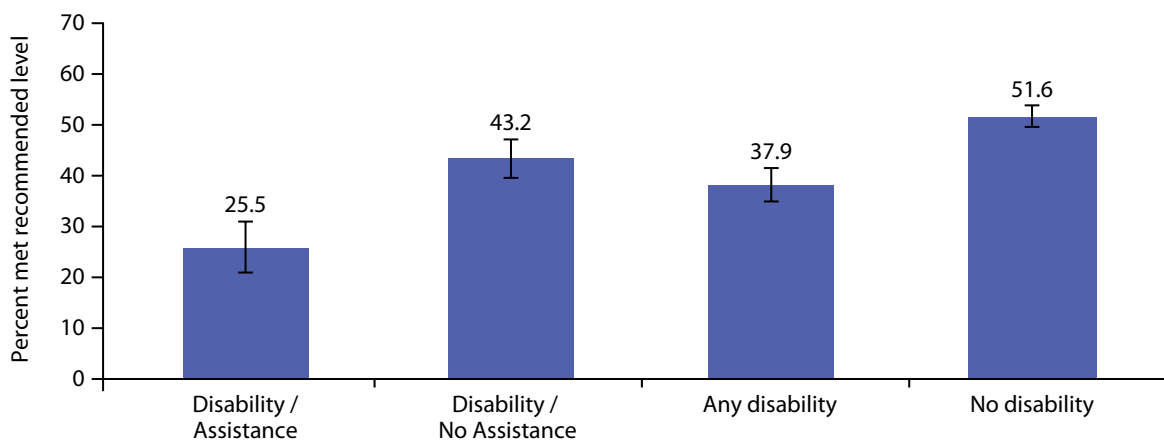
# Physical Activity: Recommended Physical Activity

## BRFSS Questions

We are interested in two types of physical activity: vigorous and moderate. Vigorous activities cause large increases in breathing or heart rate while moderate activities cause small increases in breathing or heart rate.

- Now, thinking about the moderate activities you do [when you are not working (if employed or self-employed)] in a usual week, do you do moderate activities for at least 10 minutes at a time, such as brisk walking, bicycling, vacuuming, gardening, or anything else that causes some increase in breathing or heart rate?
- How many days per week do you do these moderate activities for at least 10 minutes at a time? On days when you do moderate activities for at least 10 minutes at a time, how much total time per day do you spend doing these activities?
- Now, thinking about the vigorous activities you do [when you are not working (if employed or self-employed)] in a usual week, do you do vigorous activities for at least 10 minutes at a time, such as running, aerobics, heavy yard work, or anything else that causes large increases in breathing or heart rate?
- How many days per week do you do these vigorous activities for at least 10 minutes at a time? On days when you do vigorous activities for at least 10 minutes at a time, how much total time per day do you spend doing these activities?

**Figure 33.** Percentage of New York adults who met the recommended level of physical activity\*, by disability status.



\* Moderate-intensity physical activity outside of work of 30 or more minutes a day at least five days a week or vigorous-intensity physical activity outside of work of 20 or more minutes a day at least three days a week [Healthy People 2010].

Note: Error bars represent 95% confidence intervals.

SOURCE: 2007 NYS BRFSS

**Adults with disabilities, particularly those who require assistance, were less likely than adults without disabilities to meet the recommended level of physical activity (37.9% and 25.5% vs. 51.8%, respectively).**

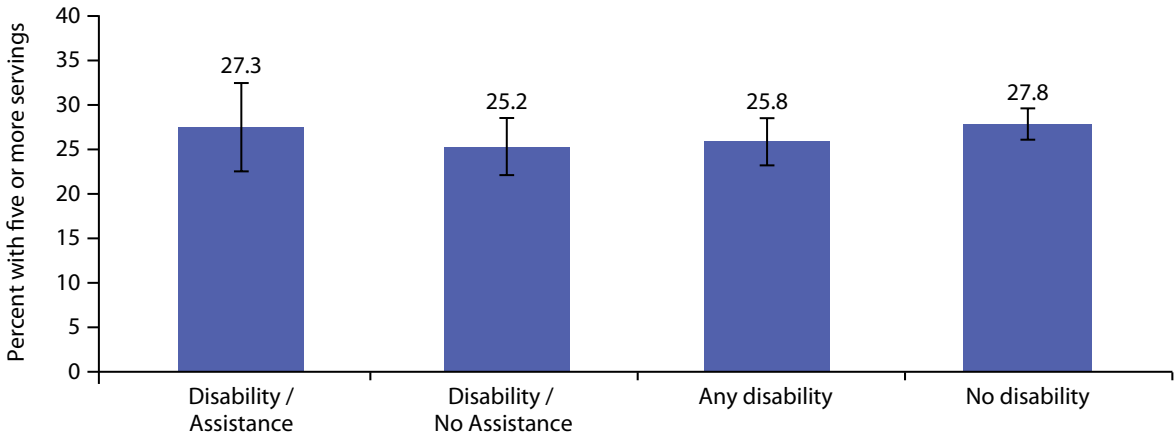
# Fruits and Vegetables Consumption

## BRFSS Questions

These next questions are about the foods you usually eat or drink. Please tell me how often you eat or drink each one, for example, twice a week, three times a month, and so forth. Remember, I am only interested in the foods you eat. Include all foods you eat, both at home and away from home.

- How often do you drink fruit juices such as orange, grapefruit, or tomato?
- Not counting juice, how often do you eat fruit?
- How often do you eat green salad?
- How often do you eat potatoes not including French fries, fried potatoes, or potato chips?
- How often do you eat carrots?
- Not counting carrots, potatoes, or salad, how many servings of vegetables do you usually eat? (Example: A serving of vegetables at both lunch and dinner would be two servings.)

**Figure 34.** Percentage of New York adults who consumed five or more servings of fruits and vegetables per day, by disability status.



Note: Error bars represent 95% confidence intervals.

SOURCE: 2007 NYS BRFSS

**There were no differences by disability status among adults for consumption of five or more servings of fruits and vegetables per day.**

## 6 Health-Related Quality of Life

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Quality of life (QoL) generally corresponds to total well-being, encompassing both physical and psychosocial determinants.<sup>12</sup> Components of QoL include performance of social roles, physical status, emotional status, social interactions, intellectual functioning, economic status, and self-perceived or subjective health status.<sup>12,13,14</sup> QoL for persons with disabilities is an outcome that reflects the influence and interaction of environmental factors, the life course of an individual or group, the disabling process, and opportunity.<sup>15</sup> Health-related quality of life (HRQoL) refers to the “physical, psychological, and social domains of health, seen as distinct areas that are influenced by a person’s experiences, beliefs, expectations, and perceptions.”<sup>16</sup> HRQoL is multidimensional and composed of, at a minimum, physical functioning, psychological well-being, social and role functioning, and health perceptions.<sup>17,18</sup> HRQoL measures can be outcomes of other health events such as access to care,<sup>19</sup> impact of chronic conditions,<sup>20</sup> or the effects of aging.<sup>21</sup> Surveillance of HRQoL is important to monitoring changes in the health of people and populations. HRQoL is related to both self-reported chronic diseases and their risk factors.<sup>1</sup>

HRQoL information from the BRFSS consists of subjective ratings of health and perceptions

of recent health. The HRQoL questions on perceived physical and mental health and function have become important components of health surveillance and are generally considered valid indicators of service needs and intervention outcomes. Self-rated health, in particular, is considered to be a reliable indicator of perceived health and a global assessment of a person’s well-being. Self-rated health is a more powerful predictor of mortality and morbidity than many objective measures of health.<sup>22</sup>

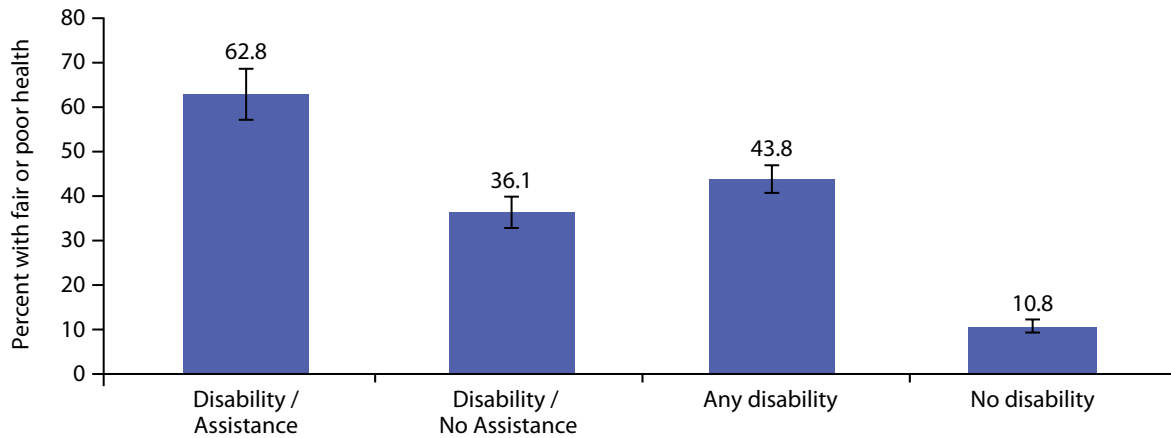
The HRQoL questions on the BRFSS have been shown to have adequate validity and acceptability for use with people with disabilities in both surveillance and research.<sup>23,24</sup> The HRQoL questions on recent health elicited information on the respondents’ estimates of impaired health days during the prior month by asking respondents to estimate the number of days in the past 30 that they had experienced a number of adverse health events. The rationale for these items is that HRQoL is a time-related phenomenon that is best measured with reference to a specified period of time.<sup>1</sup> A recall period of 30 days is long enough to capture variability in health status, but still within the limits of most persons’ memories.<sup>25</sup>

# Health Status: Self-Rated Health

## BRFSS Question

- *Would you say that in general your health is excellent, very good, good, fair, or poor?*

**Figure 35.** Percentage of New York adults with fair or poor self-rated health, by disability status.



*Note: Error bars represent 95% confidence intervals.*

SOURCE: 2007 NYS BRFSS

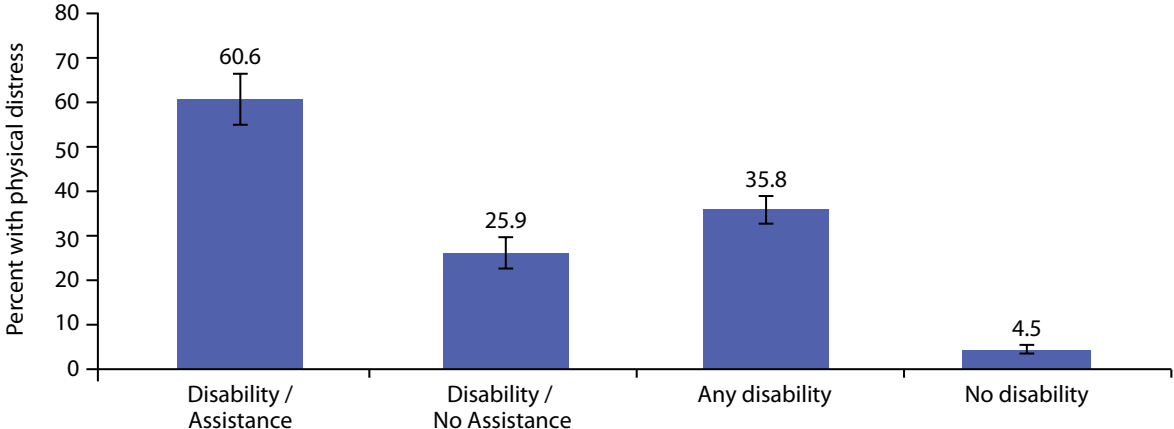
**Adults with disabilities, particularly those who require assistance, were more likely than adults without disabilities to have fair or poor self-rated health (43.8% and 62.8% vs. 10.8%, respectively).**

# Healthy Days: Physical Health

## BRFSS Question

- Now thinking about your physical health, which includes physical illness and injury, for how many days during the past 30 days was your physical health not good?

**Figure 36.** Percentage of New York adults with frequent physical distress\*, by disability status.



\* 14 or more days in the past 30 days in which physical health was not good.

Note: Error bars represent 95% confidence intervals.

SOURCE: 2007 NYS BRFSS

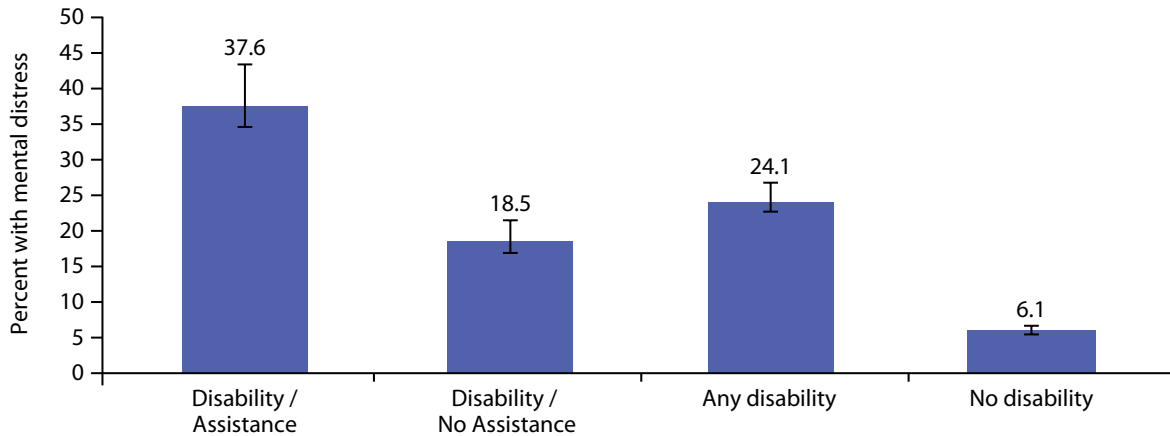
**Adults with disabilities, particularly those who require assistance, were more likely than adults without disabilities to have frequent physical distress (35.8% and 60.6% vs. 4.5%, respectively).**

# Healthy Days: Mental Health

## BRFSS Question

- Now thinking about your mental health, which includes stress, depression, and problems with emotions, for how many days during the past 30 days was your mental health not good?

**Figure 42.** Percentage of New York adults with frequent mental distress\*, by disability status.



\* 14 or more days in the past 30 days in which mental health was not good.

Note: Error bars represent 95% confidence intervals.

SOURCE: 2007 NYS BRFSS

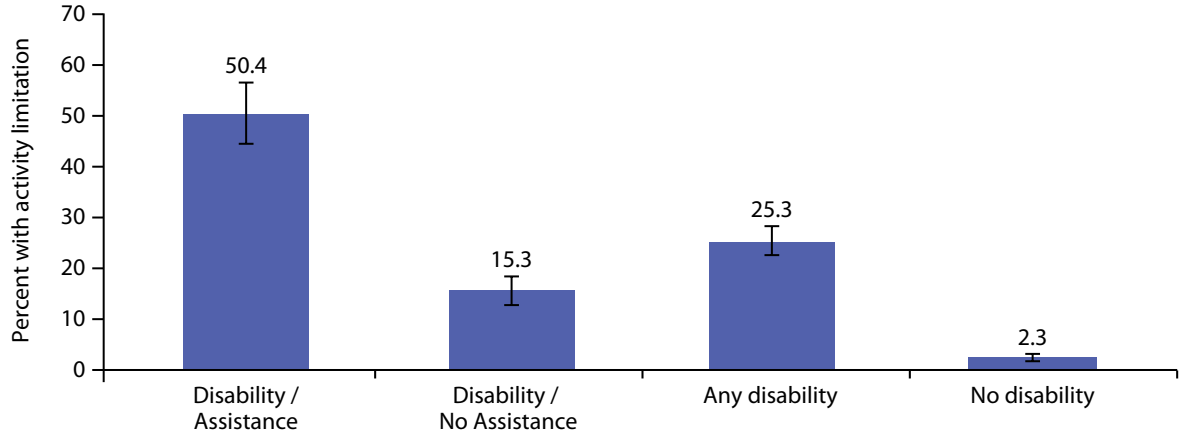
**Adults with disabilities, particularly those who require assistance, were more likely than adults without disabilities to have frequent mental distress (24.1% and 37.6% vs. 6.1%, respectively).**

# Healthy Days: Activity Limitation

## BRFSS Question

- During the past 30 days, for about how many days did poor physical or mental health keep you from doing your usual activities, such as self-care, work, or recreation?

**Figure 38.** Percentage of New York adults with frequent activity limitation\*, by disability status.



\* 14 or more days in the past 30 days in which poor physical or mental health kept from doing usual activities.

Note: Error bars represent 95% confidence intervals.

SOURCE: 2007 NYS BRFSS

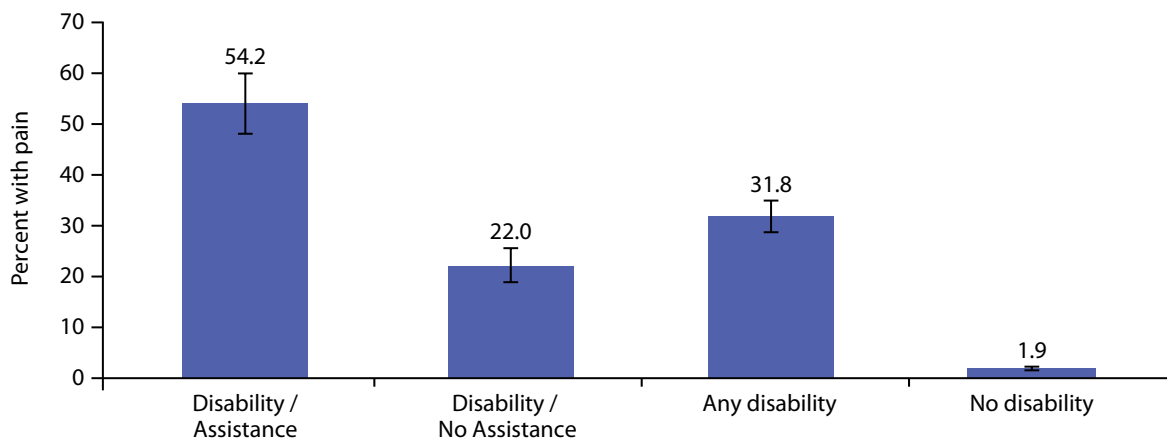
**Adults with disabilities, particularly those who require assistance, were more likely than adults without disabilities to have frequent activity limitation due to poor physical or mental health (25.3% and 50.4% vs. 2.3%, respectively).**

# Healthy Days: Pain

## BRFSS Question

- During the past 30 days, for about how many days did pain make it hard for you to do your usual activities, such as self-care, work, or recreation?

**Figure 39.** Percentage of New York adults with frequent pain\*, by disability status.



\* 14 or more days in the past 30 days in which pain made it hard to do usual activities.

Note: Error bars represent 95% confidence intervals.

SOURCE: 2007 NYS BRFSS

**Adults with disabilities, particularly those who require assistance, were more likely than adults without disabilities to have frequent activity-limiting pain (31.8% and 54.2% vs. 1.9%, respectively).**

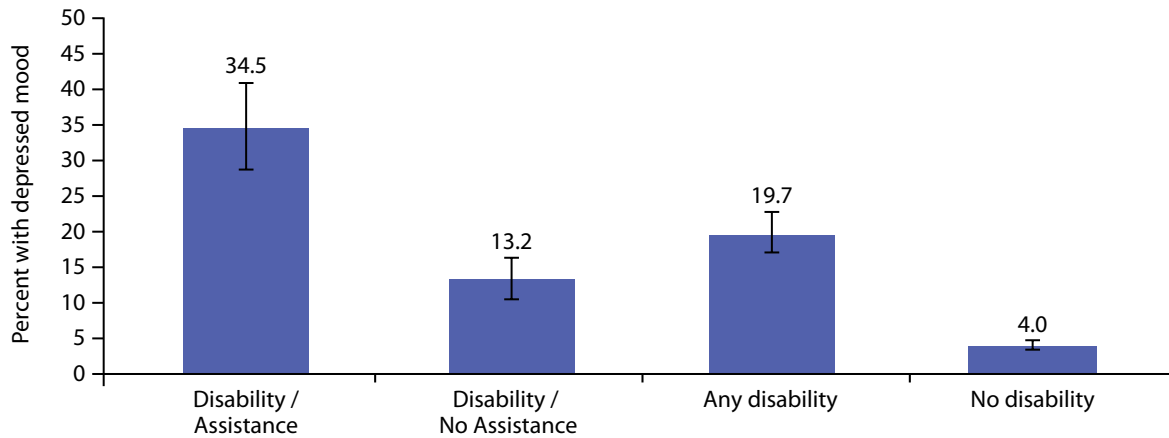


# Healthy Days: Depressed Mood

## BRFSS Question

- During the past 30 days, for about how many days have you felt sad, blue, or depressed?

**Figure 40.** Percentage of New York adults with frequent depressed mood\*, by disability status.



\* 14 or more days in the past 30 days in which felt sad, blue, or depressed.

Note: Error bars represent 95% confidence intervals.

SOURCE: 2007 NYS BRFSS

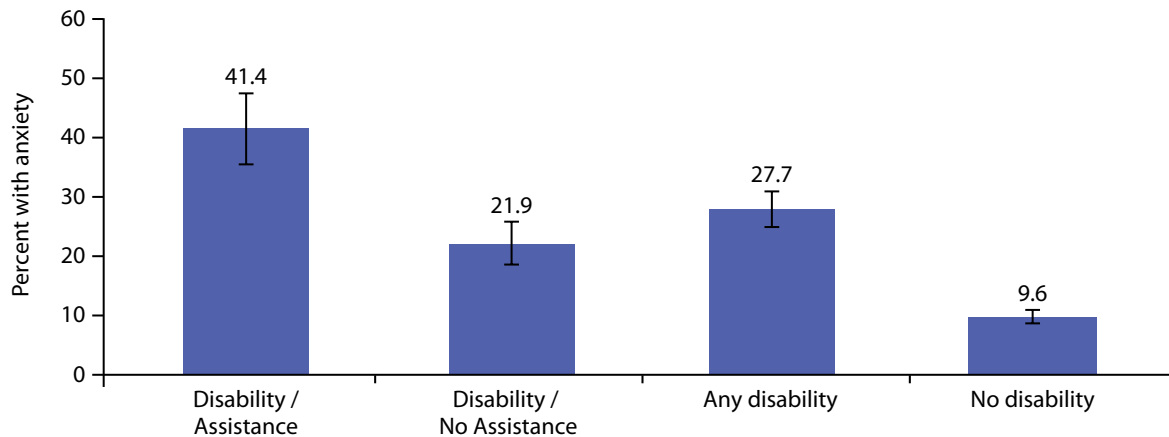
**Adults with disabilities, particularly those who require assistance, were more likely than adults without disabilities to have frequent depressed mood (19.7% and 34.5% vs. 4.0%, respectively).**

# Healthy Days: Anxiety

## BRFSS Question

- During the past 30 days, for about how many days have you felt worried, tense, or anxious?

**Figure 41.** Percentage of New York adults with frequent anxiety\*, by disability status.



\* 14 or more days in the past 30 days in which felt worried, tense, or anxious.

Note: Error bars represent 95% confidence intervals.

SOURCE: 2007 NYS BRFSS

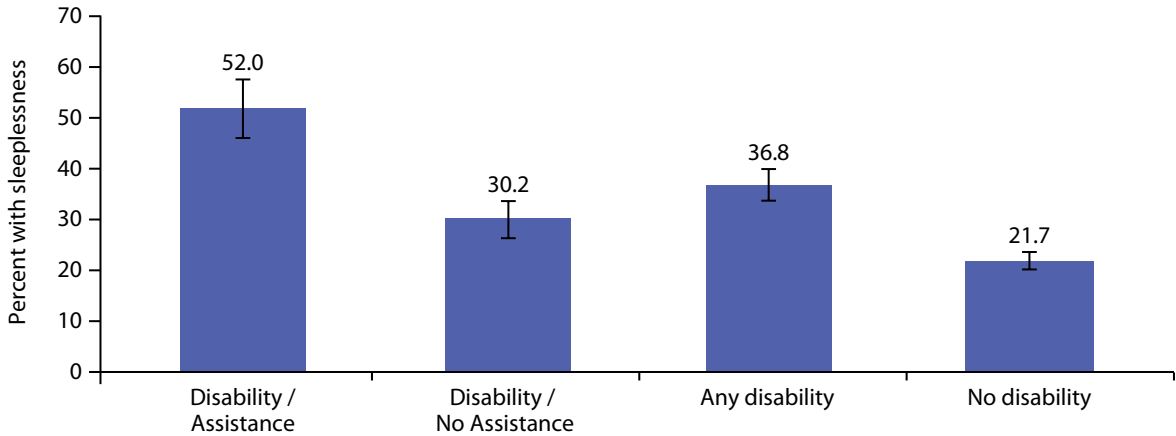
**Adults with disabilities, particularly those who require assistance, were more likely than adults without disabilities to have frequent anxiety (27.7% and 41.4% vs. 9.6%, respectively).**

# Healthy Days: Sleeplessness

## BRFSS Question

- During the past 30 days, for about how many days have you felt you did not get enough rest or sleep?

**Figure 42.** Percentage of New York adults with frequent sleeplessness\*, by disability status.



\* 14 or more days in the past 30 days in which did not get enough rest or sleep.

Note: Error bars represent 95% confidence intervals.

SOURCE: 2007 NYS BRFSS

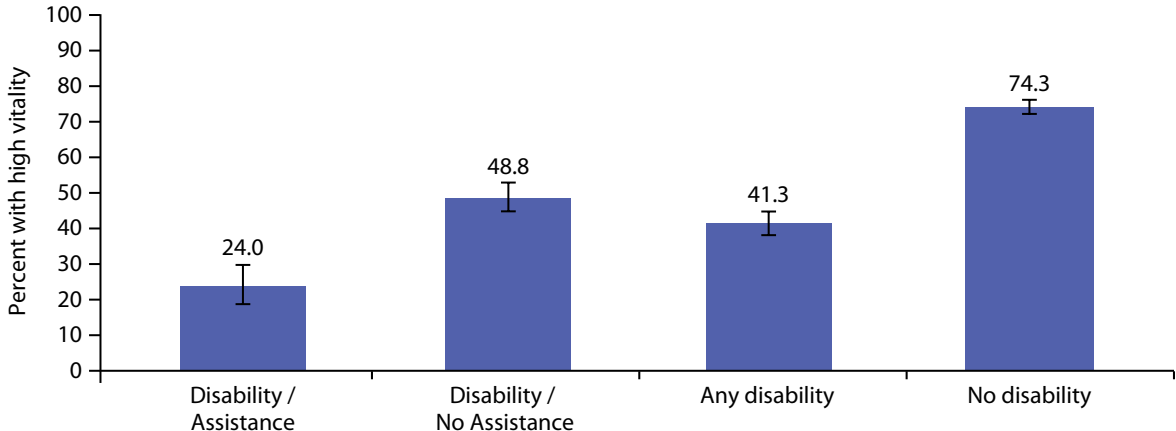
**Adults with disabilities, particularly those who require assistance, were more likely than adults without disabilities to have frequent sleeplessness (36.8% and 52.0% vs. 21.7%, respectively).**

# Healthy Days: High Vitality

## BRFSS Question

- During the past 30 days, for about how many days have you felt very healthy and full of energy?

**Figure 43.** Percentage of New York adults with frequent high vitality\*, by disability status.



\* 14 or more days in the past 30 days in which felt very healthy and full of energy.

Note: Error bars represent 95% confidence intervals.

SOURCE: 2007 NYS BRFSS

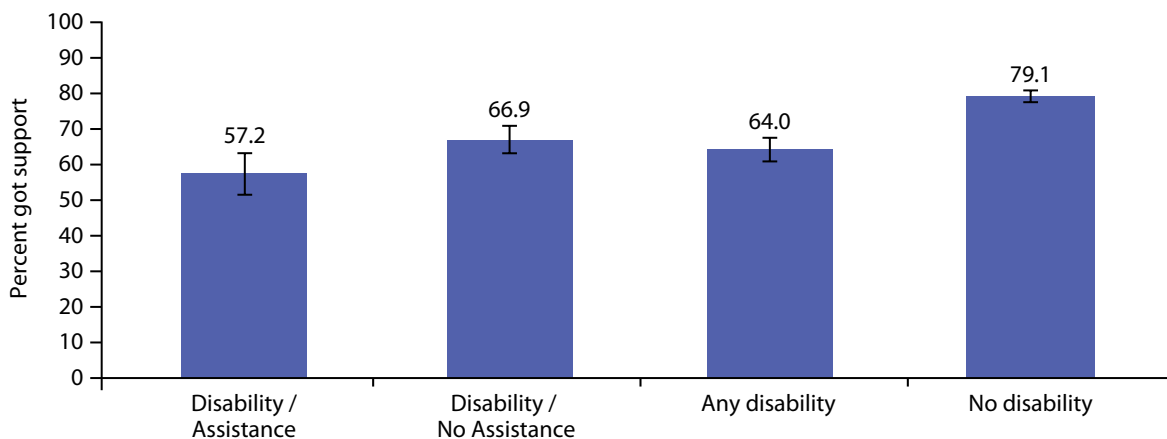
**Adults with disabilities, particularly those who require assistance, were less likely than adults without disabilities to have frequent high vitality (41.3% and 24.0% vs. 74.3%, respectively).**

# Social and Emotional Support

## BRFSS Question

- How often do you get the social and emotional support you need? [always, usually, sometimes, rarely, or never]

**Figure 44.** Percentage of New York adults who always or usually got needed social and emotional support, by disability status.



Note: Error bars represent 95% confidence intervals.

SOURCE: 2007 NYS BRFSS

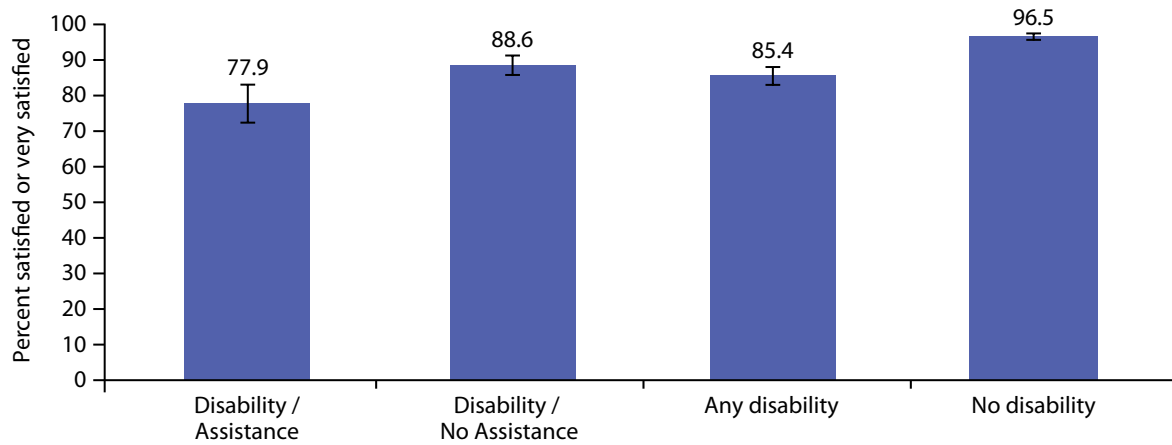
**Adults with disabilities, particularly those who require assistance, were less likely than adults without disabilities to always or usually get the social and emotional support they need (64.0% and 57.2% vs. 79.1%, respectively).**

# Satisfaction with Life

## BRFSS Question

- *In general, how satisfied are you with your life? [very satisfied, satisfied, dissatisfied, or very dissatisfied]*

**Figure 45.** Percentage of New York adults who were satisfied or very satisfied with life, by disability status.



Note: Error bars represent 95% confidence intervals.

SOURCE: 2007 NYS BRFSS

**Adults with disabilities, particularly those who require assistance, were less likely than adults without disabilities to be satisfied or very satisfied with life (85.4% and 77.9% vs. 96.5%, respectively).**

## 7 Discussion

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Disability prevalence among New Yorkers was shown to vary directly by age and inversely by levels of education and household income. Research has shown that persons with more education are much less likely to be disabled than are those with less education, as are those with higher incomes working in white-collar jobs.<sup>26</sup> More educated persons have up to 50 percent lower disability rates than the less educated, perhaps because of factors such as less exposure to occupational hazards and fewer employment-related musculoskeletal injuries.<sup>26,27</sup> Positive health behaviors such as avoidance of smoking and use of more medical services are seen among people with more education.<sup>27</sup> Female respondents had a higher prevalence of disability than did male respondents. In the general population, women have a higher rate of disability than men, due primarily to women's higher average longevity and the fact that activity limitation increases sharply with age.<sup>28</sup>

Current cigarette smoking, obesity, and inadequate physical activity, risk factors that have been consistently associated with mobility loss,<sup>29</sup> were shown to be more prevalent among New York adults with disabilities. The greater prevalence of current cigarette smoking among persons with disabilities is consistent with other reports on smoking behavior in this population.<sup>30</sup> The association of cigarette smoking with disability could be explained by its known association with several disabling chronic conditions, including heart disease, stroke, cancer, and chronic obstructive pulmonary disease.<sup>31,32</sup>

The higher prevalence of obesity found among adult New Yorkers with disabilities is not surprising because there is a documented association between weight status and disabling conditions. Several studies have shown body weight to be related to functional disability.<sup>33-35</sup> Moreover, obesity has been found to be associated with a greater risk for both lower-body<sup>36,37</sup> and upper-body osteoarthritis,<sup>38</sup> which can lead directly to disability. Obesity may also be indirectly associated with disability through diseases related to weight status. Excess weight is associated with increased incidence of cardiovascular disease, type 2 diabetes mellitus,

and stroke.<sup>39</sup> Heart disease has been associated with difficulties in activities that require endurance; stroke has been associated with difficulty in use of the upper extremities and in performing basic self-care tasks;<sup>40</sup> and diabetes has been found to be a significant cause of mobility impairments.<sup>41,42</sup>

Visual impairment and eye diseases were more prevalent among New York adults with disabilities than among adults without disabilities. Those with disabilities were more likely to report a history of several major eye diseases, including glaucoma, cataract, and age-related macular degeneration. Age-related eye diseases are primarily the leading causes of blindness and vision impairment in the United States.<sup>8,43,44</sup> Reduced vision among mature adults has been shown to result in social isolation, increased risk of falling and resultant hip fractures, depression, family stress and ultimately a greater tendency to be disabled.<sup>45</sup>

Adult New Yorkers with disabilities were less likely than adults without disabilities to meet recommended levels of physical activity. Recent evidence has shown that physical inactivity itself can be a primary cause of disability.<sup>46-49</sup> Physical inactivity results in a cycle by contributing to obesity, which exacerbates disability, and disability impedes exercise.<sup>50,51</sup> Adults with disabling conditions or disabilities are more likely to face environmental and disability-specific barriers to regular exercise, such as availability of accessible facilities and transportation, which contribute to the higher prevalence of obesity among this population.<sup>52</sup> In addition, physical impairments, including pain and weakness, may hinder or preclude certain physical activities.

Health-related quality of life (HRQoL) among people with disabilities has increasingly become a focus of attention. New York adults with disabilities were more likely to have lower levels of HRQoL in all measured areas. They were more likely to rate the health status as fair or poor, and were more likely to report frequent days of impaired health in the previous month on every measure, including physical health, mental health, activity limitation due to poor physical or mental health, activity-limiting pain,

depressed, worry or anxiety, and insufficient rest or sleep. Persons with disabilities were also less likely to report days of feeling very healthy and full of energy. Numerous studies using the CDC's HRQoL questions have shown that people with disabilities tend to report lower HRQoL levels than people without disabilities.<sup>24,53-55</sup>

Disability is a major health burden across the entire age spectrum. Any approach to monitoring the status of the population of

individuals with disabilities must include a broad range of measures. Although the NYSDOH Disability and Health Program has focused its public health interventions primarily on persons with mobility impairments, it will continue to monitor all aspects of the disability issue under its guiding document, the *New York State Strategic Plan for Health Promotion for Persons with Disabilities*.



# Appendix A: Methods

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## Data Source

The Behavioral Risk Factor Surveillance System (BRFSS) is a telephone survey limited to the noninstitutionalized, civilian adult (aged 18 years and older) population. The system monitors modifiable risk behaviors and other factors contributing to the leading causes of morbidity and mortality in the population. BRFSS data are useful for planning, initiating, and supporting health promotion and disease prevention programs at state and federal levels, and for monitoring progress toward achieving health objectives for the state and nation. The New York State Department of Health (NYSDOH) has administered the BRFSS survey annually since 1985, and since 1993 has collected information on disability.

## Sample

Disability and other health-related questions were asked of 6,525 respondents in New York State in 2007. Data were weighted to adjust for the selection probabilities and the estimates of age-sex-race distribution of adults in the state. The sample size resulted in estimates for a weighted population of 14,838,284 persons in 2007.

## Assessment of Disability

For the purposes of this chartbook, the definition of “disability” was based on responses to two questions that were part of the BRFSS core section in 2007:

- *“Are you limited in any way in any activities because of physical, mental, or emotional problems?”*
- *“Do you now have any health problem that requires you to use special equipment, such as a cane, a wheelchair, a special bed, or a special telephone?”*

A “no” response to both questions assigned the respondent to the group of persons with no disabilities (*No disability*). An affirmative response to at least one of these two questions identified the respondent as a person with a disability (*Any disability*), and two follow-up questions (a state-added module in 2007) were asked to

further assess the respondent’s limitation status:

- *“Because of any impairment or health problem, do you need the help of other persons with your personal care needs, such as eating, bathing, dressing, or getting around the house?”*
- *“Because of any impairment or health problem, do you need the help of other persons in handling your routine needs, such as everyday household chores, doing necessary business, shopping, or getting around for other purposes?”*

A “yes” response to either or both of these questions classified the respondent as a person with a greater degree of disability (*Disability / Assistance*), whereas a “no” response to both questions classified the respondent as having a lesser degree of disability (*Disability / No assistance*). These four categories of disability status (*Disability / Assistance; Disability / No assistance; Any disability; No disability*) serve as the comparison groups throughout this chartbook.

## Data Analysis

Item responses of “don’t know/not sure” and “refused” were treated as missing values and, with the exception of household income, were dropped from the analysis. (Response to questions on household income resulted in more than 10 percent refusals.) The distribution of disability across selected sociodemographic, health status, chronic condition, and risk factor subgroups was assessed by generating weighted point estimates of proportions and 95% confidence intervals, which indicate the precision of the estimates and permit assessment of subgroup differences. All estimates and associated errors were generated using SAS-callable SUDAAN software (PROC CROSSTAB procedure),<sup>56</sup> which accounted for the multistage, stratified sampling of the survey.

## Limitations

Findings based on the BRFSS survey are subject to several limitations. The BRFSS does not sample persons younger than 18 years old, thus the findings may not represent the true

prevalence of disability in New York State. Moreover, given that the BRFSS targets only the civilian noninstitutionalized population, the survey cannot measure disability among the institutionalized population, which carries a substantial burden of activity limitation. The BRFSS excludes persons without telephones. The survey represents undocumented self-reported data; self-reported indicators of activity limitation have not been validated as measures of disability. The case definition questions used in this analysis do not account for duration

of disability. Persons not included are those whose health condition would not permit a telephone interview, for example, those who are hearing impaired; have cognitive, speech, and other communication impairments; have limited physical stamina; or could not get to the telephone.<sup>3</sup> Although the weighting procedure controls for nonresponse, caution should be exercised in the interpretation of results because missing data from nonparticipants might vary from those provided by survey respondents.<sup>3</sup>

## Appendix B: Data Tables

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This section contains tables of the data that are the basis of the charts in this chartbook. The data come from the 2007 New York State BRFSS. The 95% confidence interval (CI) is given for

each percentage estimate, providing values for the upper and lower bounds of the error bars depicted on the charts.

**Table B1.** Prevalence of Disability Among New York Adults by Demographic Characteristics, New York State Behavioral Risk Factor Surveillance System, 2007.

Characteristic	Degree <sup>b</sup> of disability					
	Any disability <sup>a</sup>		Need assistance <sup>c</sup>		Need no assistance <sup>d</sup>	
	% <sup>e</sup>	95% CI <sup>e</sup>	%	95% CI	%	95% CI
<b>Total New York State</b>	19.5	18.4-20.7	5.6	5.0-6.3	13.8	12.9-14.9
<b>Gender</b>						
Male	17.9	16.1-19.8	3.7	2.8-4.7	14.2	12.6-15.9
Female	21.0	19.5-22.5	7.4	6.6-8.4	13.5	12.4-14.8
<b>Age (years)</b>						
18-44	11.1	9.6-12.9	3.0	2.3-4.0	8.1	6.8-9.6
45-64	25.0	23.0-27.0	7.2	6.0-8.4	17.8	16.1-19.6
65-74	29.4	26.2-32.8	8.7	6.8-10.9	20.7	17.9-23.7
≥ 75	38.2	34.4-42.2	12.5	10.0-15.5	25.7	22.5-29.2
<b>Race/Ethnicity</b>						
White, non-Hispanic	20.6	19.3-21.9	5.3	4.6-6.0	15.3	14.2-16.5
Black, non-Hispanic	18.9	15.2-23.1	7.4	5.7-10.3	11.5	8.7-15.1
Hispanic	17.5	14.2-21.4	6.0	4.2-8.5	11.5	8.8-14.8
Other, non-Hispanic	16.3	12.4-21.0	5.1	3.2-8.0	11.2	8.0-15.3
<b>Educational attainment</b>						
Less than high school	23.3	19.2-28.1	9.1	6.8-12.1	14.2	10.8-18.4
High school graduate / GED	23.9	21.5-26.4	7.6	6.3-9.3	16.2	14.2-18.4
Some college / technical school	20.1	17.9-22.6	6.0	4.8-7.4	14.1	12.2-16.3
College graduate	14.7	13.2-16.3	2.8	2.2-3.7	11.9	10.6-13.3
<b>Annual household income</b>						
< \$15,000	37.9	32.3-43.8	17.2	13.6-21.6	20.6	16.8-25.0
\$15,000 - < \$25,000	28.0	24.2-32.2	8.0	6.1-10.4	20.0	16.7-23.9
\$25,000 - < \$50,000	18.8	16.7-21.2	5.8	4.6-7.4	13.0	11.3-15.0
\$50,000 - < \$75,000	16.1	13.6-19.1	3.7	2.6-5.4	12.4	10.2-15.0
≥ \$75,000	11.3	9.8-13.1	1.8	1.2-2.7	9.5	8.1-11.1
[Missing <sup>f</sup> ]	21.4	18.1-25.2	5.9	4.4-8.0	15.5	12.6-18.9

<sup>a</sup> All respondents who report activity limitations due to physical, mental, or emotional problems OR have health problems that require the use of special equipment.

<sup>b</sup> Given a reported disability, status as needing assistance from others in activities of daily living.

<sup>c</sup> Because of impairment or health problem, need help of other persons with personal care needs OR in handling routine needs.

<sup>d</sup> Need no help of other persons either with personal care needs or in handling routine needs.

<sup>e</sup> % =Percentage; 95% CI =Confidence interval (at the 95 percent probability level). Percentages are weighted to population characteristics.

<sup>f</sup> "Missing" category included because more than 10% of the sample did not report income.

**Table B2.** Prevalence of Health Care Coverage, Screening, and Immunization Among New York Adults, by Disability Status, New York State Behavioral Risk Factor Surveillance System, 2007.

Coverage, screening, or immunization status	Degree <sup>b</sup> of disability							
	No disability		Any disability <sup>a</sup>		Need assistance <sup>c</sup>		Need no assistance <sup>d</sup>	
	%e	95% CI <sup>e</sup>	%	95% CI	%	95% CI	%	95% CI
<b>Health care coverage</b>								
18-64 years	82.4	80.4-84.4	89.5	86.4-92.0	92.7	88.4-95.5	88.2	84.1-91.4
≥ 65 years	97.6	96.2-98.6	97.5	95.1-98.7	95.3	87.3-98.4	98.5	97.0-99.2
All adults ≥ 18 years	84.7	82.9-86.3	91.9	89.6-93.7	93.4	90.0-95.7	91.2	88.3-93.5
<b>Underinsurance</b>								
18-64 years	5.8	4.8-7.1	16.1	13.0-19.7	16.9	11.3-24.4	15.8	12.3-20.0
≥ 65 years	3.5	2.1-5.7	4.2	2.7-6.5	6.5	3.2-12.6	3.3	1.9-5.7
All adults ≥ 18 years	5.4	4.5-6.5	12.5	10.3-15.1	14.1	10.0-19.5	11.8	9.4-14.8
<b>Personal doctor or health care provider</b>								
18-64 years	80.6	78.5-82.5	87.8	84.2-90.7	89.2	81.1-94.1	87.3	83.1-90.5
≥ 65 years	93.5	91.6-95.0	96.2	93.9-97.6	96.5	92.3-98.4	96.0	93.0-97.8
All adults ≥ 18 years	82.5	80.6-84.2	90.3	87.7-92.3	91.6	86.0-95.1	89.7	86.7-92.1
<b>Multiple personal doctors or health care providers</b>								
18-64 years	6.2	5.2-7.3	11.0	8.4-14.1	11.0	7.3-16.3	11.0	7.9-15.0
≥ 65 years	9.2	7.3-11.6	13.8	11.0-17.1	17.2	11.9-24.2	12.2	9.2-16.1
All adults ≥ 18 years	6.6	5.8-7.6	11.7	9.7-14.0	12.9	9.7-16.9	11.2	8.8-14.2
<b>Routine physical examination past 2 years</b>								
18-64 years	82.3	80.5-84.0	87.4	84.4-90.0	91.6	85.3-95.4	85.8	82.0-88.9
≥ 65 years	91.7	89.5-93.4	96.0	94.0-97.3	96.4	92.5-98.3	95.8	93.2-97.4
All adults ≥ 18 years	83.7	82.1-85.2	89.9	87.7-91.8	93.2	88.9-95.9	88.6	85.8-90.8
<b>Blood cholesterol check past 5 years</b>								
18-64 years	75.1	72.9-77.2	83.2	79.2-86.6	86.6	78.6-92.0	81.8	76.9-85.8
≥ 65 years	92.5	90.3-94.3	97.0	95.2-98.1	96.8	93.4-98.4	97.0	94.8-98.3
All adults ≥ 18 years	77.7	75.8-79.5	87.2	84.3-89.7	89.7	84.0-93.5	86.2	82.6-89.2
<b>Flu shot past 12 months</b>								
18-64 years	26.5	24.7-28.4	39.5	35.6-43.5	39.0	31.9-46.6	39.7	35.1-44.4
≥ 65 years	66.4	62.9-69.7	78.5	74.6-82.0	76.7	68.9-83.0	79.3	74.7-83.3
All adults ≥ 18 years	32.4	30.7-34.2	51.0	47.8-54.2	51.0	45.1-56.9	51.0	47.3-54.8
<b>Pneumonia vaccination ever</b>								
18-64 years	10.8	9.4-12.2	26.0	22.6-29.6	32.8	26.2-40.2	23.2	19.4-27.5
≥ 65 years	57.7	54.1-61.3	73.8	69.5-77.7	74.2	65.7-81.1	73.6	68.5-78.2
All adults ≥ 18 years	18.3	16.9-19.7	41.4	38.3-44.5	47.2	41.4-53.1	38.9	35.4-42.6
<b>Eye care insurance coverage (≥ 40 years)</b>								
40-64 years	72.0	69.7-74.3	70.2	65.8-74.2	70.8	62.3-78.0	69.9	64.7-74.5
≥ 65 years	59.4	55.8-63.0	60.2	55.4-64.8	54.2	45.2-62.8	62.9	57.2-68.2
All adults ≥ 40 years	68.8	66.8-70.7	66.6	63.4-69.7	65.1	58.8-70.9	67.3	63.5-70.9
<b>Eye exam within recommended interval (≥ 40 years)</b>								
40-64 years	81.8	79.8-83.6	78.2	74.0-81.9	76.4	67.6-83.4	79.1	74.4-83.1
≥ 65 years	72.6	69.1-75.9	76.6	72.2-80.5	67.2	57.9-75.4	81.0	76.4-84.8
All adults ≥ 40 years	79.4	77.6-81.0	77.6	74.6-80.4	73.1	66.7-78.7	79.8	76.4-82.8
<b>Dilated eye exam within recommended interval (≥ 40 years)</b>								
40-64 years	66.0	63.5-68.4	67.5	63.0-71.7	67.6	58.6-75.5	67.5	62.3-72.3
≥ 65 years	67.7	64.0-71.2	72.5	68.0-76.5	66.2	56.8-74.4	75.3	70.4-79.6
All adults ≥ 40 years	66.4	64.4-68.4	69.3	66.1-72.4	67.1	60.5-73.0	70.4	66.6-73.8

<sup>a</sup> All respondents who report activity limitations due to physical, mental, or emotional problems OR have health problems that require the use of special equipment.

<sup>b</sup> Given a reported disability, status as needing assistance from others in activities of daily living.

<sup>c</sup> Because of impairment or health problem, need help of other persons with personal care needs OR in handling routine needs.

<sup>d</sup> Need no help of other persons either with personal care needs or in handling routine needs.

<sup>e</sup> % =Percentage; 95% CI =Confidence interval (at the 95 percent probability level). Percentages are weighted to population characteristics.

**Table B3.** Prevalence of Chronic Health Conditions Among New York Adults, by Disability Status, New York State Behavioral Risk Factor Surveillance System, 2007.

Chronic health condition	Degree <sup>b</sup> of disability							
	No disability		Any disability <sup>a</sup>		Need assistance <sup>c</sup>		Need no assistance <sup>d</sup>	
	% <sup>e</sup>	95% CI <sup>e</sup>	%	95% CI	%	95% CI	%	95% CI
<b>Doctor-diagnosed arthritis</b>	20.7	19.4-22.1	58.5	55.2-61.7	67.7	61.4-73.4	54.7	50.8-58.5
<b>Diabetes</b>	5.5	4.8-6.3	19.2	16.9-21.7	22.8	18.4-28.1	17.7	15.1-20.6
<b>Asthma</b>	7.0	6.1-7.9	16.1	13.9-18.5	20.9	16.6-25.9	14.1	11.7-16.9
<b>Hypertension</b>	22.3	20.9-23.8	47.2	44.1-50.4	53.7	47.8-59.5	44.6	40.9-48.3
<b>High blood cholesterol</b>	34.1	32.3-36.0	51.9	48.7-55.2	54.2	48.2-60.0	51.0	47.2-54.8
<b>History of cardiovascular disease</b>	4.6	3.8-5.4	18.2	16.1-20.5	22.9	18.7-27.7	16.2	13.9-18.8
<b>Cataract (≥ 40 years)</b>	15.0	13.7-16.4	27.6	24.9-30.5	29.1	24.3-35.5	26.9	23.7-30.4
<b>Glaucoma (≥ 40 years)</b>	3.4	2.8-4.2	7.6	5.8-9.7	7.9	5.1-12.1	7.4	5.4-10.1
<b>Age-related macular degeneration (≥ 40 years)</b>	3.6	2.9-4.5	6.1	4.8-7.7	7.5	5.2-10.8	5.4	3.9-7.4
<b>Distance vision impairment (≥ 40 years)</b>	13.3	12.0-14.8	28.8	25.7-32.1	39.6	33.7-46.0	23.7	20.2-27.6
<b>Epilepsy or seizure disorder</b>	0.6	0.4-0.9	3.4	2.3-5.0	3.9	2.3-6.6	3.2	1.9-5.3

<sup>a</sup> All respondents who report activity limitations due to physical, mental, or emotional problems OR have health problems that require the use of special equipment.

<sup>b</sup> Given a reported disability, status as needing assistance from others in activities of daily living.

<sup>c</sup> Because of impairment or health problem, need help of other persons with personal care needs OR in handling routine needs.

<sup>d</sup> Need no help of other persons either with personal care needs or in handling routine needs.

<sup>e</sup> % =Percentage; 95% CI =Confidence interval (at the 95 percent probability level). Percentages are weighted to population characteristics.

**Table B4.** Prevalence of Health Risk Factors and Behaviors Among New York Adults, by Disability Status, New York State Behavioral Risk Factor Surveillance System, 2007.

Health risk factor or behavior	Degree <sup>b</sup> of disability							
	No disability		Any disability <sup>a</sup>		Need assistance <sup>c</sup>			
	% <sup>e</sup>	95% CI <sup>e</sup>	%	95% CI	%	95% CI	Need no assistance <sup>d</sup>	95% CI
<b>Current cigarette smoking</b>	18.1	16.5-19.7	21.7	19.1-24.5	25.3	20.5-30.8	20.2	17.2-23.5
<b>Binge drinking</b>	16.8	15.3-18.4	8.2	6.7-9.9	6.0	3.9-9.0	9.1	7.2-11.3
<b>Heavy drinking</b>	4.8	4.0-5.8	4.1	3.1-5.4	2.9	1.6-5.2	4.5	3.3-6.2
<b>Obesity</b>	22.5	20.9-24.2	39.0	35.9-42.3	41.6	35.8-47.7	38.0	34.3-41.8
<b>No leisure-time physical activity past month</b>	20.6	18.9-22.3	40.0	37.0-43.1	51.9	45.9-57.8	35.2	31.7-38.9
<b>Recommended physical activity</b>	51.6	49.6-53.6	37.9	34.7-41.2	25.5	20.8-30.8	43.2	39.3-47.2
<b>Fruits and vegetables consumption (≥ 5 servings per day)</b>	27.8	26.1-29.6	25.8	23.2-28.6	27.3	22.6-32.5	25.2	22.1-28.6

<sup>a</sup> All respondents who report activity limitations due to physical, mental, or emotional problems OR have health problems that require the use of special equipment.

<sup>b</sup> Given a reported disability, status as needing assistance from others in activities of daily living.

<sup>c</sup> Because of impairment or health problem, need help of other persons with personal care needs OR in handling routine needs.

<sup>d</sup> Need no help of other persons either with personal care needs or in handling routine needs.

<sup>e</sup> % =Percentage; 95% CI =Confidence interval (at the 95 percent probability level). Percentages are weighted to population characteristics.

**Table B5.** Prevalence of Health-Related Quality of Life (HRQoL) Factors Among New York Adults, by Disability Status, New York State Behavioral Risk Factor Surveillance System, 2007.

HRQoL factor	Degree <sup>b</sup> of disability							
	No disability		Any disability <sup>a</sup>		Need assistance <sup>c</sup>		Need no assistance <sup>d</sup>	
	% <sup>e</sup>	95% CI <sup>e</sup>	%	95% CI	%	95% CI	%	95% CI
<b>Self-rated health fair or poor</b>	10.8	9.5-12.2	43.8	40.7-46.9	62.8	57.0-68.4	36.1	32.6-39.8
<b>Frequent physical distress</b>	4.5	3.8-5.4	35.8	32.8-39.0	60.6	54.6-66.3	25.9	22.7-29.4
<b>Frequent mental distress</b>	6.1	5.2-7.1	24.1	21.3-27.1	37.6	31.8-43.7	18.5	15.6-21.9
<b>Frequent activity limitation</b>	2.3	1.7-3.2	25.3	22.6-28.3	50.4	44.4-56.4	15.3	12.8-18.1
<b>Frequent pain</b>	1.9	1.5-2.5	31.8	28.9-35.0	54.2	48.2-60.2	22.0	18.9-25.4
<b>Frequent depressed mood</b>	4.0	3.3-4.8	19.7	17.0-22.7	34.5	28.7-40.8	13.2	10.6-16.3
<b>Frequent anxiety</b>	9.6	8.5-10.8	27.7	24.7-30.9	41.4	35.6-47.4	21.9	18.6-25.7
<b>Frequent sleeplessness</b>	21.7	20.1-23.4	36.8	33.7-40.1	52.0	46.2-57.8	30.2	26.7-34.0
<b>Frequent high vitality</b>	74.3	72.4-76.1	41.3	38.0-44.6	24.0	18.9-29.8	48.8	44.8-52.8
<b>Social and emotional support</b> (always or usually)	79.1	77.4-80.7	64.0	60.7-67.1	57.2	51.2-62.9	66.9	63.0-70.6
<b>Satisfaction with life</b> (satisfied or very satisfied)	96.5	95.5-97.2	85.4	82.7-87.7	77.9	72.2-82.6	88.6	85.6-91.1

<sup>a</sup> All respondents who report activity limitations due to physical, mental, or emotional problems OR have health problems that require the use of special equipment.

<sup>b</sup> Given a reported disability, status as needing assistance from others in activities of daily living.

<sup>c</sup> Because of impairment or health problem, need help of other persons with personal care needs OR in handling routine needs.

<sup>d</sup> Need no help of other persons either with personal care needs or in handling routine needs.

<sup>e</sup> % =Percentage; 95% CI =Confidence interval (at the 95 percent probability level). Percentages are weighted to population characteristics.



## References

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1. Centers for Disease Control and Prevention. *Measuring healthy days*. Atlanta, GA: CDC, 2000.
2. Institute of Medicine (IOM). *The future of disability in America*. Washington, DC: The National Academies Press, 2007.
3. Centers for Disease Control and Prevention. State-specific prevalence of disability among adults: 11 states and the District of Columbia, 1998. *MMWR Morbidity and Mortality Weekly Report*. 2000;49:711-714.
4. Pope AM, Tarlov AR. *Disability in America*. Washington, DC: National Academy Press, 1991.
5. Ettinger WH Jr, Fried LP, Harris T, Shemanski L, Schulz RJ for the CHS Collaborative Research Group. Self-reported causes of physical disability in older people: The Cardiovascular Health Study. *Journal of the American Geriatrics Society*. 1994;42:1035-1044.
6. Guralnik JM, LaCroix AZ, Abbott RD, Berkman LF, Satterfield S, Evans DA, Wallace RB. Maintaining mobility in late life. I. Demographic characteristics and chronic conditions. *American Journal of Epidemiology*. 1993;137:845-857.
7. Mor V, Murphy J, Masterson-Allen S, Willey C, Razmpour A, Jackson ME, Greer D, Katz, S. Risk of functional decline among well elders. *Journal of Clinical Epidemiology*. 1989;42:895-904.
8. Centers for Disease Control and Prevention. Prevalence of disabilities and associated health conditions among adults—United States, 1999. *MMWR Morbidity and Mortality Weekly Report*. 2001;50:120-125.
9. Ellwein LB, Friedlin V, McBean AM, Lee PP. Use of eye care services among the 1991 Medicare population. *Ophthalmology*. 1996;103(11):1732-1743.
10. Matarazzo JD, Weiss SM, Herd JA, Miller NE, Weiss SM. Preface. In *Behavioral health: A handbook of health enhancement and disease prevention*. New York: John Wiley & Sons, 1984.
11. LaCroix AZ, Guralnik JM, Berkman LF, Wallace RB, Satterfield S. Maintaining mobility in late life. II. Smoking, alcohol consumption, physical activity, and body mass index. *American Journal of Epidemiology*. 1993;137:858-869.
12. Wenger NK, Mattson ME, Furberg CD, Elinson J (Eds). *Assessment of quality of life in clinical trials of cardiovascular therapies*. New York: Le Jacq, 1984.
13. Patrick DL, Erickson P. What constitutes quality of life? Concepts and dimensions. *Quality of Life in Cardiovascular Care*. 1988;Autumn:103-127.
14. Levine S, Croog SH. What constitutes quality of life? A conceptualization of the dimensions of life quality in healthy populations and patients with cardiovascular disease. In NK Wenger, ME Mattson, CD Furberg, J Elinson (Eds). *Assessment of quality of life in clinical trials of cardiovascular therapies*. New York: Le Jacq, 1984.
15. Patrick DL. Rethinking prevention for people with disabilities. Part I: A conceptual model for promoting health. *American Journal of Health Promotion*. 1997;11:257-260.
16. Testa M, Simonson D. Current concepts: Assessment of quality of life outcomes. *The New England Journal of Medicine*. 1996;334:835-840.
17. Guyatt G, Patrick D, Feeney D. Postscript. Proceedings of the International Conference on the Measurement of Quality of Life as an Outcome in Clinical Trials. *Controlled Clinical Trials*. 1991;12(Suppl.):266-269.
18. Ware JE. Standards for validating health measures: Definition and content. The Portugal Conference: Measuring quality of life and functional status in clinical and epidemiological research. (Special issue). *Journal of Chronic Disease*. 1987;40:473-480.
19. Fouts BS, Andresen EM, Hagglund K. Disability and satisfaction with access to health care. *Journal of Epidemiology and Community Health*. 2000;54:770-771.

20. Centers for Disease Control and Prevention. Factors associated with prevalent self-reported arthritis and other rheumatic conditions—United States, 1989-1991. *MMWR Morbidity and Mortality Weekly Report*. 1996;45:487-491.
21. Campbell VA, Crews JE, Moriarty DG, Zack MM, Blackman DK. Surveillance for sensory impairment, activity limitation, and health-related quality of life among older adults—United States, 1993-1997. *MMWR CDC Surveillance Summary*. 1999;48:131-156.
22. Idler EL, Benyamini Y. Self-rated health and mortality: A review of twenty-seven community studies. *Journal of Health and Social Behavior*. 1997;38:21-37.
23. Nanda U, Andresen EM. Performance of measures of health-related quality of life and function among disabled adults (abstract). *Quality of Life Research*. 1998;7:644.
24. Andresen EM, Fouts BS, Romeis JD, Brownson CA. Performance of health-related quality-of-life instruments in a spinal cord injured population. *Archives of Physical Medicine and Rehabilitation*. 1999;80:877-884.
25. Hennessy CH, Moriarty DG, Zack MM, Scherr PA, Brackbill R. Measuring health-related quality of life for public health surveillance. *Public Health Reports*. 1994;109:665-672.
26. Freedman VA, Martin LG. The role of education in explaining and forecasting trends in functional limitations among older Americans. *Demography*. 1999;36:461-473.
27. Cutler DM. Declining disability among the elderly. *Health Affairs*. 2001(6);20:11-27.
28. Jans L, Stoddard S. *Chartbook on women and disability in the United States. An InfoUse Report*. Washington, DC: National Institute on Disability and Rehabilitation Research, 1999.
29. LaCroix AZ, Guralnik JM, Berkman LF, Wallace RB, Satterfield S. Maintaining mobility in late life. II. Smoking, alcohol consumption, physical activity, and body mass index. *Am J Epidemiol*. 1993;137:858-869.
30. Brawarsky P, Brooks DR, Wilber N, Gertz RE Jr, Klein Walker D. Tobacco use among adults with disabilities in Massachusetts. *Tobacco Control*. 2002;11(Suppl 2):1129-1133.
31. US Department of Health and Human Services. *The health benefits of smoking cessation*. Rockville, MD: US Department of Health and Human Services, Office on Smoking and Health, 1990.
32. LaCroix AZ, Omenn GS. Older adults and smoking. *Clin Geriatr Med*. 1992;8:69-87.
33. Ferraro KF, Booth TL. Age, body mass index, and functional illness. *J Gerontol B Psychol Sci Soc Sci*. 1999;54B:S339-S348.
34. Launer LJ, Harris T, Rumpel C, Madans J. Body mass index, weight change, and risk of mobility disability in middle-aged and older women: The epidemiologic follow-up study of NHANES I. *JAMA*. 1994;271:1093-1098.
35. Clark DO, Stump TE, Hui SL, Wolinsky FD. Predictors of mobility and basic ADL difficulty among adults aged 70 years and older. *J Aging Health*. 1998;10:422-440.
36. Felson DT. Weight and osteoarthritis. *Am J Clin Nutr*. 1996;63:430S-432S.
37. Felson DT, Anderson JJ, Naimark A, Swift M, Castelli W, Meenan RF. Obesity and symptomatic knee osteoarthritis (OA): Results from the Framingham Study [abstract]. *Arthritis Rheum*. 1987;30:S130.
38. Carman WJ, Sowers M, Hawthorne VM, Weissfeld LA. Obesity as a risk factor for osteoarthritis of the hand and wrist: A prospective study. *Am J Epidemiol*. 1994;139:119-129.
39. Burton BT, Foster WR, Hirsch J, Van Itallie TB. Health implications of obesity: NIH consensus development conference. *Int J Obes Relat Metab Disord*. 1985;9:155-169.
40. Ettinger WH Jr, Fried LP, Harris T, Shemanski L, Schulz RJ, for the CHS Collaborative Research Group. Self-reported causes of physical disability in older people: The Cardiovascular Health Study. *J Am Geriatrics Soc*. 1994;42:1035-1044.

41. Guralnik JM, LaCroix AZ, Abbott RD, Berkman LF, Satterfield S, Evans DA, Wallace RB. Maintaining mobility in late life. I. Demographic characteristics and chronic conditions. *Am J Epidemiol*. 1993;137:845-857.
42. Mor V, Murphy J, Masterson-Allen S, Willey C, Razmopour A, Jackson ME, Greer D, Katz S. Risk of functional decline among well elders. *J Clin Epidemiol*. 1989;42:895-904.
43. The Eye Diseases Prevalence Research Group. Causes and prevalence of visual impairment among adults in the United States. *Arch Ophthalmol*. 2004;122:477-485.
44. Vitale S, Cotch MF, Sperduto RD. Prevalence of visual impairment in the United States. *JAMA*. 2006;295:2158-2163.
45. Ellwein LB, Friedlin V, McBean AM, Lee PP. Use of eye care services among the 1991 Medicare population. *Ophthalmology*. 1996;103:1732-1743.
46. Chandler JM, Hadley EC. Exercise to improve physiologic and functional performance in old age. *Clinics Geriatric Med*. 1996;12:761-784.
47. DiPeitro L. The epidemiology of physical activity and physical function in older people. *Medicine and Science in Sport and Exercise*. 1996;28:596-600.
48. Morey MC, Peiper CF, Corroni-Huntley J. Physical fitness and functional limitations in community-dwelling older adults. *Medicine and Science in Sport and Exercise*. 1998;30:715-723.
49. Rikli RE, Jones CJ. Assessing physical performance in independent older adults: Issues and guidelines. *J Aging Physical Activity*. 1997;5:244-261.
50. NIH. *Clinical guidelines on the identification, evaluation and treatment of overweight and obesity in adults: The Evidence Report*. Washington, DC: National Institutes of Health, 1998.
51. Heath GW, Fentem PH. Physical activity among adults with disabilities—A public health perspective. *Exerc Sport Sci Rev*. 1997;25:195-234.
52. Must A, Spadano J, Coakley EH, Field AE, Colditz G, Dietz WH. The disease burden associated with overweight and obesity. *JAMA*. 1999;282:1523-1529.
53. Moriarty D, Zack M, Kobau R. The Centers for Disease Control and Prevention's Healthy Days Measures: population tracking of perceived physical and mental health over time. *Health Qual Life Outcomes*. 2003;1:37.
54. Centers for Disease Control and Prevention. Health-related quality of life and activity limitation—eight states, 1995. *MMWR Morbidity and Mortality Weekly Report*. 1998;47:134-140.
55. Centers for Disease Control and Prevention. Health-related quality of life among persons with epilepsy—Texas, 1998. *MMWR Morbidity and Mortality Weekly Report*. 2001;50:24-26.
56. Research Triangle Institute. *SUDAAN language manual release 9.0 (1st ed.)*. Research Triangle Park, NC: Research Triangle Institute, 2004.



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