

Five A Day: Vegetable and Fruit Intake among Persons with a Disability

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The "Surgeon General's Report on Nutrition and Health" (1988) established the fact that two-thirds of all deaths -- including coronary heart disease, stroke, atherosclerosis, diabetes and some types of cancer -- are related to what we eat. In 1989 the National Academy of Sciences report, *Diet and Health*, emphasized the importance of fruits and vegetables for reducing risk of both cancer and heart disease. Consumption of vegetables rich in calcium, potassium and magnesium and beta-carotene has been shown to be positively associated with bone health and reduce the risk of osteoporosis in women (*American journal of clinical nutrition*). Other factors are also associated with health risks including genetics, age, and physical activity. While one cannot easily change their genetic make-up, and physical activity may not be easily increased among people with disabilities, diet is an area that most people can change. According to the U.S. Surgeon General, the single most important personal choice influencing one's long term health is what one eats.

*Nutrition and Your Health: Dietary Guidelines for Americans*, was first published in 1980 and was issued jointly by the Department of Human and Health Services and the United States Department of Agriculture. The guidelines were developed in response to the public's desire for an authoritative, consistent guide to health and diet, and were based on the most currently scientific knowledge at that time (Calloway et al., 1995). In 1990 the National Nutrition Monitoring and Related Research Act was passed requiring publication of *Dietary Guidelines* every 5 years, and a comprehensive 10 year plan that included assessing the dietary and nutritional status of the people of the United States. The plan also called for the continuous collection, processing, and analysis of nutritional and dietary status data of high-risk groups (e.g., various ethnic groups, persons with low-income, and homeless persons). Although not specifically mentioned, persons with

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disabilities are a high-risk group. Approximately one-thirds of the population of persons with a disability are senior citizens over the age of 65, and the population of senior citizens is the most rapidly growing population in the U.S (Hanks, 1997). In 1997 the Center for Disease Control and Prevention (CDC) put forth a request for proposals for building state capacity of surveillance of secondary conditions among persons with a disability. Fourteen states were awarded grants and given the charge of collecting data on persons with disabilities using the BRFSS. The first data from these states, collected in 1998, are now available and are the source of this report.

The data in this report come from 12 of the 14 states involved in the project to build state capacity for surveillance of secondary conditions among persons with a disability. Two states were excluded because their data were not comparable to those of the other states. Although the data from each state have been weighted to reflect the population of that state, the analyses in this report use the raw data.

There are a variety of ways that disability can be defined using the BRFSS quality of life module. In this report, disability is defined as a limitation in the ability to participate in activities because of an impairment or a health problem, or the use of a mobility aid. Using this definition, 6,953 persons age 18 or older (18.2% of the sample) were identified as having a disability.

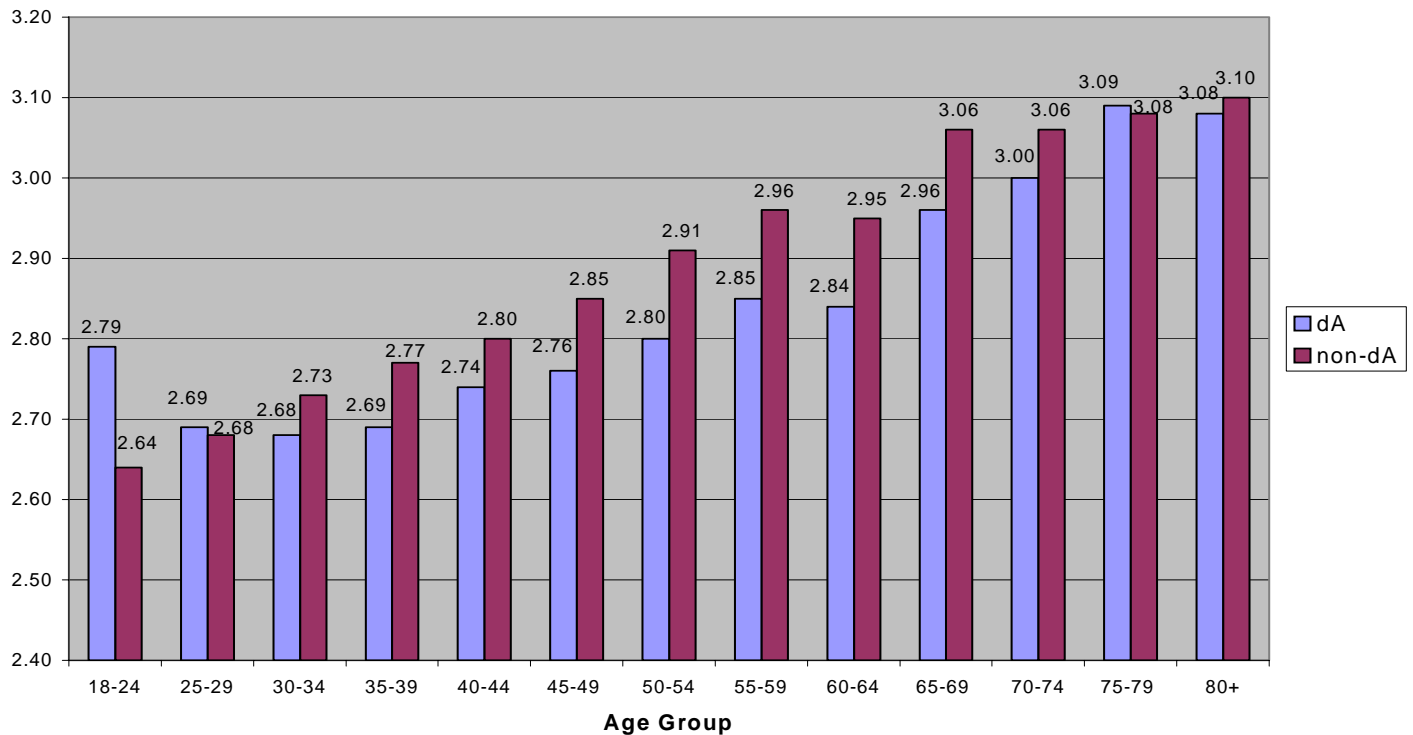
Nutritional guidelines for Americans suggest that a minimum of five servings of fruits and vegetables should be consumed each day in a well balanced diet. The data in this report are based on the fruit and vegetable index score, which is a composite score derived by the CDC and represents the average number of daily servings of fruits and vegetables consumed per respondent.

Figure 1 shows the average number of servings of fruits and vegetables by age and disability status. The number of servings eaten increases with age; however, as can be seen, all groups eat significantly fewer servings of fruits and vegetables than the

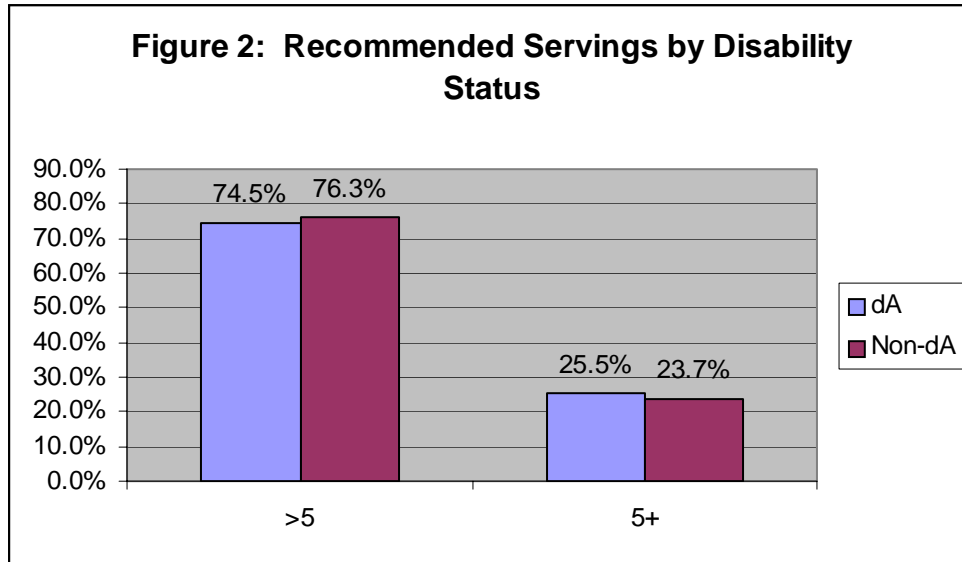
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recommended five servings per day. Although people with disabilities consume, on average, fewer servings of fruits and vegetables in almost all age groups, only the difference within the 18-24 year old age group is large enough to be statistically significant. In this age group, persons with disabilities report eating significantly more servings of fruits and vegetables than their non-disabled counterparts.

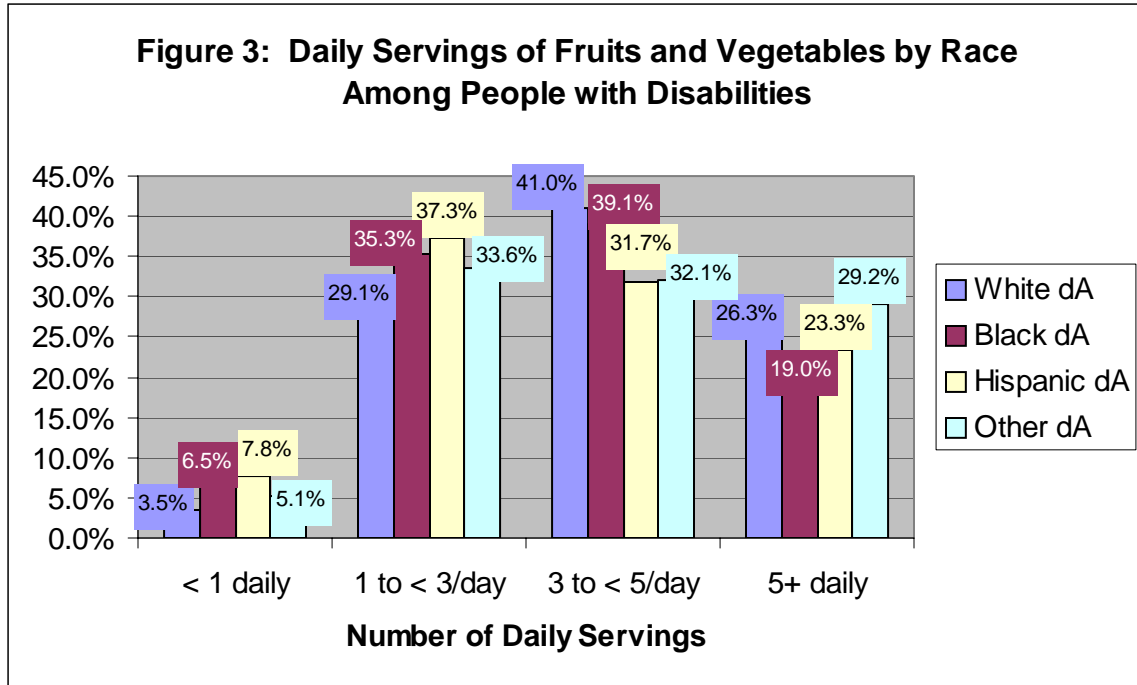
**Figure 1: Average Number of Servings of Fruits and Vegetables Daily**



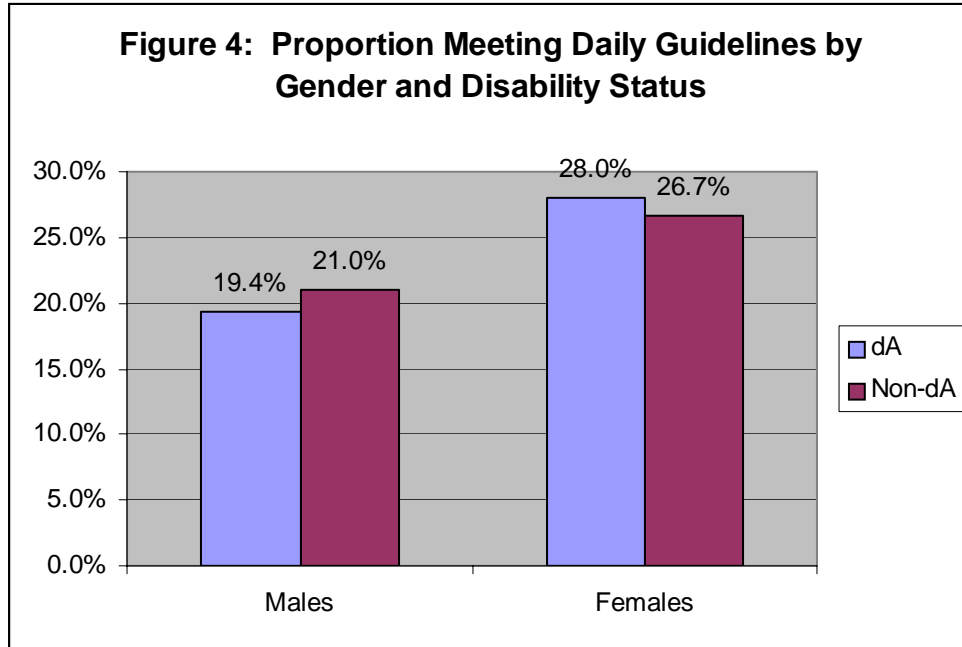
When we ignore age and simply compare the proportions of respondents with and without disabilities who average 5 or more daily servings of fruits and vegetables, a significantly larger proportion of respondents with disabilities reports eating the recommended number of servings (25.5%. Vs. 23.7% for persons without disabilities;  $z = 3.16, p < .01$ ; Figure 2).



Dietary differences have been shown to exist among different ethnic and racial groups. Figure 3 shows the differences in fruit and vegetable consumption among ethnic/racial groups for people with disabilities. In these data a significantly greater proportion of the “other” and “white” populations with disabilities reported eating the recommended number of servings per day than did the black population. A logistic regression analysis showed that Hispanics were 15% and blacks were 34% less likely than whites to eat the recommended number of servings per day. It is interesting to note that members of the disabled white population ate less than 1 serving of fruits and vegetables significantly less often than any of the other ethnic/racial groups with disabilities.



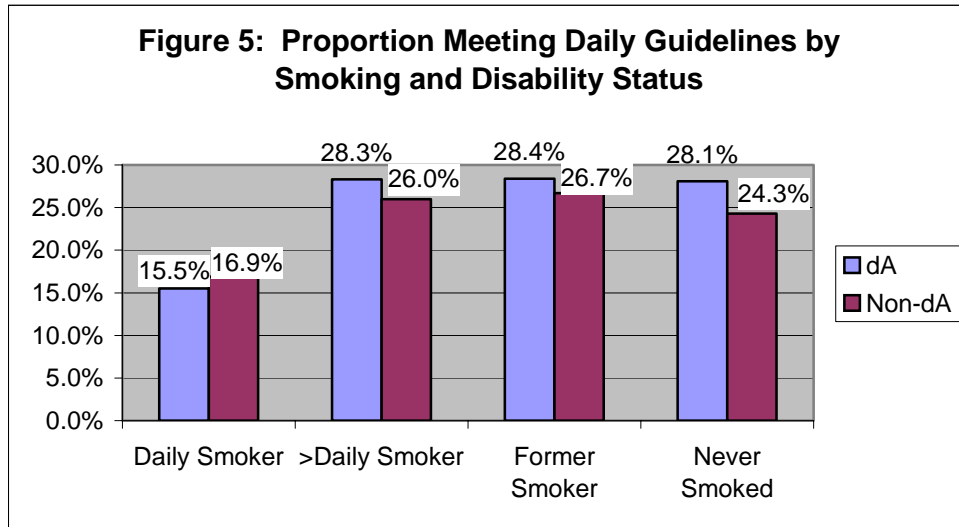
Gender is associated with diseases such as osteoporosis and stroke, which can be affected by fruit and vegetable consumption. We therefore assessed gender differences in consumption between males and females. Figure 4 shows the proportion of males and females that ate the recommended number of daily servings by disability status. A greater proportion of females reported eating 5 or more servings of fruits and vegetables per day than did males. This held true regardless of disability status. The results of a logistic regression showed that disabled women are 46% more likely to eat the recommended number of servings than are their disabled male counterparts.



In other studies regarding eating habits, it has been shown that married men usually eat better than those of the same age who are single. Looking at the fruit and vegetable consumption habits of men based on marital status, a significantly larger proportion of married men (20.4%) than single men (18.5%) ate the recommend number of servings of fruits and vegetables per day. The proportion of married men who ate the recommended number of servings per day was similar among men with and without disabilities.

Smoking status showed a significant association with the number of fruits and vegetable serving consumed daily. Only 16.6% of currently daily smokers consumed 5 or more servings of vegetables per day compared with 25% of individuals who reported they had never smoked. The number of servings consumed per day among former smokers and people who currently smoked less than daily was similar to that of the never-smoked group. Among the group of individuals with disabilities, the pattern of fruit and vegetable consumption by smoking status was similar to that of the group without disabilities. A logistic regression showed that current daily smokers with disabilities were

63% less likely to eat 5 or more servings per day, whereas the probability for former smokers and current non-daily smokers was the same as for non-smokers.



#### Discussion

The data showed that persons with disabilities are doing slightly better at eating the recommended daily number of servings of fruits and vegetables than their non-disabled counterparts. The majority of all respondents, however, fall short of eating the recommended number of servings daily. Among people with disabilities, as in the general population, Blacks and Hispanics are not doing as well at eating the recommended number of servings, as are people in the white population. There are also gender differences in consumption. Disabled females are 46% more likely than disabled males to eat the recommended number of servings per day.

Although people with disabilities are doing better than the general population at eating “5 a day”, the message still needs to be emphasized among this group. This is especially true given that diet may be the only area some persons with disabilities may be able to change to reduce their risk of heart disease and cancer. The data also suggest that campaigns should target males and members of racial/ethnic groups such as Blacks and Hispanics.

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Epigram:

This guy went to a doctor's office with a pickle up his nose, pizza shoved in his right ear and a straw sticking out of his left ear and said, "Doctor, I'm not feeling well."

The doctor replied, "That's because you're not eating right."



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