



Fruits & Vegetables

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Introduction

Numerous studies have documented the association between chronic diseases and diet.^{1, 2} There is evidence that plant foods play a role in preventing atherosclerotic heart disease.³ Plant foods provide dietary fiber that helps lower blood cholesterol levels⁴ and helps normalize blood glucose and insulin levels.⁵ Plant foods also provide antioxidants that help in lipoprotein oxidation.^{6, 7} Diets rich in vegetables and fruit have been associated with reduced risk of cardiovascular disease and high blood pressure^{8, 9} and have a protective effect on the risks of many cancers.¹⁰

The *Dietary Guidelines for Americans* issued by the U.S. Department of Health and Human Services and the Food Guide Pyramid aim to promote healthy eating patterns that reduce the risk of major chronic diseases in the United States. These guidelines emphasize the need for people to make fruits and vegetables a key part of their daily diet. People should eat three to five servings of various vegetables and vegetable juices and two to four servings of various fruits and fruit juices daily.¹¹ In spite of the importance of consuming fruits and vegetables on a daily basis, only 23% of people in this country eat at least 5 fruits and vegetables daily.¹²

It is for these reasons that the **5 A Day for Better Health** Program was started. The 5 A Day Program is a large-scale public/private partnership between the fruit and vegetable industry and the U. S. Government. Its aim is to increase the number of Americans who eat at least five servings of fruits and vegetables each day.

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This report summarizes the prevalence of fruit and vegetable consumption in New York State during 2002 using data collected from a population-based survey of state residents, the Behavioral Risk Factor Surveillance System (BRFSS).

Methods

The BRFSS was introduced in New York State in 1983 and has been conducted annually since 1985 with funding and technical assistance from the Centers for Disease Control and Prevention (CDC). Standardized questions developed by CDC are administered via a telephone survey limited to the adult (aged 18 years and older), non-institutionalized population. This survey provides state-specific information on behaviors and risk factors for chronic and infectious diseases and other health conditions among the adult population. Data on fruit and vegetable consumption in New York State were collected in the even-numbered years from 1990 through 2002. Six questions were asked regarding the kinds of foods people usually eat or drink:

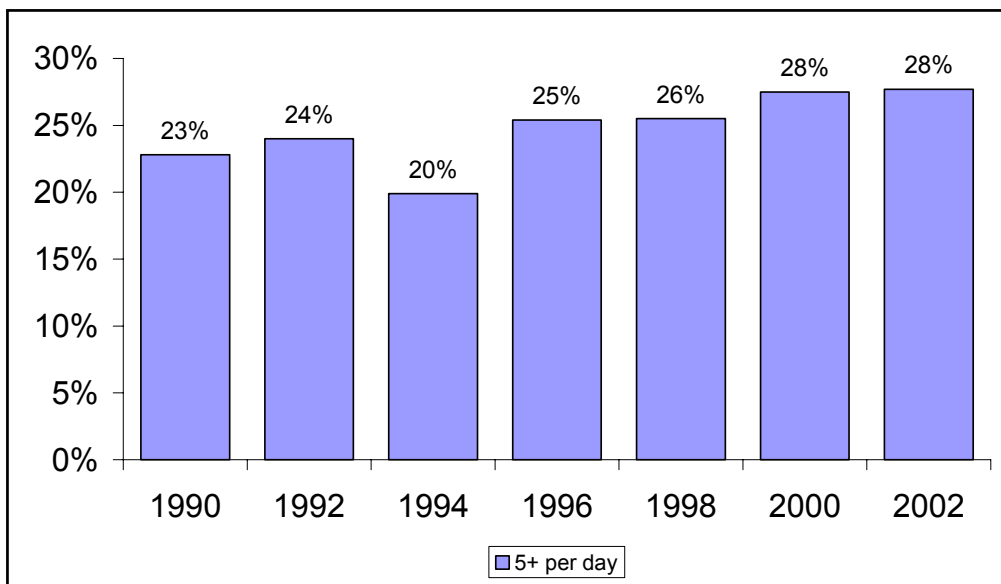
- How often do you drink fruit juices such as orange, grapefruit, or tomato?
- Not counting juice, how often do you eat fruit?
- How often do you eat green salad?
- How often do you eat potatoes not including french fries, fried potatoes, or potato chips?
- How often do you eat carrots?
- Not counting carrots, potatoes, or salad, how many servings of vegetables do you usually eat?

Respondents indicated how often, if ever, they ate these foods.

Results

In 1990 the 5 A Day rate for New York adults was 23% (CI 95%: 20.1-25.5). By 2002, the rate for the New York adult population had risen to 28% (CI 95%: 26.1-29.3) (Figure 1). Demographic

Figure 1 Fruits and Vegetable Consumption, New York State Adults (ages 18 & over): 1990-2002



breakdowns for the 5 A Day rate in New York indicated little differences by age or income groups (Table 1). However, people classified as other race (36%) had significantly higher rates than people in all other specified race groups, including non-Hispanic Whites (27%). Women (32%) also had a significantly higher rate than men (23%). People with less than a high school education (22%) had a significantly lower 5 A Day rate than people who were college graduates.

Table 1 Fruits and Vegetable Consumption, New York State Adults (ages 18 & over): 2002

		5+ per day	
		%	C.I. (95%)
Total		27.7	(26.1-29.3)
Age			
	18 - 24	27.3	(22.2-33.1)
	25 - 34	25.8	(22.3-29.6)
	35 - 44	26.1	(22.9-29.6)
	45 - 54	25.1	(21.9-28.6)
	55 - 64	30.0	(25.7-34.6)
	65+	32.8	(29.2-36.6)
Race			
	White	27.2	(25.5-29.0)
	African American	26.3	(21.8-31.4)
	Other	36.2	(29.4-43.5)
	Hispanic	25.2	(20.5-30.5)
Gender			
	Male	22.6	(20.3-25.0)
	Female	32.2	(30.2-34.4)
Income			
	less than \$15,000	23.4	(18.7-28.8)
	\$15,000- 24,999	29.6	(25.4-34.2)
	\$25,000- 34,999	19.7	(16.3-23.6)
	\$35,000- 49,999	27.5	(23.6-31.9)
	\$50,000- 74,999	31.0	(27.0-35.3)
	\$75,000+	28.8	(25.6-32.4)
Education			
	Less than H.S.	22.1	(17.6-27.4)
	H.S. or G.E.D	24.3	(21.5-27.3)
	Some post-H.S.	27.3	(24.2-30.6)
	College graduate	33.0	(30.4-35.7)

Discussion

The overall increase since 1990 in the percentage of NY adults who eat at least 5 servings of fruits and vegetables is encouraging (from 23% in 1990 to 28% in 2002), although the vast majority of adults (72%) still report not eating enough fruits and vegetables. Differences in 5 A Day rates are relatively minor for age and income groups. Race groups only show a notable difference for the other category. By far the most notable difference is by education groups, with 5 A Day rates increasing with education levels and by gender. Although it is important to target high-risk groups for 5 A Day interventions, this report clearly indicates that the entire adult population in New York is in need of attention.

A diet rich in fruits and vegetables and low in saturated fat and cholesterol, combined with physical activity, can help fight overweight, and obesity, and reduce risks for heart disease, some types of cancer, and other chronic diseases. The national 5 A Day for Better Health Program has set five or more fruits and vegetables per day as a goal for the general population, but actual nutritional needs vary slightly for age groups and between men and women. Children (aged 2-6 years), women, and others who typically need about 1,600 calories to reach or maintain a healthy weight should eat no fewer than 2 servings of fruits and 3 servings of vegetables daily. Older children, teen girls, active women, and most men who typically need about 2,200 calories to reach or maintain a healthy weight should be eating no fewer than 3 servings of fruits and 4 servings of vegetables. Teen boys and active men who typically need about 2,800 calories to reach or maintain a healthy weight should be eating no fewer than 4 servings of fruits and 5 servings of vegetables.

Fruits and vegetables are promoted primarily by the New York State Department of Health's Healthy Heart Program and Eat Well Play Hard initiative. The Healthy Heart Program funds communities to promote vegetable and fruit consumption as part of their efforts to promote heart health. Fruits and vegetables are promoted throughout the community, including places like worksites daycare settings, and schools. Worksites run 5 A Day challenges, establish on-site farmers markets, encourage participation in community-supported agriculture, create fruit clubs, and publish articles on vegetables and fruits in worksite newsletters. Community-based efforts include creating or amending policies for snack programs in daycare centers, establishing community

gardens, establishing new and promoting existing farmers markets, and working with supermarkets to promote the 5 A Day campaign.

The Eat Well Play Hard initiative promotes increased consumption of fruits and vegetables through policy changes administered through the Women, Infants and Children Program, Child and Adult Care Food Program, and Hunger Prevention and Nutrition Assistance Program. Eat Well Play Hard funded three community-level projects to assure that preschool and early elementary age children and families receive consistent and positive messages about nutrition and physical activity. Local coalitions have worked with private partners, cooperative extension and county agencies to promote increased availability of fruits and vegetables through community gardens, community-supported agriculture, farmers markets, grocery stores, and fast food establishments. Various 5 A Day messages are incorporated into communication and marketing materials. Through the Food Stamp Nutrition Education Project, "Just Say Yes to Fruits and Vegetables", nutrition educators conduct food demonstrations at food pantries.

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