

Have Americans Increased Their Fruit and Vegetable Intake?

The Trends Between 1988 and 2002

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Background: Previous research indicates that few Americans meet the United States Department of Agriculture (USDA) guidelines for fruit and vegetable consumption, and that adequate fruit and vegetable consumption may decrease the risk for chronic disease.

Methods: Twenty-four-hour dietary recall data from NHANES III, 1988–1994 ($n=14,997$) and NHANES 1999–2002 ($n=8910$) were used to assess adult (equal to or more than 18 years) trends in daily fruit and vegetable consumption (number of servings and types).

Results: In 1988–1994, an estimated 27% of adults met the USDA guidelines for fruit (equal to or more than two servings) and 35% met the guidelines for vegetables (equal to or more than three servings). In 1999–2002, 28% and 32% of adults met fruit and vegetable guidelines, respectively. There was a significant decrease in vegetable consumption over time ($p=0.026$). Only 11% met USDA guidelines for both fruits and vegetables in 1988–1994 and 1999–2002, indicating no change in consumption ($p=0.963$). In both data sets, non-Hispanic blacks were less likely to meet USDA guidelines compared to non-Hispanic whites ($p<0.05$). Higher income and greater education were significantly associated with meeting the guidelines in both data sets ($p<0.05$).

Conclusions: Despite the initiation of a national fruit and vegetable campaign in 1991, the findings indicated that Americans' fruit and vegetable consumption did not increase in 1999–2002, and only a small proportion met the related dietary recommendations. Greater public health efforts and approaches are needed to promote healthy eating in the United States. (Am J Prev Med 2007;32(4):257–263) © 2007 American Journal of Preventive Medicine

Introduction

Consuming a diet high in fruits and vegetables is associated with a decreased risk of certain chronic diseases including cardiovascular disease,^{1–4} cancer,^{1,5} and diabetes.^{6–9} Beginning in 1985, the United States Department of Agriculture (USDA) *Dietary Guidelines for Healthy Americans* recommended consuming at least two servings of fruit and three servings of vegetables daily.^{10,11} In 1991, the 5-A-Day Program for Better Health was initiated by the National Cancer Institute and the Produce for Better Health Foundation to increase public awareness of the importance of eating at least five fruits and vegetables daily.¹²

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This was done through education, advertising campaigns, and school and workplace interventions.

Previous research indicates that only a small proportion of Americans meet USDA guidelines for daily servings of fruits and vegetables.^{13–15} Twenty-four-hour dietary recall data from the Second National Health and Nutrition Examination Survey (NHANES II, 1976–1980) estimated that only 27% of adults consumed three or more servings of vegetables and 29% consumed two or more servings of fruit as recommended by the USDA; only 9% met both guidelines.¹⁴ Previous trend studies including the Behavioral Risk Factor Surveillance System (BRFSS) (1990–2000)^{13,15} and the National Health Interview Survey (NHIS) (1987–1992)¹⁶ found little or no improvement in fruit and vegetable consumption. However, a limitation of the dietary data reported in these studies is the inability to account for portion size. Respondents may over-report their fruit and vegetable consumption if they view this as socially desirable, resulting in reporting errors and bias.^{17,18}

This analysis was conducted to assess current trends in Americans' fruit and vegetable consumption. The current study attempts to overcome the major limitations of previous studies by using 24-hour dietary recall

Table 1. Mean servings per day (SE) of fruits and vegetables and percentage (SE) of American adults (≥ 18 years) meeting USDA Dietary Guidelines

	NHANES II, 1976–1980 ¹⁴ (n=11,648)	NHANES III, 1988–1994 (n=14,997)	NHANES 1999–2002 (n=8910)	p value ^a
Fruit servings				
Mean (SE)	1.08 (0.03)	0.99 (0.03)	1.07 (0.04)	0.081
≥ 2 % (SE)	29 (<1.0)	26.7 (0.8)	28.4 (1.2)	0.196
Vegetable servings				
Mean (SE)	1.77 (0.02)	2.08 (0.03)	1.97 (0.03)	0.029
≥ 3 % (SE)	27 (1.0)	35.0 (0.7)	32.5 (0.7)	0.026
Vegetable servings, excluding fried potatoes				
Mean (SE)	—	1.83 (0.03)	1.71 (0.03)	0.025
≥ 3 % (SE)	—	29.9 (0.6)	27.4 (0.7)	0.020
Total fruit and vegetable servings				
Mean (SE)	—	3.06 (0.04)	3.04 (0.06)	0.754
≥ 2 Fruit & ≥ 3 Vegetable % (SE)	9 (<1.0)	10.9 (0.4)	10.8 (0.6)	0.963
≥ 5 Any F&V combination % (SE)	—	24.3 (0.6)	23.6 (0.8)	0.541

^aPearson χ^2 test for difference between NHANES III and NHANES 1999–2002. USDA, United States Department of Agriculture.

data collected in NHANES III (1988–1994) and NHANES 1999–2002. Unlike prior trend studies, serving size estimations were determined to evaluate if national efforts to increase fruit and vegetable consumption were successful.

Materials and Methods

The National Health and Nutrition Examination Survey (NHANES) is a stratified multistage probability survey conducted in the noninstitutionalized population, aged ≥ 6 months administered by the National Center for Health Statistics (NCHS). The NHANES survey has two parts: (1) an in-home interview for demographic and basic health information, and (2) a health examination in a mobile examination center (MEC). Household interviews are conducted by trained staff, and the MEC is staffed by physicians, medical and health technicians, and dietary and health interviewers. All survey information is confidential and approved by the NCHS Institutional Review Board.¹⁹

Study Population

The study included 14,997 adults (≥ 18 years) from 1988–1994 and 8910 adults from 1999–2002 with complete demographic and dietary data. For 1988–1994, the number of missing values for variables ranged from 108 (0.6% missing) for education to 1582 (9%) for poverty income ratio (PIR). Individuals with missing PIR tended to be slightly older, more often Mexican American, and have less education than individuals not missing PIR (data not shown). For 1999–2002, missing values for variables ranged from 19 (0.2%) for education to 1031 (10%) for PIR. Individuals with missing PIR tended to be slightly older, more often non-Hispanic black or Mexican American, and have less education than individuals having PIR (data not shown). There were no differences in fruit and vegetable consumption overall or by sociodemographic indicators when individuals with missing PIR were included in analysis in either NHANES data set. Therefore, individuals with missing sociodemographic data were excluded. Sociodemographic measures are detailed in Table 2, including household variables.²⁰

Dietary Measures

As part of the standard NHANES data-collection protocol, 24-hour dietary recalls (24HR) were conducted and were used to estimate the number of daily fruit and vegetable servings. The main fruit and vegetable variable used in these analyses was the seven- and eight-digit food coding scheme developed

Table 2. Logistic regression analysis [OR (95% CI)] for American adults meeting USDA fruit and vegetable guidelines by sociodemographic characteristics

	Meeting guidelines for fruits (≥ 2) and vegetables (≥ 3)	
	NHANES III, 1988–1994 (n=14,997) OR (95% CI)	NHANES 1999–2002 (n=8910) OR (95% CI)
Age (years)		
18–29	Ref	Ref
30–39	1.18 (0.99–1.41)	1.23 (0.99–1.54)
40–49	1.22 (1.01–1.48)	1.25 (1.00–1.56)
50–59	1.84 (1.51–2.23)	1.45 (1.14–1.83)
60–69	1.71 (1.42–2.06)	1.80 (1.45–2.23)
≥ 70	2.10 (1.78–2.49)	1.74 (1.42–2.14)
Gender		
Female (vs. male)	0.97 (0.88–1.08)	1.00 (0.88–1.14)
Ethnicity		
Non-Hispanic white	Ref	Ref
Non-Hispanic black	0.45 (0.39–0.53)	0.57 (0.46–0.70)
Mexican American	0.78 (0.68–0.88)	0.95 (0.81–1.11)
Other	0.92 (0.71–1.20)	0.94 (0.74–1.21)
Poverty to income ratio (PIR)		
≤ 1.0 (poor)	Ref	Ref
1.0–1.25 (near poor)	1.40 (1.10–1.77)	0.89 (0.65–1.22)
1.25–2.5 (average)	1.44 (1.22–1.69)	1.31 (1.06–1.61)
> 2.5 (high income)	2.06 (1.77–2.39)	1.65 (1.37–1.99)
Education		
<High school	Ref	Ref
High school diploma	1.14 (1.00–1.31)	1.21 (1.00–1.47)
>High school	1.78 (1.57–2.02)	1.90 (1.62–2.22)

CI, confidence intervals; OR, odds ratio.

by the USDA for NHANES III and NHANES 1999–2002, respectively, which categorized items by food group and subgroup.²¹ If the main ingredient of a mixed dish was a fruit or vegetable, the item was categorized according to the main fruit or vegetable. Sweets containing fruit where fruit was not the main ingredient were excluded from analysis. Serving sizes for each recorded fruit and vegetable were determined using serving size estimations from USDA/U.S. Department of Health and Human Services dietary guidelines²² and a previous NHANES study.¹⁴ Fruit servings included whole fruit, dried, and mixed fruit dishes, and 100% fruit juice. Vegetable servings included white potatoes, fried potatoes, garden vegetables (dark leafy greens, yellow vegetables, tomatoes, green beans, starchy vegetables), salad, and legumes. Although fried potatoes have been criticized as a vegetable, this subcategory was included in analyses to be consistent with previously published NHANES II data.¹⁴ Additional analyses were conducted to estimate the proportion of individuals consuming fried potatoes. Reporting a salad on a single occasion was coded as being equal to one serving rather than multiple servings for each ingredient.

For each vegetable, one serving consisted of 30–149 grams and two servings consisted of ≥ 150 grams. For each fruit, one serving consisted of 30–239 grams and two servings consisted of ≥ 240 grams. For fruit juice, one serving was 62–371 grams (2 to 12 ounces), two servings 372–587 grams (12–18 ounces), and three servings ≥ 588 grams (≥ 18 ounces). To minimize the impact of reported overestimation, an upper limit of two servings for fruits and vegetables and an upper limit of three servings for fruit juice were established. The lower limit for one serving was equal to 1 ounce to capture consumption for individuals with lower energy intakes. Although portions < 1 ounce could sum to a serving over the day, and consequently result in underestimation, the bias would be minimal because the lower limit reflects very small intake amounts.

Individuals with total caloric intakes < 350 kcal or > 7000 kcal were considered to have unreliable consumption patterns and were excluded from final analysis ($n=195$ [1.0%] and $n=67$ [0.7%] for 1988–1994 and 1999–2002, respectively).^{23,24}

Statistical Analysis

All analyses were conducted using survey weighting to account for the complex survey design, which consisted of multistage, stratified, clustered samples. Probability sampling weights were used in conjunction with strata and primary sampling units (psu) to weight the analysis. Mean servings of fruits and vegetables, the proportion of individuals consuming specific types of fruits and vegetables, and the proportion of individuals meeting the dietary guidelines (equal to or more than two servings of fruit and equal to or more than three servings of vegetables based on an average 2000 kcal daily intake) were reported.²² To explore demographic shifts over time between NHANES data sets, secondary analyses were conducted adjusted for age, ethnicity, and gender. Previously published data from NHANES II, 1976–1980¹⁴ was used to assess trends across three NHANES surveys.

Logistic regression analysis was used to compare fruit and vegetable consumption patterns across sociodemographic groups. Mean intakes of total energy, percentage of energy from total and saturated fat, and fiber were stratified by fruit and vegetable intake and adjusted for age, gender, and ethnicity using multiple regression models. To assess differences in consumption between 1988–1994 and 1999–2002, χ^2 tests for significance were performed. All analyses were conducted between 2005 and 2006 using STATA 9.0 statistical software (Stata Statistical Software, College Station TX, 2005).

Results

Population Characteristics

Sixty-eight percent and 65%, respectively, of the study population was aged less than 50 years in 1988–1994 and 1999–2002, with a greater number of individuals aged more than 70 years represented in 1999–2002 (11.2% vs 9.4%) ($p<0.001$). There were slight differences, although not significant ($p=0.055$), in ethnicity between 1988–1994 and 1999–2002, with 76.8% and 72.4%, respectively, of those sampled reporting ethnicity as non-Hispanic white, 10.8% and 10.3% reporting non-Hispanic black, and 5.0% and 6.9% reporting Mexican American. Fewer participants were poor or near poor in 1988–1994 (12.9% and 4.9%, respectively) compared to participants in 1999–2002 (14.9% and 6.7%, respectively) ($p=0.008$). Education level was significantly different between the two NHANES populations with 41.5% in 1988–1994 reporting an education level greater than high school compared to 52.5% in 1999–2002 ($p<0.001$) (all demographic data not shown).

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Fruit and Vegetable Patterns

Fruit. The percentage of adults meeting the guidelines for daily fruit consumption (equal to or more than two servings) was similar between 1988–1994 (26.7%) and 1999–2002 (28.4%) ($p=0.196$) (Table 1). Approximately 62% did not consume any whole fruit servings and 75% did not consume any fruit juice servings; about half of the participants reported no whole fruit and no fruit juice servings in both surveys. Excluding 100% fruit juice, 16.8% and 17.5% of individuals in 1988–1994 and 1999–2002, respectively, met fruit guidelines ($p=0.479$).

Vegetable. From 1988–1994 and 1999–2002, there was a small decrease in the proportion of participants who met the daily vegetable recommendation of equal to or more than three servings (35.0% in 1988–1994 to 32.5% in 1999–2002) ($p=0.026$). Approximately 25% of participants reported eating no daily vegetable servings. In both surveys, about half of participants reported consuming at least one serving of garden vege-

tables and 20% reported at least one serving of fried potatoes. Of all vegetables, legumes were consumed the least, with roughly 12% consuming at least one serving in both study periods. Additionally, 29.9% and 27.4%, in 1988–1994 and 1999–2002, respectively, met vegetable guidelines when fried potatoes were excluded as a vegetable ($p=0.020$).

Sixty-five percent in 1988–1994 and 68% in 1999–2002 consumed less than three servings of vegetables daily; overall, there was no significant trend for the number of vegetable servings consumed by individuals (data not shown). Among those consuming one vegetable serving, 26% in 1988–1994 and 27% in 1999–2002 consumed fried potatoes ($p=0.51$); 44% and 43% in 1988–1994 and 1999–2002 consumed garden vegetables, respectively ($p=0.53$). In both study periods, as vegetable servings increased, vegetable combinations became more varied and less fried potatoes were consumed. Among individuals consuming equal to or more than three servings, 12% consumed three servings of garden vegetables and 14% consumed two servings of garden vegetables and a salad, with far fewer consuming any combination containing fried potatoes in both NHANES data sets.

Fruit and vegetable. Eleven percent met USDA guidelines (equal to or more than two servings fruit and equal to or more than three servings vegetables) in 1988–1994 and in 1999–2002 ($p=0.963$), indicating no change in consumption (Table 1). Mean daily serving intakes for fruits and vegetables combined were similar in 1988–1994 (3.06) and 1999–2002 (3.04) ($p=0.754$). Roughly 14% reported no daily vegetable and no daily fruit servings. The proportion of adults consuming fruits and vegetables and meeting the guidelines did not change significantly after adjustment for age, gender, and ethnicity.

Trends: 1976–2002. Previously published data from NHANES II (1976–1980)¹⁴ was used to compare fruit and vegetable consumption over the past three NHANES surveys (Table 1). The proportion of participants meeting fruit and vegetable guidelines increased slightly from 9.0% in 1976–1980 to 10.9% in 1988–1994 and remained constant at 10.8% in 1999–2002. Although the improvement between the first two time periods is duly noted, the more recent plateau in fruit and vegetable consumption is troublesome.

Fruit and Vegetable Patterns by Demographics

Age and Gender. Older individuals (aged more than 40 years in 1988–1994 and more than 50 years in 1999–2002) were more likely to meet both fruit and vegetable guidelines (all $p<0.05$) (Table 2). There was no gender difference.

Ethnicity. Non-Hispanic blacks were less likely in 1988–1994 and 1999–2002 (odds ratio [OR]=0.45,

0.57, respectively; $p<0.05$) to meet the guidelines compared to non-Hispanic whites. Mexican Americans were less likely to meet the guidelines in 1988–1994 (OR=0.78, CI=0.68, 0.88) than non-Hispanic whites; there was no significant difference among ethnicities in 1999–2002 with non-Hispanic whites slightly decreasing consumption.

Socioeconomic status. In 1988–1994, individuals near poor to high income (PIR >1.0) had an increased likelihood of meeting fruit and vegetable guidelines compared to those with the most poverty (PIR \leq 1.0) (all $p<0.05$). In 1999–2002, only individuals with average (PIR=1.25–2.5) or high incomes (PIR >2.5) had an increased likelihood of meeting fruit and vegetable guidelines (all $p<0.05$). In both NHANES surveys, individuals with equivalent or greater than high school completion were more likely to meet fruit and vegetable guidelines (OR=1.78, OR=1.90, respectively, all $p<0.05$).

Energy and Macronutrient Consumption by Fruit and Vegetable Intake

The USDA dietary guidelines recommend that 14 grams of fiber per 1000 kcal be consumed.²⁵ After adjusting for age, gender, and ethnicity, mean energy and fiber intakes were higher for those consuming more fruits and vegetables (Table 3), but remained below recommendations in both data sets. The dietary guidelines recommend 20%–35% of energy from total fat and <10% of energy from saturated fat. The mean percentage of energy from total fat was slightly above 30%, and the mean percentage of energy from saturated fat was slightly above 10% for all fruit and vegetable intake levels.

Discussion

Approximately 89% of Americans failed to meet USDA dietary guidelines for fruits and vegetables in NHANES III 1988–1994 and NHANES 1999–2002. Furthermore, there was no improvement in Americans' fruit consumption during this period, and there was a small decrease in vegetable intake. In addition, about half of participants did not consume any fruit and a quarter consumed no vegetables. Although 35% in 1988–1994 and 32% in 1999–2002 consumed equal to or more than three servings of vegetables per day on average, many individuals consumed multiple servings of the same vegetable, which reflects a lack of balance and variety.

In both surveys, non-Hispanic blacks were less likely to meet fruit and vegetable guidelines than non-Hispanic whites (7% vs 11%). These results are consistent with previous NHANES findings,¹⁴ although published literature is varied.^{26–28} The results that fruit and vegetable

Table 3. Mean intakes (SE) of energy, total and saturated fat, and fiber by fruit and vegetable consumption for American adults, adjusted for age, gender and ethnicity

	NHANES III, 1988–1994 (n=14,997)				NHANES 1999–2002 (n=8910)			
	Energy intake (kcal)	% of energy from total fat	% of energy from saturated fat	Fiber (g/1000 kcal)	Energy intake (kcal)	% of energy from total fat	% of energy from saturated fat	Fiber (g/1000 kcal)
Fruit and vegetable servings								
0	1818 (37)	32.4 (0.4)	11.4 (0.2)	6.1 (0.1)	1813 (32)	31.9 (0.4)	10.7 (0.1)	5.5 (0.1)
1	1922 (27)	33.1 (0.3)	11.3 (0.1)	6.9 (0.1)	1985 (29)	33.1 (0.3)	10.8 (0.1)	6.4 (0.1)
2	2075 (37)	33.8 (0.3)	11.3 (0.1)	7.7 (0.1)	2090 (27)	33.7 (0.3)	10.9 (0.1)	7.0 (0.1)
3	2091 (28)	32.7 (0.3)	10.8 (0.1)	8.5 (0.1)	2164 (22)	33.1 (0.3)	10.7 (0.1)	7.8 (0.1)
4	2253 (39)	33.3 (0.3)	10.8 (0.1)	9.4 (0.1)	2269 (36)	33.0 (0.5)	10.5 (0.2)	8.1 (0.1)
≥5	2372 (29)	32.4 (0.3)	10.3 (0.1)	10.2 (0.1)	2453 (24)	32.1 (0.4)	10.0 (0.1)	10.0 (0.2)

consumption was positively associated with income and education are also consistent with findings in other studies.^{13,15,26,29,30} This result suggests that poverty continues to be a barrier for purchasing and consuming fruits and vegetables, and could be one reason for low fruit and vegetable consumption. In addition to the general population, behavioral interventions should target demographic groups that are less likely to meet the national dietary guidelines such as African Americans and low socioeconomic status groups.

In contrast to study expectations, the analysis indicated little change in fruit and vegetable consumption between 1988–1994 and 1999–2002. A slight increase in consumption was expected as a result of national initiatives such as the 5-A-Day for Better Health Program launch in 1991, and increased media attention on the importance of a healthy, balanced diet, which includes a variety of fruits and vegetables. Although the 5-A-Day campaign has produced some immediate successful results in local interventions,^{31–33} the analyses indicate that consumption at the national level has not changed. Similar results have been documented in the BRFSS, which examined trends over a shorter period. The BRFSS data collected between 1994 and 2000 showed that the proportion of individuals consuming fruits and vegetables five or more times per day remained constant at 25%,¹⁵ while another BRFSS analysis indicated 19%, 22%, and 23% of adults in 1990, 1994, and 1996, respectively, consumed at least five daily fruit and vegetable servings.¹³ The 1987–1992 NHIS found that fruit and vegetable consumption and the mean number of servings per week remained stable over time.¹⁶ Although the trends in BRFSS and NHIS are similar to the current study, the difference in the actual proportion meeting the guidelines is likely because of inaccurate portion size estimation and limiting fruit and vegetable consumption to the specific combination of two fruits and three vegetables. In this analysis, when any combination of fruits and vegetables was

considered, 24% of individuals consumed equal to or more than five fruits and vegetables.

The 2005 dietary guidelines incorporate energy intake into the fruit and vegetable guidelines to emphasize that individuals who consume more energy should consume more fruits and vegetables (equal to or more than five servings for less than 1800 kcal, equal to or more than nine for 1800–2200 kcal, and more than nine for more than 2200 kcal). In these analyses only 2.8% in 1988–1994 and 3.7% in 1999–2002 met the 2005 dietary guidelines recommendation of equal to or more than nine fruit and vegetable servings for a dietary intake of approximately 2000 kcal. Although individuals surveyed during 1988–1994 and 1999–2002 cannot be expected to meet the 2005 guidelines, these additional analyses stress the point that the proportion of individuals meeting guidelines is even lower, and the need for further nutritional education.

A lack of an improvement in fruit and vegetable consumption could be attributed to a variety of factors. First, food preferences are often personal and rooted in cultural backgrounds.^{34–36} Second, environmental barriers continue to deter individuals from eating the recommended number of fruits and vegetables. Snack and unhealthy foods are relatively cheap compared to fresh produce because of subsidies, costs in fresh food distribution, and the large U.S. food supply³⁷; eating out is common and convenient, but facilitates consumption of larger portion sizes with extra energy and fat content³⁸; advertising for nutritionally poor foods is much more widespread than for the promotion of fruits and vegetables³⁷; access to fruits and vegetables may be limited in disadvantaged neighborhoods.³⁹ Third, confusion over implementing the dietary guidelines into daily practice may deter individuals from trying to meet fruit and vegetable recommendations.⁴⁰ Without formal education or access to pertinent information, many Americans are missing important mes-

sages about the health benefits of including fruits and vegetables in the daily diet.

There are limitations of this study worth noting. First, NHANES provides only one 24-hour dietary recall. Four 24-hour recalls are optimal to measure individuals' usual intake; however, some research has indicated that food intake data based on 1-day dietary recall can be reliable measures of usual intakes of population groups.⁴¹ Second, it is likely that there may be inaccuracies in converting grams to servings. Nevertheless, the implemented method follows protocols used in the USDA dietary guidelines and is interpretable by the public. Even though small portions (less than 1 ounce) were excluded, which could sum to a serving over the span of a day, it is unlikely that the results were underestimated because a generous lower limit of 1 ounce was used in calculation of servings. Approximately less than 1% of individuals had small fruit intakes that could cumulate to a 1-ounce serving over a day; less than 10% of individuals were estimated to have small vegetable intakes that could cumulate to a 1-ounce serving. On the other hand, the lower limit is equivalent to less than half of a USDA defined serving, which could result in an overestimation of consumption. The latter bias would be expected to be larger; thus, adult fruit and vegetable consumption may be, regrettably, lower than reported here. Indeed, additional analyses determined that less than 10% of individuals reported consuming between 2 and 6 ounces of juice, and that the sum of these small quantities often did not reach a total of 6 ounces.

Low fruit and vegetable consumption with no indication of improvement between 1988 and 2002, as well as consumption disparities across ethnic, income, and educational groups, should alarm public health officials and professionals. With two thirds of the U.S. adult population overweight or obese, the implications of a diet low in fruits and vegetables are extensive.⁴² Actions to improve the availability, accessibility, and affordability of fresh produce and to increase consumption through federally funded food programs, such as the Food Stamp Program, should be components for implementation. New strategies, in addition to the 5-A-Day campaign, are necessary to help Americans make desirable behavioral changes to consume a healthy diet that includes a variety of fruits and vegetables.

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