

Trends in the Food Intakes of Children 1977-2002

Food consumption patterns developed in childhood and adolescence have implications for current and future health. Increases in diet-related diseases including obesity and diabetes among children call for a review of how food choices have changed.

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The objective of this study was to measure how food choices made by children 6-19 years have changed since the late 1970's. Incidence of overweight has increased more than 100% in children 6-11 and 200% in teens during this time period. Insight into past and current intake patterns can be useful in the development of appropriate nutritional interventions to address this phenomenon. This information is of interest to consumers as well as nutrition educators, policymakers, food industry representatives and others who must be responsive to the health issues of this population.

Methods

This study used data from two nationally representative surveys: the 1977-78 Nationwide Food Consumption Survey (NFCS) and the 2001-02 What We Eat in America, National Health and Nutrition Examination Survey (WWEIA-NHANES). In both surveys, multiple days of dietary intake data were collected from participants of all ages; however, only the first day of dietary data, collected using the 24-hour recall method, was utilized in this study. Data from 4,107 children 6-11 years and 5,890 teenagers 12-19 years in the NFCS 1977-78 and 1,136 children and 2,297 teenagers in the 2001-02 WWEIA-NHANES who provided complete Day 1 dietary recalls were analyzed. Weights were applied to make the samples representative of children and teens in the U.S. population.

Foods reported in both surveys were combined into food groups for analysis. Mean food group intakes were computed for all individuals in the specified age groups and for users only. SAS and SUDAAN were used to test for significant differences in intake between the survey years.

Results

The following major shifts in intakes of children were observed:

- (1) Beverage preferences have changed. Differences in mean intake between the two surveys for milk, soda, fruit drinks and 100% fruit juice were significant ($p < .001$) for both children and teens. As a percentage of total beverage intake, intake of soda by children 6-11 years increased from 15% to 33% during the 25 year time period. At the same time, milk decreased from 61% of total beverage intake to 33%. Among teens, soda replaced milk as the beverage of choice. In 1977-78, soda accounted for 29% and milk 51% of all beverages consumed by teens on a per gram basis. In 2001-02, these percentages were virtually reversed with soda making up 50% and milk 23% of this total. Ninety-five percent of soda consumed by both age groups was regular (sugar sweetened) soda. Consumption of fruit drinks and ades changed slightly, increasing as a percentage of total beverages from 14% to 20% for children and 11% to 17% for teens. Intake of 100% fruit juice as a percentage of total beverages increased from 10% to 14% for children and remained relatively constant for teens (9% in 1977-78, 10% in 2001-02).
- (2) Children and teens who consume fruit juice, fruit drinks and ades, and soda are drinking more per day of these products than they did in 1977-78 (Table 1). Conversely, milk drinkers are consuming less milk. For the 6-11 year olds, significant differences ($p < .001$) were observed in consumption of milk, soda, and 100% fruit juice. For the teenagers, significant differences in intake were found for all beverages examined except milk. In 2001-02, soda was consumed in the largest amount of any beverage. To translate into common measures, mean soda intake by children who drank soda was about 15 ounces per day for 6-11 year olds and 25 ounces for teenagers.

Table 1

Change in Mean Intake of Beverages by Users 6-19 Years, 1977-78 to 2001-02

Beverage	Children 6-11			Teens 12-19		
	1977-78	2001-02	Difference	1977-78	2001-02	Difference
Milk	480 gm	382 gm	-98*	503 gm	458 gm	-45
Soda	355	474	+119*	480	761	+281*
Fruit Drinks and Ades	353	410	+57	432	592	+160*
100% Fruit Juice	212	327	+115*	238	423	+185*

*p<.001

(3) Higher fat food choices have increased. Consumption of pizza, tacos, and snack foods increased dramatically for children and teens between 1977-78 and 2001-02. The following food groups showed large increases in mean intake: savory grain snacks including corn chips, tortilla chips, popcorn, pretzels, and non-sweet crackers (+320% in both groups); pizza (+413% for children, +208% for teens); Mexican dishes (+367% for children, +567% for teens); and candy (+180%, +220%). Overall, vegetables not consumed as part of a mixed dish exhibited a decrease in consumption despite a sizable increase in fried potatoes intake. All reported differences in food group intake were significant (p<.001).

Conclusions

The results of this study indicated that food and beverage choices changed considerably since 1977-78. Trends in intake by children 6-11 and teenagers 12-19 years were comparable. Beverage preferences shifted from milk to less desirable choices including soda and fruit drinks. Foods which typically have a high caloric content relative to the nutrients they provide also showed large gains in popularity. Further research investigating effective mechanisms to replace current food choices made by children and teens with more healthful options including fruits, vegetables, and whole grains, are warranted.

References

National Center for Health Statistics. *Prevalence of overweight among children and adolescents: United States, 1999-2000*. Retrieved March 1, 2006 from NCHS Health E-stats (web only): <http://www.cdc.gov/nchs/products/pubs/pubd/hestats/overwght99.htm>.

Endnotes

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