

Data

Our studies used data from USDA's 1989-91 Continuing Survey of Food Intakes by Individuals (CSFII) and the companion Diet and Health Knowledge Survey (DHKS) (Cypel and others, 1996). For the HEI study, we used households that completed the 1989-90 surveys because the 1991 survey does not have calculated values for the Healthy Eating Index. For the nutrient phase, we used all 3 survey years.

The CSFII survey collects information on what, when, and where Americans eat and how much they eat. Each CSFII participant was asked to provide 3 consecutive days of dietary data. Dietary intakes of children under age 12 were provided by an adult, usually the parent. The first day's data were collected via an in-home interview using a 1-day dietary recall. The second and third days' data were collected using a self-administered 2-day dietary record. Social, economic, and demographic characteristics of survey participants are also included in the CSFII.

The CSFII uses a multistage, stratified selection procedure targeted at private households in the 48 contiguous States. In the 1989-91 surveys, 23,142 housing units were selected, which after screening resulted in 8,443 eligible households, of which 6,718 (79.6 percent) participated.

The DHKS was conducted as a telephone or in-person follow-up to the CSFII. One respondent, usually the household's main meal planner, was contacted about 6 weeks after collection of the dietary data and asked to answer questions about his or her knowledge of nutrition, diet, and health issues. Among the 6,178 households participating in the 1989-91 CSFII, 5,730 (85.3 percent) completed the DHKS.

Because the *Dietary Guidelines for Americans* are aimed at individuals age 2 and over, children between the ages of 2 and 17 were chosen for analysis. To explore the hypothesis that a mother's influence on her children's diets weakens with children's age, the analysis was conducted for two age groups: 2-5 and 6-17. Of the households with children in the two age groups, a large percentage had only a single child in one age group. To avoid intrafamily effects, we randomly selected one child from households with more than one child in an age group for all the analyses. After we eliminated observations with missing values, our final sample sizes were as follows: 308 preschool children and 538 school-age children for the HEI phase and 458 preschool children and 853 school-age children for the nutrients phase.

Table 1 contains the means and standard deviations for the variables used in the HEI study, separated into two age groups: 2-5 years old and 6-17. Table 2 reports similar descriptive statistics for children's intakes of seven nutrients. In conformity with the *Dietary Guidelines* units, we expressed fat and saturated fat intake by their percent contribution to a child's total energy intake per day. The intakes of the remaining five nutrients were expressed in a closely related unit, the nutrient-to-calorie density—grams of nutrient consumed per 1,000 kilocalories—employed widely in nutrition studies (Colavita and others, 1996; Lin, Guthrie, and Blaylock, 1996). These relative measures give us an assessment of the nutritional quality of children's diets. Details on the construction of the Healthy Eating Index are provided in the Appendix.

Table 1—Description of variables used in children’s HEI study

| Variable (unit) | Ages 2-5 | | Ages 6-17 | |
|---|----------|--------------------|-----------|--------------------|
| | Mean | Standard deviation | Mean | Standard deviation |
| Child’s HEI (score) | 65.44 | 12.44 | 62.64 | 11.74 |
| Child’s characteristics: | | | | |
| Age (years) | 3.48 | 1.09 | 11.04 | 3.52 |
| Female (proportion) | .43 | — | .52 | — |
| Mother’s nutrition knowledge: | | | | |
| Nutrient Content Knowledge (score) | 15.19 | 2.81 | 15.49 | 2.66 |
| Diet-Health Awareness (score) | 6.29 | 2.33 | 6.50 | 2.34 |
| Mother’s characteristics: | | | | |
| Education (years) | 12.30 | 2.43 | 12.24 | 2.57 |
| Age (years) | 29.79 | 5.57 | 36.53 | 6.71 |
| Height (inches) | 64.10 | 2.60 | 64.27 | 2.68 |
| Weight (pounds) | 147.11 | 34.51 | 153.31 | 36.85 |
| Smoker (proportion) | .30 | — | .28 | — |
| Household characteristics: | | | | |
| Income (\$000) | 22.17 | 20.52 | 25.68 | 21.33 |
| Household size (number) | 4.44 | 1.69 | 4.30 | 1.57 |
| Race (White omitted) — | | | | |
| Black (proportion) | .16 | — | .16 | — |
| Other ¹ (proportion) | .02 | — | .02 | — |
| Hispanic (proportion) | .11 | — | .10 | — |
| Any member on a vegetarian diet (proportion) | .06 | — | .03 | — |
| Receives Food Stamps (proportion) | .30 | — | .20 | — |
| Receives WIC ² benefits (proportion) | .19 | — | .06 | — |
| Region (Northeast omitted) — | | | | |
| Midwest (proportion) | .29 | — | .26 | — |
| South (proportion) | .32 | — | .36 | — |
| West (proportion) | .18 | — | .20 | — |
| Urbanization (city omitted) — | | | | |
| Suburban (proportion) | .46 | — | .43 | — |
| Nonmetro (proportion) | .23 | — | .24 | — |
| Year (1989 omitted) — | | | | |
| 1990 (proportion) | .51 | — | .47 | — |
| 1991 (proportion) | .08 | — | .09 | — |
| Season (winter omitted) — | | | | |
| Spring (proportion) | .18 | — | .19 | — |
| Summer (proportion) | .29 | — | .27 | — |
| Fall (proportion) | .28 | — | .28 | — |
| Intake recorded on weekend (weekday omitted)— | | | | |
| Day 1 (proportion) | .23 | — | .27 | — |
| Day 2 (proportion) | .24 | — | .30 | — |
| Day 3 (proportion) | .31 | — | .32 | — |
| | | <i>Number</i> | | |
| Number of children | 308 | — | 538 | — |

— = Not applicable.

¹Asian/Pacific Islander, Aleut, Eskimo, or American Indian.

²Women, Infants, and Children.

Source: CSFII-DHKS, 1989-90, U.S. Department of Agriculture.

Table 2—Description of variables used in children’s nutrient intakes study

| Variable (unit) | Ages 2-5 | | Ages 6-17 | |
|---|----------|--------------------|-----------|--------------------|
| | Mean | Standard deviation | Mean | Standard deviation |
| Nutrient intake (per day): | | | | |
| Total fat (percent of total calories) | 34.47 | 5.98 | 34.73 | 5.63 |
| Saturated fat (percent of total calories) | 13.65 | 3.18 | 13.12 | 2.76 |
| Cholesterol (gm/1000 calories) | .15 | .07 | .13 | .06 |
| Fiber (gm/1000 calories) | 6.45 | 2.21 | 6.69 | 2.15 |
| Sodium (gm/1000 calories) | 1.70 | .36 | 1.70 | .33 |
| Calcium (gm/1000 calories) | .59 | .19 | .50 | .16 |
| Iron (mg/1000 calories) | 7.64 | 2.82 | 7.24 | 2.70 |
| Child’s characteristics: | | | | |
| Age (years) | 3.47 | 1.10 | 11.14 | 3.58 |
| Female (proportion) | .45 | — | .45 | — |
| Mother’s nutrition knowledge: | | | | |
| Nutrient Content Knowledge (score) | 15.61 | 2.70 | 15.82 | 2.62 |
| Diet-Health Awareness (score) | 6.21 | 2.44 | 6.46 | 2.38 |
| Household characteristics: | | | | |
| Race (White omitted)— | | | | |
| Black (proportion) | .16 | — | .16 | — |
| Other ¹ (proportion) | .03 | — | .02 | — |
| Hispanic (proportion) | .11 | — | .10 | — |
| Female head (proportion) | .27 | — | .30 | — |
| Any member on a vegetarian diet (proportion) | .06 | — | .05 | — |
| Low-fat/low-calorie diet (proportion) | .05 | — | .08 | — |
| Receives Food Stamps (proportion) | .30 | — | .22 | — |
| Receives WIC ² benefits (proportion) | .19 | — | .07 | — |
| Income ³ (percent) | 174.10 | 173.50 | 208.40 | 203.40 |
| Region (Northeast omitted) — | | | | |
| Midwest (proportion) | .30 | — | .29 | — |
| South (proportion) | .34 | — | .35 | — |
| West (proportion) | .19 | — | .20 | — |
| Urbanization (city omitted)— | | | | |
| Suburban (proportion) | .45 | — | .43 | — |
| Nonmetro (proportion) | .23 | — | .27 | — |

See notes at end of tables

—Continued

Table 2—Description of variables used in children’s nutrient intakes study—Continued

| Variable (unit) | Ages 2-5 | | Ages 6-17 | |
|-----------------------------------|----------|--------------------|-----------|--------------------|
| | Mean | Standard deviation | Mean | Standard deviation |
| Mother’s characteristics: | | | | |
| Education (years) | 12.23 | 2.45 | 12.22 | 2.56 |
| Age (years) | 29.66 | 5.76 | 36.66 | 6.86 |
| Employment (full omitted) — | | | | |
| Part employed (proportion) | .19 | — | .19 | — |
| Not employed (proportion) | .60 | — | .44 | — |
| Smoker (proportion) | .33 | — | .30 | — |
| Disease (proportion) | .04 | — | .10 | — |
| Received diet advice (proportion) | .05 | — | .06 | — |
| Survey characteristics: | | | | |
| Year (1989 omitted) — | | | | |
| 1990 (proportion) | .35 | — | .32 | — |
| 1991 (proportion) | .29 | — | .31 | — |
| 1992 (proportion) | .07 | — | .09 | — |
| Season (winter omitted) — | | | | |
| Spring (proportion) | .17 | — | .18 | — |
| Summer (proportion) | .31 | — | .28 | — |
| Fall (proportion) | .28 | — | .27 | — |
| Intake recorded on weekend — | | | | |
| (weekday omitted) | | | | |
| Day 1 (proportion) | .24 | — | .26 | — |
| Day 2 (proportion) | .23 | — | .29 | — |
| Day 3 (proportion) | .28 | — | .31 | — |
| | | <i>Number</i> | | |
| Number of children | 458 | — | 853 | — |

— = Not applicable.

¹Asian/Pacific Islander, Aleut, Eskimo, or American Indian.

²Women, Infants, and Children.

³Expressed as a percentage of the poverty threshold.

Source: CSFII-DHKS, 1989-91, U.S. Department of Agriculture.