Appendix C
Statistical and Reporting Guidelines

This report presents population means and proportions, standard errors of estimates, and percentiles of dietary intake distributions. Sample weights were used to account for sample design and nonresponse. Information about the NHANES-III survey design was used in estimating variances and testing for statistical significance.

Several software packages were used to produce the tabulations:

- ***C-SIDE: Software for Intake Distribution Estimation (Version 1.0)***—used to estimate means, percentiles, and standard errors for nutrient intake tables.

- ***SUDAAN (Version 7.5)***—used to calculate means, standard errors, and tests of statistical significance for non-nutrient tables, using the DESCRIPT procedure.

- ***SAS (Version 8.2)***—used to read the NHANES-III data files, call SUDAAN procedures, process SUDAAN output, and write SUDAAN results to ASCII files.

- ***TPL (Table Producing Language)***—this software produced all data tables in appendix D.

General Procedures

NHANES-III sample weights account for the fact that each sample person does not have an equal probability of selection into the sample. NHANES-III provides sample weights for three samples: the interviewed sample weight (WTPEQX6), the MEC-examined sample weight (WTPFEX6), and the MEC and home-examined sample weight (WTPFHX6). The sampling weight used for each table in this report was specific to the data item presented in the table, and is indicated by the source of data listed in the table footnote.

Variance is generally underestimated in a complex survey when information about the survey design is not used in variance estimation. For this report, two alternate methods were used to account for the sample design.

- Balance repeated replication (BRR)—this method was specified when using C-SIDE software to obtain estimates for nutrient tables. The BRR method used the 52 replicate weights provided in the NHANES-III data.

- Taylor series linearization—this method is used in SUDAAN procedures. The complex survey design is accounted for by specifying strata and PSU in the "nest" statement of SUDAAN procedures.

Coefficients of variation (CVs) and t-statistics were generated and examined, but are not provided in the tables. CVs were examined to determine the statistical reliability of estimates, as described below in the section on Reporting Guidelines. T-statistics were examined to determine the statistical significance of differences in means and proportions. When examining categorical data, t-statistics were used and the Bonferroni adjustment was applied to adjust for multiplicity of tests.

All tests for statistical significance are tests for differences between two independent samples defined by program participation and/or income-level. In volumes I and II, differences between

program participants and income-eligible nonparticipants are denoted by symbols on values for income-eligible nonparticipants; differences between program participants and higher-income nonparticipants are denoted by symbols on values for higher-income nonparticipants. In volumes III and IV, differences between the lowest-income group and the low-income group are denoted by symbols on values for the low-income group; differences between the lowest-income group and high-income group are denoted by symbols on values for the high-income group.

Differences in means and proportions were tested for statistical significance using α levels of 0.01, 0.05, and 0.001. For categorical data, differences involve multiple non-independent comparisons and were tested using α levels of 0.01, 0.05, and 0.001 adjusted using the Bonferroni method, by dividing α levels by the number of comparisons.

Age Standardization

Tables presented in appendix A include age-adjusted estimates for the total population (i.e., all age groups), calculated using the direct method (Klein, 2001). The age-adjusted estimates were obtained by weighting estimates for each age category by the year 2000 population distribution.

The population distribution used for age-adjustment is from *Monthly Estimates of the United States Population: April 2000*. Age-adjusted estimates were calculated by the SUDAAN software.

Nutrient Analyses

A primary goal for the analysis of dietary intake was to estimate the proportion of individuals whose intake is inadequate. Reference standards used to define adequate intake reflect expectations for usual intake. To apply these standards appropriately, it is necessary to have information about the distribution of intake in the population of interest. The variance of the distribution of observed intake is too large to produce reliable estimates of the prevalence of inadequate intake. This is because the variance of observed intake includes both within-person (day-to-day) and between-person variation. Methods have been established for adjusting observed intake distributions to estimate distributions of usual intake by removing within-person variation (NRC, 1986 and Nusser et al, 1996). These adjustments require two or more days of intake data for at least some subjects.

NHANES-III collected replicate 24-hour recalls on a convenience sample of approximately 5 percent of respondents. The nonrandom nature and small size of the replicate recall sample prohibited its use in estimating usual dietary intake. Instead, we used the Continuing Survey of Food Intake of Individuals (CSFII) 1994-96, to obtain estimates of within-person variation. CSFII is a nationally representative survey that includes two days of dietary intake data for all subjects.

CSFII data were used to estimate variance components for 96 demographic cells defined by age group (8), gender (male, female, both), and program participation or income (3 plus overall).[1] The variance components from CSFII were used to adjust observed intakes collected in the NHANES-III single-day dietary recalls. Estimation for all nutrients was done using *C-SIDE: Software for Intake Distribution Estimation* (Iowa State University, 1996). Because iron requirements for menstruating females are known to be asymmetrical, the adjustments performed by the C-SIDE software (using this "Iowa State Method") were not appropriate.

[1] Age groups correspond to the DRI age groups for volumes I, III, IV. CSFII used to estimate variance components for volume II (WIC participants and nonparticipants) were aggregated by year of age (4) and program participation or income (3 plus overall), but not by gender.

Therefore, distributions of iron intake were adjusted using the full probability approach as described in the IOM report *Dietary Reference Intakes: Applications in Dietary Assessment* (IOM, 2001). CSFII variance components are shown in table C1.

Reporting Guidelines

This report follows the recommendations in the NHANES-III Analytic Guidelines in the appendix titled "Joint Policy on Variance Estimation and Statistical Reporting Standards for NHANES-III and CSFII Reports: HNIS/NCHS Analytic Working Group Recommendations" (NCHS, 1996). The recommendations for presentation of statistical data call for estimates to be flagged if any of the following conditions are met:

1. **Inadequate sample size for normal approximation.** For means and for proportions based on commonly occurring events (where $0.25 < P < 0.75$), an estimate is flagged if it is based on a cell size of less than 30 times a "broadly calculated average design effect."

2. **Large coefficient of variation.** Estimates are flagged if the coefficient of variation (ratio of the standard error to the mean expressed as a percent) is greater than 30.

3. **Inadequate sample size for uncommon or very common events.** For proportions below 0.25 or above 0.75, the criteria for statistical reliability is that the cell size be sufficiently large that the minimum of nP and n(1-P) be greater than or equal to 8 times a broadly calculated average design effect, where n is the cell size and P is the estimated proportion. (I.e., an estimate is flagged when $n < 8 * (\text{avg design effect}) / \min(P,(1-P))$.) The coefficient of variation is not used in these cases.

For each data item, the design effect was calculated for each table cell as the ratio of the complex sampling design variance calculated by SUDAAN, to the simple random sample variance. The average design effect for a data item is the average of estimated design effects across age groups (pooled genders) within a demographic group, where demographic groups correspond to the columns of tables (groups defined by program participation and income).

Table C-1—CSFII variance components for 10 nutrients

Total energy

	Total Persons		Currently Receiving Food Stamps		Income-eligible Nonparticipant		Higher-income Nonparticipant	
	Sample size	Within-individual variance	Sample size	Within-individual variance	Sample size	Within-individual variance	Sample size	Within-individual variance
Both sexes								
1-3 years	1,908	0.52389	352	0.53826	315	0.47163	1,224	0.54007
4-8 years	1,711	0.61130	306	0.60367	262	0.69893	1,130	0.58733
9-13 years	1,160	0.60947	152	0.56450	171	0.65552	826	0.60408
14-18 years	923	0.51767	102	0.58726	153	0.64029	652	0.46100
19-30 years	1,728	0.50903	124	0.46669	383	0.48593	1,198	0.52977
31-50 years	3,496	0.47057	258	0.47125	472	0.47240	2,723	0.47407
51-70 years	3,285	0.45816	174	0.52661	513	0.47794	2,565	0.45746
71 + years	1,392	0.43502	57	0.47828	338	0.47518	979	0.44151
Male								
1-3 years	966	0.54768	180	0.51278	154	0.51796	623	0.55534
4-8 years	859	0.60505	164	0.68015	123	0.61715	563	0.56916
9-13 years	574	0.65768	66	0.78349	83	0.57975	423	0.64210
14-18 years	474	0.57933	55	0.70453	82	0.58653	328	0.52891
19-30 years	920	0.58255	34	0.64225	212	0.50990	660	0.60721
31-50 years	1,806	0.55910	–	–	248	0.54578	1,440	0.56967
51-70 years	1,680	0.50927	67	0.58970	252	0.48542	1,344	0.51912
71 + years	722	0.45101	25	0.44649	159	0.46190	529	0.46700
Female								
1-3 years	942	0.52019	172	0.55728	161	0.42039	601	0.53494
4-8 years	852	0.64040	142	0.48329	139	0.83277	567	0.64110
9-13 years	586	0.62520	86	0.48138	88	0.85348	403	0.62220
14-18 years	449	0.68427	47	0.58822	71	0.87874	324	0.64157
19-30 years	808	0.66751	90	0.48449	171	0.69075	538	0.69342
31-50 years	1,690	0.59557	160	0.55087	224	0.57076	1,283	0.60680
51-70 years	1,605	0.57595	107	0.50283	261	0.62198	1,221	0.57884
71 + years	670	0.52747	32	0.48480	179	0.59438	450	0.53285

– Data not available. Estimate of within-person variance could not be obtained from CSFII.

Source: Variance components were estimated from two days of 24-hour recalls from the *Continuing Survey of Food Intakes by Individuals (CSFII)* using *C-SIDE: Software for Intake Distribution Estimation.*

Table C-1—CSFII variance components for 10 nutrients — Continued

Calcium

	Total Persons		Currently Receiving Food Stamps		Income-eligible Nonparticipant		Higher-income Nonparticipant	
	Sample size	Within-individual variance	Sample size	Within-individual variance	Sample size	Within-individual variance	Sample size	Within-individual variance
Both sexes								
1-3 years	1,908	0.52929	352	0.51531	315	0.57580	1,224	0.52468
4-8 years	1,711	0.64491	306	0.68911	262	0.68980	1,130	0.61985
9-13 years	1,160	0.64724	152	0.61654	171	0.80792	826	0.63005
14-18 years	923	0.54743	102	0.55094	153	0.65108	652	0.53003
19-30 years	1,728	0.61482	124	0.51297	383	0.68864	1,198	0.60369
31-50 years	3,496	0.54508	258	0.50292	472	0.55228	2,723	0.55654
51-70 years	3,285	0.51370	174	0.50120	513	0.49433	2,565	0.52979
71 + years	1,392	0.47122	57	0.54118	338	0.45983	979	0.48274
Male								
1-3 years	966	0.53968	180	0.51024	154	0.55214	623	0.55108
4-8 years	859	0.63776	164	0.75765	123	0.63659	563	0.60247
9-13 years	574	0.67549	66	0.72023	83	0.73816	423	0.65572
14-18 years	474	0.55848	55	0.52524	82	0.61561	328	0.57781
19-30 years	920	0.64941	34	0.55810	212	0.71666	660	0.61977
31-50 years	1,806	0.58293	98	0.52786	248	0.65977	1,440	0.57898
51-70 years	1,680	0.52979	67	0.45846	252	0.51951	1,344	0.54806
71 + years	722	0.48633	25	0.59395	159	0.47225	529	0.51490
Female								
1-3 years	942	0.52645	172	0.55421	161	0.62431	601	0.49460
4-8 years	852	0.66067	142	0.59251	139	0.75838	567	0.65333
9-13 years	586	0.65549	86	0.55632	–	–	403	0.63004
14-18 years	449	0.68419	47	0.63815	71	0.84286	324	0.64459
19-30 years	808	0.67232	90	0.60427	171	0.75298	538	0.67202
31-50 years	1,690	0.58359	160	0.54708	224	0.50234	1,283	0.61563
51-70 years	1,605	0.55032	107	0.52544	261	0.49645	1,221	0.56824
71 + years	670	0.49120	32	0.51046	179	0.47928	450	0.48140

– Data not available. Estimate of within-person variance could not be obtained from CSFII.

Source: Variance components were estimated from two days of 24-hour recalls from the *Continuing Survey of Food Intakes by Individuals (CSFII)* using *C-SIDE: Software for Intake Distribution Estimation.*

Table C-1—CSFII variance components for 10 nutrients — Continued

Fiber

	Total Persons		Currently Receiving Food Stamps		Income-eligible Nonparticipant		Higher-income Nonparticipant	
	Sample size	Within-individual variance	Sample size	Within-individual variance	Sample size	Within-individual variance	Sample size	Within-individual variance
Both sexes								
1-3 years	1,908	0.59055	352	0.65235	315	0.49565	1,224	0.60865
4-8 years	1,711	0.68211	306	0.68005	262	0.78384	1,130	0.65945
9-13 years	1,160	0.67919	152	0.71734	171	0.64219	826	0.68211
14-18 years	923	0.68249	102	0.74950	153	0.79782	652	0.63912
19-30 years	1,728	0.59700	124	0.58469	383	0.54348	1,198	0.62555
31-50 years	3,496	0.58534	258	0.53742	472	0.54659	2,723	0.58585
51-70 years	3,285	0.52120	174	0.59649	513	0.54158	2,565	0.53370
71 + years	1,392	0.47500	57	0.41996	338	0.58591	979	0.46468
Male								
1-3 years	966	0.59255	180	0.62781	154	0.48896	623	0.60796
4-8 years	859	0.70988	164	0.79936	123	0.72699	563	0.68675
9-13 years	574	0.70411	66	0.81040	83	0.67484	423	0.67178
14-18 years	474	0.72115	–	–	82	0.68602	328	0.68754
19-30 years	920	0.60946	34	0.73769	212	0.54421	660	0.63555
31-50 years	1,806	0.61456	98	0.51322	248	0.63895	1,440	0.61753
51-70 years	1,680	0.50910	67	0.59855	252	0.45214	1,344	0.53816
71 + years	722	0.48286	25	0.61010	159	0.52256	529	0.49506
Female								
1-3 years	942	0.59872	172	0.67793	161	0.49621	601	0.61102
4-8 years	852	0.66858	142	0.52900	139	0.82409	567	0.64605
9-13 years	586	0.68173	86	0.69673	88	0.65895	403	0.70998
14-18 years	449	0.75960	47	0.59119	71	0.94124	324	0.70277
19-30 years	808	0.67745	90	0.61634	171	0.67682	538	0.69053
31-50 years	1,690	0.60443	160	0.58176	224	0.52990	1,283	0.63443
51-70 years	1,605	0.58734	107	0.60218	261	0.68132	1,221	0.58635
71 + years	670	0.50713	32	0.35433	179	0.68253	450	0.45934

– Data not available. Estimate of within-person variance could not be obtained from CSFII.

Source: Variance components were estimated from two days of 24-hour recalls from the *Continuing Survey of Food Intakes by Individuals (CSFII)* using *C-SIDE: Software for Intake Distribution Estimation.*

Table C-1—CSFII variance components for 10 nutrients — Continued

Sodium

	Total Persons		Currently Receiving Food Stamps		Income-eligible Nonparticipant		Higher-income Nonparticipant	
	Sample size	Within-individual variance	Sample size	Within-individual variance	Sample size	Within-individual variance	Sample size	Within-individual variance
Both sexes								
1-3 years	1,908	0.54763	352	0.53522	315	0.51147	1,224	0.56384
4-8 years	1,711	0.67864	306	0.68060	262	0.63738	1,130	0.68414
9-13 years	1,160	0.71673	152	0.70947	171	0.79814	826	0.68754
14-18 years	923	0.65780	102	0.81727	153	0.79810	652	0.58923
19-30 years	1,728	0.61804	124	0.48105	383	0.59408	1,198	0.65364
31-50 years	3,496	0.57282	258	0.51845	472	0.53695	2,723	0.58194
51-70 years	3,285	0.56512	174	0.62511	513	0.57087	2,565	0.56168
71 + years	1,392	0.52579	57	0.54291	338	0.50446	979	0.53316
Male								
1-3 years	966	0.58898	180	0.57301	154	0.51197	623	0.59448
4-8 years	859	0.64675	164	0.76898	123	0.56697	563	0.62981
9-13 years	574	0.73693	66	0.88804	83	0.81705	423	0.68519
14-18 years	474	0.72082	55	0.89992	82	0.66743	328	0.66886
19-30 years	920	0.68590	34	0.52773	212	0.62859	660	0.72397
31-50 years	1,806	0.63657	98	0.53939	248	0.60289	1,440	0.64841
51-70 years	1,680	0.61278	67	0.62498	252	0.57626	1,344	0.62437
71 + years	722	0.52532	25	0.49165	159	0.50710	529	0.52627
Female								
1-3 years	942	0.52217	172	0.45037	161	0.51487	601	0.53661
4-8 years	852	0.72617	142	0.58058	139	0.75527	567	0.76640
9-13 years	586	0.76276	86	0.66294	88	0.89548	403	0.75480
14-18 years	449	0.81917	47	0.91239	–	–	324	0.74120
19-30 years	808	0.75424	90	0.52501	171	0.75865	538	0.81341
31-50 years	1,690	0.69657	160	0.63255	224	0.62077	1,283	0.71690
51-70 years	1,605	0.67418	107	0.67633	261	0.71167	1,221	0.66108
71 + years	670	0.61586	32	0.58009	179	0.56680	450	0.63376

– Data not available. Estimate of within-person variance could not be obtained from CSFII.

Source: Variance components were estimated from two days of 24-hour recalls from the *Continuing Survey of Food Intakes by Individuals (CSFII)* using *C-SIDE: Software for Intake Distribution Estimation.*

Table C-1—CSFII variance components for 10 nutrients — Continued

Total fat

	Total Persons		Currently Receiving Food Stamps		Income-eligible Nonparticipant		Higher-income Nonparticipant	
	Sample size	Within-individual variance	Sample size	Within-individual variance	Sample size	Within-individual variance	Sample size	Within-individual variance
Both sexes								
1-3 years	1,908	0.66806	352	0.68494	315	0.70470	1,224	0.66277
4-8 years	1,711	0.76813	306	0.83232	262	0.76260	1,130	0.75197
9-13 years	1,160	0.79698	152	0.78596	171	0.81125	826	0.78311
14-18 years	923	0.74140	102	0.92332	153	0.76397	652	0.70150
19-30 years	1,728	0.74276	124	0.71637	383	0.68262	1,198	0.77414
31-50 years	3,496	0.70254	258	0.80346	472	0.68682	2,723	0.69267
51-70 years	3,285	0.63493	174	0.74366	513	0.61862	2,565	0.63381
71 + years	1,392	0.58807	57	0.72810	338	0.54775	979	0.58540
Male								
1-3 years	966	0.67526	180	0.71614	154	0.65094	623	0.67199
4-8 years	859	0.80141	164	0.87588	123	0.76004	563	0.78120
9-13 years	574	0.84989	66	0.94826	83	0.94876	423	0.81233
14-18 years	474	0.73897	55	0.77843	82	0.76420	328	0.74518
19-30 years	920	0.81057	34	0.89931	212	0.74189	660	0.83419
31-50 years	1,806	0.68598	98	0.78387	248	0.63257	1,440	0.68933
51-70 years	1,680	0.62872	67	0.80284	252	0.61137	1,344	0.62541
71 + years	722	0.59005	–	–	159	0.55260	529	0.58103
Female								
1-3 years	942	0.66978	172	0.64558	161	0.76681	601	0.65280
4-8 years	852	0.73394	142	0.79261	139	0.76108	567	0.72590
9-13 years	586	0.73594	86	0.66883	88	0.71243	403	0.75815
14-18 years	449	0.74010	–	–	71	0.75710	324	0.67194
19-30 years	808	0.68276	90	0.67340	171	0.62670	538	0.72320
31-50 years	1,690	0.71865	160	0.84373	224	0.75874	1,283	0.69601
51-70 years	1,605	0.64895	107	0.69586	261	0.64092	1,221	0.65723
71 + years	670	0.59525	32	0.51084	179	0.57215	450	0.58929

– Data not available. Estimate of within-person variance could not be obtained from CSFII.

Source: Variance components were estimated from two days of 24-hour recalls from the *Continuing Survey of Food Intakes by Individuals (CSFII)* using *C-SIDE: Software for Intake Distribution Estimation.*

Table C-1—CSFII variance components for 10 nutrients — Continued

Saturated fat

	Total Persons		Currently Receiving Food Stamps		Income-eligible Nonparticipant		Higher-income Nonparticipant	
	Sample size	Within-individual variance	Sample size	Within-individual variance	Sample size	Within-individual variance	Sample size	Within-individual variance
Both sexes								
1-3 years	1,908	0.58526	352	0.66474	315	0.61781	1,224	0.55253
4-8 years	1,711	0.76631	306	0.75043	262	0.80281	1,130	0.75876
9-13 years	1,160	0.82117	152	0.82081	171	0.85772	826	0.82246
14-18 years	923	0.74213	102	0.86551	153	0.82102	652	0.69022
19-30 years	1,728	0.74203	124	0.75077	383	0.72995	1,198	0.74800
31-50 years	3,496	0.73557	258	0.84039	472	0.67061	2,723	0.70185
51-70 years	3,285	0.61362	174	0.78145	513	0.60805	2,565	0.60849
71 + years	1,392	0.53249	57	0.54960	338	0.52525	979	0.52202
Male								
1-3 years	966	0.56861	180	0.71703	154	0.54811	623	0.53945
4-8 years	859	0.81057	164	0.77466	123	0.89010	563	0.78559
9-13 years	574	0.85565	66	0.84709	–	–	423	0.83993
14-18 years	474	0.72580	55	0.68063	82	0.80246	328	0.70234
19-30 years	920	0.80299	–	–	212	0.79731	660	0.79476
31-50 years	1,806	0.72049	98	0.82855	248	0.69036	1,440	0.71333
51-70 years	1,680	0.60657	67	0.70136	252	0.56218	1,344	0.61148
71 + years	722	0.52599	–	–	159	0.53590	529	0.50599
Female								
1-3 years	942	0.60727	172	0.61850	161	0.70628	601	0.56876
4-8 years	852	0.72616	142	0.71882	139	0.75291	567	0.74677
9-13 years	586	0.79391	86	0.80269	88	0.75272	403	0.81076
14-18 years	449	0.75438	–	–	71	0.84080	324	0.68858
19-30 years	808	0.69192	90	0.70251	171	0.65297	538	0.70805
31-50 years	1,690	0.70468	160	0.87385	224	0.66915	1,283	0.69266
51-70 years	1,605	0.62804	107	0.81779	261	0.66631	1,221	0.61865
71 + years	670	0.54013	32	0.36329	179	0.53898	450	0.53521

– Data not available. Estimate of within-person variance could not be obtained from CSFII.

Source: Variance components were estimated from two days of 24-hour recalls from the *Continuing Survey of Food Intakes by Individuals (CSFII)* using *C-SIDE: Software for Intake Distribution Estimation.*

Table C-1—CSFII variance components for 10 nutrients — Continued

Cholesterol

	Total Persons		Currently Receiving Food Stamps		Income-eligible Nonparticipant		Higher-income Nonparticipant	
	Sample size	Within-individual variance	Sample size	Within-individual variance	Sample size	Within-individual variance	Sample size	Within-individual variance
Both sexes								
1-3 years	1,908	0.67030	352	0.65023	315	0.72734	1,224	0.67722
4-8 years	1,711	0.72133	306	0.78508	262	0.79436	1,130	0.71503
9-13 years	1,160	0.77601	152	0.83566	171	0.83326	826	0.75949
14-18 years	923	0.74671	102	0.85082	153	0.86355	652	0.70874
19-30 years	1,728	0.68789	124	0.65526	383	0.64361	1,198	0.73332
31-50 years	–	–	258	0.60040	472	0.66045	2,723	0.68235
51-70 years	3,285	0.66567	174	0.65283	513	0.64164	2,565	0.67099
71 + years	1,392	0.66630	57	0.53950	338	0.59058	979	0.69528
Male								
1-3 years	966	0.67552	180	0.71872	154	0.75661	623	0.65623
4-8 years	859	0.71121	164	0.80972	123	0.81381	563	0.66703
9-13 years	574	0.85027	66	0.93549	83	0.82690	423	0.81586
14-18 years	474	0.80438	–	–	82	0.94176	328	0.72566
19-30 years	920	0.72477	34	0.82630	212	0.63226	660	0.79860
31-50 years	1,806	0.70790	98	0.51583	248	0.74336	1,440	0.71636
51-70 years	1,680	0.72831	67	0.64592	252	0.59870	1,344	0.73214
71 + years	722	0.67255	25	0.79881	159	0.59083	529	0.69480
Female								
1-3 years	942	0.67583	172	0.58425	161	0.70023	601	0.70333
4-8 years	852	0.75225	142	0.76085	139	0.76549	567	0.78541
9-13 years	586	0.76585	86	0.75299	88	0.90712	403	0.76363
14-18 years	449	0.83348	47	0.76784	71	0.88098	324	0.84839
19-30 years	808	0.78032	90	0.69824	171	0.81079	538	0.79565
31-50 years	1,690	0.75123	160	0.70356	224	0.67035	1,283	0.78564
51-70 years	1,605	0.74004	107	0.69665	261	0.79881	1,221	0.72031
71 + years	670	0.71629	32	0.40638	179	0.67220	450	0.74579

– Data not available. Estimate of within-person variance could not be obtained from CSFII.

Source: Variance components were estimated from two days of 24-hour recalls from the *Continuing Survey of Food Intakes by Individuals (CSFII)* using *C-SIDE: Software for Intake Distribution Estimation.*

Table C-1—CSFII variance components for 10 nutrients — Continued

Vitamin C

	Total Persons		Currently Receiving Food Stamps		Income-eligible Nonparticipant		Higher-income Nonparticipant	
	Sample size	Within-individual variance	Sample size	Within-individual variance	Sample size	Within-individual variance	Sample size	Within-individual variance
Both sexes								
1-3 years	1,908	0.62903	352	0.58485	315	0.64053	1,224	0.63547
4-8 years	1,711	0.69570	306	0.68078	262	0.74402	1,130	0.68738
9-13 years	1,160	0.69614	152	0.68223	171	0.76334	826	0.68178
14-18 years	923	0.67458	102	0.71523	153	0.74638	652	0.65058
19-30 years	1,728	0.68600	124	0.69163	383	0.73440	1,198	0.67622
31-50 years	–	–	258	0.73645	472	0.61572	2,723	0.60307
51-70 years	3,285	0.54548	174	0.70212	513	0.55520	2,565	0.53891
71 + years	1,392	0.46944	57	0.52685	338	0.55509	979	0.45127
Male								
1-3 years	966	0.63841	180	0.64068	154	0.63147	623	0.64284
4-8 years	859	0.69102	164	0.77478	123	0.84344	563	0.61959
9-13 years	574	0.77886	66	0.83669	83	0.84583	423	0.72259
14-18 years	474	0.64437	55	0.87923	82	0.69055	328	0.61043
19-30 years	920	0.65510	34	0.91794	212	0.71618	660	0.64557
31-50 years	1,806	0.59951	98	0.65047	248	0.56114	1,440	0.60299
51-70 years	1,680	0.52239	67	0.70229	252	0.47381	1,344	0.53339
71 + years	722	0.41210	25	0.44043	159	0.47313	529	0.41198
Female								
1-3 years	942	0.62195	172	0.52377	161	0.65199	601	0.62595
4-8 years	852	0.71441	142	0.58840	139	0.65243	567	0.76110
9-13 years	586	0.63838	86	0.60327	88	0.70354	403	0.63890
14-18 years	449	0.73566	47	0.53593	71	0.82180	324	0.72019
19-30 years	808	0.74220	90	0.61317	171	0.76672	538	0.74196
31-50 years	1,690	0.64171	160	0.78020	224	0.69003	1,283	0.61204
51-70 years	1,605	0.57501	107	0.68254	261	0.65381	1,221	0.55283
71 + years	670	0.56238	32	0.63743	179	0.62702	450	0.51489

– Data not available. Estimate of within-person variance could not be obtained from CSFII.

Source: Variance components were estimated from two days of 24-hour recalls from the *Continuing Survey of Food Intakes by Individuals (CSFII)* using *C-SIDE: Software for Intake Distribution Estimation.*

Table C-1—CSFII variance components for 10 nutrients — Continued

Iron

	Total Persons		Currently Receiving Food Stamps		Income-eligible Nonparticipant		Higher-income Nonparticipant	
	Sample size	Within-individual variance	Sample size	Within-individual variance	Sample size	Within-individual variance	Sample size	Within-individual variance
Both sexes								
1-3 years	1,908	0.54994	352	0.57906	315	0.45683	1,224	0.56713
4-8 years	1,711	0.64589	306	0.63392	262	0.66086	1,130	0.65030
9-13 years	1,160	0.67053	152	0.63939	171	0.67176	826	0.67339
14-18 years	923	0.56598	102	0.67432	153	0.61818	652	0.52707
19-30 years	1,728	0.62329	124	0.54429	383	0.63122	1,198	0.64736
31-50 years	3,496	0.53375	258	0.49428	472	0.53548	2,723	0.53922
51-70 years	3,285	0.52014	174	0.56471	513	0.51311	2,565	0.52818
71 + years	1,392	0.45859	57	0.54916	338	0.49621	979	0.45054
Male								
1-3 years	966	0.58214	180	0.56728	154	0.51029	623	0.60189
4-8 years	859	0.64141	164	0.69790	123	0.68960	563	0.62234
9-13 years	574	0.72306	66	0.67791	83	0.66723	423	0.71389
14-18 years	474	0.64303	55	0.92655	82	0.53605	328	0.64734
19-30 years	920	0.67515	34	0.74362	212	0.69430	660	0.68029
31-50 years	1,806	0.59387	98	0.40466	248	0.59148	1,440	0.60390
51-70 years	1,680	0.55213	67	0.70141	252	0.50332	1,344	0.56296
71 + years	722	0.45455	25	0.41072	159	0.56508	529	0.43853
Female								
1-3 years	942	0.52103	172	0.59212	161	0.43540	601	0.52931
4-8 years	852	0.67774	142	0.58623	139	0.72953	567	0.70946
9-13 years	586	0.68630	86	0.65385	88	0.72648	403	0.69255
14-18 years	449	0.66157	47	0.58730	71	0.84984	324	0.59405
19-30 years	808	0.72109	90	0.51772	171	0.73920	538	0.77178
31-50 years	1,690	0.61006	160	0.62091	224	0.59220	1,283	0.61320
51-70 years	1,605	0.59650	107	0.50000	261	0.57957	1,221	0.61255
71 + years	670	0.52587	32	0.62417	179	0.45487	450	0.54324

Source: Variance components were estimated from two days of 24-hour recalls from the *Continuing Survey of Food Intakes by Individuals (CSFII)* using *C-SIDE: Software for Intake Distribution Estimation.*

Table C-1—CSFII variance components for 10 nutrients — Continued

Zinc

	Total Persons		Currently Receiving Food Stamps		Income-eligible Nonparticipant		Higher-income Nonparticipant	
	Sample size	Within-individual variance	Sample size	Within-individual variance	Sample size	Within-individual variance	Sample size	Within-individual variance
Both sexes								
1-3 years	1,908	0.63077	352	0.64054	315	0.60033	1,224	0.63512
4-8 years	1,711	0.68683	306	0.73204	262	0.64124	1,130	0.68966
9-13 years	1,160	0.72610	152	0.65371	171	0.82400	826	0.73444
14-18 years	923	0.64606	102	0.80297	153	0.64929	652	0.62049
19-30 years	1,728	0.66328	124	0.61973	383	0.62745	1,198	0.69342
31-50 years	3,496	0.60474	258	0.51204	472	0.64449	2,723	0.60667
51-70 years	3,285	0.60836	174	0.74425	513	0.63880	2,565	0.59656
71 + years	1,392	0.57332	57	0.67141	338	0.59190	979	0.57223
Male								
1-3 years	966	0.63073	180	0.57716	154	0.60849	623	0.64521
4-8 years	859	0.68304	164	0.78017	123	0.58445	563	0.67441
9-13 years	574	0.81480	66	0.72099	83	0.79581	423	0.82717
14-18 years	474	0.76878	–	–	82	0.52539	328	0.78264
19-30 years	920	0.72542	34	0.72904	212	0.65752	660	0.75600
31-50 years	1,806	0.70032	98	0.56022	248	0.77872	1,440	0.69187
51-70 years	1,680	0.65664	67	0.77270	252	0.67492	1,344	0.65029
71 + years	722	0.58192	25	0.48673	159	0.63184	529	0.58255
Female								
1-3 years	942	0.64234	172	0.74207	161	0.61132	601	0.63745
4-8 years	852	0.71259	142	0.66702	139	0.70340	567	0.72876
9-13 years	586	0.71205	86	0.63590	88	0.94726	403	0.71641
14-18 years	449	0.73887	47	0.72386	71	0.93249	324	0.67197
19-30 years	808	0.80706	90	0.67039	171	0.82128	538	0.83448
31-50 years	1,690	0.69402	160	0.57474	224	0.66773	1,283	0.71305
51-70 years	1,605	0.70998	107	0.80030	261	0.68770	1,221	0.70447
71 + years	670	0.65633	–	–	179	0.58598	450	0.65007

– Data not available. Estimate of within-person variance could not be obtained from CSFII.

Source: Variance components were estimated from two days of 24-hour recalls from the *Continuing Survey of Food Intakes by Individuals (CSFII)* using *C-SIDE: Software for Intake Distribution Estimation.*