

## Appendix

### A.1. Variable Construction

We use several outcome measures that are based on dietary recall data, all of which are based on computations by the NHANES. The first is the Healthy Eating Index (HEI), which is a summary measure of the overall dietary quality. The underlying ten components and cut-offs are listed in Table A1. The second is the caloric content of the 24-hour dietary recall data, which is based on a recipe analysis. Low magnesium intake and low zinc intake are based on intake levels also determined by the recipe analysis of the 24-hour dietary recall data; the cut-offs for low intake are listed in Table A2.

We use several outcomes measures that are based on the laboratory analysis of blood. We construct measures of low vitamins A, C, and E, folate, and high cholesterol based on serum measures. We create a measure of anemia based on hemoglobin and hematocrit levels. The cut-offs for each of these assessments are presented in Table A3. Although blood was potentially taken from individuals of all analyzed in our sample, vitamin C levels were not reported for children under 6. We do not analyze vitamin E for individuals over 16.

### A.2. Empirical Nutrition-Income Relationships

Figures A1 and A2 present the underlying relationship between various nutrition measures and the income-to-poverty ratio in our data. For children in our primary sample (Figure A1), the relationship is fairly monotonic at low levels of income for both being low in vitamins and minerals (A, C, E, and folate) and caloric intake. For 18-39 year olds (Figure A2), the relationships are much simpler, suggesting that the detection of beneficial effects may be easier for adults than for children.

### A.3. Unweighted Regression Results

In Tables A3 to A6, we present many of the key results for children and adults based on unweighted regressions. Given that we control for many of the factors over which the over-sampling occurred (race, income, age, and geography), some economists argue that weights should not be used (for example, see DuMouchel and Duncan 1983). From comparing the unweighted results to the weighted results reported in the text, none of our basic conclusions would change.

We choose to use weights for our main results for several reasons. First, we do not control exactly for the sampling variables. For example, only census region is provided in the public release data. Second, to illustrate our identification strategy, we report means, which must be weighted. For consistency, we choose to weight throughout. Third, it is more efficient to weight for correctly specified models (Wooldridge 2002).

**Table A1: Components of the Healthy Eating Index**

Component	Criteria for Score of 0	Criteria for Score of 10
1. Grains	0 servings	6–11 servings*
2. Vegetables	0 servings	3–5 servings
3. Fruits	0 servings	2–4 servings
4. Milk	0 servings	2–3 servings
5. Meat	0 servings	2–3 servings
6. Total fat	>44% calories from fat	<31% calories from fat
7. Saturated fat	>14% calories from s.f.	<10% calories from s.f.
8. Cholesterol	>449 mg	<300 mg
9. Sodium	>4,799 mg	<2,400 mg
10. Variety	<4 different categories a day	>7 different categories a day

Notes: This table is taken from the NHANES III manual. People with consumption or intakes between the maximum and minimum ranges or amounts were assigned scores proportionately.

**Table A2: Criteria for Nutrition Measures**

Outcome	Age/Gender	Criteria for Inadequacy
<i>Laboratory Measures</i>		
Anemia	0–12	hemoglobin < 11.5 g/dL and hematocrit < 35%
	13–17	hemoglobin < 12 g/dL and hematocrit < 37%
	>17/Female	hemoglobin < 12 g/dL and hematocrit < 36%
	>17/Male	hemoglobin < 13 g/dL and hematocrit < 39%
High blood cholesterol		Serum cholesterol $\geq$ 200 mg/dL.
Low vitamin A	0–11	< 1.05 $\mu$ mol/L
	>11	< 0.7 $\mu$ mol/L
Low vitamin C	6 and above	< 11.4 $\mu$ mol/L
Low vitamin E	4-16	< 11.6 $\mu$ mol/L
Low folate	4 and above	< 7 nmol/L
<i>Dietary Recall Measures</i>		
Low magnesium intake	5-8	< 130 mg/day
	9-13	< 240 mg/day
	14-18/Female	< 360 mg/day
	14-18/Male	< 410 mg/day
	19-30/Female	< 310 mg/day
	19-30/Male	< 400 mg/day
	31-60/Female	< 320 mg/day
	31-60/Male	< 420 mg/day
Low zinc intake	5-8	< 5 mg/day
	9-13	< 8 mg/day
	14-18/Female	< 9 mg/day
	19-60/Female	< 8 mg/day
	14-60/Male	< 11 mg/day

Notes: All laboratory measure values were taken from Wilson et al. (1991). Dietary recall measures were taken from the *Dietary Reference Intake* reports produced by the National Academy of Sciences, summarized in tables on the USDA Food and Nutrition Information Center website (<http://www.nal.usda.gov/fnic/etext/000105.html>).

**Table A3: Unweighted Regression Estimates of SBP Availability for Children**

Panel A: Key Dietary Recall Measures								
	HEI score	HEI score	Total calories	Total calories	% cals from fat	% cals from fat	% cals from s.f.	% cals from s.f.
sbav*inschool	2.92 (0.94)**		98.21 (66.75)		-0.52 (0.61)		0.01 (0.28)	
sbav*inschool* low income		2.78 (1.32)*		110.25 (94.03)		0.66 (0.86)		0.36 (0.40)
sbav*inschool* med. income		3.01 (1.96)		83.96 (139.49)		-2.12 (1.27)+		-0.04 (0.59)
sbav*inschool* high income		2.84 (1.46)+		112.19 (104.01)		-1.95 (0.95)*		-0.41 (0.44)
sbav*inschool* unknown		-1.40 (3.11)		150.45 (221.44)		1.50 (2.02)		0.14 (0.94)
Obs.	4841	4841	4841	4841	4841	4841	4841	4841
R-square	0.10	0.10	0.11	0.11	0.04	0.04	0.02	0.02

Panel B: Key Exam Measures								
	Low vit C	Low vit C	Low vit E	Low vit E	Low folate	Low folate	High chol.	High chol.
sbav*inschool	-0.02 (0.01)+		-0.01 (0.01)+		-0.01 (0.02)		-0.04 (0.03)	
sbav*inschool* low income		0.01 (0.02)		0.01 (0.01)		0.03 (0.03)		-0.03 (0.04)
sbav*inschool* med. income		-0.07 (0.03)*		-0.01 (0.02)		0.03 (0.04)		-0.07 (0.05)
sbav*inschool* high income		-0.03 (0.02)		-0.03 (0.01)*		-0.06 (0.03)+		-0.06 (0.04)
sbav*inschool* unknown		-0.05 (0.05)		-0.09 (0.03)**		-0.13 (0.06)*		-0.00 (0.08)
Obs.	4150	4150	4841	4841	4836	4836	4834	4834
R-square	0.04	0.04	0.02	0.02	0.09	0.09	0.02	0.02

Notes: Author's tabulations from the NHANES. The other control variables include household size and indicator variables for age, income groups, and urban\*census region.

Significance: + 0.10 level. \* 0.05 level. \*\* 0.01 level.

**Table A4: Unweighted Regression Estimates of SBP Availability for Children, Excluding Highest Income, South, and West Families**

Panel A: Key Dietary Recall Measures								
	HEI score	HEI score	Total calories	Total calories	% cals from fat	% cals from fat	% cals from s.f.	% cals from s.f.
sbav*inschool	1.77 (1.56)		231.3 (118.)+		0.46 (1.03)		0.06 (0.46)	
sbav*inschool*		0.74 (2.06)		276.5 (157.5)+		2.09 (1.37)		0.40 (0.61)
low income								
sbav*inschool*		2.81 (3.31)		317.7 (252.9)		-2.22 (2.20)		-0.49 (0.98)
med. income								
sbav*inschool*		5.70 (3.64)		287.6 (278.1)		-3.68 (2.42)		-1.49 (1.08)
high income								
sbav*inschool*		-3.95 (4.92)		-173.6 (375.4)		2.81 (3.26)		0.68 (1.46)
unknown								
Obs.	1012	1012	1012	1012	1012	1012	1012	1012
R-square	0.12	0.13	0.11	0.11	0.05	0.06	0.03	0.03

Panel B: Key Exam Measures								
	Low vit C	Low vit C	Low vit E	Low vit E	Low folate	Low folate	High chol.	High chol.
sbav*inschool	-0.06 (0.02)**		-0.02 (0.01)*		-0.01 (0.03)		-0.09 (0.04)*	
sbav*inschool*		-0.07 (0.03)*		-0.01 (0.02)		0.01 (0.04)		-0.01 (0.06)
low income								
sbav*inschool*		-0.14 (0.05)**		0.01 (0.03)		0.06 (0.06)		-0.15 (0.09)+
med. income								
sbav*inschool*		-0.04 (0.06)		-0.02 (0.03)		-0.00 (0.07)		-0.25 (0.10)*
high income								
sbav*inschool*		-0.12 (0.08)		-0.15 (0.04)**		-0.18 (0.09)*		-0.12 (0.13)
unknown								
Obs.	895	895	1012	1012	1009	1009	1011	1011
R-square	0.08	0.11	0.05	0.07	0.13	0.14	0.05	0.06

Notes: Author's tabulations from the NHANES. The other control variables include household size and indicator variables for age, income groups, and urban\*census region.

Significance: + 0.10 level. \* 0.05 level. \*\* 0.01 level.

**Table A5: Unweighted Regression Estimates of SBP Availability for Adults**

Panel A: Key Dietary Recall Measures								
	HEI score	HEI score	Total calories	Total calories	% cals from fat	% cals from fat	% cals from s.f.	% cals from s.f.
sbav*inschool	3.55 (1.16)**		25.12 (90.36)		-1.33 (0.89)		-0.50 (0.38)	
sbav*inschool* low income		3.97 (1.73)*		175.18 (135.46)		0.31 (1.33)		-0.11 (0.57)
sbav*inschool* med. income		3.95 (2.55)		80.10 (199.39)		-3.22 (1.96)		-0.97 (0.83)
sbav*inschool* high income		2.56 (1.61)		-53.06 (125.95)		-1.47 (1.24)		-0.24 (0.53)
sbav*inschool* unknown		-0.68 (3.92)		-157.89 (305.81)		1.52 (3.01)		0.36 (1.28)
Obs.	3378	3378	3378	3378	3378	3378	3378	3378
R-square	0.07	0.08	0.18	0.18	0.05	0.06	0.04	0.05
Panel B: Key Exam Measures								
	Low vit C	Low vit C	Low folate	Low folate	Anemic	Anemic	High chol.	High chol.
sbav*inschool	-0.04 (0.04)		-0.02 (0.04)		0.03 (0.05)		-0.03 (0.03)	
sbav*inschool* low income		-0.02 (0.05)		0.03 (0.06)		0.04 (0.07)		-0.07 (0.04)
sbav*inschool* med. income		-0.02 (0.08)		-0.16 (0.10)+		0.02 (0.10)		-0.06 (0.06)
sbav*inschool* high income		-0.08 (0.05)		-0.07 (0.06)		0.01 (0.07)		0.02 (0.04)
sbav*inschool* unknown		0.02 (0.12)		0.22 (0.15)		0.22 (0.16)		-0.09 (0.10)
Obs.	3263	3263	3376	3376	3374	3374	3337	3337
R-square	0.07	0.07	0.03	0.04	0.07	0.08	0.10	0.10

Notes: Author's tabulations from the NHANES. The regressions take into account the complex survey design. The other control variables include household size and indicator variables for age, income groups, and urban\*census region.

Significance: + 0.10 level. \* 0.05 level. \*\* 0.01 level.

**Table A6: Unweighted Regression Estimates of SBP Availability for Adults, Excluding Highest Income, South, and West Families**

Panel A: Key Dietary Recall Measures								
	HEI score	HEI score	Total calories	Total calories	% cals from fat	% cals from fat	% cals from s.f.	% cals from s.f.
sbav*inschool	1.62 (2.02)		505 (170)**		-0.03 (1.61)		-0.03 (0.67)	
sbav*inschool*		2.36 (2.92)		667 (247)**		1.85 (2.33)		0.12 (0.97)
low income								
sbav*inschool*		-2.70 (4.30)		356.07 (363.82)		0.39 (3.42)		0.25 (1.43)
med. income								
sbav*inschool*		-0.24 (4.33)		317.29 (366.38)		0.09 (3.45)		0.98 (1.44)
high income								
sbav*inschool*		2.98 (6.05)		365.15 (512.41)		-2.57 (4.82)		-0.60 (2.01)
unknown								
Obs.	636	636	636	636	636	636	636	636
R-square	0.18	0.19	0.23	0.23	0.11	0.12	0.09	0.10

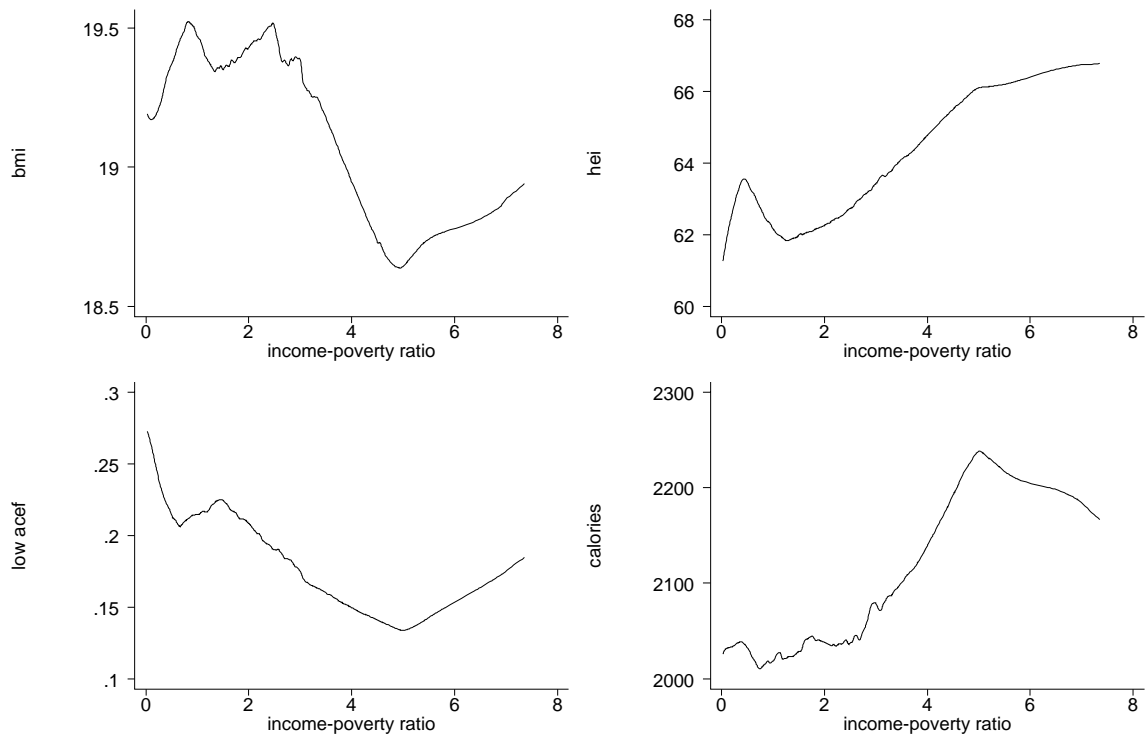
  

Panel B: Key Exam Measures								
	Low vit C	Low vit C	Low folate	Low folate	Anemic	Anemic	High chol.	High chol.
sbav*inschool	-0.07 (0.06)		0.07 (0.07)		0.05 (0.08)		0.00 (0.05)	
sbav*inschool*		-0.15 (0.09)+		-0.07 (0.11)		0.17 (0.12)		0.06 (0.08)
low income								
sbav*inschool*		-0.12 (0.13)		0.12 (0.16)		-0.07 (0.17)		-0.18 (0.11)
med. income								
sbav*inschool*		-0.04 (0.13)		0.27 (0.16)+		0.09 (0.17)		-0.04 (0.11)
high income								
sbav*inschool*		0.16 (0.18)		0.23 (0.22)		-0.04 (0.24)		0.04 (0.16)
unknown								
Obs.	626	626	636	636	636	636	630	630
R-square	0.15	0.17	0.09	0.12	0.13	0.15	0.17	0.18

Notes: Author's tabulations from the NHANES. The regressions take into account the complex survey design. The other control variables include household size and indicator variables for age, income groups, and urban\*census region.

Significance: + 0.10 level. \* 0.05 level. \*\* 0.01 level.

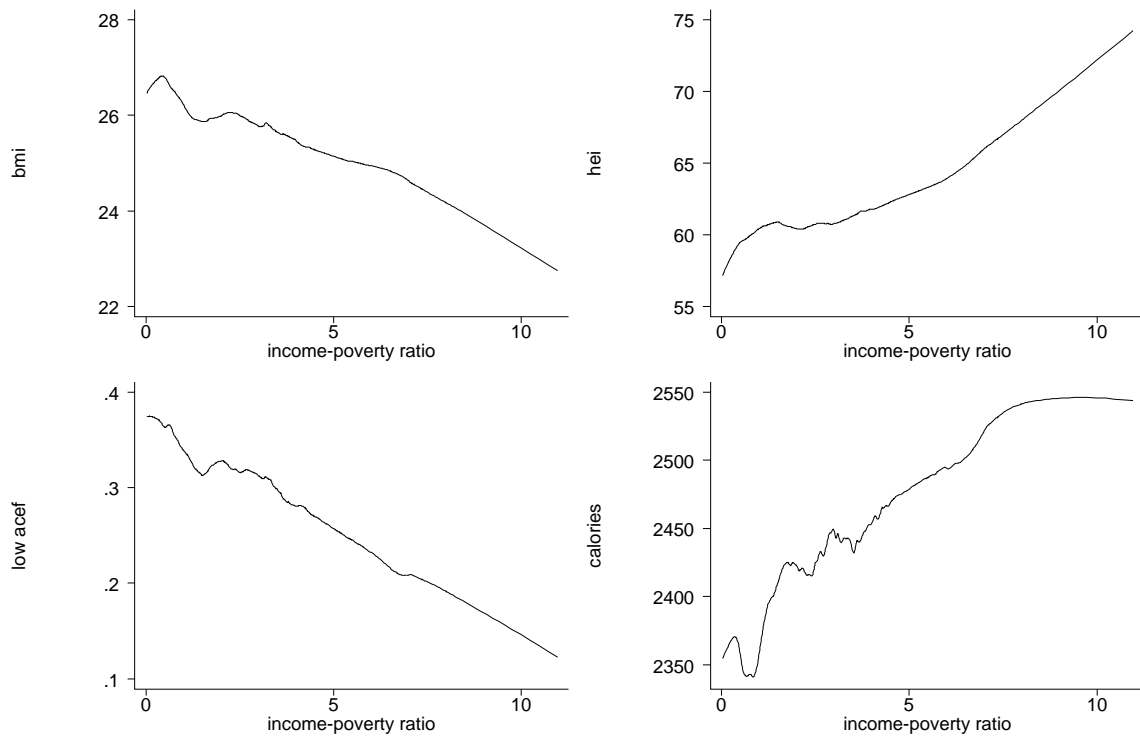
**Figure A1: Empirical Nutrition to Income/Poverty Ratio Relationships, 5-16 Year Olds**



Notes: These figures are based on the 4,481 children in the primary sample. They present the smoothed relationship based on a Lowess smoother with a bandwidth of 0.4.



**Figure A2: Empirical Nutrition to Income/Poverty Ratio Relationships, 18-34 Year Olds**



Notes: These figures are based on the 3,378 adults. They present the smoothed relationship based on a Lowess smoother with a bandwidth of 0.4.