

Table 5.2. Summary Table: Studies of school age populations

	Number (n)	Age (years)	Ethnically Diverse	Longitudinal Study	Cross sectional Study	Assessment Method					Nutrient Biomarkers	Supplement Intake Assessment Method	Outcomes
						Weighed Food Record (no. days)	Estimated Food Record (no. days)	24-Hour Recall (n)	FFQ Type	Other Questionnaire			
National Surveys													
US National Health and Nutrition Examination Survey (NHANES) 1999-2000 (41)	992	6-11	✓		✓			1; 2 in 10%			✓	Quest.& 24HR	Food, nutrient, physical activity, and chemical exposures
Continuing Survey of Food Intake of Individuals (CSFII) 1994-96 (42)	2,000	6-11	✓		✓			2			✓	24HR	Food and nutrient exposures, diet and health knowledge
US School Nutrition Dietary Survey, 1995 (216;222)	3,350	6-18	✓		✓			1		✓		NS*	Dietary intake assessed; other questionnaires collected information on school lunch and breakfast; students in grades 1 and 2 interviewed with parents
Survey of School Children in Spain, 1998-99 (223;224)	1,112	6-7	NS		✓				77 item			NS	Height, weight, energy and nutrient intake, and food groups (bakery items, sweetened soft drinks, and yogurt.
Austrian Study of Nutritional Status, 1999 (225)	2,173	6-18	NS		✓	7d					✓	NS	Nutrients and food consumption assessed, biomarkers (cholesterol and fat soluble vitamins)
Cross-National Survey on Health Behavior in School Age Children, 20 countries, 1993-94 (226)	33,084	11-15	✓		✓					✓		NS	Soft drink and sweets consumption recorded on 10-item dietary habits questionnaire similar to FFQ.
HEUREKA 1991, Switzerland (Sample recruited from visitors to national exhibit) (227;228)	903	7-18	NS		✓			FFQ-like 24 HR				NS	Self-administered 24HR with food photos used FFQ format listing 240 foods; assessed energy intake, 10 food groups, and main nutrients.

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National Surveys, continued													
General Mills Dietary Intake Study, Market Research Corporation of (MRCA) Menu Census Panel Surveys 1980-1992 (229)	1,946	11-18	NS		✓		14d					NS	Four cross-sectional surveys evaluated dietary calcium intake over a 12-year period; serving size information not collected
Population Studies of Food and Nutrient Exposures													
The Bogalusa Heart Study-21 years, Bogalusa, LA (192;212;230;231)	1,562	10	✓		✓			1			✓	NS	Cross-sectional sample of 10 year olds over 21 years evaluated 24HR and lipid and cardiovascular screening; food and nutrient intake assessed
Study of Children's Activity and Nutrition Project (SCAN), 2002 (213)	228	4-12	✓	✓				2 per 6mo				NS	Tracking energy, % fat kcal, sodium intake over 8 years using modified 24HR with observation of lunch and dinner and interview of primary food preparer for children 4-7 years, and standard 24HR for children 11-12 yrs.
Child and Adolescent Trial for Cardiovascular Health (CATCH), 2002, California, Texas, Minnesota, California (214;232)	1,874	8-14	✓	✓			1d 3x	3			✓	NS	Three Food Record assisted 24HR at baseline (3rd grade) and follow-up at 5th and 8th grade assessed energy and nutrient intake and compared (3rd and 5th grade) energy intake cholesterol, dietary fat, fatty acid intake, and dietary fiber with serum lipids and height and weight.

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Population Studies of Food and Nutrient Exposures, continued														
DONALD Study, 1985-2000 (Germany) (154;155;233;234)	787	2-18		✓		3d					✓	NS	Energy and nutrient intake (total vs. fortified foods), growth.	
Food Intake and Obesity in Italian School Children, 2000 (235)	530	7-11			✓						✓	NS	Diet History interview of mother and child assessed usual weekly food intake; diet composition compared with child's adiposity and parents BMI	
Growing Up Today Study (GUTS), US, 1996-1999 (236-239)	10,769-16,882	9-14	95% C	✓					Youth Adol. Quest. (YAQ) 132-item			YAQ	Survey of offspring of participants in Nurses Health Study II examined energy, dietary patterns, physical activity and weight change over 1 yr (236); energy and nutrient intake (237); self reported height, weight, and Tanner Index (by drawings); 18 questions on physical activity; changes in fruit and vegetable consumption and changes in BMI over a 3-yr period (238;239)	
Survey of Ylivieska, Finland School Children, 1999 (240)	404	10-11	NS		✓				55-item	✓		NS	Food intake and meal patterns; parents and children completed FFQ and Child Behavior Checklist (screens for behavioral and emotional problems)	
Gimme 5 School Health Program, Georgia (241;242)	640	8-12	✓		✓		7d					none	Fruit and vegetable intake	

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Population Surveys of Food and Nutrient Exposures, continued													
Coronary Artery Risk Detection in Appalachian Communities, 1998-1999, West Virginia (243)	325	10-12	NS		✓				YAQ 143 item past mo.	✓		NS	Energy, total fat, and saturated fat intake; socio-demographic and environmental variables; nutrition knowledge (assessed by 10-item questionnaire adapted from CATCH)
National Heart and Lung Growth and Health Study, 1997, US (244)	2,379	9-10	✓	✓			3d			✓		NS	Food and energy intake, eating practices, and snacking practices; Nutrition Patterns Questionnaire collected on nutrition patterns and practices.
Survey of Children on Mexico-US Border, Mexico, 1997 (245)	3,325	9-11	✓		✓				36 item Interv.-Admin.			NS	Food intake (fruits, vegetables, soft drinks, high fat snacks, sweets).
Active Programs Promoting Lifestyle Education in Schools, 1996-97 Leeds, UK (246;246)	636	7-11			✓		3d	2				NS	Food groups (fruits, vegetables, high fat, high sugar); BMI
Dietary Intervention Study in Children (DISC), 1993-1997, 6 US Clinical Centers (215;247)	663	8-10		✓				3x per 6-12 mo.		✓	✓	NS	Three 24HR (2 by telephone) at baseline, 12, and 36 mo and also at 6 mo in feasibility study assessed energy, nutrient, and food intake; total cholesterol, LDL-cholesterol, and HDL-cholesterol measured.

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Population Surveys of Food and Nutrient Exposures, continued													
Survey of Calcium Intake of Italian School Children, 1995 (248)	35,000	7-10			✓				116 item			NS	Parents assisted children in completing FFQ for previous 6 mo intake; calcium intake assessed.
Fleurbaix Laventie Ville Sante Study (FLVS), 1993 (249)	501	5-11			✓			1				NS	Energy intake; % kcal from complex CHO, protein, total fat, and saturated fats; anthropometric measurements
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Northumbrian Study of Children 11-12 Years, 1980-1990, UK (250)	379	11-12			✓		3d					NS	Height, weight, energy and nutrient intakes.

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