

PMID	First Author	Title	Year	Study Type	Prospect/Retrospect	Study	CVD	RF by CQ	Country	Setting	Main Study Objective	N at Baseline (N at Follow-up)	Target Population	Eligibility Criteria	Patient Characteristics	Study Groups	n at Baseline (n at Follow-up) for Study Groups	Total Follow-up Duration	Outcomes Measured	Results	Main Reported Findings by Critical Question
9922071	Hickman TB	Distributions and trends of serum lipid levels among United States children and adolescents ages 4-19 years: data from the Third National Health and Nutrition Examination Survey	1998	CrS	Retrospective	NHES III, NHANES I, NHANES III	None	Q5 (RF2, RF5)	USA	Clinical	Examine lipid distributions among children and adolescents using the most recent nationally representative data	7,499	Pediatric/Young adults	NHES III, NHANES I, and NHANES III eligibility criteria	Patient characteristics from NHES III, NHANES I, and NHANES III	Groups were studied by age, sex, and race/ethnicity	Sample sizes are stratified by age	NR	Mean TC [mg/dL (SE)] HDL-C [mg/dL (SE)] LDL-C [mg/dL (SE)] TG [mg/dL (SE)]	In national data for the US population ending in 1994, for children and adolescents 4 to 19 years of age, the 95th percentile for serum total cholesterol was 216 mg/dL and the 75th percentile was 181 mg/dL. Mean age-specific total cholesterol levels peaked at 171 mg/dL at 9-11 years of age and fell thereafter. Females had significantly higher mean total cholesterol and LDL-C levels than did males (P < 0.005). Non-Hispanic black children and adolescents had significantly higher mean total cholesterol, LDL-C, and HDL-C levels compared to non-Hispanic white and Mexican American children and adolescents. The mean total cholesterol level among 12- to 17-year-olds decreased by 7 mg/dL from 1966-1970 to 1988-1994 and is consistent with, but less than, observed trends in adults. Black females have experienced the smallest decline between surveys.	In national data for the US population ending in 1994, for children and adolescents 4 to 19 years of age, the 95th percentile for serum total cholesterol was 216 mg/dL and the 75th percentile was 181 mg/dL. The mean total cholesterol level among 12- to 17-year-olds decreased by 7 mg/dL from 1966-1970 to 1988-1994. This is consistent with, but less than, observed trends in adults. Black females have experienced the smallest decline between surveys. Q5: Non-Hispanic black children and adolescents had significantly higher mean total cholesterol, LDL-C, and HDL-C levels compared to non-Hispanic white and Mexican American children and adolescents.
11384953	Nicklas TA	Trends in nutrient intake of 10-year-old children over two decades (1973-1994): the Bogalusa Heart Study	2001	CrS	Retrospective	Bogalusa	None	Q6 (RF5, RF8)	USA	Community (other)	Observe secular trends in intake over 2 decades, 1973-1994.	1,655	Pediatric/Young adults	Varying proportions (72-100%) of 10 y old children were selected from each of 7 CrS surveys performed from 1973-1994 for review of 24 hr dietary recall records.	Community-based cohort of B & W children and young adults - originally examined at 5-17 yrs; 52% F, 44% B. For this study, 7 cross-sectional surveys of 10 yr olds.	N/A	N/A	20 yrs	Ht Wt Ponderal index Nutrient intake Food group consumption	Total energy intake was unchanged but intake/kg decreased because mean wt increased. There was a significant increase in wt and Ponderal Index from 1973 to 1994. Linear trends were noted for total fat(-), saturated fat(-), cholesterol (-), polyunsaturated fat (+) and total carbohydrate (+). There was a significant increase in % energy from protein & carbohydrate and a significant decrease in % intake from fat. More children met diet recommendations for total fat, sat fat and cholesterol intake but the vast majority continued to exceed prudent diet recommendations.	Over the 20 y period from 1973-1994, changes in children's diets reflected secular changes in the population with increased % of energy from protein & carbohydrate and decreased % from total & saturated fats. Over this same time period, there has been a significant & dramatic increase in adiposity of children. Despite beneficial changes in diet composition, > 75% of children surveyed still exceed recommendations for total & saturated fat consumption.
11693451	Hanna EZ	The relationship of early-onset regular smoking to alcohol use, depression, illicit drug use, and other risky behaviors during early adolescence: results from the youth supplement to the third national health and nutrition examination survey	2001	CrS	Retrospective	NHANES	None	Q6 (RF3, RF10)	USA	Clinical	Test the hypothesis that regular tobacco use is as predictive of lifetime drug use and depressive disorders as it is of alcohol use disorders. Study the strength and patterns of associations among these problem behaviors already present among youth.	2,001	Pediatric/Young adults	NHANES III eligibility criteria	Male: 52% White: 83% Incomes below poverty line: 22% Mean age: 14 yr	Current smokers Former smokers Experimenters Nonsmokers	NR	NR	Smoking prevalence	Descriptive analyses indicated that in comparison with those who never smoked, or who simply experimented, early-onset regular smokers, both those who began at age 13 or younger and those who did so between 14 and 16, were those most likely to use alcohol and other drugs as well as have school problems and early sexual experiences culminating in pregnancy. Multivariate logistic regression analyses were conducted to assess the associations among these high-risk behaviors.	Q6: Both those who began at age 13 or younger and those who did so between 14 and 16, were those most likely to use alcohol and other drugs as well as have school problems and early sexual experiences culminating in pregnancy.
12830023	Kronenberg SS	Macronutrient intake of black and white adolescent girls over 10 years: the NHLBI Growth and Health Study	2003	Cohort	Prospective	Growth	None	Q5 (RF9) Q8 (RF9)	USA	Community (other)	Compare age-related changes in intake in B & W girls over 10 years.	2,379	Pediatric/Young adults	All participants in the NGHHS study for whom 3-d diet records were available	1166 W girls, 1213 B girls from 3 geographic locations evaluated at age 9-10 y and again 9 yrs later.	Black Females(BF): n=1213 White Females(WF): n=1166	N/A	10 y	Family SES status - parental education, annual income, # of parents at home BMI Sum of skinfolds(SSFs) Nutrient intake: Energy, protein, carbohydrate, total fat, cholesterol, saturated fat, monounsaturated fat, polyunsaturated fat Adherence to NCEP Dietary recommendations	Total energy intake increased significantly with age in Bs & Ws (p<S** for both). B girls reported greater energy intake than W girls at every age (p=S* for age-by-ethnicity interaction term). W girls consumed a higher %age of calories from carbs than did B girls at every age, with the difference increasing from age 13 onward (p=S** for age-by-ethnicity interaction term). Total and sat fat intake decreased with age, significantly more in W girls than B girls (p=S** for age-by-ethnicity interaction term). Dietary cholesterol decreased with age, more in W girls than B girls but cholesterol intake was greater in B girls at every age(p=S** for age-by-ethnicity interaction term). For B & W girls, fat intake decreased over time, more in Ws and most for PU fats & monounsaturated fats. Depending on age, 7-51% of W girls & 8-26% of B girls met NCEP recommendations for total fat & sat fat intake. (p=S* for difference between groups for age-by-ethnicity interaction term). 85% of W girls & 75% of B girls met NCEP recommendations for dietary cholesterol.	Total and sat fat intake decreased with age, more in W girls than B girls. Depending on age, 7-51% of W girls & 8-26% of B girls met NCEP recommendations for fat intake. Lower parental education was associated with increased fat/sat fat & cholesterol intake & decreased carb intake. Independent of parental education, living in a 2-parent household was associated with decreased fat & cholesterol intake & increased carb intake.
12830023	Kronenberg SS	Macronutrient intake of black and white adolescent girls over 10 years: the NHLBI Growth and Health Study	2003																	Lower parental education was associated with increased fat/sat fat & cholesterol intake & decreased carb intake. Independent of parental education, living in a 2-parent household was associated with decreased fat(p=S) & cholesterol intake(p=S) & increased carb intake(p=S*).	
12912785	Kant AK	Reported consumption of low-nutrient-density foods by American children and adolescents: nutritional and health correlates, NHANES III, 1988 to 1994	2003	CrS	Retrospective	NHANES	None	Q5 (RF9) Q6 (RF8, RF9, RF11)	USA	Clinical	Examine the contribution of foods of low-nutrient-density to the diets of American children and adolescents.	4,852	Pediatric/Young adults	24 hour dietary recalls from 8-18 yr old participants in the NHANES III survey for 1998-1994. Complete/reliable 24-hour dietary recall Exclusions: Pregnant Nursing	Male: 49% 8-12 yr: 52% 13-18 yr: 48% Non-Hispanic white(W): 26% Non-Hispanic black(B): 35% Mexican American(M-A): 34% Other: 5%	N/A	N/A	N/A	Energy intake Carbohydrate intake Total fat intake Saturated fat intake Protein intake Fiber intake Fruit and vegetable consumption BMI Self-reported physical activity Sedentary time Low nutrient density (LND) food categories: Visible fat Table sweeteners Candy & sweetened beverages Baked & dairy desserts Salty snacks Miscellaneous.	LND foods contributed >30% of daily calories with sweeteners & desserts accounting for nearly 25%. Total calorie intake & % of energy from carbohydrate & fat correlated positively and % of energy from protein & dietary fiber related inversely to the reported number of LND foods (p=S). The reported number of LND foods was a negative predictor of the amount of nutrient-dense foods reported (p=S**). Reported intake of micronutrients - vitamins A,B6 & folate and the minerals calcium, magnesium, iron & zinc - declined with increasing tertiles of reported LND foods (p=S). LND food reporting was not a significant predictor of BMI	LND foods are major contributors to daily calorie intake. Higher self-reported levels of LND consumption are positively associated with healthy dietary patterns, LND food reporting was not a significant predictor of BMI.

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14679382	Rasanen M	Impact of nutrition counseling on nutrition knowledge and nutrient intake of 7- to 9-year-old children in an atherosclerosis prevention project	2004	RCT f/u	Prospective	STRIP	None	Q10 (RF9) Q11 (RF9)	USA	Clinical	Assess the impact of nutrition counseling given to 7.5 - 9 yr old children on children's nutrition knowledge & intake.	98	Pediatric/Young adults	From a RCT of individualized counseling focusing on healthy low fat & low saturated fat diet & good exercise behaviors 2 X/yr beginning in infancy. At age 7 mos, 540 children randomized to intervention, 522 to control. Intervention = individualized counseling focusing on healthy diet & exercise behaviors 2 X/yr. From this cohort, 98 children selected for study - 47 intervention group children received nutrition training, 2X yr with assessment of nutrient intake and diet knowledge tested at 7 & 9 years; 49 control children underwent nutrition knowledge testing at 7 & 9 years.	RCT of individualized counseling focusing on healthy low fat & low saturated fat diet & good exercise behaviors 2 X/yr beginning in infancy. At age 7 mos, 540 children randomized to intervention, 522 to control. Intervention = individualized counseling focusing on healthy diet & exercise behaviors 2 X/yr.	Diet: n=47 CON: n=49	47/47 49/49	1.5 yrs	Nutrient intake Nutrition knowledge	In the intervention group, differences in saturated fatty acid intake attained with parent counseling alone were sustained (11.5 vs. 13.3 % of calories at age 7, p<.01; 11.1 vs. 13.4 % of calories at age 9, p<.01). Intervention children used more polyunsaturated fats at age 9 vs. controls (5.7 vs. 5.1%, p=.05) Pre-intervention nutrition knowledge scores did not differ between groups; at 9 yrs, intervention children had higher scores (p<.001).	Nutrition counseling delivered directly to children did not change nutrient intake from baseline in children whose parents received prior nutrition counseling but baseline differences in nutrition between diet intervention subjects & controls were sustained. Pre-knowledge intervention, nutrition knowledge scores did not differ between groups; at 9 yrs, knowledge-intervention children had higher scores than controls (p<.001).
15499355	Demery-Luce D	Changes in food group consumption patterns from childhood to young adulthood: the Bogalusa Heart Study	2004	Cohort	Retrospective	Bogalusa	None	Q5 (RF9)	USA	Community (other)	Assess changes in food group consumption from childhood to adult life.	246	Pediatric/Young adults	240 young adults who underwent diet evaluation in 1989-2001 at ages 19-28y and who also participated in 1 of 3 CrS surveys at 10 yrs of age from 1973-1978.	Community-based cohort of B & W children and young adults - originally examined at 5-17 yrs; 52% F, 44% B. For this study, evaluation at age: 10 yrs & then 19-28 yrs. 70% W, 30% B	N/A	N/A	N/A	Nutrient intake Food group consumption Nutrient-dense score	In childhood, consumption from the food groups of vegetables & breads/grains (both, p=S), mixed meats, desserts, fruits/fruit juice, candy & milk (all, p=S**) was greater than in young adulthood. Young adulthood consumption from the food groups of sweetened beverages, poultry (p=S), seafood (p=S**) & cheese (p=S**) was greater. In terms of mean food group consumption from childhood to adulthood, consumption of fruit/fruit juice, mixed meats (p=S), desserts, milk, & candy (both, p=S**) decreased; intake of sweetened beverages, poultry, cheese, seafood, beef (all, p=S**) & snacks (p=S) all increased For combined food groups, intake of meats, sweets & dairy all increased (all, p=S**) and of fruits/fruit juices + vegetables decreased. At age 10, 50% of children had a nutrient-dense score of 5 vs only 19% of young adults. Mean frequency of food group consumption decreased significantly from childhood to young adulthood regardless of sex & ethnicity.	There is an overall decline in diet quality from childhood to young adulthood, most strikingly a decrease in the consumption of nutrient-dense foods: at age 10, 50% of children had a nutrient-dense score of 5 vs only 19% of young adults. There is no major race/sex difference relative to the diet changes.
15942545	Afenito SG	Breakfast consumption by African-American and white adolescent girls correlates positively with calcium and fiber intake and negatively with body mass index	2005	Cohort	Retrospective	NGHS	None	Q5 (RF8) Q6 (RF8, RF9)	USA	Community (other)	Describe age- and race-related differences in breakfast consumption and to examine the association of breakfast intake with dietary calcium and fiber and body mass index.	2,379 (89%)	Pediatric/Young adults	9 or 10 yr at baseline Female African-American or white	Race/ethnicity: White: 49% African-American: 51%	Group 1: White(W) females Group 2: Black(B) females	Group 1: 1,166 (NR) Group 2: 1,213 (NR)	10 yr	Breakfast consumption Fiber intake Calcium intake BMI	Breakfast consumption was higher in Ws than Bs at all assessments. # of days breakfast was eaten decreased with increasing age in Bs and Ws. Frequency of breakfast consumption was positively asst'd with calcium intake (p=S**) even after adjustment for age, race, parental education, total calorie intake and race by site interaction. Increasing frequency of breakfast consumption was significantly asst'd with higher fiber intake (p=S**) even after adjustment for age, race, parental education, total calorie intake and race by site interaction. Increasing frequency of breakfast consumption correlated negatively with BMI (p=S*). Girls who ate cereal all 3 days of a 3 d diet record had a BMI 0.1 point lower than girls who ate cereal 0, 1 or 2 days (p=S). However, when activity, parental education and calorie consumption were added to the analysis, the effect of breakfast was no longer significant.	There is a racial difference in breakfast consumption which was higher in Ws than Bs at all assessments. Breakfast consumption decreased with increasing age in Bs and Ws. Frequency of breakfast consumption was positively asst'd with calcium intake and fiber intake. Breakfast consumption was associated with lower BMI but only when other variables were excluded.
16492426	Striegel-Moore RH	Correlates of beverage intake in adolescent girls: the National Heart, Lung, and Blood Institute Growth and Health Study	2006	Cohort	Prospective	NGHS	None	Q6 (RF8, RF9)	USA	Community (other)	Examine the longitudinal changes in consumption of 6 types of beverages (milk, diet and regular soda, fruit juice, fruit-flavored drinks, and coffee/tea) in girls and determine the relationship between average intake, BMI and nutrient intake.	2,379 (2,371)	Pediatric/Young adults	Participants in the NHLBI Growth and Health Study. Female. Self reported as black or white. 9-10 years of age at baseline. Living with parents/guardians with racial concordance.	Black: 1,213 White: 1,166.	Black(B) girls. White(W) girls.	Black 1213 (1210) White 1166 (1161)	10 yr	BMI 3-day food record Amount and type of beverage intake Intake of total energy, sucrose, fructose, total sugars, and calcium	For B & W girls, milk consumption decreased (>25%) and soda consumption increased (>300%) over time. At each visit, B girls consumed less milk than W girls. Among all beverages, only soda intake was associated with BMI (chi-sq=4.62, p=S); BMI increased 0.01 unit for each 100 g of soda consumed. Consumption of beverages was significantly asst'd with higher daily calorie intake (p=S**). For every 100 g of soda consumed, average daily calorie intake increased by about 82 calories. Soda, fruit juice & fruit drink consumption was strongly asst'd with increased daily average fructose intake (p=S**). Milk, soda, fruit drink & coffee/tea consumption was strongly asst'd with increased daily average sucrose intake (p=S) All beverages except diet soda were associated with increased average daily sugar intake (p=S**). Milk consumption and to a lesser extent diet soda consumption was asst'd with increased average daily calcium intake (p=S**).	For both B & W girls, milk consumption decreased > 25% over the 10 yr F/U. Soda consumption increased dramatically by > 300% over the 10 yr F/U. Among all beverages, only soda intake was significantly associated with BMI. Milk consumption and to a lesser extent diet soda consumption was asst'd with increased average daily calcium intake
17367571	Mikkila V	Major dietary patterns and cardiovascular risk factors from childhood to adulthood. The Cardiovascular Risk in Young Finns Study	2007	Cohort	Prospective	Young Finns	None	Q6 (RF4, RF5, RF8, RF9) Q7 (RF4, RF5, RF8, RF9) Q8 (RF4, RF5, RF8, RF9)	Finland	Clinical	Investigate the associations between the 2 major dietary patterns and several risk factors for CVD	1,768 (1,037)	Pediatric/Young Adult	Finnish multicenter longitudinal cohort study of CV risk with subjects enrolled at 3-18 yr of age in 1980 and followed with serial lipid evaluation over time. 47% male. For this study, a random sample of 3596 subjects were chosen to participate in 49-hr dietary recall at baseline and at 6 and 21 y follow-up.	3-18 yr at baseline, 24-39 yr at follow-up	Traditional dietary pattern (high consumption of rye, potatoes, butter, sausages, milk and coffee) Health-conscious dietary pattern (high consumption of vegetables, legumes and nuts, tea, rye, cheese, and other dairy products, and alcoholic beverages)	NR	21 yr	TC HDL-C TG HDL VLDL Apo B CRP SBP DBP Fasting insulin(INS) BMI	Dietary patterns tracked strongly over time. The traditional dietary pattern was associated with higher BMI, smoking and with less physical activity. By MVA, the traditional dietary pattern was independently associated with higher TC, LDL-C, Apo B and CRP concentrations among both genders, and also with SBP and insulin levels among women (p < 0.05 for all); a dietary pattern reflecting healthier food choices was inversely, but not significantly associated with cardiovascular risk factors The dietary pattern reflecting more healthier food choices was inversely, but less strongly associated with cardiovascular risk factors	In Finland, consumption of the traditional dietary pattern was independently associated with TC, LDL-C, Apo B and CRP concentrations among both genders, and also with SBP and insulin levels among women (p < 0.05 for all); a dietary pattern reflecting healthier food choices was inversely, but not significantly associated with cardiovascular risk factors

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18442510	Grandjean AC	Popcorn consumption and dietary and physiological parameters of US children and adults: analysis of the National Health and Nutrition Examination Survey (NHANES) 1999-2002 dietary survey data	2008	CrS	Retrospective	NHANES	None	Q6 (RF4, RF5, RF7, RF8, RF9)	USA	Home	Assess the association between popcorn consumption, food group intakes, nutrient intakes, and physiological biomarkers of cardiovascular disease.	15,506	Pediatric/ Young adults	All NHANES dietary survey respondents, 1999-2002.	Nationally representative sample.	Group 1: Popcorn consumers Group 2: Non-popcorn consumers	Group 1: 910 Group 2: 14,596	N/A	Energy intake Protein intake Total fat intake Saturated fat intake Carbohydrate intake Fiber intake Potassium intake Calcium intake Sodium intake Zinc intake Weight BMI Waist circumference SBP DBP TC HDL-C LDL-C TG CRP	Compared with non-consumers, popcorn consumers had 250% higher intake of whole grains(2.5 vs 0.70 servings/d) (p=S*) and 22% higher intake of fiber (18.1 vs 14.9 g/d) (p=S*). Small but significant differences were also observed for intake of carbohydrate, Mg, protein, niacin & folate. Popcorn consumers had greater intake of total grains (p=S*) and consumed fewer meat servings. There was no association between popcorn consumption and body wt, BP, lipids or inflammatory markers (data not given).	Popcorn consumption was associated with increased intake of whole grains, fiber and other nutrients. There was no association between popcorn consumption and body wt, BP, lipids or inflammatory markers.
18519465	Wang YC	Increasing caloric contribution from sugar-sweetened beverages and 100% fruit juices among US children and adolescents, 1988-2004.	2008	CrS	Retrospective	NHANES	None	Q5 (RF9) Q6 (RF2, RF3, RF8,RF9)	USA	Clinical	Document caloric contributions from sugar-sweetened beverages (SSBs) and 100% fruit juice among US youth during 1988-2004.	20,844	Pediatric/ Young adults	24 hour dietary recalls from 2-19 yr participants in the NHANES surveys for 1988-1994 & 1999 - 2004. Complete/reliable 24-hour dietary recall Exclusions: Pregnant Nursing	Group 1: 2-5 yr: 22% 6-11 yr: 34% 12-19yr: 43% Male: 51% Non-Hispanic white(W): 73% Non-Hispanic black(B): 17% Mexican American: 10% Group 2: 2-5 yr: 21% 6-11 yr: 34% 12-19yr: 46% Male: 51% Non-Hispanic white(W): 70% Non-Hispanic black(B): 17% Mexican American: 14%	Group 1: NHANES respondents 1988-1994 Group 2: NHANES respondents 1999-2004	Group 1: 9,882 Group 2: 10,962	N/A	Sugar-sweetened beverage intake 100% fruit juice intake BMI	Per capita daily calorie contribution from sugar-sweetened beverages (SSB) & 100% fruit juice (FJ) increased from 242 kcal/d in period 1 to 270 kcal/d in period 2.(p for trend=S*) The largest increase occurred among 6 - 11 y old children, ~ 20% (31 kcal/d;p=S**) between surveys. There was no change in per capita daily consumption in W adolescents but significant increases among B and Mexican-American youth. Among adolescents, soda contributed ~ 67% of SSB calories while FJ provided more than half of SSB calories in preschool aged children. On average, 55-70% of all SSB calories were consumed at home, and 7 - 15% in schools.	Consumption of SSB and FJ has increased significantly between 1988-1994 & 1999-2004. There was no change in per capita daily consumption in W adolescents but significant increases among B and Mexican-American youth.