PMID	First Author	Title	Year	Study Type	Prospect./ Restrospect.	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
8357505	Clarke WR	Does childhood obesity track into adulthood?	1993	Cohort	Prospective	Muscatine	None	Q8 (RF8)	USA	Community (schools)	Evaluate tracking of body anthropometry from childhood into young adult yrs.	2631	Pediatric/ Young adults	All those surveyed as children between 1971-1981 and again as young adults between 1981-1990. Total # of subjects with data in both time periods=2631.	Longitudinal cohort study based in Muscatine, IA of children aged 8-18 y at enrollment between 1971 & 1981, followed with biennial school surveys into adult life. A total of 14,066 children have undergone 32,636 evaluations. For this study, age at baseline: 9 - 18 y; Age at F/U: 23, 28 & 33 y.	All those surveyed as children between 1971-1981 and again as young adults between 1981-1990.	N/A	15 y	Height Weight BMI Triceps skin fold (SF)	Pearson correlations were used to assess tracking for childhood to adult anthropometric measures: Ht: 0.41-0.97; Wt:0.51 - 0.88; BMI: 0.58 - 0.91;SFs: 0.26 - 0.58. From 57.3-68.5% of children in the top quintile for weight were in the top quintile as adults; from 50-87.5% of F children & 47.8-75.0% of M children in the top quintile of BMI were again in the top quintile as adults; from 25-57% of children in the top quintile of triceps SFs were again in the top quintile as adults. 31% of children from the upper quintile of BMI become adults with BMIs below this level & a similar # of lean children become obese adults.	Weight, BMI and triceps SFs track strongly from childhood into young adult life. However, ~30% of individuals in the top quintile for BMI in childhood become adults with BMI in the lower 3 quintiles. Equally,~ 30% of individuals with BMI in the lower 3 quintiles as children become adults with BMI in the top quintile.
10905529	Lewis CE	Weight gain continues in the 1990s: 10-year trends in weight and overweight from the CARDIA study. Coronary Artery Risk Development in Young Adults	2000	Cohort	Prospective	CARDIA	None	Q5 (RF8)	USA	Community (other)	Evaluate 10-year aging & secular trends in weight in the CARDIA cohort.	5115/ 3939	Pediatric/ Young adults	All participants in CARDIA who underwent baseline evaluation in 1985-86 & each F/U exam until yr 10 in 1995-96.	Population-based , prospective observational study with participants recruited from 4 metropolitan areas (Birmingham, Ala; Chicago, Ill, Minneapolis, Minn; & Oakland, Calif) in 1985-1986 at 18-30 yrs of age (44.9% black, 53.9% women) & followed up 10 yrs later	BM: n=806 BF: n=1 120 WM: n=950 WF:n-1 072	BM: 1,157/ 806 BF: 1,480/ 1,120 WM: 1,171/ 950 WF:1 305/ 1,072	10 yrs.	Weight 10 Y weight change: Loss> 5 kg; Stability +/- 5 kg; Gain 5-7.9 kg; Gain 8-10.9 kg; Gain 11-19.9 kg Ht BMI BMI class: Normal = 18.5-24.9; overweight=25.0-29.9; Class I obesity = 30.0-34.9; Class 2 obesity=35.0-39.9; Class 3 (extreme) obesity= ≥40 Sum of skin folds - SSF Education category:< 12 y; 13-15 y; ≥16 y Smoking status	Body weight & overweight prevalence were assessed at 5 time points from 1985-86 to 1995-96. No difference between survey attendees & non-attendees By repeated measures regression, prevalence of overweight increased markedly in all race/sex groups. WF= 23.7% at baseline to 41.6% at 10y; BF=47.8% at baseline to 71.6% at 10y; WM= 34.9% at baseline to 59.5% at 10 y; BM= 38.2% at baseline to 66.2% at 10 y. Prevalence of severe obesity (BMI≥40) more than doubled in all 4 race-sex grps. Average wt, BMI & SSFs increased over the 10 y in all race-sex grps. Generally larger & non-linear wt gains occurred in the early 20s vs earlier & later age groups. Secular trends in wt gain were similar in those who had never smoked & there was no consistent trend related to educational status.	Over a 10 y period, prevalence of overweight (BMI≥40) doubled in all race/sex groups. Significant secular gains occurred across each time period and for each race-sex group with magnitude varying btwn groups.
12415060	Kimm SY	Obesity development during adolescence in a biracial cohort: the NHLBI Growth and Health Study	2002	Cohort	Prospective	NGHS	None	Q5 (RF8) Q8 (RF8)	USA	Community (schools)	Investigate the development of obesity in B & W girls during adolescence.	2379	Pediatric/ Young adults	Girls from 3 geographic locations who declared themselves as either black or white; enrolled at age 9-10 y and followed annually X 10 y. Schools selected were each ~ 50% W, 50% B.	1166 WFs, 1213 BFs from 3 geographic locations enrolled at age 9-10 y and followed annually X 10 y.	1166 WFs, 1213 BFs from 3 geographic locations enrolled at age 9-10 y and followed annually X 10 y.	WF=1166/ 1026 BF=1213/ 1104	10 y	Ht Wt BMI Tanner stage	At age 9, BFs were significantly taller than WFs(p=S**) but by age 19, WFs were significantly taller than BFs(p=S*). Wt & BMI were significantly greater for BFs at all ages (p=S** for all yrs). At age 9, prevalence of overweight was 37% higher in BFs than WFs, 30.6% vs 22.4%. At 10 y F/U, 56.9% of BFs & 41.3% of WFs were overweight. At age 9, prevalence of obesity was 17.7% for BFs & 7.7% for WFs. At 10 y F/U, prevalence rate for obesity was 36.9% in BFs & 18.0% in WFs. BFs underwent puberty before WFs with almost half of B cohort already pubertal at age 9.	Q5. BFs were heavier and with greater BMI at baseline and throughout the 10 y F/U. Prevalence of overweight was 30.6% in B girls vs. 22.4% in W girls at baseline. Prevalence of overweight almost doubled and of obesity more than doubled in both BFs & WFs over the 10 yr follow-up period-->>1/3 of B girls and ~1/5 W girls were obese at 19 y of age. Relative racial difference in overweight & obesity persisted unchanged.
12495828	Youssef AA	Time-course of adiposity and fasting insulin from childhood to young adulthood in offspring of parents with coronary artery disease: the Bogalusa Heart Study	2002	Cohort	Prospective	Bogalusa	None	Q5 (RF 1, 8,14) Q6 (RF 1, 8,14) Q8 (RF 8,14)	USA	Community (other)	Correlate (+) Fam Hx for CHD with obesity and insulin levels.	1076 (by design)	Pediatric/ Young adults	Among the 1930 young adults aged 18-32 y who were evaluated between 1988-1991, 271 had a (+) confirmed fam hx for parental CAD vs 805 with confirmed (-) fam hx. These 1076 subjects represent the eligible subjects.	Community-based cohort of B & W children and young adults - originally examined at 5-17 yrs; 52% F, 44% B. For this study, subjects were chosen based on confirmed family hx of CAD from among the 1930 subjects who underwent evaluation as young adults in 1988-1991 and on whom childhood data were available.	(+) FAM HX = 271 (-) FAM HX = 805	No loss to F/U by study design	18 y	BMI Sub-scapular skin folds (SFs) Fasting insulin levels (IN)	Analysis used generalized estimation equations to allow for varying #s & unequal spacing of observations, plus correlations between repeated observations on the same individual. Trends of BMI & SFs were consistently higher for offspring with (+) fam hx of CAD, beginning in childhood. In both groups, BMI & SFs increased markedly with age in an almost linear fashion but SFs only showed this pattern until age 20. By MVA, BMI & SFs were consistently higher in (+) FAM HX group from childhood to adulthood (p=S0. With BMI in the model, no association seen between SFs & fam hx of CAD. Fasting insulin levels showed a significant interaction between age & (+) FAM HX, lower to age 20 (p=S*) and higher after age 20 (P=S*), even after controlling for BMI.	BMI, triceps and subscapular SFs were consistently higher from childhood to adulthood in offspring of parents with CAD. Insulin levels were lower in childhood in offspring with (+) Fam Hx; after age 20, (+) Fam Hx was asst'd with higher insulin levels even after adjustment for BMI.
14522695	Storey ML	Demographic and lifestyle factors associated with body mass index among children and adolescents	2003	CrS	Retrospective	CFSII and NHANES III	None	Q6 (RF2, RF3, RF8, RF9, RF10)	U.S.A	Clinical	Examine the association between demographic and lifestyle variables (gender, race/ethnicity, age, family income, diet, and television viewing) and the BMI of children 6-11 yr and adolescents aged 12-19 yr for CSFII and 12-16 yr for NHANES	16,857	Pediatric/ Young adults	6-19 yr	Patient characteristics from CFSII and NHANES III	Children (6-11 yr) Adolescents (12-16 yr)	CSFII: 5,739 NHANES: 4,720 CSFII: 4,182 NHANES: 2,216	NR	Gender Race/ethnicity Family income(% of poverty line) Mean BMI [kg/m2 (SE)] Mean weight [kg (SE)] Mean dietary total fat [g/d (SE)] Mean dietary added sugars Mean dietary protein [g/d (SE)] Mean television watched [hr/d (SE)] Mean exercise [times/wk (SE)]	In children, the statistically significant predictors of BMI were age, race, gender and family income; in adolescents, they were age, race and gender. Dietary factors were not associated with BMI in younger children but simple carbohydrate intake had a statistically significant inverse relationship to BMI among adolescents. In both children and adolescents, total screen time was markedly associated with BMI, and participation in team sports was negatively associated with BMI. Demographic variables accounted for roughly half of the explained variances in BMI for both children and adolescents. The remainder was accounted for by TV viewing, diet and family income.	Q5, 6: In children, the statistically significant predictors of BMI were age, race, gender and family income; in adolescents, they were age, race and gender. Dietary factors were not associated with BMI in younger children but simple carbohydrate intake had a statistically significant inverse relationship to BMI among adolescents. In both children and adolescents, total screen time was markedly associated with BMI, and participation in team sports was negatively associated with BMI. Demographic variables accounted for roughly half of the explained variances in BMI for both children and adolescents. The remainder was accounted for by TV viewing, diet and family income.

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15480363	Fernandez JR	Waist circumference percentiles in nationally representative samples of African-American, European-American, and Mexican-American children and adolescents	2004	CrS	Retrospective	NHANES III	None	Q5 (RF2, RF3, RF8) Q6 (RF2, RF3, RF8)	U.S.A	Clinical	Describe and provide estimates of the distribution of waist circumference according to percentiles in African-, European-, and Mexican-American children, and to test for group differences at different percentiles	9,713	Pediatric/ Young adults	2-18 yr Non-pregnant	Patient characteristics from NHANES III	African-American (AA) European-American (EA) Mexican-American (MA)	3,414 (NR) 2,746 (NR) 3,553 (NR)	NR	10th percentile for WC distribution; 25th percentile for WC distribution; 50th percentile for WC distribution; 75th percentile for WC distribution; 90th percentile for WC distribution; Race/ethnicity; Age; Gender	Waist circumference(WC) measurements increased in a monotonic fashion across ages but at nonconstant rates and in a manner that varied across age and sex. In general, MA boys and girls have higher WC at the considered percentiles than do AA or EA children. Rates of WC increase differ between race/ethnic groups for both Ms and Fs: (1)AA Ms consistently had a lower rate of increase than any other group at every %ile of the distribution; (2) On the 75th & 90th%iles, MA Fs had the fastest overall increase of all Fs; (3) At every %ile, MA Ms & Fs showed the highest overall WC and the fastest rate of increase with age. At higher percentiles of the distribution, estimates of WC were higher in MA and AA than EA in females and between MA and EA in males. WC measures exceeded the adult cutoff value for obesity-related disease risk at 13 years in MA & AA girls and at 15 yrs in EA females; and at 17 yrs in MA males and 18 yrs in EA males. *M= male; F=female	Q5,6:Waist circumference measurements increased in a monotonic fashion across ages but at nonconstant rates and in a manner that varied across age,sex and racial/ethnic group. Rates of WC increase differ between race/ethnic groups for both Ms and Fs: (1)AA Ms consistently had a lower rate of increase than any other group at every %ile of the distribution; (2) On the 75th & 90th%iles, MA Fs had the fastest overall increase of all Fs; (3) At every %ile, MA Ms & Fs showed the highest overall WC and the fastest rate of increase with age. At higher percentiles of the distribution, estimates of WC were higher in MA and AA than EA in females and between MA and EA in males. WC measures exceeded the adult cutoff value for obesity-related disease risk at 13 years in MA & AA girls and at 15 yrs in EA females; and at 17 yrs in MA males and 18 yrs in EA males.
15629977	Freedman DS	The relation of childhood BMI to adult adiposity: the Bogalusa Heart Study	2005	Cohort	Prospective	Bogalusa	None	Q6 (RF8) Q8 (RF8)	USA	Community (other)	Evaluate the association btwn childhood BMI and body fatness with adult adiposity.	2,610	Pediatric/ Young adults	Children who participated in at least 1 survey in childhood at 2-17 y of age and in one adult survey at 18-37 y of age.	Community-based cohort of B & W children and young adults - originally examined at 5-17 yrs; 52% F, 44% B. For this study, 2 examinations: baseline at 2-17 yrs & F/U at 18-37 yrs; 57% F;	N/A	N/A	17.6 yrs (range:10-24 y)	Childhood & adult BMI; Childhood triceps skin folds (SFs); Adult triceps & sub-scapular SFs	Study cohort did not differ from group lost to F/U except for slightly higher prevalence of overweight in the study cohort (7% vs 6%,p=S) At follow-up, 23% of subjects were obese (BMI≥30) & 25% were overfat with mean SF in the upper quartile. Childhood levels of BMI-for-age & SFs correlated significantly with adult levels with r=0.44 - 0.64. Strongest associations were seen between childhood & adult BMI but childhood BMI also correlated significantly with adult SFs at all ages including the youngest, 2-5 y olds with r=0.41 for M, 0.33 for F. Childhood BMI correlated almost as well as childhood SFs with adult SFs. In general, correlations were stronger for Ms than Fs and for older children (9-17y) than younger children. As childhood BMI increased,the (+) predictive value for adult obesity (BMI≥30) or overfatness(upper quartile SFs) increased. (+) predictive values for overweight BMI increased with increasing childhood age & were greater for adult obesity than for adult overfat. (+) predictive values for adult overfat varied little with age. Multiple regression models demonstrated statistically significant independent associations between childhood BMI-for-age & SFs with adult SFs (p=S**).	Childhood levels of both BMI & triceps skin folds were associated with adult levels of BMI & adiposity. Magnitude increased with increasing childhood age but BMI levels of even the youngest children were moderately associated with obesity. 2 - 5 yr olds with BMI for age ≥ 95th%ile were 4X as likely to be overfat adults as were children with BMI < 50th%ile. Controlling for skin folds, childhood BMI still correlated with adult adiposity
15629977	Freedman DS	The relation of childhood BMI to adult adiposity: the Bogalusa Heart Study	2005																	Among severely obese adults with BMI≥40, 46% had a childhood BMI ≥95th%ile & 70% had a childhood BMI >85th%ile.	
15761176	Field AE	Weight status in childhood as a predictor of becoming overweight or hypertensive in early adulthood	2005	Cohort	Prospective	East Boston	None	Q6 (RF4,8) Q8 (RF4,8)	USA	Community (other)	To assess the extent to which weight status in childhood predicts young adult overweight or hypertension.	337/ 314	Pediatric/ Young adults	All available participants in the East Boston BP study.	Cohort study of 339 schoolchildren from a single school in east Boston beginning in 1978 with annual F/U until 1981 and then reassembly of the original cohort in 1989-1990. 177F/ 139M. 315 W; 2 Asian.	N/A	N/A	12 yrs	Age; Sex; Ht; Wt; BMI; SBP; DBP; History of HTN dx; History of parental HTN dx; Medication use; Cigarette use; Alcohol use; * BPs were measured weekly X 3 wks using a standard protocol in 1978, 1979, 1980 & 1981 and then again in 1989-90.	Overweight/ Obesity: At baseline in childhood, the distribution of wt status was similar in Ms & Fs. At adult F/U, among subjects with BMI < 25 at first visit, 48.3% of Ms vs 23.5% of Fs became overweight or obese (p=S**). Of 103 children who were at risk for overweight or overweight at childhood evaluation (BMI>85th%ile), 75% were overweight as young adults. 13% of children with BMI < 50th %ile became overweight/ obese as young adults vs 33% of children with BMI between the 50th & 75th%ile. For Fs whose BMI was between the 50th & 75th%iles in childhood, OR for becoming overweight/ obese was 4.8(CI=0.9-26.6); for childhood BMI between the 75th& 84th%iles, OR for becoming overweight/ obese was 20.2(CI=3.4-121.6). Independent of baseline BMI, childhood gains in BMI or BMI %ile predicted adult overweight/ obesity. There was a strong (+) association between childhood & adult BMI.	Weight status at 11 yrs of age was strongly predictive of future overweight/ obesity in young adulthood. Overweight male children were at significant risk to become hypertensive as young adults. Males at the upper end of the normal weight range in childhood have increased risk of developing HTN as young adults.
15761176	Field AE	Weight status in childhood as a predictor of becoming overweight or hypertensive in early adulthood	2005																	BP: Incidence of HTN was 12.3% in Ms vs 1.9% in Fs (p=S**). As young adults, Fs had lower mean SBPs (by 12.3 mmHg) & DBP (by 5.4 mmHg) than Ms. Among Ms, childhood BMI was predictive of BP in young adulthood but BMI was no longer a significant predictor after adjustment for height. Age-specific z-score of childhood BMI(OR=2.2,CI=1.2-3.9)or BMI itself (OR=1.1,CI-1.0-1.3)predicted development of HTN in young adult males. Ms with BMI ≥ 85th%ile at first childhood visit were 5X more likely (OR=5.1, CI=1.4-18.1) than those with BMI < 75th%ile to become hypertensive by young adulthood.	

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16571857	Freedman DS	Racial and ethnic differences in secular trends in childhood BMI, weight, and height	2006	CrS	Retrospective	NHANES I, II, III, NHANES 1999-2002	None	Q5 (RF8)	U.S.A	Clinical	Examine sex and race/ethnicity differences in secular trends for childhood BMI< overweight, weight, and height	NHANES I: 6,431 NHANES II: 6,395 NHANES III: 9,610 NHANES 1999-2004: 6,710	Pediatric/ Young adults	Non-pregnant NHANES I, II, III, and 1999-2004 eligibility criteria	Patient characteristics from NHANES I, II, III< and NHANES 1999-2002	Whites Blacks Mexican Americans	Sample sizes are stratified by race, age, and gender	NR	Mean BMI Mean BMI z-scores Race/ethnicity Age	Overall, black children experienced much larger secular increases in BMI, weight, and height than did white children. For example, over the 30-year period, the prevalence of overweight increased approximately 3-fold (4% to 13%) among 6- to 11-year-old white children but 5-fold (4% to 20%) among black children. In most sex-age groups, Mexican-American children experienced increases in BMI and overweight that were between those experienced by blacks and whites. Race/ethnicity differences were less marked among 2 to 5 year olds, and in this age group, white children experienced the largest increase in overweight (from 4% to 9%). In 1999-2002, the prevalence of extreme BMI levels (> or =99th percentile) reached 6% to 7% among black girls and Mexican-American boys.	Q5: Over a 30 yr period, there have been marked racial and ethnic differences in weight status change during childhood. Overall, black children experienced much larger secular increases in BMI, weight, and height than did white children. In most sex-age groups, Mexican-American children experienced increases in BMI and overweight that were between those experienced by blacks and whites. Race/ethnic differences were less marked among 2 to 5 year olds, and in this age group, white children experienced the largest increase in overweight (from 4% to 9%). In 1999-2002, the prevalence of extreme BMI levels (> or =99th percentile) reached 6% to 7% among black girls and Mexican-American boys.
16672846	Yang X	Risk of obesity in relation to physical activity tracking from youth to adulthood	2006	Cohort	Prospective	Young Finns	None	Q6 (RF8,11) Q7 (RF8,11) Q8 (RF8,11)	Finland	Community (other)	Correlate physical activity patterns from youth with young adult BMI	1665/ 1319	Pediatric/ Young adults	Finnish cohort enrolled at 9-18 yr of age in 1980 and followed with serial RF evaluation over time, including activity level assessment by questionnaire. At 24-39 yr of age, activity level evaluated relative to BMI.	626 M/ 693 F	Persistently active (PA): n = 130 M/ 138 F Increasingly active (IA): n = 216 M/ 225 F Decreasingly active (DA): n = 139 M/ 187 F Persistently inactive (PI): n = 141 M/ 143 F		21 yr	Physical activity index (PAI) from questionnaires based on frequency & intensity of participation in leisure-time activities, training, & competitions. Subset of 102 participants underwent maximal cycle ergometry with measurement of VO2max,mean workload during last 4 mins of testing (Wlast4) & hypothetical max workload for 6 mins (Wmax6). BMI SSFs Waist circumference (WC)	PA: 33.1% of Ms/ 32% of Fs IA: 27.3% of Ms/ 30.3% of Fs DA: 28.1% of Ms/ 30.3% of Fs PI: 11.5% of Ms/ 7.4% of Fs Prevalence of obesity was 14.7% in Ms & 12.0% in Fs. Physically active subjects(both M & F) had lower WC as adults compared with all other groups; active Fs had lower BMI (p=S*) compared with all other groups but this was not true for Ms. Physical activity in youth was not associated with adult obesity. Physical inactivity in youth was associated with obesity in youth in Fs but not in Ms. After adjustment for age, youth BMI & SSFs, SES measures & smoking, being DA in Fs was independently associated with risk of being overweight (OR=2.35, CI=1.16-4.78) or obese (OR=2.72, CI=1.04-7.09) but not in Ms. In Ms, decreases in physical activity over this time period were not associated with development of obesity. In both Ms & Fs, being persistently inactive was not associated with development of obesity.	Physically active subjects(both M & F) had lower WC as adults compared with all other groups and active Fs had lower BMI. Decreasingly active subjects were more likely to have abdominal obesity as adults. Physical activity in youth was inversely associated with obesity in youth in Fs. In both Ms & Fs, being persistently inactive was not associated with development of obesity.
16675506	de Ferranti SD	Inflammation and changes in metabolic syndrome abnormalities in US adolescents: findings from the 1988-1994 and 1999-2000 National Health and Nutrition Examination Surveys	2006	CrS	Retrospective	NHANES 1988-1994, NHANES 1999-2000	None	Q5 (RF6, RF14) Q6 (RF6, RF7, RF8. RF14)	U.S.A	Clinical	Explore changes over time in the prevalence of the metabolic syndrome phenotype in US adolescents by comparing 2 NHANES datasets, 1999-2000 and 1988-1994. Evaluate the relationship between metabolic abnormalities, metabolic syndrome, and CRP concentrations in the more recent database.	NHANES 1988-1994: 1,960 NHANES 1999-2000: 1,527	Pediatric/ Young adults	NHANES 1988-1990 and NHANES 1999-2000 eligibility criteria	Patient characteristics from NHANES 1988-1994 and NHANES 1999-2000	Low HDL High BP High TG High WC High Glucose	1,960 1,527	NR	Subjects 12 - 19 yrs of age from NHANES 88-94 and 99-00 grouped by: BMI percentile (< or ≥ 85th%ile) HDL (< or ≥ 50 mg/dL)* BP (SBP<90th%ile or≥ 90th%ile for age/sex) TG (fasting TG , or ≥ 100 mg/dL) Waist circumference (< or≥75th%ile for age/sex) Fasting glucose(FG) (< or ≥ 110 mg/dL) CRP * 45 mg/dl in boys from 15-19 yrs	The prevalence of central obesity, low HDL-cholesterol, and hypertension increased between the 2 surveys. Three or more abnormalities (metabolic syndrome dx) were found in 12.7% [(CI) 10.0%-15.4%] of adolescents from the 1999-2000 survey, compared with 9.2% (CI, 7.8%-10.6%; P < 0.001) in the 1988-1994 dataset. Prevalence increased in all racial/ethnic groups but at different rates: Non-hispanic white: 10.9%(CI:8.4-13.4) to 12.5(CI:8.1-16.9) Black: 2.5(CI:1.3-3.7) to 10.2(CI:6.4-14.0) Mexican American: 12.9(CI:10.4-15.4) to 16.9(CI:15.1-18.6) Increases in metabolic syndrome were primarily attributable to increasing body mass index (BMI); prevalence of BMI at or above the 85th percentile increased from 25.9% to 30.5%. Metabolic syndrome was much more prevalent in overweight compared with normal-weight adolescents (38.6% vs 1.4%; P < 0.001). Median CRP increased with increasing numbers of metabolic abnormalities and was higher in adolescents with metabolic syndrome than in those without. CRP was higher in adolescents with BMI at or above the 85th percentile than those with normal BMI.	Q5: Metabolic syndrome cluster (≥3 abnormalities) increased between surveys: 12.7% [(CI), 10.0%-15.4%] in the 1999-2000 survey, compared with 9.2% (CI, 7.8%-10.6%; P < 0.001) in the 1988-1994 dataset. I subgroups. Q5. Prevalence increased in all racial/ethnic groups but at different rates: Non-hispanic white: 10.9%(CI:8.4-13.4) to 12.5(CI:8.1-16.9); Black: 2.5%(CI:1.3-3.7) to 10.2%(CI:6.4-14.0);Mexican American: 12.9%(CI:10.4-15.4) to 16.9%(CI:15.1-18.6) Q6: Increases in metabolic syndrome were primarily attributable to increasing body mass index (BMI); prevalence of BMI ≥ 85th percentile increased from 25.9% to 30.5% between surveys. Metabolic syndrome was much more prevalent in overweight compared with normal-weight adolescents (38.6% vs 1.4%; P < 0.001). Median CRP increased with increasing numbers of metabolic abnormalities and was higher in adolescents with metabolic syndrome than in those without and higher in adolescents with BMI≥85th percentile than those with normal BMI.
16953253	Yang X	Testing a model of physical activity and obesity tracking from youth to adulthood: the cardiovascular risk in young Finns study	2007	Cohort	Retrospective	Young Finns	None	Q6 (RF2, RF8, RF11) Q8 (RF8)	Finland	Don't know/NR	Test a potential model of the relationship between physical activity and obesity from youth to adulthood	1,319 (NR)	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 total of 1319 children ages 9, 12, 15, and 18 yrs at baseline were selected with follow-up evaluation 21 yrs later.	Boys: 626	N/A	N/A	21 yr	Obesity measures: BMI Sum of skin folds(SSF) Waist circumference (WC) Physical activity index computed from self-reported questionnaires at B/L and adult F/U.(PAI)	There was a significant association between youth PAI and adult PAI for Ms and Fs. There were significant correlations between youth BMI & SSF and between adult BMI and WC (beta=0.41, t=11.13, p<0.05 for men, beta=0.34, t=9.39, p<0.05 for women) Adult PAI correlated inversely with WC in Ms and Fs and with BMI in Fs (beta= - 0.16, t=-4.02, p = S for Ms, beta= - 0.12, t= - 3.35, p = S for Fs). There was no correlation between youth PAI and adult BMI or WC, or between youth BMI and SSF and adult PAI in Ms or Fs. The model accounted for 19% of abdominal obesity in men and 13% in women.	Q6,7,8: The prevalence of abdominal obesity in adulthood was directly affected by adult physical activity (p< 0.05 for men and women) and only indirectly via the effect of youth physical activity on youth obesity (p< 0.05 for men and women). Youth physical activity was associated with lower body weight in youth but was not directly associated with adult abdominal obesity in either men or women. The model accounted for 19% of abdominal obesity in men and 13% in women. Q8: Obesity tracked significantly from youth to adulthood

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17023695	Wang Y	Are American children and adolescents of low socioeconomic status at increased risk of obesity? Changes in the association between overweight and family income between 1971 and 2002	2006	CrS	Retrospective	NHANES	None	Q5 (RF2, RF8)	U.S.A	Clinical	Examine secular trends in the relation between overweight and SES	30,417	Pediatric/ Young adults	2-18 yr	Patient characteristics from NHANES I, II, III, and NHANES 1999-2002	Whites Blacks Mexican Americans	NR	NR	Mean BMI [kg/m² (SE)] Overweight [% (SE)] Age (Child: 2 - 9 y; Adolescent: 10 - 19 y) Race/ethnicity	The prevalence of overweight/obesity has increased in all race/sex groups, overall almost doubling between surveys, from 15.5% to 29.2%. Mean BMI of American children has increased from 18.1 to 19.5 between the 2 surveys. Considerable race, sex, and age differences were observed in the association between overweight and SES in adolescents: - A reverse association existed in white Ms & Fs in NHANESIII; - African American children with a high SES were at increased risk. Socioeconomic disparities in overweight have changed over time, with an overall trend of weakening. Compared with the medium-SES group, the adjusted odds ratios and 95% CIs were for the low SES group were 0.79 (0.47, 1.33), 1.08 (0.73, 1.61), 1.24 (0.73, 2.09), and 1.04 (0.82, 1.33) in NHANES I, II and III and in the 1999-2002 NHANES; and 0.66 (0.43, 1.00), 0.60 (0.35, 1.03), 0.42 (0.23, 0.76), and 0.99 (0.68, 1.43) for the high-SES group, respectively. Between 1988-1994 and 1999-2002, the ratio in the prevalence of overweight with a low or high SES decreased from 2.5 to 1.1 in adolescent boys and from 3.1 to 1.6 in girls. Consistently across almost all SES groups, the prevalence of overweight was much higher in blacks than in whites.	Q5: There are considerable race, sex, and age differences in the association between overweight and SES: a reverse association only existed in white girls; African American children with a high SES were at increased risk. Socioeconomic disparities in overweight have changed over time, with an overall trend of weakening. Compared with the medium-SES group, the adjusted odds ratios and 95% CIs for the low SES group were 0.79 (0.47, 1.33), 1.08 (0.73, 1.61), 1.24 (0.73, 2.09), and 1.04 (0.82, 1.33) in NHANES I, II, and III and in the 1999-2002 NHANES; and 0.66 (0.43, 1.00), 0.60 (0.35, 1.03), 0.42 (0.23, 0.76), and 0.99 (0.68, 1.43) for the high-SES group, respectively. Between 1988-1994 and 1999-2002, the ratio in the prevalence of overweight with a low vs high SES decreased from 2.5 to 1.1 for boys & and from 3.1 to 1.6 in girls. Consistently across almost all SES groups, the prevalence of overweight was much higher in blacks than in whites.
17188606	Thompson DR	Childhood Overweight and Cardiovascular Disease Risk Factors: The National Heart, Lung, and Blood Institute Growth and Health Study	2007	Cohort	Prospective	NGHS	None	Q6,7,8 (RF 4,5,8)	USA	Community (schools)	Estimate the prevalence and incidence of overweight in black and white girls and examine associations between adolescent overweight and CVD risk	2379 (2054)	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: 1213 White: 1166	Black girls. White girls.	Black 1213 (1063) White 1166 (991)	10 yr	BMI Body fat by bioelectric impedance(BF) Sum of skin folds (SSF) Waist circumference (WC) BP Lipids (TC,HDL-C, TG, LDL-C) New onset of overweight (BMI>95th%ile for age)	Overweight was more prevalent in B girls than W girls at all ages (OR=4.9;CI:1.6-8.2);[B vs W % overweight 9-12 years old: 21.5% vs 10.3%; B vs W % overweight 13-18 years old: 23.3% vs 10.1%]. % of new onset overweight was 2-5% through age 12; then averaged 1-2%. Compared with non-overweight girls, girls who were overweight at age 9-18 were substantially more likely to be overweight as adults (p=S**). All adiposity indicators increased as BMI increased & all measures increased with increasing age (p=S**). %BF & WC were greater in B girls by approximately 5.7%(CI:4.4-7.1) and 2.8%(CI:1.9-3.7)(p=S** for both). Overweight was most strongly asst'd with SSFs & WC but also significantly with % BF. Compared with non-overweight girls, girls who were overweight were more likely to have high SBP & DBP (p=S*);to exhibit low HDL (p=S**) and high TG (p=S*). Overweight was not significantly associated with elevated TC or LDL-C. In a model that controlled for maturation, LDL was associated with overweight (p=S*).	Q5. Racial differences in obesity prevalence are present at age 9 with a significantly higher prevalence in B girls. B girls also showed higher incidence of overweight onset. % of new onset overweight was higher at 2-5% through age 12, then lower and stable through the rest of the F/U period. The association between overweight & CV RFs is already present in early childhood: girls who were overweight were 3 to 10 X more likely to be assessed in the high risk range for 4 of 6 CV indicators (SBP;DBP;HDL;TG)
17955082	Freedman DS	Childhood overweight and family income	2007	CrS	Retrospective	NHANES 1971-1975. NHANES 1999-2004	None	Q5 (RF8)	U.S.A	Clinical	Examine the relation of family income, expressed relative to the poverty threshold, to prevalence of childhood overweight, and to determine whether the association differs by race/ethnicity and time period	10,409	Pediatric/ Young adults	2-19 yr Exclusions: Pregnant women NHANES 1971-1975 and NHANES 1999-2004 eligibility criteria	Patient characteristics from NHANES 1999-2002	Income ratio levels	NR	NR	Prevalence of overweight	The relation of family income to childhood overweight differed (P < .001) by race/ethnicity in 1999-2004. - As compared with children below the poverty level (annual family income of about $19,200), the odds of overweight among children from families with incomes of 4 or more times the poverty threshold were 0.63 (white children) and 0.51 (Mexican-American children). - Among black children, overweight was positively associated (OR=1.12) with family income. As compared with white children, Mexican American and black children had a higher BMI for age, a higher prevalence of overweight and were almost twice as likely to be overweight. Although family income was not associated with childhood overweight in 1971-1974, there is an observed association in the 1999-2004 data. The association changed most during the past few decades among Mexican-American children (P = .03 for secular trend).	Q5: As compared with children below the poverty level, the odds of overweight among children from families with incomes of 4 or more times the poverty threshold varied with racial/ethnic status: 0.63 (white children) and 0.51 (Mexican-American children); among black children, however, overweight was positively associated (odds ratio of 1.12) with family income. Although family income was not associated with childhood overweight in 1971-1974, the observed associations also differed by race/ethnicity in the 1976-1980 and 1988-1994 surveys. The association changed during the past few decades among Mexican-American children (P = .03 for secular trend), but not among white or black children.