

CONCLUSIONS: These results suggest that there is an inverse relationship between cardiorespiratory fitness and the prevalence of hypertension and diabetes, but not dyslipidemia, among Japanese men and women. We intend to continue prospective follow-up of participants, to obtain more robust findings with longitudinal analyses.

	Cases	Q1 (lowest)	Q2	Q3	Q4 (highest)	P for trend
Hypertension	366	1.00 (reference)	0.36 (0.22–0.60)	0.51 (0.30–0.85)	0.35 (0.19–0.62)	0.005
Diabetes	55	1.00 (reference)	0.93 (0.44–1.93)	0.39 (0.15–1.00)	0.46 (0.16–1.32)	0.049
Dyslipidemia	420	1.00 (reference)	0.98 (0.65–1.48)	1.06 (0.69–1.64)	0.92 (0.56–1.51)	0.850

873 Board #107 May 29 2:00 PM - 3:30 PM

Association of Active Commuting with Sport Time and Outdoor Play Time in Chinese Schoolchildren

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(No relationships reported)

PURPOSE: Active commuting has been proved to be related to higher levels of physical activity in children in Western countries. Whether this relationship exists for specific forms of physical activity, e.g., sport participation and outdoor play, remains unclear, especially among Chinese children. This study aimed to investigate the association of active commuting with sport time and outdoor play time in Chinese schoolchildren.

METHODS: A total of 441 children (49.7% boys, mean age = 8.3 ± 0.9 years) in grades 1 to 3 from four primary schools in Beijing participated in this study. Information of children's walking trips, daily sport time, and daily outdoor play time was reported by parents using the modified Chinese version of the children's leisure activities study survey. Children were categorized as either active (≥ 6 walking trips per week) or passive commuters (< 6 walking trips per week) based on the parent-reported number of trips walking to and from school. Children reported their own sex, age, and exercise self-efficacy. Children's body weight and height were measured by researchers to calculate body mass index (BMI). Differences of daily sport time and outdoor play time between active vs. passive commuters were examined by the analysis of covariance (ANCOVA) adjusting for children's age, BMI, and exercise self-efficacy. ANCOVA were conducted separately for boys and girls.

RESULTS: 42.7% of boys and 40.3% of girls were classified as active commuters. In boys, no difference was found for daily sport time between active and passive commuters (62.0 ± 46.7 min/d vs. 55.4 ± 41.4 min/d, *P* = 0.266), whereas active commuters had more time of outdoor play than passive commuters (194.8 ± 122.4 min/d vs. 153.7 ± 122.3 min/d, *P* = 0.041). For girls, neither daily sport time (64.1 ± 37.7 min/d vs. 54.1 ± 43.9 min/d, *P* = 0.110) nor daily outdoor play time (146.3 ± 129.6 min/d vs. 178.5 ± 141.4 min/d, *P* = 0.156) differed between active and passive commuters.

CONCLUSIONS: Boys who actively commute to school have higher levels of outdoor play time. Promoting active commuting may increase levels of physical activity in Chinese schoolchildren.

874 Board #108 May 29 2:00 PM - 3:30 PM

A Comparison of Obesity and Other CVD Risk Factors between Boys and Girls in Kuwait

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The prevalence of childhood obesity in Kuwait, among the highest globally including the US, is higher in boys than girls. Cardiovascular disease (CVD) risk is hence a concern, but data are limited comparing other CVD risk factors between boys and girls.

PURPOSE: To compare the mean level and prevalence of CVD risk factors between 5th grade boys and girls in Kuwait.

METHODS: A cross-sectional study of 367, 5th graders at 10.4 ± 0.4 years of age, (53% girls), from 16 schools in 6 Kuwaiti cities. Outcome variables and at-risk cut points included: Body mass index (BMI) to classify overweight (OW) or obese (OB) [WHO 2007], total cholesterol (TC ≥170 mg/dL), low-density lipoprotein (LDL ≥130 mg/dL), high-density lipoprotein (HDL < 40 mg/dL), TC:HDL-C (≥3.5), triglycerides (TG ≥100 mg/dL), resting systolic (SBP), and diastolic blood pressure (DBP) (≥90th centile). Trained research assistants took measures with a portable anthropometer, scale, Cardiocheck Plus analyzer, and BP via auscultation with manual cuff. Physical activity (PA) and screen time (ST) were self-reported. Differences were examined with ANOVA or χ^2 (significance *p* ≤ 0.05).

RESULTS: Mean and % at-risk for boys vs girls was: BMI Z score (1.32 ± .11 vs 1.29 ± .09; *p*<0.44), OW (15.5% vs 27.1%, *p*<0.007), and OB (41.1% vs 37.8%, *p*<0.487). There were no significant differences in blood lipids except girls had higher TG (108.5 ± 58.6 vs 91 ± 42.7 mg/dL, *p*<0.009). Girls vs boys had higher (non-significant) % at risk for TC (29% vs 23%; *p*<0.28), low HDL-C (21% vs 12%; *p*<0.06), TC:HDL-C (29.5% vs 22%; *p*<0.16), and TG (38% vs 30%; *p*<0.19); and lower % at risk for LDL-C (3.2% vs 4.5%; *p*<0.60). Girls also had significantly higher SBP (107.7 ± 12 vs 102.4 ± 11.5 mmHg; *p*<0.001) and DBP (70.3 ± 9.6 vs 64.8 ± 8.7 mmHg; *p*<0.0001), and % at-risk for BP (10% vs 6%; *p*<0.16), respectively. Boys mean PA (ds/wk ≥ 60 min; 3.37 ± 2.36 vs 2.47 ± 2.24; *p*<0.001) and ST (hrs/d; 4.97 ± 2.56 vs 4.50 ± 2.77; *p*<0.119) were higher than girls. Most girls and boys (>80%) did not meet PA or ST (≤ 2 hrs/d) recommendations.

CONCLUSION: Contrary to previous data Kuwaiti boys did not have significantly higher obesity prevalence vs girls. Girls had significantly higher OW % at risk; and mean TG, SBP, DBP, and lower PA levels. Intervention studies on Kuwaiti children are warranted to reduce CVD risk factors including improving PA and ST behaviors.

875 Board #109 May 29 2:00 PM - 3:30 PM

Handgrip Strength and Congestive Heart Failure in Aging Adults: Getting a Grip on Heart Health

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Handgrip strength is a powerful biomarker of aging that is linked to a variety of health conditions; however, it is not well understood how handgrip weakness factors into certain cardiovascular diseases such as congestive heart failure (CHF).

PURPOSE: To determine the association between handgrip weakness on time to CHF for aging adults in the United States.

METHODS: A discrete sample of 12,658 adults aged at least 50 years (age: 68.0±10.2 years at baseline) who participated in at least one wave of the 2006-2014 waves of the Health and Retirement Study were included. Interviews were conducted on participants biennially. Healthcare provider diagnosed CHF was self-reported at each wave. A spring-type hand-held dynamometer assessed maximal handgrip strength. Age- and race-specific maximal handgrip strength cut-points were used for determining weakness (Black men: <40-kilograms, Black women: <31-kilograms, White men: <35-kilograms, White women: <22-kilograms). A Cox proportional hazard regression model examined the association between handgrip weakness and time to CHF. Sex, race, age, body mass index, current smoking status, smoking history, self-rated health, diabetes status, and previously reported heart conditions aside from CHF were controlled for in the analyses.

RESULTS: For those included, 4,141 (32.7%) were weak and 252 (2.0%) developed CHF during the mean follow-up of 5.6±4.5 years. The covariate-adjusted Cox model revealed that those who were weak had a 35% higher hazard of CHF (hazard ratio: 1.35; 95% confidence interval: 1.02, 1.80), relative to those who were not-weak.