

Supplementary Table 1. Comparison of Demographic and Lifestyle Characteristics of Included and Excluded Participants

Characteristic	Analytic Sample	Remaining 16-year cohort
	N = 212	N = 467
Female	105 (49.5%)	217 (46.5%)
Socioeconomic status ^a	26.6 (6.5)	27.0 (6.1)
Dietary nutritional quality ^b , 16y	5.4 (1.3)	5.1 (1.2)
Number of days drank alcohol in the past 30 days, 16y	0.9 (2.2)	1.0 (2.1)
Smoked any cigarettes in the past 30 days, 16y	24 (12.1%)	98 (22.0%)
Maternal education, years	10.1 (3.0)	9.8 (2.7)
Parental history of cardiovascular disease ^c , 16y	115 (57.2%)	234 (51.7%)

Abbreviations: MVPA, moderate-to-vigorous physical activity

Data are presented as mean (SD) for continuous variables and frequency (proportion) for categorical variables

16y represents variables assessed at 16-year follow-up. All other variables were measured at trial baseline (i.e., infancy)

^a Socioeconomic status measured with the Graffar Index, with higher scores indicating greater disadvantage.

^b Dietary nutritional quality questionnaire on a 10-point scale, with higher scores indicating better nutritional quality

^c Parent-reported history of diabetes, high cholesterol, hypertension, or heart attack before age 60 years

Supplementary Table 2. Unadjusted Cross-sectional Associations Between Sedentary Behavior and Body Composition at Age 16, Overall and by Sex

	Body Mass Index	Waist Circumference	Waist-to-Height Ratio	Fat Mass Percentage	Lean Mass Percentage
	β (95%CI)	β (95%CI)	β (95%CI)	β (95%CI)	β (95%CI)
Overall (N = 212)					
Sedentary time ^a	-0.77 (-1.38, -0.15)*	-1.85 (-3.42, -0.27)*	-0.009 (-0.019, 0.001)	0.14 (-1.27, 1.55)	-0.09 (-1.53, 1.36)
Bout duration ^b	-0.27 (-0.89, 0.36)	-0.76 (-2.36, 0.83)	-0.004 (-0.014, 0.006)	-0.68 (-2.09, 0.72)	0.70 (-0.74, 2.15)
Males (N = 107)					
Sedentary time ^a	-0.84 (-1.65, -0.03)*	-2.01 (-4.08, 0.06)	-0.013 (-0.025, -0.001)*	-0.89 (-2.51, 0.73)	1.04 (-0.62, 2.70)
Bout duration ^b	-0.10 (-0.95, 0.75)	-0.39 (-2.56, 1.77)	-0.003 (-0.016, 0.009)	-0.39 (-2.07, 1.29)	0.41 (-1.31, 2.13)
Females (N = 105)					
Sedentary time ^a	-0.77 (-1.73, 0.19)	-1.73 (-4.21, 0.74)	-0.010 (-0.025, 0.006)	-0.31 (-1.70, 1.07)	0.33 (-1.03, 1.70)
Bout duration ^b	-0.42 (-1.35, 0.51)	-1.11 (-3.50, 1.27)	-0.005 (-0.020, 0.010)	-0.80 (-2.12, 0.53)	0.81 (-0.50, 2.11)

Models adjusted for sex, socioeconomic status, nutritional quality, maternal education, alcohol use in past 30 days, cigarette use in past 30 days, parental history of cardiovascular disease, and average daily moderate-to-vigorous physical activity. Sex is not included as a covariate in sex-stratified models.

Regression coefficients are non-standardized

^a Per one-standard deviation increment (86.5 min/day) in daily average total sedentary time

^b Per one-standard deviation increment (7.7 min) in mean sedentary bout duration

* p<0.05

Supplementary Table 3. Unadjusted Prospective Associations Between Sedentary Behavior at Age 16 and Body Composition at Age 23, Overall and by Sex

	Body Mass Index	Waist Circumference	Waist-to-Height Ratio	Fat Mass Percentage	Lean Mass Percentage
	β (95%CI)	β (95%CI)	β (95%CI)	β (95%CI)	β (95%CI)
Overall (N = 212)					
Sedentary time ^a	-1.01 (-1.75, -0.28)*	-2.53 (-4.11, 0.96)*	-0.013 (-0.022, -0.004)*	0.03 (-1.19, 1.26)	-0.10 (-1.29, 1.10)
Bout duration ^b	-0.40 (-1.15, 0.34)	-0.71 (-2.32, 0.90)	-0.004 (-0.013, 0.006)	-0.78 (-2.00, 0.44)	0.81 (-0.38, 1.99)
Males (N = 107)					
Sedentary time ^a	-0.76 (-1.66, 0.14)	-1.68 (-3.59, 0.22)	-0.010 (-0.022, 0.001)	-0.46 (-1.82, 0.90)	0.40 (-0.90, 1.70)
Bout duration ^b	-0.31 (-1.25, 0.63)	-0.64 (-2.62, 1.35)	-0.004 (-0.016, 0.007)	-0.69 (-2.08, 0.71)	0.68 (-0.65, 2.02)
Females (N = 105)					
Sedentary time ^a	-1.33 (-2.53, -0.13)*	-2.72 (-5.16, -0.29)*	-0.016 (-0.031, -0.001)*	-0.72 (-2.10, 0.66)	0.63 (-0.72, 1.99)
Bout duration ^b	-0.49 (-1.66, 0.69)	-0.87 (-3.26, 1.52)	-0.003 (-0.018, 0.012)	-0.74 (-2.06, 0.59)	0.79 (-0.21, 2.08)

Models adjusted for sex, socioeconomic status, nutritional quality, maternal education, alcohol use in past 30 days, cigarette use in past 30 days, parental history of cardiovascular disease, and average daily moderate-to-vigorous physical activity. Sex is not included as a covariate in sex-stratified models.

Regression coefficients are non-standardized

^a Per one-standard deviation increment (86.5 min/day) in daily average total sedentary time

^b Per one-standard deviation increment (7.7 min) in mean sedentary bout duration

* p<0.05

Supplementary Table 4. Unadjusted Prospective Associations Between Sedentary Behavior at Age 16 and Changes in Body Composition from Age 16 to 23, Overall and by Sex

	Body Mass Index	Waist Circumference	Waist-to-Height Ratio	Fat Mass Percentage	Lean Mass Percentage
	β (95%CI)	β (95%CI)	β (95%CI)	β (95%CI)	β (95%CI)
Overall (N = 212)					
Sedentary time ^a	-0.25 (-0.63, 0.14)	-0.68 (-1.77, 0.41)	-0.004 (-0.011, 0.003)	-0.11 (-0.88, 0.66)	-0.01 (-0.79, 0.78)
Bout duration ^b	-0.14 (-0.52, 0.25)	0.05 (-1.04, 1.15)	0.001 (-0.006, 0.007)	-0.10 (-0.87, 0.67)	0.10 (-0.68, 0.89)
Males (N = 107)					
Sedentary time ^a	0.08 (-0.41, 0.58)	0.33 (-1.02, 1.68)	0.002 (-0.006, 0.010)	0.44 (-0.78, 1.66)	-0.64 (-1.85, 0.57)
Bout duration ^b	-0.21 (-0.73, 0.30)	-0.24 (-1.63, 1.14)	-0.001 (-0.009, 0.007)	-0.30 (-1.55, 0.96)	0.28 (-0.97, 1.53)
Females (N = 105)					
Sedentary time ^a	-0.56 (-1.15, 0.03)	-0.99 (-2.47, 0.49)	-0.006 (-0.015, 0.003)	-0.41 (-1.30, 0.49)	0.30 (-0.61, 1.21)
Bout duration ^b	-0.07 (-0.65, 0.51)	0.24 (-1.19, 1.68)	0.002 (-0.007, 0.011)	0.06 (-0.81, 0.92)	-0.02 (-0.90, 0.85)

Models adjusted for body composition measure at age 16 sex, socioeconomic status, nutritional quality, maternal education, alcohol use in past 30 days, cigarette use in past 30 days, parental history of cardiovascular disease, and average daily moderate-to-vigorous physical activity. Sex is not included as a covariate in sex-stratified models.

Regression coefficients are non-standardized

^a Per one-standard deviation increment (86.5 min/day) in daily average total sedentary time

^b Per one-standard deviation increment (7.7 min) in mean sedentary bout duration

* p<0.05

Supplementary Table 5. Cross-sectional Associations Examining ST and MVPA and Body Composition at Age 16, Overall and by Sex

	Body Mass Index	Waist Circumference	Waist-to-Height Ratio	Fat Mass Percentage	Lean Mass Percentage
	β (95%CI)	β (95%CI)	β (95%CI)	β (95%CI)	β (95%CI)
Overall (N = 212)					
Unadjusted ^{a,b}					
ST	-0.94 (-1.59, -0.29)*	-2.11 (-3.78, -0.44)*	-0.013 (-0.023, -0.003)*	-1.29 (-2.65, 0.070)*	1.38 (-0.02, 2.77)
MVPA	-0.56 (-1.21, 0.09)	-0.81 (-2.47, 0.86)	-0.012 (-0.022, -0.002)*	-4.48 (-5.84, -3.12)*	4.59 (3.20, 5.99)*
Adjusted ^{a,c}					
ST	-1.07 (-1.72, -0.41)*	-2.23 (-3.92, -0.54)*	-0.013 (-0.023, -0.003)*	-1.11 (-2.21, -0.01)*	1.18 (0.07, 2.29)*
MVPA	-0.57 (-1.28, 0.15)	-1.19 (-3.04, 0.66)	-0.005 (-0.017, 0.005)	-1.60 (-2.80, -0.40)*	1.54 (0.33, 2.76)*
Males (N = 107)					
Unadjusted ^{a,b}					
ST	-1.13 (-1.20, -0.26)*	-2.57 (-4.81, -0.33)*	-0.016 (-0.029, -0.003)*	-1.61 (-3.34, 0.12)	1.74 (-0.03, 3.51)
MVPA	-0.79 (-1.69, 0.11)	-1.52 (-3.83, 0.80)	-0.009 (-0.022, 0.005)	-1.95 (-3.74, -0.16)*	1.90 (0.07, 3.74)*
Adjusted ^{a,d}					
ST	-1.02 (-1.83, -0.20)*	-2.30 (-4.43, -0.16)*	-0.014 (-0.027, -0.002)*	-1.37 (-2.98, 0.24)	1.48 (-0.17, 3.12)
MVPA	-0.73 (-1.57, 0.10)	-1.46 (-3.64, 0.72)	-0.008 (-0.021, 0.004)	-2.09 (-3.74, -0.45)*	2.05 (0.36, 3.74)*
Females (N = 105)					
Unadjusted ^{a,b}					
ST	-0.78 (-1.77, 0.21)	-1.75 (-4.29, 0.79)	-0.009 (-0.025, 0.006)	-0.41 (-1.83, 1.01)	0.42 (-0.98, 1.83)
MVPA	-0.07 (-1.33, 1.20)	-0.09 (-3.33, 3.15)	0.002 (-0.018, 0.022)	-0.61 (-2.42, 1.21)	0.56 (-1.23, 2.35)
Adjusted ^{a,d}					
ST	-1.14 (-2.19, -0.09)*	-2.36 (-5.04, 0.33)	-0.011 (-0.028, 0.005)	-1.11 (-2.55, 0.33)	1.15 (-0.27, 2.56)
MVPA	-0.22 (-1.48, 1.04)	-0.85 (-4.08, 2.38)	-0.001 (-0.022, 0.019)	-1.09 (-2.82, 0.64)	1.03 (-0.68, 2.73)

Abbreviations: ST, sedentary time; MVPA, moderate-to-vigorous physical activity

^a Per one standard deviation increment in daily average MVPA (i.e., 24.8 min/day) or ST (i.e., 86.5 min/day)

^b Models include a variable for daily average ST and a variable for daily average MVPA

^c Models include variables for daily average total sedentary time, daily average MVPA, sex, socioeconomic status, nutritional quality, maternal education, alcohol use in past 30 days, cigarette use in past 30 days, and parental history of cardiovascular disease,

^d Models include all variables in ^c except sex

Regression coefficients are non-standardized

* p<0.05