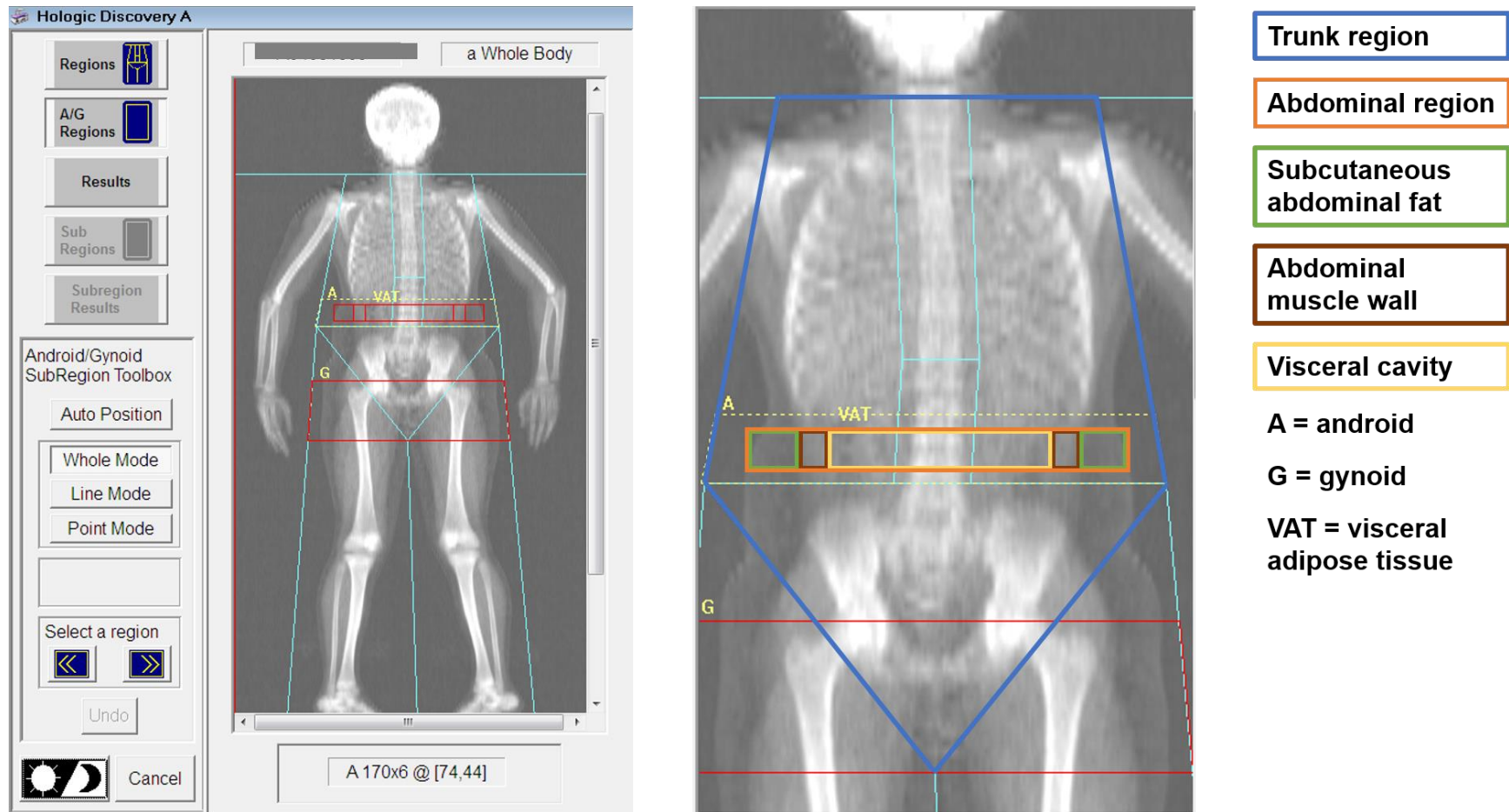


Supplementary Figure S1. Project Viva participant dual-energy X-ray absorptiometry (DXA) scan (left) with highlighted DXA measures (right)



Reference: Hologic. Horizon Bone Densitometry System User Guide.

Supplementary Table S1. Cross-sectional associations of visceral adipose tissue (VAT), subcutaneous abdominal adipose tissue (SAAT), and total abdominal adipose tissue (TAAT) sex-specific standard deviation score (SDS) with cardio-metabolic risk and related markers; sex-stratified analyses

	Girls β (95% CI)					Boys β (95% CI)				
	<i>N</i> <i>Obs</i>	Model 1	<i>N</i> <i>Obs</i>	Model 2	Model 3	<i>N</i> <i>Obs</i>	Model 1	<i>N</i> <i>Obs</i>	Model 2	Model 3
VAT area SDS										
Metabolic risk z-score	232	0.25 (0.20, 0.30)	230	0.24 (0.19, 0.29)	0.12 (0.05, 0.20)	250	0.29 (0.23, 0.34)	249	0.29 (0.23, 0.34)	0.16 (0.07, 0.24)
SBP z-score	371	0.02 (-0.07, 0.10)	369	-0.00 (-0.09, 0.09)	-0.07 (-0.21, 0.07)	363	0.08 (0.01, 0.16)	362	0.06 (-0.02, 0.14)	-0.01 (-0.14, 0.11)
Log HDL-C, mg/dL	252	-0.06 (-0.08, -0.03)	250	-0.06 (-0.08, -0.03)	-0.02 (-0.07, 0.02)	282	-0.07 (-0.10, -0.04)	281	-0.08 (-0.10, 0.05)	-0.03 (-0.07, 0.02)
Log TG, mg/dL	252	0.08 (0.04, 0.13)	250	0.10 (0.05, 0.15)	0.11 (0.04, 0.19)	282	0.09 (0.04, 0.14)	281	0.09 (0.04, 0.15)	0.02 (-0.07, 0.11)
Log HOMA-IR, units	234	0.28 (0.22, 0.34)	232	0.25 (0.19, 0.31)	0.12 (0.02, 0.22)	255	0.29 (0.21, 0.36)	254	0.29 (0.21, 0.36)	0.15 (0.03, 0.27)
Log ALT, U/L	252	-0.01 (-0.05, 0.03)	250	0.03 (-0.01, 0.07)	0.04 (-0.02, 0.11)	280	0.06 (0.01, 0.10)	279	0.05 (0.01, 0.10)	0.00 (-0.07, 0.07)
Log hsCRP, mg/L	239	0.69 (0.56, 0.82)	237	0.66 (0.52, 0.80)	0.43 (0.21, 0.65)	277	0.61 (0.48, 0.73)	276	0.61 (0.48, 0.74)	0.55 (0.34, 0.76)
Log leptin, ng/mL	251	0.62 (0.55, 0.70)	249	0.55 (0.48, 0.62)	0.19 (0.09, 0.28)	281	0.87 (0.78, 0.96)	280	0.86 (0.78, 0.95)	0.55 (0.42, 0.69)
Log adiponectin, ug/mL	252	-0.13 (-0.18, -0.09)	250	-0.11 (-0.16, -0.06)	-0.10 (-0.18, -0.02)	282	-0.12 (-0.17, -0.06)	281	-0.13 (-0.18, -0.07)	-0.06 (-0.14, 0.03)
SAAT area SDS										
Metabolic risk z-score	232	0.26 (0.21, 0.30)	230	0.26 (0.21, 0.31)	0.16 (0.07, 0.25)	250	0.33 (0.28, 0.38)	249	0.33 (0.28, 0.38)	0.27 (0.19, 0.35)
SBP z-score	371	0.01 (-0.07, 0.10)	369	-0.02 (-0.11, 0.08)	-0.14 (-0.30, 0.03)	363	0.06 (-0.02, 0.13)	362	0.04 (-0.03, 0.12)	-0.05 (-0.18, 0.07)
Log HDL-C, mg/dL	252	-0.06 (-0.09, -0.04)	250	-0.06 (-0.09, -0.04)	-0.03 (-0.08, 0.02)	282	-0.10 (-0.13, -0.08)	281	-0.11 (-0.14, -0.08)	-0.11 (-0.15, -0.06)
Log TG, mg/dL	252	0.07 (0.03, 0.12)	250	0.10 (0.05, 0.15)	0.12 (0.03, 0.21)	282	0.13 (0.08, 0.18)	281	0.14 (0.08, 0.19)	0.13 (0.05, 0.22)
Log HOMA-IR, units	234	0.29 (0.23, 0.34)	232	0.26 (0.20, 0.33)	0.13 (0.02, 0.25)	255	0.32 (0.24, 0.40)	254	0.31 (0.23, 0.39)	0.19 (0.07, 0.32)
Log ALT, U/L	252	-0.01 (-0.05, 0.03)	250	0.04 (-0.00, 0.08)	0.09 (0.01, 0.17)	280	0.06 (0.02, 0.10)	279	0.06 (0.02, 0.10)	0.02 (-0.05, 0.09)
Log hsCRP, mg/L	239	0.71 (0.58, 0.84)	237	0.73 (0.58, 0.87)	0.54 (0.28, 0.80)	277	0.72 (0.60, 0.84)	276	0.72 (0.60, 0.84)	0.83 (0.64, 1.02)
Log leptin, ng/mL	251	0.69 (0.63, 0.76)	249	0.64 (0.57, 0.71)	0.33 (0.22, 0.44)	281	0.94 (0.86, 1.02)	280	0.93 (0.85, 1.01)	0.71 (0.59, 0.83)
Log adiponectin, ug/mL	252	-0.14 (-0.18, -0.09)	250	-0.11 (-0.16, -0.06)	-0.10 (-0.19, 0.00)	282	-0.13 (-0.19, -0.08)	281	-0.13 (-0.19, -0.08)	-0.08 (-0.16, 0.01)
TAAT area SDS										
Metabolic risk z-score	232	0.26 (0.22, 0.31)	230	0.26 (0.21, 0.31)	0.17 (0.08, 0.26)	250	0.33 (0.28, 0.39)	249	0.34 (0.28, 0.39)	0.28 (0.20, 0.37)
SBP z-score	371	0.01 (-0.07, 0.10)	369	-0.01 (-0.11, 0.08)	-0.13 (-0.30, 0.03)	363	0.06 (-0.02, 0.14)	362	0.05 (-0.03, 0.13)	-0.05 (-0.18, 0.08)
Log HDL-C, mg/dL	252	-0.06 (-0.09, -0.04)	250	-0.06 (-0.09, -0.04)	-0.03 (-0.08, 0.02)	282	-0.10 (-0.13, -0.07)	281	-0.11 (-0.13, -0.08)	-0.11 (-0.15, -0.06)
Log TG, mg/dL	252	0.08 (0.03, 0.12)	250	0.10 (0.05, 0.15)	0.13 (0.04, 0.22)	282	0.13 (0.07, 0.18)	281	0.13 (0.08, 0.19)	0.13 (0.04, 0.22)
Log HOMA-IR, units	234	0.29 (0.23, 0.35)	232	0.27 (0.20, 0.33)	0.15 (0.03, 0.26)	255	0.32 (0.25, 0.40)	254	0.32 (0.24, 0.39)	0.21 (0.08, 0.34)
Log ALT, U/L	252	-0.01 (-0.05, 0.03)	250	0.04 (-0.00, 0.08)	0.09 (0.01, 0.16)	280	0.06 (0.02, 0.10)	279	0.06 (0.02, 0.10)	0.02 (-0.05, 0.09)
Log hsCRP, mg/L	239	0.72 (0.59, 0.85)	237	0.73 (0.59, 0.87)	0.57 (0.31, 0.83)	277	0.72 (0.60, 0.84)	276	0.73 (0.60, 0.85)	0.88 (0.68, 1.08)
Log leptin, ng/mL	251	0.69 (0.63, 0.76)	249	0.64 (0.57, 0.70)	0.33 (0.22, 0.44)	281	0.96 (0.88, 1.03)	280	0.94 (0.87, 1.02)	0.77 (0.64, 0.89)
Log adiponectin, ug/mL	252	-0.14 (-0.19, -0.09)	250	-0.11 (-0.17, -0.06)	-0.11 (-0.20, -0.01)	282	-0.14 (-0.19, -0.08)	281	-0.14 (-0.19, -0.08)	-0.08 (-0.17, 0.01)

N Obs, number of observations (same in Models 2 and 3)

Model 1. Unadjusted

Model 2. Adjusted for age, race/ethnicity, puberty score

Model 3. Additionally adjusted for BMI z-score

VAT, visceral adipose tissue; SAAT, subcutaneous abdominal adipose tissue; TAAT, total abdominal adipose tissue; SDS, standardized deviation score; SBP, systolic blood pressure; HDL-C, high-density lipoprotein cholesterol; TG, triglycerides; HOMA-IR, homeostatic model assessment of insulin resistance; ALT, alanine aminotransferase; hsCRP, high-sensitivity C-reactive protein.

Supplementary Table S2. Characteristics of included versus excluded study participants and their mothers in Project Viva

	Included n=740	Excluded n=1388
	Mean (SD) or N (%)	
Maternal characteristics		
Age at enrollment, years	32.2 (5.4)	31.6 (5.1)
Pre-pregnancy BMI, kg/m ²	25.0 (5.3)	24.8 (5.6)
Pregnancy weight gain, kg	15.5 (5.4)	15.6 (5.8)
Pregnancy smoking status, %		
Never	524 (71)	919 (67)
Former	148 (20)	250 (18)
During pregnancy	66 (9)	200 (15)
College degree or beyond, %		
No	231 (31)	513 (38)
Yes	507 (69)	853 (62)
Married or cohabitating, %		
No	68 (9)	112 (8)
Yes	670 (91)	1253 (92)
Household income >\$70,000/year, %		
No	241 (36)	487 (41)
Yes	431 (64)	715 (59)
Child characteristics		
Sex		
Boys	366 (49)	730 (53)
Girls	374 (51)	658 (47)
Race/ethnicity, %		
White	462 (62)	880 (64)
Black	131 (18)	224 (16)
Hispanic	33 (4)	95 (7)
Asian	20 (3)	75 (5)
Other	93 (13)	96 (7)
Early teen characteristics*		
Age, years	13.0 (0.7)	13.9 (1.1)
BMI, kg/m ²	21.0 (4.7)	20.8 (4.1)
WHO BMI z-score	0.59 (1.28)	0.35 (1.13)
Waist circumference, cm	73.1 (12.1)	73.1 (11.1)

BMI, body mass index

*Excluded participants comprised of subset of participants with available early teen data (n=298 for age, n=294 for BMI, n=298 for waist circumference)