

Appendix
Accuracy of Self-Reported Height, Weight, and BMI Over Time in Emerging Adults
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Appendix Table 1. Timeline of Assessments Used in Analyses

Wave	Year	NEXT main study		NEXT Plus additional assessments	
		Assessments	Number assessed ^a	Assessments ^b	Number assessed
1	2010	Survey ^c	2,531	Cardiometabolic biomarkers ^d	567
1	2010	Anthropometrics ^e			
2	2011	Survey	2,448 ^f	No additional	534
2	2011	Anthropometrics ^g			
3	2012	Survey	2,414	Anthropometrics	509
4	2013	–	–	Survey	461
4	2013			Cardiometabolic biomarkers	
4	2013			Anthropometrics	
7	2016	–	–	Survey	456
7	2016			Cardiometabolic biomarkers	
7	2016			Anthropometrics	

^aLoss to follow-up was primarily due to refusals without explanation or inability to recontact participants.

^bNEXT Plus participants completed main study components as well as additional assessments.

^cThe annual survey queried height and weight, smoking, and alcohol use. At baseline, participants reported sex and race/ethnicity.

^dBiomarkers included blood pressure and blood draw to assess fasting blood glucose, HbA1c, serum c-reactive protein, triglycerides, total cholesterol, high-density lipoprotein cholesterol, low-density lipoprotein cholesterol, and uric acid.

^eAnthropometrics were obtained by trained and certified researchers using standardized protocols.

^fIncludes 254 participants who were first assessed in Wave 2. Total sample size for NEXT=2,785 (2,531 + 254).

^gAnthropometrics were assessed in participants (both in the main study and substudy) attending NEXT Plus schools.

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Appendix Table 2. Baseline Sample Characteristics in the NEXT Full Sample and the NEXT Plus Subsample

Characteristic	Full sample (n=2,785)	Subsample (n=567)
Age, mean (SD), years	16.3 (0.5)	16.5 (0.5)
Female, n (%)	1,386 (54.4)	309 (54.5)
Race/ethnicity, n (%)		
Non-Hispanic white	1,098 (57.9)	254 (45.0)
Non-Hispanic black	485 (17.6)	94 (16.6)
Hispanic	798 (19.6)	191 (33.8)
Other	134 (5.0)	26 (4.6)
Measured height (SD), cm	167.2 (9.0)	166.4 (9.0)
Measured weight (SD), kg	69.6 (18.3)	71.4 (18.7)
Measured BMI (SD), kg/m ²	24.8 (6.0)	25.7 (5.9)
Weight status,^a n (%)		
Underweight	37 (1.4)	0
Normal weight	1,413 (59.5)	289 (51.0)
Overweight	448 (18.5)	129 (22.8)
Obese	487 (20.6)	149 (26.3)

^aBaseline weight status according to cutoffs of Centers for Disease Control and Prevention age- and sex-specific BMI percentiles (underweight= <5; normal weight= ≥5, <85; overweight= ≥85, <95; obese= ≥95).

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Appendix Table 3. Correlation and Concordance^a Between Measured and Self-Reported Anthropometrics

Wave	Height			Weight			BMI		
	<i>r</i>	ρ_c	LOA	<i>r</i>	ρ_c	LOA	<i>r</i>	ρ_c	LOA
NEXT full sample ^b									
Wave 1									
All data	0.85	0.83	-12.8, 10.0	0.94	0.94	-10.2, 12.4	0.49 ^c	0.43	-14.9, 16.0
No BIV ^d	0.94	0.93	-8.0, 5.5	0.96	0.96	-7.7, 10.1	0.93	0.92	-2.9, 4.5
Wave 2									
All data	0.92	0.91	-9.4, 6.5	0.93	0.93	-11.9, 14.0	0.92	0.91	-3.4, 5.0
No BIV	0.96	0.95	-6.8, 4.1	0.96	0.95	-8.9, 11.3	0.94	0.92	-3.0, 4.6
Wave 3									
All data	0.94	0.92	-8.7, 5.6	0.97	0.97	-7.7, 9.6	0.94	0.93	-3.0, 4.6
No BIV	0.96	0.95	-6.9, 3.9	0.97	0.97	-7.5, 9.3	0.95	0.94	-2.8, 4.3
NEXT Plus subsample ^e									
Wave 1									
All data	0.89	0.87	-10.9, 8.0	0.97	0.97	-7.0, 9.7	0.92	0.91	-3.5, 5.2
No BIV	0.94	0.93	-8.0, 5.5	0.97	0.97	-6.9, 9.7	0.94	0.92	-3.0, 4.7
Wave 2									
All data	0.92	0.91	-9.3, 6.7	0.97	0.97	-7.7, 9.9	0.92	0.91	-3.7, 5.2
No BIV	0.96	0.95	-6.7, 4.1	0.97	0.97	-7.8, 9.9	0.94	0.93	-3.0, 4.6
Wave 3									
All data	0.94	0.92	-9.1, 5.5	0.98	0.98	-6.7, 8.3	0.96	0.95	-2.3, 3.9
No BIV	0.97	0.96	-6.4, 3.3	0.98	0.98	-6.8, 8.3	0.96	0.95	-2.2, 3.7
Wave 4									
All data	0.95	0.94	-7.9, 5.2	0.97	0.97	-8.6, 9.8	0.96	0.96	-2.7, 3.9
No BIV	0.96	0.95	-6.8, 4.3	0.97	0.97	-8.6, 9.9	0.97	0.96	-2.7, 3.7
Wave 7									
All data	0.97	0.96	-6.3, 4.3	0.97	0.97	-9.6, 11.7	0.95	0.94	-3.5, 4.9
No BIV	0.97	0.96	-6.3, 4.3	0.97	0.97	-8.6, 10.4	0.96	0.96	-3.0, 4.3

^aPearson's *r*, Lin's concordance coefficient ρ_c , and Bland-Altman 95% limits-of-agreement (LOA). Lin and Bland-Altman methods do not account for the complex survey design.

^bn=2,785 in Wave 1.

^c*p*-value=0.09; *p*-values for all other *r* and ρ_c are <0.001

^dExcluding BIV

^en=567 in Wave 1.

BIV, biologically implausible values (for self-reported measures).

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Appendix Table 4. Agreement^a of Self-Reported Versus Measured Weight Status^b and of Central Adiposity^c Versus Self-Reported and Measured Obesity^d

Comparison	Agreement % (95% CI)	Gwet AC1	Probabilistic benchmark
Self-reported versus measured weight status			
1	94 (93, 96)	0.90	0.80–1.00
2	95 (91, 98)	0.91	0.80–1.00
3	95 (92, 98)	0.91	0.80–1.00
4	94 (85, 100)	0.90	0.80–1.00
7	95 (86, 100)	0.90	0.80–1.00
Central adiposity versus self-reported obesity			
1	90 (88, 92)	0.86	0.80–1.00
2	89 (86, 93)	0.86	0.80–1.00
3	89 (86, 92)	0.85	0.80–1.00
4	83 (75, 92)	0.77	0.60–0.80
7	85 (76, 94)	0.75	0.60–0.80
Central adiposity versus measured obesity			
1	89 (88, 90)	0.84	0.80–1.00
2	90 (88, 92)	0.86	0.80–1.00
3	90 (88, 91)	0.85	0.80–1.00
4	83 (79, 87)	0.72	0.60–0.80
7	86 (82, 89)	0.73	0.60–0.80

^aPercent agreement and 95% CI, Gwet AC1 (Gwet's agreement coefficient) and probabilistic benchmark inter-rater reliability. Estimates exclude biologically implausible self-reported values.

^bWeight was classified according to Centers for Disease Control and Prevention age- and sex-specific BMI percentile cut-offs until age 20 years (underweight= <5; normal weight= ≥5, <85; overweight ≥85, <95; obese= ≥95). From age ≥20 years, underweight=BMI <18.5; normal weight=BMI ≥18.5, <25; overweight=BMI ≥25, <30; obese=BMI ≥30.

^cCentral adiposity determined by measured waist circumference cutoffs (>102 cm for males; >88 cm for females).

^dBMI ≥30 kg/m².

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Appendix Table 5. Associations^a of Cardiometabolic Biomarkers With Self-Reported BMI, Measured BMI, and Measured Waist Circumference

Wave	Measured BMI, kg/m ²		Self-reported BMI, kg/m ²		Waist circumference, cm	
	β (SE)	<i>p</i> -value	β (SE)	<i>P</i> -value	β (SE)	<i>p</i> -value
CRP, nmol/L²						
1	0.12 (0.01)	<0.001	0.11 (0.01)	<0.001	0.05 (0.004)	<0.001
4	0.14 (0.01)	<0.001	0.14 (0.01)	<0.001	0.06 (0.005)	<0.001
7	0.11 (0.009)	<0.001	0.11 (0.01)	<0.001	0.05 (0.004)	<0.001
Triglycerides, mmol/L²						
1	0.02 (0.003)	<0.001	0.02 (0.004)	<0.001	0.009 (0.001)	<0.001
4	0.02 (0.003)	<0.001	0.02 (0.004)	<0.001	0.009 (0.001)	<0.001
7	0.02 (0.004)	<0.001	0.02 (0.004)	<0.001	0.008 (0.001)	<0.001
HbA1c, mmol/mol²						
1	0.003 (0.0009)	0.002	0.002 (0.001)	0.08	0.001 (0.0004)	0.002
4	0.003 (0.0009)	0.001	0.003 (0.001)	0.008	0.0009 (0.0004)	0.02
7	0.004 (0.0009)	<0.001	0.004 (0.001)	<0.001	0.002 (0.0004)	<0.001
Fasting glucose, mmol/L²						
1	2.8E-5 (0.0009)	0.98	6.6E-5 (0.001)	0.96	-4.3 E-5 (0.0004)	0.91
4	8.4E-4 (0.0009)	0.34	2.7E-4 (0.001)	0.79	-1.0 E-4 (0.0004)	0.79
7	0.002 (0.0009)	0.02	0.002 (0.001)	0.07	6.7 E-4 (0.0004)	0.07
Total cholesterol, mmol/L						
1	0.03 (0.006)	<0.001	0.03 (0.007)	<0.001	0.01 (0.002)	<0.001
4	0.02 (0.006)	0.008	0.02 (0.007)	0.001	0.007 (0.003)	0.008
7	0.02 (0.006)	0.003	0.02 (0.007)	0.001	0.009 (0.003)	0.001
HDL-C, mmol/L						
1	-0.01 (0.002)	<0.001	-0.01 (0.003)	<0.001	-0.006 (0.0009)	<0.001
4	-0.02 (0.002)	<0.001	-0.02 (0.003)	<0.001	-0.008 (0.001)	<0.001
7	-0.02 (0.002)	<0.001	-0.02 (0.003)	<0.001	-0.009 (0.001)	<0.001
LDL-C, mmol/L						
1	0.03 (0.005)	<0.001	0.03 (0.006)	<0.001	0.01 (0.002)	<0.001
4	0.02 (0.005)	<0.001	0.03 (0.006)	<0.001	0.01 (0.002)	<0.001
7	0.03 (0.005)	<0.001	0.03 (0.006)	<0.001	0.01 (0.002)	<0.001
Uric acid, μmol/L						

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1	4.15 (0.44)	<0.001	4.56 (0.60)	<0.001	1.61 (0.18)	<0.001
4	4.07 (0.45)	<0.001	3.82 (0.54)	<0.001	1.91 (0.19)	<0.001
7	3.80 (0.48)	<0.001	4.69 (0.53)	<0.001	1.87 (0.20)	<0.001
Systolic BP, mmHg						
1	0.06 (0.07)	0.38	0.09 (0.09)	0.30	0.005 (0.03)	0.84
4	0.04 (0.007)	0.60	0.07 (0.08)	0.40	0.004 (0.03)	0.91
7	0.10 (0.08)	0.22	0.09 (0.09)	0.29	0.05 (0.03)	0.15
Diastolic BP, mmHg						
1	0.28 (0.06)	<0.001	0.22 (0.08)	0.007	0.10 (0.02)	<0.001
4	0.35 (0.06)	<0.001	0.34 (0.07)	<0.001	0.15 (0.03)	<0.001
7	0.40 (0.07)	<0.001	0.40 (0.08)	<0.001	0.18 (0.03)	<0.001

^aEstimates from linear regression models adjusted for height, age, sex, race/ethnicity, smoking and alcohol use. Estimates exclude biologically implausible self-reported values. Sample includes NEXT Plus participants (n=567 in Wave 1).

^bIndicates continuous outcomes were transformed using the natural logarithmic function.

BP, blood pressure; CRP, c-reactive protein; HDL, high-density lipoprotein cholesterol; LDL, low-density lipoprotein cholesterol.