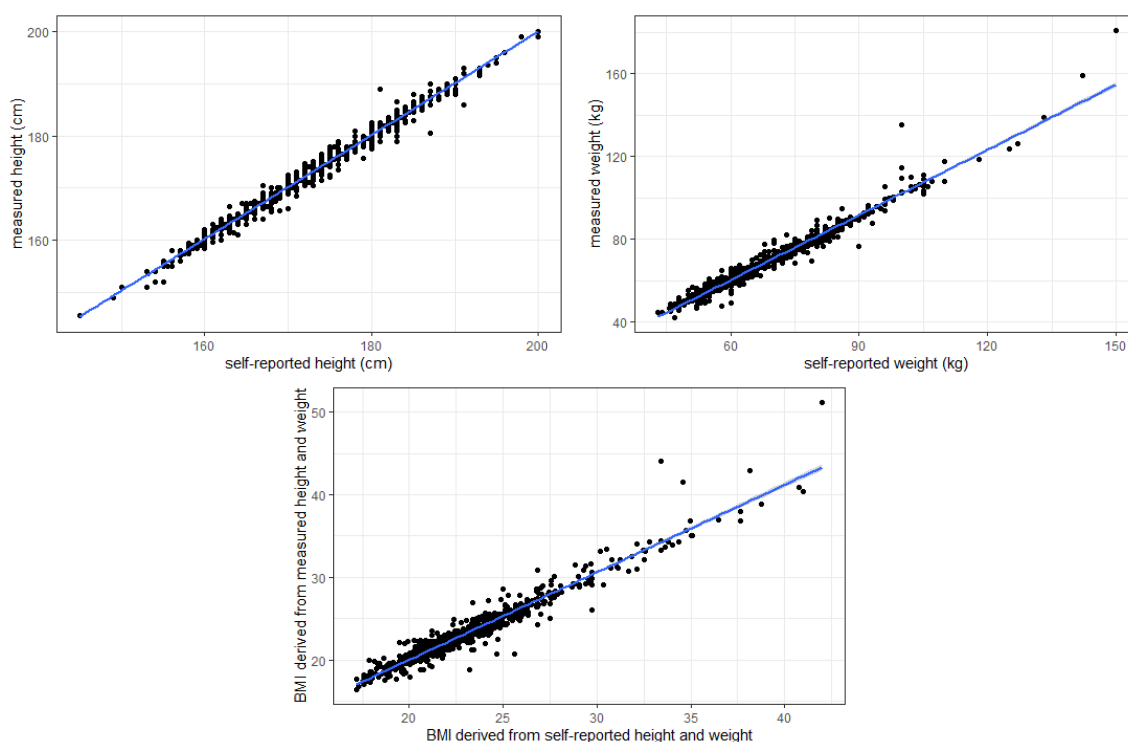

Supplementary document

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1 Validity of self-reported *versus* measured anthropometric measurements

We wished to investigate the validity of self-reported weight and height measurements in FinnTwin12. Of the 786 FinnTwin12 participants who had blood sampling, 756 had a clinical measure of their weight (kg) and height (cm) in addition to their self-reported weights (kg) and heights (cm). Five median days separated clinical measurements from receipt of self-reported measurements. Thirteen days at most separated weight and height measurements from self-reported measurements for 95% of these participants. Four participants had reported their weight and height more than 1 year before their clinical measurement, and were therefore excluded to improve the assessment of the validity of self-reported measurements.



Self-reported height, weight and BMI

	N	height		weight		BMI	
		mean	sd	mean	sd	mean	sd
All	752	171.5	9.5	68.6	14.2	23.2	3.6
Male participants	316	179.5	6.9	77.0	13.2	23.8	3.3
Female participants	436	165.7	6.3	62.5	11.6	22.7	3.8

Measured height, weight and BMI

	N	height		weight		BMI	
		mean	sd	mean	sd	mean	sd
All	752	171.7	9.5	69.4	15.2	23.4	4.0
Male participants	316	179.6	7.1	77.6	14.8	24.0	3.9
Female participants	436	166.0	6.4	63.5	12.5	23.0	4.0

Pearson correlation coefficients were used to compare self-reported and measured height and weight. The body mass index (BMI) derived from the self-reported measurements (kg.m-2) was also compared with the BMI derived from the measured height and weight. Linear regressions were also used to model the relationship between self-reported (x) and measured (y) variables as (Δ).

$$y = \beta_0 + \beta_1 x + \varepsilon \quad (\Delta)$$

Measured and self-reported height were highly correlated (r=0.99). Measured and self-reported weight also correlated strongly (r=0.98). The BMI derived from the self-reported measurements and the BMI derived from the clinical measurements were strongly correlated (r= 0.97). Linear regressions also showed high agreement between self-reported and measured height, weight, and BMI.

According to linear regressions, there seems to be a great match between self-reported height and measured height. Individuals with high weight tended to slightly underestimate their weight ($\beta_1=1.048$). The diagnostic of the residuals shows overall correct quality modeling for height and weight, but some individuals may have inflated the slope coefficient values. The outputs of the linear regressions are therefore to be considered with caution.

<i>Dependent variable:</i>	
measured height	
self-reported height (β_1)	0.994*** (0.004)
Constant (β_0)	1.167 (0.734)
Observations	752
R ²	0.986
Adjusted R ²	0.986
Residual Std. Error	1.110 (df = 750)
F Statistic	54,098.020*** (df = 1; 750)
<i>Note:</i>	*p<0.1; **p<0.05; ***p<0.01

<i>Dependent variable:</i>	
measured weight	
self-reported weight (β_1)	1.048*** (0.007)
Constant (β_0)	-2.495*** (0.517)
Observations	752
R ²	0.964
Adjusted R ²	0.964
Residual Std. Error	2.881 (df = 750)
F Statistic	20,169.380*** (df = 1; 750)
<i>Note:</i>	*p<0.1; **p<0.05; ***p<0.01

<i>Dependent variable:</i>	
measured BMI	
BMI from self-report (β_1)	1.058*** (0.010)
Constant (β_0)	-1.138*** (0.237)
Observations	752
R ²	0.936
Adjusted R ²	0.936
Residual Std. Error	1.009 (df = 750)
F Statistic	11,037.050*** (df = 1; 750)

Note: *p<0.1; **p<0.05; ***p<0.01

