

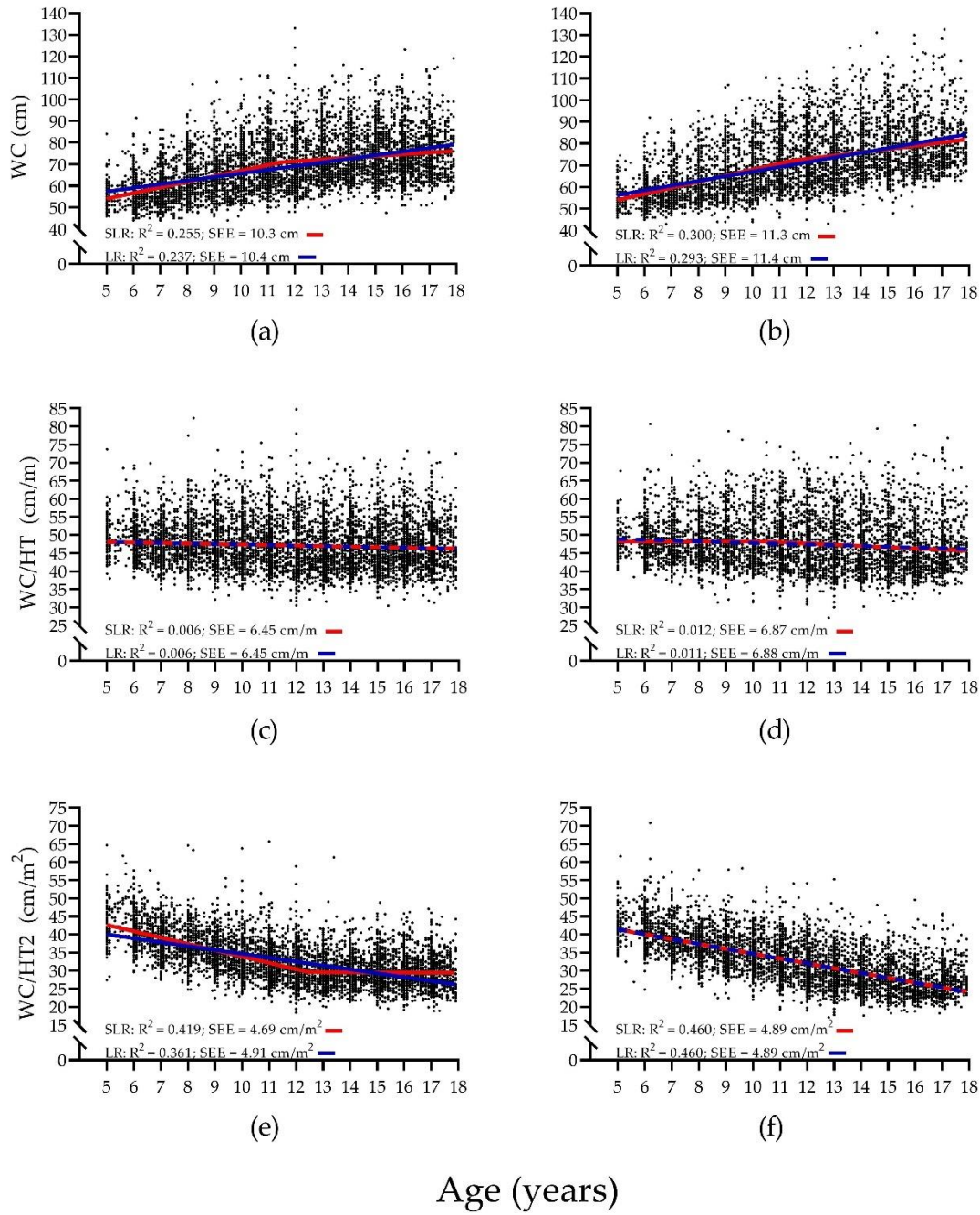


Figure S1. Correlation between age and waist circumference (WC) (a, b), waist circumference corrected for height (WC/HT) (c, d), and waist circumference corrected for height squared (WC/HT2) (e, f) in girls (a, c, e) ($n = 6998$) and boys (b, d, f) ($n = 5981$). LR: Linear regression (blue line); SEE: Standard error of estimation; SLR: Segmented linear regression (red line). The overlapping between SLR and LR is denoted by semicontinuous regression lines in graphs (c, d, f).

Table S1. Waist circumference (cm) percentiles in girls by age ($n = 6998$).

Percentile	Age (years)												
	5 ($n = 161$)	6 ($n = 477$)	7 ($n = 491$)	8 ($n = 480$)	9 ($n = 516$)	10 ($n = 549$)	11 ($n = 525$)	12 ($n = 699$)	13 ($n = 653$)	14 ($n = 666$)	15 ($n = 705$)	16 ($n = 620$)	17 ($n = 456$)
5 th	48.0	48.0	49.0	51.0	52.0	53.5	55.0	56.0	59.0	61.0	60.0	60.0	62.0
10 th	49.0	49.8	51.0	52.5	54.0	56.0	57.0	58.1	61.0	62.5	62.5	62.0	63.0
15 th	49.0	50.0	52.0	54.0	55.5	58.0	59.0	60.0	62.5	64.0	63.5	64.0	65.0
20 th	50.5	51.0	53.0	55.0	57.0	59.0	60.0	61.0	64.0	65.0	65.5	65.0	66.0
25 th	51.0	52.0	54.0	55.0	58.0	60.0	61.0	63.0	65.0	66.0	66.0	66.3	68.0
30 th	51.8	53.0	55.0	56.5	59.0	62.0	62.0	64.0	66.0	67.5	67.0	68.0	69.0
40 th	53.0	54.0	56.0	59.0	61.0	64.0	65.0	66.0	68.0	69.8	70.0	70.0	71.9
50 th	54.0	55.0	57.0	60.5	63.5	67.0	68.0	69.0	70.0	72.0	72.0	72.0	74.0
60 th	56.3	57.0	59.0	63.0	67.0	69.0	71.0	72.0	73.0	75.0	74.5	75.0	77.0
70 th	59.0	60.0	61.0	67.0	70.0	73.0	74.5	75.0	77.0	78.0	78.8	78.0	80.0
75 th	60.0	60.0	63.0	68.0	72.0	75.0	77.0	77.0	79.0	80.0	80.5	81.0	81.5
80 th	60.0	62.0	64.0	70.0	74.0	78.0	79.0	80.0	81.0	82.0	83.0	83.0	83.0
85 th	62.0	64.0	67.0	73.0	76.0	80.5	82.0	83.0	84.0	84.0	85.0	85.0	86.0
90 th	64.0	67.0	70.0	77.0	79.0	84.0	85.0	87.0	88.0	88.0	89.0	89.0	89.5
95 th	69.5	70.0	75.0	81.5	85.0	87.0	90.0	92.0	94.0	93.0	95.0	96.0	95.0

Table S2. Waist circumference (cm) percentiles in boys by age ($n = 5981$).

Percentile	Age (years)												
	5 ($n = 164$)	6 ($n = 442$)	7 ($n = 422$)	8 ($n = 463$)	9 ($n = 495$)	10 ($n = 502$)	11 ($n = 554$)	12 ($n = 628$)	13 ($n = 530$)	14 ($n = 521$)	15 ($n = 536$)	16 ($n = 408$)	17 ($n = 316$)
5 th	48.0	48.0	50.0	51.5	53.0	55.0	56.0	57.5	59.0	62.0	62.0	64.0	66.5
10 th	49.0	50.0	52.0	53.0	54.0	57.0	58.0	60.0	62.0	64.0	64.0	66.0	69.5
15 th	50.0	51.2	52.0	54.5	56.0	59.0	60.0	61.5	63.0	65.0	66.4	67.0	70.5
20 th	50.0	52.5	53.0	55.0	57.0	60.0	61.0	63.0	64.0	66.0	68.0	68.0	71.0
25 th	51.0	53.0	54.0	56.0	58.0	61.0	62.0	64.0	66.0	68.0	68.5	69.0	72.0
30 th	51.0	53.5	54.0	57.0	59.0	62.0	63.0	64.7	67.0	69.0	69.5	70.0	74.0
40 th	52.0	55.0	56.0	58.0	61.0	64.0	66.0	67.0	69.0	71.0	72.0	72.0	76.0
50 th	54.0	56.0	58.0	60.0	63.0	66.0	70.0	70.0	72.0	73.5	75.0	75.0	78.0
60 th	55.0	58.0	60.0	62.0	66.0	69.0	73.0	74.0	75.0	77.0	78.5	78.0	80.5
70 th	57.0	60.0	62.0	65.5	69.0	73.0	77.0	78.0	80.0	81.5	83.0	81.5	86.0
75 th	58.0	61.0	64.0	67.0	71.4	76.0	79.0	81.0	83.0	84.0	85.0	84.0	88.0
80 th	59.0	63.0	66.0	69.0	75.0	79.0	82.5	84.0	85.5	87.0	87.5	87.0	90.0
85 th	60.5	64.5	68.5	72.5	78.0	82.0	86.0	87.0	89.0	91.0	90.5	91.0	95.0
90 th	64.0	67.0	73.0	76.0	82.0	86.0	90.0	92.0	92.0	95.0	97.0	95.0	100.0
95 th	68.0	73.0	79.0	81.0	87.0	90.1	95.0	97.0	99.0	101.0	103.0	102.0	107.0

Table S3. Waist circumference corrected for height (cm/m) percentiles in girls by age ($n = 6998$).

Percentile	Age (years)												
	5 ($n = 161$)	6 ($n = 477$)	7 ($n = 491$)	8 ($n = 480$)	9 ($n = 516$)	10 ($n = 549$)	11 ($n = 525$)	12 ($n = 699$)	13 ($n = 653$)	14 ($n = 666$)	15 ($n = 705$)	16 ($n = 620$)	17 ($n = 456$)
5 th	41.74	41.07	40.16	39.68	38.81	39.10	38.30	37.20	37.86	38.46	37.97	37.91	37.80
10 th	43.36	42.11	41.41	41.06	40.58	40.13	39.31	38.93	39.35	39.74	39.22	39.16	39.51
15 th	44.25	43.31	42.31	42.06	41.20	41.04	40.14	40.00	40.13	40.60	40.25	40.24	40.51
20 th	45.37	43.86	43.08	42.75	41.98	42.55	40.94	40.63	40.79	41.23	41.10	41.07	41.40
25 th	46.15	44.49	43.55	43.66	42.75	43.17	41.56	41.28	41.67	42.04	41.88	41.91	42.32
30 th	46.43	44.91	44.00	44.44	43.48	43.91	42.28	41.94	42.38	42.73	42.56	42.63	43.21
40 th	47.50	46.09	45.08	45.49	44.85	45.10	43.84	43.42	43.69	44.16	43.90	44.03	44.97
50 th	48.62	47.29	46.12	46.62	46.60	46.54	45.95	44.74	45.34	45.80	45.45	45.68	46.64
60 th	50.00	48.39	47.44	48.51	48.06	48.57	47.71	46.45	47.06	47.20	47.10	47.13	48.39
70 th	51.72	50.00	49.15	50.39	50.34	51.01	50.00	49.01	49.03	49.36	49.07	49.07	50.63
75 th	52.54	51.28	50.00	51.89	51.48	52.33	51.35	50.32	49.70	50.45	50.63	50.31	51.38
80 th	53.64	52.46	51.39	53.08	52.99	53.57	52.50	51.90	51.19	51.90	51.88	51.57	52.26
85 th	54.39	53.33	52.63	54.61	54.55	54.93	54.11	53.66	53.16	53.16	53.37	53.19	53.61
90 th	56.19	54.92	54.58	56.69	56.67	57.14	55.84	56.21	55.56	55.13	55.63	56.13	54.97
95 th	60.00	57.20	57.14	60.31	59.49	60.58	60.13	59.24	59.74	57.96	59.09	59.08	59.68

Table S4. Waist circumference corrected for height (cm/m) percentiles in boys by age ($n = 5981$).

Percentile	Age (years)												
	5 ($n = 164$)	6 ($n = 442$)	7 ($n = 422$)	8 ($n = 463$)	9 ($n = 495$)	10 ($n = 502$)	11 ($n = 554$)	12 ($n = 628$)	13 ($n = 530$)	14 ($n = 521$)	15 ($n = 536$)	16 ($n = 408$)	17 ($n = 316$)
5 th	42.98	41.32	40.31	40.23	39.69	40.14	39.22	37.91	38.06	37.72	37.13	37.57	39.38
10 th	43.86	42.44	41.90	41.54	41.09	41.42	40.21	39.14	39.43	38.88	38.51	38.64	40.35
15 th	44.44	43.70	42.62	42.22	41.91	42.03	41.33	40.25	40.31	39.77	39.41	39.43	41.14
20 th	45.05	44.54	43.22	42.86	42.57	42.56	42.31	41.03	41.13	40.49	40.12	40.00	41.92
25 th	45.51	45.05	43.80	43.33	43.51	43.45	43.28	41.76	41.72	40.94	40.90	40.47	42.49
30 th	46.03	45.69	44.21	43.98	44.03	44.12	44.00	42.57	42.32	41.98	41.46	40.96	43.26
40 th	46.79	46.61	45.38	45.16	45.56	45.38	45.39	43.86	43.67	43.04	42.50	42.42	44.58
50 th	47.73	47.49	46.46	46.76	47.01	46.83	47.02	45.70	44.97	44.77	43.98	43.89	45.89
60 th	48.54	48.62	48.09	48.25	48.46	48.65	49.65	47.26	46.88	46.82	45.88	45.61	47.47
70 th	49.57	50.00	49.61	50.38	50.47	50.76	51.97	50.94	50.30	49.02	48.30	47.83	49.35
75 th	50.81	50.91	50.42	51.39	51.94	52.48	53.21	52.27	52.04	50.92	50.00	49.28	50.61
80 th	51.89	52.07	51.61	52.59	53.91	54.41	54.90	53.97	53.55	52.88	51.48	50.85	52.66
85 th	53.27	53.47	53.85	54.20	55.90	56.54	56.86	56.02	55.49	54.84	53.29	52.71	54.95
90 th	54.84	55.00	57.04	56.49	58.21	58.27	59.21	58.82	57.59	57.32	56.70	55.39	58.37
95 th	56.78	58.87	60.00	60.00	61.43	62.06	62.40	61.99	60.61	60.24	59.66	60.24	61.20

Table S5. Waist circumference corrected for height squared (cm/m²) percentiles in girls by age (*n* = 6998).

Percentile	Age (years)												
	5 (<i>n</i> = 161)	6 (<i>n</i> = 477)	7 (<i>n</i> = 491)	8 (<i>n</i> = 480)	9 (<i>n</i> = 516)	10 (<i>n</i> = 549)	11 (<i>n</i> = 525)	12 (<i>n</i> = 699)	13 (<i>n</i> = 653)	14 (<i>n</i> = 666)	15 (<i>n</i> = 705)	16 (<i>n</i> = 620)	17 (<i>n</i> = 456)
5 th	35.67	33.71	31.00	29.74	27.63	26.23	25.27	23.92	23.87	23.98	23.03	23.44	23.05
10 th	37.26	35.34	32.37	31.25	29.09	28.06	26.27	25.10	24.61	24.74	24.28	24.24	24.24
15 th	38.37	36.20	33.32	32.28	29.93	28.84	26.91	25.96	25.48	25.28	25.00	24.77	24.98
20 th	39.55	36.93	34.14	33.05	30.68	29.49	27.62	26.48	25.93	25.91	25.71	25.46	25.64
25 th	40.30	37.50	34.91	33.52	31.36	30.08	28.21	27.02	26.60	26.53	26.35	26.11	26.37
30 th	40.98	37.99	35.34	34.25	31.82	30.73	28.72	27.47	27.05	27.06	26.78	26.61	26.99
40 th	42.15	39.02	36.35	35.34	32.86	31.87	29.96	28.40	27.99	28.07	27.73	27.61	27.97
50 th	44.05	40.29	37.50	36.30	34.20	33.06	31.24	29.48	28.95	29.08	28.74	28.63	29.35
60 th	45.44	41.59	38.78	37.59	35.50	34.24	32.42	30.63	30.04	30.00	29.71	29.76	30.49
70 th	46.99	42.87	40.18	39.05	36.73	35.68	33.76	32.05	31.25	31.25	30.86	31.04	32.01
75 th	47.77	43.72	40.96	39.68	37.78	36.73	34.57	32.89	32.02	32.04	31.64	32.00	32.42
80 th	48.70	44.56	41.65	40.63	38.44	37.65	35.58	33.91	32.87	32.88	32.47	32.87	32.97
85 th	49.43	45.44	42.66	41.57	39.66	38.46	36.45	35.20	33.88	33.78	33.75	33.88	34.21
90 th	50.51	46.53	43.83	42.88	41.03	40.26	37.72	36.74	35.20	35.06	35.15	35.65	35.52
95 th	53.09	48.56	45.82	44.99	43.16	43.02	40.69	38.67	38.10	36.57	37.83	38.49	37.52

Table S6. Waist circumference corrected for height squared (cm/m²) percentiles in boys by age (*n* = 5981).

Percentile	Age (years)												
	5 (<i>n</i> = 164)	6 (<i>n</i> = 442)	7 (<i>n</i> = 422)	8 (<i>n</i> = 463)	9 (<i>n</i> = 495)	10 (<i>n</i> = 502)	11 (<i>n</i> = 554)	12 (<i>n</i> = 628)	13 (<i>n</i> = 530)	14 (<i>n</i> = 521)	15 (<i>n</i> = 536)	16 (<i>n</i> = 408)	17 (<i>n</i> = 316)
5 th	36.35	34.20	31.36	29.90	28.85	27.55	25.84	23.77	23.22	22.13	21.31	21.37	22.09
10 th	37.35	35.31	32.90	31.13	30.07	28.94	27.11	24.78	24.24	22.95	22.41	22.28	23.04
15 th	38.06	36.20	33.82	32.05	30.61	29.62	28.17	25.72	24.92	23.73	22.99	22.79	23.61
20 th	38.64	36.95	34.60	32.71	31.43	30.32	28.69	26.35	25.72	24.16	23.74	23.20	24.34
25 th	39.94	37.50	35.20	33.48	32.05	30.75	29.42	27.19	26.15	24.86	24.11	23.58	24.76
30 th	40.72	38.19	35.77	34.01	32.71	31.11	30.25	27.93	26.64	25.48	24.50	24.02	25.31
40 th	41.45	39.06	36.71	35.14	33.74	32.12	31.35	29.00	27.70	26.30	25.22	24.82	25.97
50 th	42.65	40.15	37.76	36.42	34.94	33.31	32.56	30.31	28.73	27.24	26.06	25.81	26.99
60 th	43.61	40.98	39.00	37.59	36.13	34.85	33.79	31.44	29.96	28.58	27.31	26.71	27.97
70 th	44.55	42.67	40.28	38.46	37.66	36.53	35.20	32.89	31.90	30.11	28.73	28.01	29.03
75 th	45.43	43.10	40.89	39.50	38.46	37.27	36.22	33.72	32.69	30.85	29.72	28.72	30.20
80 th	46.26	44.53	42.15	40.28	39.43	38.12	37.17	34.72	33.79	32.04	30.48	29.76	31.25
85 th	47.85	45.42	43.07	41.54	40.70	39.54	38.37	36.33	35.06	33.31	31.75	31.07	32.05
90 th	48.91	46.60	44.59	42.27	42.15	41.33	39.80	38.22	36.45	34.89	33.28	33.06	34.14
95 th	50.58	48.84	47.36	44.29	44.11	43.40	41.96	40.35	38.37	37.02	35.49	35.01	35.74

Table S7. Main characteristics by sex and age group for the subsample ($n = 2309$).

	Age group (years)						<i>p</i> -trend §
	5 to 6.9	7 to 8.9	9 to 10.9	11 to 12.9	13 to 14.9	15 to 17.9	
Girls (<i>n</i> = 1271)							
<i>n</i>	100	174	200	216	232	349	
Body weight (kg) †	21.0 a (18.6 – 24.5)	26.5 a (23.6 – 31.4)	36.5 b (29.5 – 44.5)	45.8 c (38.4 – 54.7)	53.1 d (46.8 – 63.1)	58.5 d (50.1 – 67.9)	<0.001
Height (m)	1.14 a (1.12 – 1.20)	1.26 b (1.22 – 1.31)	1.39 c (1.34 – 1.45)	1.51 d (1.46 – 1.56)	1.58 e (1.52 – 1.62)	1.60 e (1.55 – 1.64)	<0.001
BMI (kg/m ²)	15.9 a (14.7 – 17.1)	16.7 a (15.2 – 18.4)	18.6 b (16.5 – 21.9)	19.8 b (17.2 – 23.5)	21.5 c (19.1 – 25.3)	23.2 c (20.1 – 25.9)	<0.001
Boys (<i>n</i> = 1038)							
<i>n</i>	87	137	178	190	205	241	
Body weight (kg)	21.6 a (19.5 – 26.6)	26.7 a (23.1 – 35.1)	36.3 b (30.5 – 44.3)	45.3 c (36.4 – 57.9)	53.4 d (46.4 – 63.8)	64.9 e (56.3 – 77.7)	<0.001
Height (m)	1.18 a (1.13 – 1.23)	1.27 a (1.23 – 1.33)	1.40 b (1.34 – 1.45)	1.50 c (1.43 – 1.57)	1.62 d (1.55 – 1.67)	1.71 e (1.66 – 1.76)	<0.001
BMI (kg/m ²)	15.8 a (14.6 – 18.6)	16.6 a (15.1 – 19.5)	18.1 b (16.4 – 21.6)	19.7 c (17.3 – 24.0)	20.3 c (18.1 – 24.3)	22.1 d (19.4 – 27.0)	<0.001

† Data expressed as median (25th – 75th percentile).

§ Calculated with Kruskal-Wallis H test.

Different letters within variables denote significant differences ($p \leq 0.05$) among age groups (Dunn's post hoc test).

BMI: Body mass index.

Table S8. Waist circumference values by sex and age group for the subsample ($n = 2309$).

	Age group (years)						<i>p</i> -trend §
	5 to 6.9	7 to 8.9	9 to 10.9	11 to 12.9	13 to 14.9	15 to 17.9	
Girls (<i>n</i> = 1271)							
<i>n</i>	100	174	200	216	232	349	
WC (cm) †	55.5 a (52.2 – 61.0)	58.0 a (54.0 – 64.3)	64.5 b (58.6 – 73.0)	68.0 c (62.0 – 76.0)	71.0 d (65.0 – 80.0)	73.0 d (67.0 – 82.0)	<0.001
WC/HT (cm/m)	48.4 a (46.1 – 52.5)	46.2 b (43.5 – 50.5)	46.2 b (43.3 – 52.3)	44.7 b (41.5 – 50.5)	45.7 b (41.5 – 51.0)	46.0 b (42.3 – 51.0)	<0.001
WC/HT2 (cm/m ²)	42.4 a (39.5 – 46.2)	36.6 b (34.6 – 40.7)	33.8 c (30.9 – 37.2)	30.0 d (27.6 – 33.6)	29.1 d (26.5 – 32.2)	28.9 d (26.4 – 32.5)	<0.001
Boys (<i>n</i> = 1038)							
<i>n</i>	87	137	178	190	205	241	
WC (cm)	58.0 a (54.0 – 63.5)	58.5 a (54.3 – 67.0)	65.0 b (58.8 – 75.0)	69.0 c (62.5 – 80.0)	72.0 c,d (66.5 – 83.0)	78.0 d (69.0 – 88.0)	<0.001
WC/HT (cm/m)	48.0 a (45.0 – 53.2)	46.9 a,b (43.7 – 50.6)	46.2 a,b (42.8 – 51.8)	46.1 a,b (42.0 – 52.0)	44.6 b (41.5 – 51.6)	45.1 b (40.6 – 51.8)	<0.001
WC/HT2 (cm/m ²)	40.3 a (37.8 – 46.2)	37.3 a (35.0 – 40.5)	33.6 b (30.7 – 37.8)	31.4 c (28.4 – 35.1)	27.9 d (25.5 – 32.7)	26.7 d (23.7 – 30.5)	<0.001

† Data expressed as median (25th – 75th percentile).

§ Calculated with Kruskal-Wallis H test.

Different letters within variables denote significant differences between age groups (Dunn's post hoc, $p < 0.05$).

WC: Waist circumference; WC/HT: Waist circumference corrected for height; WC/HT2: Waist circumference corrected for height squared.

Table S9. Body mass index categories by sex and age group for the subsample ($n = 2309$).

	Age group (years)						<i>p</i> -trend §	<i>φ</i>
	5 to 6.9	7 to 8.9	9 to 10.9	11 to 12.9	13 to 14.9	15 to 17.9		
Girls (<i>n</i> = 1271)								
<i>n</i>	100	174	200	216	232	349		
Underweight ‡	0 (0)	3 (1.7)	3 (1.5)	3 (1.4)	6 (2.6)	10 (2.9)	0.469	0.060
Normal	76 a (76.0)	114 a,b (65.5)	108 b (54.0)	125 b (57.9)	128 b (55.2)	199 b (57.0)	0.002	0.123
Overweight	13 a (13.0)	34 a,b (19.5)	48 a,b (24.0)	52 a,b (24.1)	66 b (28.4)	99 b (28.4)	0.014	0.106
Obesity	11 (11.0)	23 (13.2)	41 (20.5)	36 (16.7)	32 (13.8)	41 (11.7)	0.073	0.089
Boys (<i>n</i> = 1038)								
<i>n</i>	87	137	178	190	205	241		
Underweight	6 (6.9)	4 (2.9)	2 (1.1)	7 (3.7)	6 (2.9)	11 (4.6)	0.208	0.083
Normal	53 (60.9)	79 (57.7)	98 (55.1)	95 (50.0)	117 (57.1)	139 (57.7)	0.518	0.064
Overweight	7 a (8.0)	25 a,b (18.2)	32 a,b (18.0)	37 a,b (19.5)	55 b (26.8)	46 a,b (19.1)	0.012	0.119
Obesity	21 a,b,c (24.1)	29 a,b,c (21.2)	46 b,c (25.8)	51 c (26.8)	27 a (13.2)	45 a,b,c (18.7)	0.009	0.121

‡ Data expressed as n (%).

§ Calculated with χ^2 test.

Different letters within BMI categories denote significant differences ($p \leq 0.05$) among age groups (t-test for independent proportions with Bonferroni adjustment).