

SUPPLEMENTAL MATERIAL

Table S1. Median (interquartile range) and range values for anthropometry and body composition indices, systolic and diastolic blood pressure in mmHg, and growth pattern from birth to 15 years (Z-score) among female adolescents with and without high blood pressure (HBP) (N=691).

		With HBP (N = 22)		Without HBP (N = 669)		p value
		Median (IQR)	Range (min-max)	Median (IQR)	Range (min-max)	
At 6 y						
Weight (kg)		31.7 (24.2 – 39.2)	19.2 – 45.5	22.9 (20.7 – 27.5)	14.9 – 53.2	<0.001
Height (m)		1.24 (1.20 – 1.28)	1.15 – 1.40	1.20 (1.17 – 1.24)	1.04 – 1.41	<0.001
BMI (kg/m ²)		20.7 (16.7 – 23.0)	14.6 – 29.4	16.0 (14.7 – 18.1)	12.0 – 31.2	<0.001
FMI (kg/m ²)		7.6 (4.4 – 9.0)	2.4 – 12.6	3.7 (2.8 – 5.1)	1.0 – 16.0	<0.001
FFMI (kg/m ²)		13.4 (12.5 – 14.2)	11.2 – 18.0	12.4 (11.7 – 13.2)	9.7 – 17.8	<0.001
Systolic BP (mmHg)		114.5 (111.0 – 118.5)	104.0 – 131.0	96.5 (91.5 – 103.0)	74.5 – 152.5	<0.001
Diastolic BP (mmHg)		73.0 (68.5 – 76.0)	57.0 – 84.5	59.0 (54.5 – 64.3)	37.0 – 117.5	<0.001
At 11 y						
Weight (kg)		56.8 (43.0 – 71.6)	33.2 – 77.0	40.3 (34.1 – 49.1)	22.0 – 90.0	<0.001
Height (m)		1.53 (1.46 – 1.55)	1.42 – 1.67	1.47 (1.42 – 1.52)	1.25 – 1.71	0.006
BMI (kg/m ²)		25.0 (19.0 – 29.8)	16.1 – 34.6	18.7 (16.4 – 22.1)	11.7 – 36.4	<0.001
FMI (kg/m ²)		9.0 (5.8 – 12.3)	2.3 – 15.3	4.6 (3.0 – 7.0)	0.5 – 18.1	<0.001
FFMI (kg/m ²)		15.5 (14.1 – 16.5)	12.0 – 22.9	14.1 (13.0 – 15.3)	10.2 – 22.8	<0.001
Systolic BP (mmHg)		132.3 (122.0 – 138.0)	110.0 – 142.5	112.0 (105.0 – 119.0)	83.5 – 151.5	<0.001
Diastolic BP (mmHg)		77.5 (72.0 – 82.5)	65.0 – 105.0	65.5 (61.0 – 70.5)	46.0 – 98.5	<0.001
At 15 y						
Weight (kg)		73.1 (59.1 – 85.6)	48.1 – 110.3	56.2 (48.8 – 65.6)	35.5 – 121.0	<0.001
Height (m)		1.64 (1.56 – 1.65)	1.47 – 1.77	1.60 (1.55 – 1.64)	1.37 – 1.81	0.104
BMI (z-score)		27.1 (23.4 – 33.1)	18.7 – 41.5	22.1 (19.5 – 25.5)	14.5 – 44.0	<0.001
FMI (kg/m ²)		10.2 (8.1 – 14.9)	3.8 – 19.4	6.4 (4.4 – 8.9)	1.0 – 22.2	<0.001
FFMI (kg/m ²)		16.6 (12.7 – 24.4)	12.7 – 24.4	15.7 (14.6 – 16.9)	11.3 – 23.0	<0.001
Systolic BP (mmHg)		127.0 (124.0 – 129.5)	114 – 139.5	107.0 (101.5 – 114.0)	66.0 – 140.0	<0.001
Diastolic BP (mmHg)		75.5 (72.5 – 102.5)	65.5 – 102.5	66.5 (62.0 – 71.5)	45.5 – 96.5	<0.001
Growth 0-6 y						

Weight gain z-score (0-3m)	0.05 (-0.3 – 0.4)	-2.5 – 3.1	-0.11 (-0.6 – 0.6)	-3.6 – 3.3	0.391
Weight gain (3-12m)	0.23 (-0.2 – 1.2)	-2.1 – 2.0	-0.06 (-0.7 – 0.6)	-2.2 – 3.3	0.092
Weight gain z-score (12-24m)	0.20 (-0.7 – 1.1)	-1.0 – 4.5	-0.13 (-0.6 – 0.4)	-4.9 – 5.8	0.001
Weight gain z-score (24-48m)	0.24 (-0.2 – 1.8)	-1.5 – 3.7	-0.09 (-0.5 – 0.5)	-2.0 – 6.3	0.001
Weight gain z-score (48m-6y)	0.31 (-0.2 – 1.4)	-1.8 – 2.8	-0.13 (-0.7 – 0.4)	-2.9 – 5.7	0.006
Height gain z-score (0-3m)	-0.04 (-0.7 – 0.8)	-1.7 – 3.4	-0.01 (-0.6 – 0.6)	-2.5 – 5.6	0.812
Height gain z-score (3-12m)	-0.18 (-0.6 – 0.7)	-2.5 – 2.7	-0.08 (-0.7 – 0.6)	-3.6 – 3.4	0.594
Height gain z-score (12-24m)	0.11 (-0.4 – 1.1)	-1.5 – 2.6	-0.06 (-0.7 – 0.6)	-2.4 – 3.3	0.141
Height gain z-score (24-48m)	0.22 (-0.3 – 0.7)	-1.0 – 4.1	-0.13 (-0.7 – 0.5)	-3.1 – 5.6	0.003
Height gain z-score (48m-6y)	0.20 (-0.5 – 1.8)	-1.6 – 5.5	-0.16 (-0.7 – 0.4)	-2.4 – 5.9	0.001
<i>Growth 6-11 y</i>					
Weight gain z-score	0.21 (-0.7 – 0.7)	-1.7 – 4.8	-0.16 (-0.6 – 0.5)	-3.8 – 5.0	0.128
Height gain z-score	0.77 (-0.2 – 1.7)	-1.1 – 4.1	-0.21 (-0.7 – 0.4)	-3.4 – 4.8	<0.001
<i>Growth 11-15 y</i>					
Weight gain z-score	-0.21 (-0.6 – 0.5)	-2.5 – 1.7	-0.04 (-0.6 – 0.5)	-3.7 – 4.2	0.811
Height gain z-score	0.85 (-0.2 – 2.4)	-1.5 – 3.1	-0.17 (-0.7 – 0.5)	-2.4 – 3.7	<0.001

p value for the difference between individuals with and without HBP information

Table S2. Median (interquartile range) and range values for anthropometry and body composition indices, systolic and diastolic blood pressure in mmHg, and growth pattern from birth to 15 years (Z-score) among *male* adolescents with and without high blood pressure (HBP) (N=726).

		With HBP (N = 31)		Without HBP (N = 695)		p value
		Median (IQR)	Range (min-max)	Median (IQR)	Range (min-max)	
At 6 y						
Weight (kg)		26.1 (24.7 – 31.1)	16.8 -57.9	23.7 (21.5 – 27.4)	15.9 – 47.0	0.001
Height (m)		1.23 (1.19 – 1.26)	1.08 – 1.35	1.22 (1.19 – 1.26)	1.07 – 1.39	0.664
BMI (kg/m ²)		17.9 (16.0 – 19.9)	13.4 – 32.1	16.1 (14.9 – 17.7)	10.4 – 27.7	<0.001
FMI (kg/m ²)		4.3 (3.0 – 6.4)	1.6 – 15.9	3.3 (2.5 – 4.5)	0.7 – 12.2	0.002
FFMI (kg/m ²)		13.6 (13.0 – 14.3)	10.3 – 19.0	12.9 (12.2 – 13.7)	10.2 – 17.0	<0.001
Systolic (mmHg)	BP	114.0 (112.5 – 115.5)	98.0 – 123.0	98.0 (92.5 – 105.0)	73.0 – 137.0	<0.001
Diastolic (mmHg)	BP	69.5 (62.5 – 74.0)	55.5 – 84.5	59.0 (54.0 – 63.5)	42.5 – 112.0	<0.001
At 11 y						
Weight (kg)		48.8 (39.5 – 59.8)	23.4 – 91.1	39.0 (33.4 – 48.7)	23.0 – 89.5	0.001
Height (m)		1.47 (1.41 – 1.52)	1.28 – 1.68	1.45 (1.41 – 1.63)	1.27 – 1.70	0.359
BMI (kg/m ²)		22.7 (17.7 – 26.7)	14.0 – 36.0	18.6 (16.4 – 22.1)	12.5 – 34.2	<0.001
FMI (kg/m ²)		7.6 (4.2 – 10.2)	1.7 – 19.3	4.5 (2.7 – 7.5)	0.4 – 17.2	<0.001
FFMI (kg/m ²)		14.9 (11.3 – 20.9)	11.3 – 20.9	14.1 (13.2 – 15.1)	9.7 – 22.1	0.004
Systolic (mmHg)	BP	123.5 (119.5 – 128.5)	106.5 – 150.0	111.0 (104.5 – 118.0)	83.5 – 147.0	<0.001
Diastolic (mmHg)	BP	73.5 (70.0 – 80.0)	57.5 – 95.0	64.0 (59.0 – 69.5)	40.5 – 110.0	<0.001
At 15 y						
Weight (kg)		83.0 (65.3 – 91.5)	48.0 – 119.1	62.3 (54.9 – 72.3)	36.5 – 150.2	<0.001
Height (m)		1.72 (1.67 – 1.76)	1.53 – 1.85	1.72 (1.68 – 1.76)	1.52 – 1.91	0.282
BMI (z-score)		27.0 (22.4 – 41.4)	17.2 – 41.4	20.9 (18.9 – 24.1)	14.4 – 45.5	<0.001
FMI (kg/m ²)		7.9 (4.9 – 12.3)	1.1 – 18.8	3.2 (2.1 – 6.0)	0.4 – 21.9	<0.001
FFMI (kg/m ²)		19.4 (17.5 – 20.6)	14.4 – 24.1	17.5 (16.2 – 19.0)	11.6 – 24.6	<0.001
Systolic (mmHg)	BP	133.0 (130.0 – 137.0)	115.5 – 156.5	116.0 (110 – 123.5)	64.0 – 150.5	<0.001
Diastolic (mmHg)	BP	76.5 (73.0 – 83.0)	55.5 – 90.0	66.0 (61.5 – 71.5)	33.0 – 99.0	<0.001

Growth 0-6 y					
Weight gain z-score (0-3m)	-0.14 (-0.4 – 0.4)	-2.8 – 2.3	-0.01 (-2.0 – 2.7)	-2.6 – 5.2	0.979
Weight gain (3-12m)	0.18 (-0.6 – 1.1)	-2.3 – 4.4	-0.12 (-0.7 – 0.5)	-1.7 – 3.1	0.270
Weight gain z-score (12-24m)	-0.01 (-0.04 – 0.02)	-0.1 – 0.1	-0.03 (-0.05 – 0.01)	-0.2 – 0.4	0.868
Weight gain z-score (24-48m)	-0.08 (-0.5 – 0.7)	-1.6 – 5.9	-0.13 (-0.7 – 0.4)	-2.2 – 3.9	0.043
Weight gain z-score (48m-6y)	0.16 (-0.1 – 1.0)	-1.3 – 3.0	-0.20 (-0.7 – 0.4)	-4.4 – 4.3	0.002
Height gain z-score (0-3m)	-0.52 (-1.1 – 0.5)	-1.6 – 3.0	-0.06 (-0.7 – 0.6)	-3.3 – 3.5	0.204
Height gain z-score (3-12m)	-0.22 (-0.7 – 0.4)	-2.0 – 2.7	-0.04 (-0.6 – 0.6)	-2.6 – 5.4	0.635
Height gain z-score (12-24m)	-0.10 (-0.6 – 0.5)	-2.0 – 4.8	-0.08 (-0.7 – 0.5)	-2.4 – 3.1	0.672
Height gain z-score (24-48m)	-0.03 (-0.07 – 0.01)	-0.1 – 0.3	-0.03 (-0.07 – 0.01)	-0.2 – 0.4	0.850
Height gain z-score (48m-6y)	-0.02 (-0.5 – 0.7)	-1.5 – 5.8	-0.11 (-0.7 – 0.4)	-2.3 – 4.2	0.007
Growth 6-11 y					
Weight gain z-score	0.36 (-0.6 – 0.9)	-2.7 – 2.9	-0.16 (-0.6 – 0.5)	-3.8 – 4.3	0.190
Height gain z-score	0.40 (-0.4 – 0.9)	-1.4 – 5.8	-0.2 (-0.7 – 0.4)	-3.6 – 3.6	<0.001
Growth 11-15 y					
Weight gain z-score	0.66 (-0.1 – 1.8)	-4.1 – 3.8	-0.07 (-0.6 – 0.4)	-2.8 – 3.9	<0.001
Height gain z-score	0.60 (-0.3 – 1.3)	-2.3 – 3.3	-0.1 (-0.6 – 0.5)	-3.6 – 3.8	0.005

p value for the difference between individuals with and without HBP information

Table S3. Comparison between adolescents with full information on blood pressure (BP) at 6, 11, and 15 years and with missing BP on at least one occasion (N= 2,029) by sex.

Characteristics	Females with BP measures on three occasions N = 691	Females with missing BP on at least one occasion N =301	<i>P</i>*	Males with BP measures on three occasions N = 726	Males with missing BP on at least one occasion N = 311	<i>P</i>*
<i>Family characteristics</i>						
Family income (quintiles) (n=2,029)						
1 st (poorest)	118 (17.1)	70 (23.3)	0.064	136 (18.7)	52 (16.7)	0.662
2 nd	148 (21.4)	50 (16.6)		143 (19.7)	53 (17.0)	
3 rd	143 (20.7)	62 (20.6)		145 (20.0)	71 (22.8)	
4 th	148 (21.4)	72 (23.9)		161 (22.2)	70 (22.5)	
5 th (wealthiest)	134 (19.4)	47 (15.6)		141 (19.4)	65 (20.9)	
Family history of hypertension (n=1,753)						
Yes	155 (25.4)	66 (27.4)	0.545	170 (26.2)	57 (22.5)	0.250
No	456 (74.6)	175 (72.6)		478 (73.8)	196 (77.5)	
<i>Maternal characteristics</i>						
Schooling (years) (n=2,014)						

≤ 4	103 (15.0)	39 (13.1)	0.565	100 (13.9)	39 (12.5)	0.531
5-8	282 (41.2)	118 (39.7)		298 (41.3)	121 (38.9)	
≥ 9	300 (43.8)	140 (47.1)		323 (44.8)	151 (48.6)	
Age at childbirth (years) (n=2,029)						
≤ 20	156 (22.6)	66 (21.9)	0.138	162 (22.3)	67 (21.5)	0.031
21-25	173 (25.0)	92 (30.6)		173 (23.8)	101 (32.5)	
26-30	151 (21.9)	70 (23.3)		167 (23.0)	62 (19.9)	
> 30	211 (30.5)	73 (24.3)		224 (30.9)	81 (26.1)	
Pre-gestational BMI² (kg/m²) (n=1,464)						
< 25.0	299 (61.8)	146 (66.4)	0.242	335(62.2)	157 (71.0)	0.020
≥ 25.0	185 (38.2)	74 (33.6)		204 (37.9)	64 (29.0)	
Maternal smoking during pregnancy (n=2,029)						
Yes	173 (25.0)	77 (25.6)	0.856	184 (25.3)	91 (29.3)	0.191
No	518 (75.0)	224 (74.4)		542 (74.7)	220 (70.7)	
<i>Adolescent characteristics at birth</i>						
Gestational age (weeks) (n=2,026)						
< 37	88 (12.8)	42 (14.1)	0.580	94 (13.0)	40 (12.9)	0.970
≥ 37	602 (87.3)	257 (86.0)		632 (87.1)	271 (87.1)	

Intrauterine growth (n=1,951)							
SGA ³	54 (8.1)	21 (7.3)	0.430	59 (8.4)	26 (8.6)	0.782	
AGA ⁴	506 (76.3)	211 (73.4)		519 (74.3)	230 (75.9)		
LGA ⁵	103 (15.5)	54 (18.9)		121 (17.3)	47 (15.5)		
Skin color (n=1,898)							
White	467 (68.1)	176 (69.8)	0.606	485 (68.4)	171 (68.1)	0.935	
Non-White	219 (31.9)	76 (30.2)		224 (31.6)	80 (31.9)		
<i>Adolescent characteristics at 15 years</i>							
Puberty status (Tanner) (n=1,813)							
2-4	155 (23.0)	53 (21.6)	0.909	36 (5.4)	8 (3.5)	0.494	
5-7	368 (54.6)	136 (55.5)		311 (46.8)	107 (46.7)		
8-10	151 (22.4)	56 (22.9)		318 (47.8)	114 (49.8)		
Systolic genetic factors (n=1,812)							
1 st	223 (34.3)	89 (37.1)	0.536	216 (31.0)	76 (33.8)	0.744	
2 nd	226 (34.7)	74 (30.8)		232 (33.3)	72 (32.0)		
3 rd	202 (31.0)	77 (32.1)		248 (35.6)	77 (34.2)		
Diastolic genetic factors (n=1,812)							
1 st	217 (33.3)	85 (35.4)	0.734	234 (33.6)	68 (30.2)	0.149	
2 nd	216 (33.2)	81 (33.8)		220 (31.6)	87 (38.7)		

3 rd	218 (33.5)	74 (30.8)		242 (34.8)	70 (31.1)	
Mean sleep duration (hours/day) (N= 1,910)						
<8	416 (62.6)	167 (61.9)	0.840	476 (67.7)	176 (64.7)	0.371
≥8	249 (37.4)	103 (38.2)		227 (32.3)	96 (35.3)	
Physical activity (min/day), mean (SD) (n=1,484)						
	30.9 (8.4)	30.3 (7.9)	0.431	34.5 (12.5)	35.2 (12.4)	0.503
Daily sodium intake (g), mean (SD) (n=1,917)	3.199 (4.189)	3.328 (3.493)	0.923	3.339 (3.705)	3.727 (4.851)	0.188
Screen time (hours/day), mean (SD) (n=1,880)	4.5 (3.6)	4.3 (3.6)	0.342	6.5 (4.6)	6.0 (4.0)	0.117
BMI-z score, mean (SD) (n=1,903)	0.5 (1.3)	0.5 (1.3)	0.590	0.4 (1.4)	0.4 (1.4)	0.760
FMI (kg/m ²), mean (SD) (n=1,903)	7.3 (3.7)	7.1 (3.9)	0.560	4.7 (3.7)	4.6 (3.6)	0.663
FFMI (kg/m ²), mean (SD) (n=1,903)	15.9 (1.9)	15.9 (1.9)	0.996	17.7 (2.1)	17.8 (2.3)	0.667
Current work (N=1,822)						
Yes	72 (11.2)	27 (10.1)	0.635	85 (13.0)	32 (12.7)	0.917
No	574 (88.9)	241 (89.9)		571 (87.0)	220 (87.3)	

*Chi-square or t-test; BP: blood pressure; BMI: body mass index; FMI: fat mass index; FFMI: fat-free mass index; SGA: small for gestational age; AGA: adequate for gestational age; LGA: large for gestational age.