

Supplementary Table 1. Distribution of male and female subjects of the ECPBHS at ages 15, 18 and 25 years by NPY genotype groups (%).

15 years	MALE (n = 481)			FEMALE (n = 594)			X ² /Fisher
	TT	CT	CC	TT	CT	CC	
rs5574	99 (20.6)	228 (47.4)	154 (32.0)	115 (19.4)	321 (54.0)	158 (26.6)	0.075
rs16147	130 (27.0)	233 (48.5)	118 (24.5)	129 (21.7)	320 (53.9)	145 (24.4)	0.098
rs16139	420 (87.3)	58 (12.1)	3 (0.6)	513 (86.4)	78 (13.1)	3 (0.5)	0.831
rs17149106	TT	GT	GG	TT	GT	GG	
rs17149106	3 (0.6)	58 (12.1)	420 (87.3)	3 (0.5)	80 (13.5)	511 (86.0)	0.738

18 years	MALE (n = 399)			FEMALE (n = 514)			X ² /Fisher
	TT	CT	CC	TT	CT	CC	
rs5574	81 (20.3)	194 (48.6)	124 (31.1)	102 (19.8)	272 (52.9)	140 (27.3)	0.371
rs16147	106 (26.6)	197 (49.4)	96 (24.0)	116 (22.6)	266 (51.7)	132 (25.7)	0.375
rs16139	351 (88.0)	45 (11.3)	3 (0.7)	442 (86.0)	69 (13.4)	3 (0.6)	0.627
rs17149106	TT	GT	GG	TT	GT	GG	
rs17149106	3 (0.8)	46 (11.5)	350 (87.7)	3 (0.6)	70 (13.6)	441 (85.8)	0.629

25 years	MALE (n = 418)			FEMALE (n = 508)			X ² /Fisher
	TT	CT	CC	TT	CT	CC	
rs5574	92 (22.0)	196 (46.9)	130 (31.1)	102 (20.1)	260 (51.2)	146 (28.7)	0.429
rs16147	109 (26.1)	204 (48.8)	105 (25.1)	118 (23.2)	260 (51.2)	130 (25.6)	0.595
rs16139	372 (89.0)	43 (10.3)	3 (0.7)	434 (85.4)	71 (14.0)	3 (0.6)	0.225
rs17149106	TT	GT	GG	TT	GT	GG	
rs17149106	3 (0.7)	43 (10.3)	372 (89.0)	3 (0.6)	71 (14.0)	434 (85.4)	0.225

Supplementary Table 2. Anthropometric measurements, biochemical measures and physical activity (mean and SD) of the ECPBHS sample by *NPY* rs5574 genotype and age (n).

	15 years old			18 years old			25 years old		
	TT	CT	CC	TT	CT	CC	TT	CT	CC
Age (years)	14.9 ± 0.6 (214)	14.9 ± 0.7 (549)	14.9 ± 0.6 (312)	17.9 ± 0.6 (183)	17.8 ± 0.8 (466)	17.9 ± 0.8 (264)	24.8 ± 0.5 (194)	24.7 ± 0.6 (456)	24.8 ± 0.7 (276)
Height (cm)	169.2 ± 8.7 (214)	168.9 ± 7.9 (549)	170.3 ± 8.1 (312)	172.9 ± 9.4 (181)	173.1 ± 8.8 (450)	173.7 ± 9.0 (258)	174.0 ± 9.8 (194)	173.8 ± 9.0 (456)	174.5 ± 9.0 (275)
Weight (kg)	58.2 ± 10.3 (214)	58.8 ± 10.5 (549)	60.0 ± 10.03 (312)	65.3 ± 12.3 (181)	66.1 ± 12.2 (450)	67.9 ± 12.6 (258)	71.3 ± 15.1 (194)	72.2 ± 16.1 (456)	74.1 ± 15.9 (275)
BMI (kg/m ²)	20.3 ± 2.8 (214)	20.6 ± 3.0 (549)	20.6 ± 2.8 (312)	21.8 ± 3.0 (181)	22.0 ± 3.4 (450)	22.4 ± 3.3 (258)	23.4 ± 4.0 (194)	23.8 ± 4.3 (456)	24.2 ± 4.2 (275)
WC (cm)	68.3 ± 6.1 (214)	68.5 ± 6.7 (549)	69.1 ± 6.1 (312)	72.9 ± 7.8 (181)	73.3 ± 8.6 (450)	74.6 ± 8.4 (258)	78.7 ± 11.2 (194)	79.2 ± 11.6 (455)	80.9 ± 11.6 (275)
HC (cm)	90.0 ± 6.8 (214)	90.8 ± 7.0 (548)	90.8 ± 6.4 (312)	93.8 ± 6.5 (181)	94.5 ± 7.3 (450)	95.0 ± 7.0 (257)	98.7 ± 8.2 (194)	99.3 ± 9.1 (455)	99.8 ± 8.3 (275)
WHR (units)	0.76 ± 0.05 (214)	0.76 ± 0.05 (548)	0.76 ± 0.05 (312)	0.78 ± 0.06 (181)	0.77 ± 0.6 (450)	0.78 ± 0.5 (257)	0.80 ± 0.07 (194)	0.80 ± 0.07 (455)	0.81 ± 0.07 (275)§
WHtR (units)	0.40 ± 0.03 (214)	0.41 ± 0.04 (549)	0.41 ± 0.03 (312)	0.42 ± 0.04 (181)	0.42 ± 0.05 (450)	0.43 ± 0.04 (258)	0.45 ± 0.06 (194)	0.46 ± 0.06 (455)	0.46 ± 0.06 (275)
Sum of 5 sf (mm)	53.9 ± 26.9 (214)	55.0 ± 26.3 (549)	53.9 ± 23.9 (312)	67.8 ± 33.7 (179)	68.6 ± 33.7 (450)	70.5 ± 33.4 (258)	72.9 ± 38.0 (193)	76.1 ± 36.5 (455)	79.3 ± 37.0 (275)
CHL (mmol/L)	4.1 ± 0.7 (213)	4.1 ± 0.8 (545)	4.0 ± 0.7 (308)	4.2 ± 0.8 (180)	4.2 ± 0.8 (439) ^b	4.1 ± 0.7 (253) ^b	4.5 ± 0.8 (190)	4.5 ± 0.8 (451)	4.4 ± 0.9 (269)
HDL-C (mmol/L)	1.4 ± 0.3 (213)	1.4 ± 0.3 (545)	1.4 ± 0.3 (308)	1.5 ± 0.3 (180)	1.5 ± 0.3 (439)	1.5 ± 0.4 (253)	1.5 ± 0.4 (190)	1.5 ± 0.4 (451)	1.5 ± 0.4 (269)
LDL-C (mmol/L)	2.3 ± 0.6 (96)	2.3 ± 0.6 (238)	2.2 ± 0.6 (140)	2.4 ± 0.7 (180)	2.5 ± 0.7 (439)	2.4 ± 0.6 (253)	2.7 ± 0.7 (190)	2.7 ± 0.8 (451)	2.7 ± 0.8 (269)
TRG (mmol/L)	0.8 ± 0.4 (213)	0.8 ± 0.5 (544)	0.8 ± 0.6 (308)	0.8 ± 0.4 (180)	0.9 ± 0.5 (439)	0.8 ± 0.4 (253)	1.0 ± 0.5 (190)	1.0 ± 0.6 (450)	1.0 ± 0.6 (269)
Glucose (mmol/L)	5.0 ± 0.5 (213)	5.0 ± 0.4 (545)	5.1 ± 0.4 (308)	4.8 ± 0.5 (179)	4.8 ± 0.6 (438)	4.9 ± 0.5 (252)	5.0 ± 0.5 (190)	4.9 ± 0.5 (451)	5.0 ± 0.5 (269)
Insulin (mU/L)	12.7 ± 8.1 (213) ^a	11.4 ± 5.7 (545) ^a	11.8 ± 7.0 (307)	7.8 ± 4.4 (179)	8.2 ± 5.6 (435)	8.1 ± 6.3 (252)	7.8 ± 4.7 (190)	7.4 ± 4.6 (451)	8.1 ± 5.7 (269)
Daily energy intake (kcal)	2354.2 ± 965.7 (214) ^c	2201.3 ± 896.3 (545)	2157.9 ± 894.6 (311) ^c	2228.0 ± 931.6 (182)	2179.5 ± 884.1 (445)	2158.4 ± 863.7 (252)	1997.8 ± 780.2 (194)	1986.8 ± 707.4 (445)	2001.3 ± 710.1 (274)
Protein (g)	74.3 ± 30.7 (214)	68.7 ± 32.3 (545)	69.8 ± 33.1 (311)	75.2 ± 33.7 (182)	71.1 ± 31.6 (445)	74.6 ± 34.2 (252)	78.5 ± 30.3 (194)	79.3 ± 34.7 (445)	81.0 ± 33.3 (274)
Lipids (g)	91.5 ± 48.3 (214)	87.4 ± 44.5 (545)	83.7 ± 41.3 (311)	90.5 ± 45.7 (182)	87.0 ± 40.1 (445)	88.9 ± 43.9 (252)	82.3 ± 36.8 (194)	80.6 ± 34.4 (445)	82.8 ± 33.6 (274)
Carbohydrates (g)	299.9 ± 131.4 (214) ^c	277.4 ± 118.9 (545)	273.4 ± 125.7 (311) ^c	264.8 ± 110.1 (182)	262.8 ± 114.7 (445)	249.8 ± 99.2 (252)	208.01 ± 81.02 (194)	209.6 ± 78.1 (445)	207.7 ± 81.3 (274)
Protein E%	13.2 ± 2.9 (214)	12.8 ± 3.1 (545)	13.3 ± 3.4 (311)	13.8 ± 2.7 (182)	13.4 ± 3.0 (445) ^b	14.1 ± 3.1 (252) ^b	16.0 ± 3.4 (194)	16.0 ± 4.2 (445)	16.2 ± 4.2 (274)
Lipids E%	34.7 ± 8.2 (214)	35.4 ± 8.2 (545)	35.0 ± 7.9 (311)	36.0 ± 7.2 (182)	35.9 ± 7.6 (445)	36.6 ± 8.1 (252)	35.9 ± 6.5 (194)	35.3 ± 6.3 (445)	36.2 ± 6.4 (274)
Carbohydrates E%	52.2 ± 8.9 (214)	51.8 ± 9.0 (545)	51.7 ± 9.0 (311)	49.2 ± 8.0 (182)	49.4 ± 8.3 (445)	48.2 ± 9.1 (252)	45.8 ± 7.8 (194)	46.5 ± 8.2 (445)	45.6 ± 8.3 (274)
Systolic BP	111.4 ± 12.0 (214)	110.7 ± 11.5 (549)	111.6 ± 11.4 (312)	115.3 ± 12.7 (182)	113.8 ± 13.1 (450)	114.7 ± 12.7 (258)	116.2 ± 14.0 (194)	116.1 ± 14.6 (456)	117.0 ± 14.3 (275)
Diastolic BP	62.3 ± 6.9 (214)	62.5 ± 6.7 (549)	62.3 ± 6.9 (312)	62.1 ± 7.8 (182)	61.6 ± 7.5 (450)	61.2 ± 6.9 (258)	65.3 ± 8.4 (194)	66.7 ± 9.6 (456)	66.8 ± 8.5 (275)
MPO/kg	2.9 ± 0.7 (214)	2.9 ± 0.65 (547)	2.9 ± 0.8 (309)	2.6 ± 0.8 (170)	2.5 ± 0.7 (421)	2.5 ± 0.7 (239)	2.8 ± 0.8 (188)	2.7 ± 0.7 (436)	2.7 ± 0.7 (259)
Activity score	2.6 ± 1.1 (207)	2.7 ± 1.1 (526)	2.7 ± 1.1 (300)	1.2 ± 0.8 (173)	1.2 ± 0.8 (414)	1.2 ± 0.8 (227)	4.8 ± 3.0 (199)	4.6 ± 3.1 (465)	4.4 ± 3.2 (280)

^a p < 0.05 significant difference between the mean values of the *NPY* rs5574 TT and TC genotypes by the Bonferroni method

^b p < 0.05 significant difference between the mean values of the *NPY* rs5574 CT and CC genotypes by the Bonferroni method

^c p < 0.05 significant difference between the mean values of the *NPY* rs5574 TT and CC genotypes by the Bonferroni method

§ p > 0.05 significant differences were not found between *NPY* rs5574 genotypes after correcting by the Bonferroni method

BMI – body mass index; WC – waist circumference; HC – hip circumference; WHR – waist-to-hip ratio; WHtR – waist-to-height ratio; sf – skinfolds; CHL – cholesterol; HDL-C – high-density lipoprotein cholesterol; LDL-C – low-density lipoprotein cholesterol; TRG – triglycerides; BP – blood pressure; MPO – maximum power output

Supplementary Table 3. Anthropometric measurements, biochemical measures and physical activity (mean and SD) of the ECPBHS sample by *NPY rs16147* genotype and age (n).

	15 years old			18 years old			25 years old		
	TT	CT	CC	TT	CT	CC	TT	CT	CC
Age (years)	14.9 ± 0.6 (259)	14.9 ± 0.6 (553)	14.9 ± 0.6 (263)	17.9 ± 0.8 (222)	17.9 ± 0.8 (463)	17.8 ± 0.6 (228)	24.8 ± 0.7 (227)	24.8 ± 0.6 (464)	24.8 ± 0.5 (235)
Height (cm)	170.6 ± 8.2 (259) ^{ac}	169.1 ± 7.8 (553) ^a	168.8 ± 8.6 (263) ^c	174.0 ± 9.0 (218)	173.3 ± 8.7 (446)	172.3 ± 9.4 (225)	174.8 ± 9.2 (226)	174.0 ± 8.8 (464)	173.5 ± 9.8 (235)
Weight (kg)	60.3 ± 10.6 (259) ^c	59.0 ± 10.5 (553)	57.9 ± 9.9 (263) ^c	68.1 ± 12.7 (218) ^c	66.3 ± 12.2 (446)	65.1 ± 12.0 (225) ^c	74.8 ± 16.1 (226) ^c	72.4 ± 16.0 (464)	70.8 ± 15.2 (235) ^c
BMI (kg/m ²)	20.6 ± 2.9 (259)	20.6 ± 3.0 (553)	20.3 ± 2.8 (263)	22.4 ± 3.4 (218)	22.0 ± 3.3 (446)	21.8 ± 3.0 (225)	24.4 ± 4.3 (226) ^c	23.8 ± 4.2 (464)	23.4 ± 4 (235) ^c
WC (cm)	69.3 ± 6.3 (259)	68.6 ± 6.6 (553)	68.2 ± 6.0 (263)	74.6 ± 8.5 (218)	73.5 ± 8.6 (446)	72.8 ± 7.9 (225)	81.5 ± 11.9 (226) ^c	79.2 ± 11.4 (464)	78.5 ± 11.2 (234) ^c
HC (cm)	91.0 ± 6.6 (259)	90.8 ± 7.0 (552)	89.9 ± 6.5 (263)	95.0 ± 7.2 (217)	94.7 ± 7.3 (446)	93.7 ± 6.4 (225)	100.1 ± 8.5 (226)	99.2 ± 9.1 (464)	98.7 ± 8.1 (234)
WHR (units)	0.76 ± 0.05 (259)	0.76 ± 0.05 (552)	0.76 ± 0.05 (263)	0.78 ± 0.06 (217)	0.78 ± 0.06 (446)	0.78 ± 0.06 (225)	0.81 ± 0.07 (226) ^{ac}	0.80 ± 0.07 (464) ^a	0.79 ± 0.07 (234) ^c
WHT _r (units)	0.41 ± 0.03 (259)	0.41 ± 0.04 (553)	0.40 ± 0.03 (263)	0.43 ± 0.04 (218)	0.42 ± 0.05 (446)	0.42 ± 0.04 (225)	0.47 ± 0.06 (226)	0.45 ± 0.06 (464)	0.45 ± 0.06 (234) [§]
Sum of 5 sf (mm)	53.6 ± 24.5 (259)	55.2 ± 26.2 (553)	53.8 ± 26.0 (263)	69.8 ± 33.4 (446)	68.7 ± 34.1 (446)	68.7 ± 32.9 (223)	80.1 ± 38.2 (226)	76.1 ± 36.8 (464)	73.2 ± 36.3 (233)
CHL (mmol/L)	4.0 ± 0.7 (257)	4.1 ± 0.7 (547)	4.1 ± 0.8 (262)	4.1 ± 0.7 (212)	4.2 ± 0.8 (436)	4.2 ± 0.8 (224)	4.4 ± 0.8 (221)	4.5 ± 0.9 (459)	4.5 ± 0.8 (230)
HDL-C (mmol/L)	1.4 ± 0.3 (257)	1.4 ± 0.3 (547)	1.4 ± 0.3 (262)	1.5 ± 0.3 (212)	1.5 ± 0.4 (436)	1.5 ± 0.4 (224)	1.5 ± 0.4 (221)	1.5 ± 0.4 (459)	1.5 ± 0.4 (230)
LDL-C (mmol/L)	2.2 ± 0.6 (119)	2.3 ± 0.6 (243)	2.3 ± 0.6 (112)	2.4 ± 0.6 (212)	2.4 ± 0.7 (436)	2.4 ± 0.7 (224)	2.6 ± 0.7 (221)	2.7 ± 0.8 (459)	2.7 ± 0.7 (230)
TRG (mmol/L)	0.8 ± 0.6 (257)	0.8 ± 0.5 (546)	0.8 ± 0.4 (262)	0.8 ± 0.4 (212)	0.9 ± 0.5 (436)	0.8 ± 0.4 (224)	1.0 ± 0.6 (221)	1.0 ± 0.6 (458)	1.0 ± 0.5 (230)
Glucose (mmol/L)	5.1 ± 0.4 (257)	5.0 ± 0.4 (547)	5.0 ± 0.5 (262)	4.9 ± 0.5 (211)	4.8 ± 0.6 (435)	4.8 ± 0.5 (223)	5.0 ± 0.5 (221)	4.9 ± 0.5 (459)	5.0 ± 0.5 (230)
Insulin (mU/L)	11.6 ± 6.9 (256)	11.5 ± 5.8 (547)	12.5 ± 7.7 (262)	8.2 ± 6.7 (211)	8.1 ± 5.3 (432)	8.0 ± 4.9 (223)	8.4 ± 5.9 (221) ^a	7.3 ± 4.6 (459) ^a	7.9 ± 4.7 (230)
Daily energy intake (kcal)	2169.4 ± 900.6 (258)	2201.0 ± 903.9 (550)	2306.7 ± 937.0 (262)	2195.4 ± 885.3 (213)	2170.0 ± 878.2 (440)	2198.5 ± 911.7 (226)	2012.6 ± 709.5 (226)	1995.1 ± 710.0 (456)	1971.4 ± 764.9 (231)
Protein (g)	70.6 ± 34.1 (258)	68.7 ± 32.4 (550)	72.6 ± 29.8 (262)	76.4 ± 35.1 (213)	71.1 ± 31.6 (440)	73.3 ± 32.8 (226)	81.7 ± 33.9 (226)	79.6 ± 34.9 (456)	77.6 ± 29.7 (231)
Lipids (g)	84.5 ± 40.7 (258)	87.0 ± 44.9 (550)	90.0 ± 46.9 (262)	91.4 ± 44.8 (213)	86.5 ± 40.8 (440)	88.8 ± 44.7 (226)	83.6 ± 33.4 (226)	80.9 ± 34.2 (456)	81.0 ± 36.7 (231)
Carbohydrates (g)	273.9 ± 129.6 (258)	278.0 ± 119.5 (550)	293.1 ± 126.0 (262)	250.6 ± 101.6 (213)	262.8 ± 113.1 (440)	262.4 ± 109.9 (226)	209.1 ± 81.4 (226)	209.8 ± 77.8 (456)	206.1 ± 81.7 (231)
Protein E%	13.4 ± 3.4 (258)	12.8 ± 3.1 (550)	13.2 ± 2.9 (262)	14.2 ± 3.1 (213) ^a	13.4 ± 3.0 (440) ^a	13.7 ± 2.8 (226)	16.2 ± 4.2 (226)	16.0 ± 4.2 (456)	16.0 ± 3.5 (231)
Lipids E%	35.3 ± 8.1 (258)	35.3 ± 8.1 (550)	34.9 ± 8.0 (262)	37.0 ± 8.0 (213)	35.9 ± 7.6 (440)	35.9 ± 7.4 (226)	36.3 ± 6.5 (226)	35.4 ± 6.2 (456)	35.7 ± 6.7 (231)
Carbohydrates E%	51.4 ± 9.2 (258)	51.9 ± 9.1 (550)	52.0 ± 8.7 (262)	47.5 ± 8.9 (213) ^{ac}	49.5 ± 8.4 (440) ^a	49.5 ± 8.2 (226) ^c	45.5 ± 8.2 (226)	46.3 ± 8.2 (456)	46.1 ± 8.1 (231)
Systolic BP	111.4 ± 10.7 (259)	110.7 ± 11.6 (553)	111.6 ± 12.1 (263)	114.8 ± 12.6 (218)	113.8 ± 13.0 (446)	115.0 ± 12.9 (226)	117.3 ± 13.9 (226)	116.1 ± 14.7 (464)	116.0 ± 14.1 (235)
Diastolic BP	62.2 ± 6.9 (259)	62.5 ± 6.7 (553)	62.5 ± 6.9 (263)	61.5 ± 7.0 (218)	61.4 ± 7.5 (446)	62.0 ± 7.5 (226)	66.8 ± 8.6 (226)	66.6 ± 9.5 (464)	65.8 ± 8.5 (235)
MPO/kg	2.9 ± 0.8 (256)	2.9 ± 0.7 (551)	2.9 ± 0.7 (263)	2.5 ± 0.8 (201)	2.5 ± 0.7 (418)	2.6 ± 0.7 (211)	2.6 ± 0.8 (212)	2.7 ± 0.7 (446)	2.7 ± 0.8 (225)
Activity score	2.7 ± 1.1 (250)	2.7 ± 1.1 (530)	2.6 ± 1.1 (253)	1.2 ± 0.8 (191)	1.2 ± 0.8 (410)	1.2 ± 0.8 (213)	4.4 ± 3.1 (231)	4.6 ± 3.2 (471)	4.6 ± 3.1 (242)

^a p < 0.05 significant difference between the mean values of the *NPY rs16147* TT and TC genotypes by the Bonferroni method

^c p < 0.05 significant difference between the mean values of the *NPY rs16147* TT and CC genotypes by the Bonferroni method

[§] p > 0.05 significant differences were not found between *NPY rs16147* genotypes after correcting by the Bonferroni method

BMI – body mass index; WC – waist circumference, HC – hip circumference; WHR – waist-to-hip ratio; WHT_r – waist-to-height ratio; sf – skinfolds; CHL – cholesterol; HDL-C – high-density lipoprotein cholesterol; LDL-C – low-density lipoprotein cholesterol; TRG – triglycerides; BP – blood pressure; MPO – maximum power output

Supplementary Table 4. Anthropometric measurements, biochemical measures and physical activity (mean and SD) of the ECPBHS sample by *NPY rs16139* genotype and age (n).

	15 years old		18 years old		25 years old	
	TT	CT	TT	CT	TT	CT
Age (years)	14.9 ± 0.6 (933)	14.9 ± 0.7 (136)	17.9 ± 0.8 (793)	17.8 ± 0.7 (114)	24.8 ± 0.6 (806)	24.7 ± 0.6 (114)
Height (cm)	169.5 ± 8.1 (933)	168.5 ± 7.9 (136)	173.5 ± 9.0 (777) ^a	171.4 ± 8.4 (106) ^a	174.3 ± 9.2 (806) ^a	172.0 ± 8.9 (113) ^a
Weight (kg)	59.2 ± 10.4 (933)	57.7 ± 10.3 (136)	66.6 ± 12.3 (777)	65.5 ± 12.8 (106)	72.7 ± 15.9 (803)	71.6 ± 15.4 (113)
BMI (kg/m ²)	20.5 ± 2.9 (933)	20.3 ± 2.9 (136)	22.1 ± 3.3 (777)	22.2 ± 3.2 (106)	23.8 ± 4.2 (806)	24.0 ± 4.2 (113)
WC (cm)	68.7 ± 6.3 (933)	68.1 ± 6.9 (136)	73.6 ± 8.3 (777)	73.3 ± 9.1 (106)	79.6 ± 11.5 (805)	79.7 ± 12.0 (113)
HC (cm)	90.8 ± 6.8 (933)	89.4 ± 6.2 (135)	94.5 ± 7.1 (776)	94.3 ± 6.7 (106)	99.3 ± 8.7 (805)	99.2 ± 8.5 (113)
WHR (units)	0.76 ± 0.05 (933)	0.76 ± 0.06 (135)	0.78 ± 0.06 (776)	0.78 ± 0.06 (106)	0.80 ± 0.07 (805)	0.80 ± 0.08 (113)
WHtR (units)	0.41 ± 0.03 (933)	0.40 ± 0.04 (136)	0.42 ± 0.04 (777)	0.43 ± 0.05 (106)	0.46 ± 0.06 (805)	0.46 ± 0.06 (113)
Sum of 5 sf (mm)	54.4 ± 26.0 (933)	54.6 ± 24.3 (136)	68.4 ± 33.8 (775)	73.8 ± 32.1 (106)	75.7 ± 37.2 (804)	82.1 ± 36.0 (113)
CHL (mmol/L)	4.1 ± 0.7 (924)	4.1 ± 0.7 (136)	4.2 ± 0.8 (761) ^a	4.4 ± 0.9 (105) ^a	4.5 ± 0.8 (792)	4.6 ± 0.8 (112)
HDL-C (mmol/L)	1.4 ± 0.3 (924)	1.4 ± 0.3 (136)	1.5 ± 0.4 (761)	1.5 ± 0.4 (105)	1.5 ± 0.4 (792)	1.6 ± 0.5 (112)
LDL-C (mmol/L)	2.3 ± 0.6 (417)	2.3 ± 0.6 (54)	2.4 ± 0.7 (761) ^a	2.6 ± 0.7 (105) ^a	2.7 ± 0.8 (792)	2.7 ± 0.7 (112)
TRG (mmol/L)	0.8 ± 0.5 (923)	0.8 ± 0.3 (136)	0.8 ± 0.5 (761)	0.9 ± 0.5 (105)	1.0 ± 0.5 (791)	1.1 ± 0.7 (112)
Glucose (mmol/L)	5.0 ± 0.4 (924)	5.0 ± 0.4 (136)	4.8 ± 0.5 (759)	4.8 ± 0.5 (104)	4.9 ± 0.5 (792)	5.0 ± 0.5 (112)
Insulin (mU/L)	11.9 ± 6.7 (923)	10.7 ± 5.9 (136)	8.1 ± 5.7 (755)	8.2 ± 4.9 (105)	7.7 ± 5.1 (792)	7.5 ± 3.7 (112)
Daily energy intake (kcal)	2239.5 ± 908.6 (929)	2092.1 ± 937.5 (135)	2193.3 ± 900.6 (770)	2098.0 ± 792.2 (103)	2001.9 ± 737.6 (794)	1952.7 ± 628.2 (113)
Protein (g)	71.0 ± 32.7 (929) ^a	65.1 ± 28.7 (135) ^a	73.4 ± 32.9 (770)	69.6 ± 32.4 (103)	80.5 ± 34.3 (794) ^a	73.8 ± 25.8 (113) ^a
Lipids (g)	87.8 ± 44.8 (929)	83.3 ± 42.3 (135)	88.8 ± 43.1 (770)	83.8 ± 40.1 (103)	82.0 ± 35.3 (794)	79.2 ± 30.6 (113)
Carbohydrates (g)	283.4 ± 121.6 (929)	263.5 ± 138.7 (135)	260.7 ± 112.0 (770)	249.1 ± 91.6 (103)	209.1 ± 80.7 (794)	207.9 ± 73.0 (113)
Protein E%	13.0 ± 3.1 (929)	13.0 ± 3.3 (135)	13.7 ± 3.0 (770)	13.5 ± 3.1 (103)	16.2 ± 4.1 (794)	15.2 ± 3.2 (113)
Lipids E%	35.1 ± 8.1 (929)	35.8 ± 8.6 (135)	36.2 ± 7.5 (770)	35.6 ± 8.6 (103)	35.7 ± 6.4 (794)	35.4 ± 6.2 (113)
Carbohydrates E%	51.9 ± 9.0 (929)	51.2 ± 9.5 (135)	49.0 ± 8.4 (770)	49.4 ± 9.0 (103)	45.9 ± 8.2 (794)	47.3 ± 7.7 (113)
Systolic BP	111.3 ± 11.7 (933)	109.7 ± 10.4 (136)	114.6 ± 12.9 (778)	112.3 ± 12.9 (106)	116.6 ± 14.3 (806)	114.8 ± 14.5 (113)
Diastolic BP	62.4 ± 6.8 (933)	62.0 ± 6.7 (136)	61.9 ± 7.4 (778) ^a	59.5 ± 7.5 (106) ^a	66.6 ± 9.0 (806)	65.7 ± 9.4 (113)
MPO/kg	2.9 ± 9.7 (928)	2.8 ± 0.7 (136)	2.5 ± 0.7 (727)	2.4 ± 0.7 (97)	2.7 ± 0.7 (772) ^a	2.5 ± 0.7 (105) ^a
Activity score	-0.01 ± 1.01 (893)	0.07 ± 1.00 (134)	0.01 ± 0.99 (712)	-0.12 ± 1.05 (97)	-0.001 ± 1.00	-0.005 ± 1.02

^a p < 0.05 significant difference between the mean values of the *NPY rs16139* TT and TC genotypes

BMI – body mass index; WC – waist circumference, HC – hip circumference; WHR – waist-to-hip ratio; WHtR – waist-to-height ratio; sf – skinfolds; CHL – cholesterol; HDL-C – high-density lipoprotein cholesterol; LDL-C – low-density lipoprotein cholesterol; TRG – triglycerides; BP – blood pressure; MPO – maximum power output

Supplementary Table 5. Anthropometric measurements, biochemical measures and physical activity (mean and SD) of the ECPBHS sample by *NPY rs17149106* genotype and age (n).

	15 years old		18 years old		25 years old	
	GG	GT	GG	GT	GG	GT
Age (years)	14.9 ± 0.6 (931)	14.9 ± 0.7 (138)	17.9 ± 0.8 (791)	17.8 ± 0.7 (116)	24.8 ± 0.6 (806)	24.7 ± 0.6 (114)
Height (cm)	169.5 ± 8.1 (931)	168.2 ± 7.8 (138)	173.5 ± 9.0 (775) ^d	171.3 ± 8.3 (108) ^d	174.4 ± 9.2 (806) ^d	171.9 ± 8.8 (113) ^d
Weight (kg)	59.2 ± 10.4 (931)	57.8 ± 10.3 (138)	66.6 ± 12.3 (775)	65.8 ± 12.7 (108)	72.7 ± 15.9 (806)	71.4 ± 15.2 (113)
BMI (kg/m ²)	20.5 ± 2.9 (931)	20.4 ± 2.9 (138)	22.0 ± 3.3 (775)	22.3 ± 3.3 (108)	23.8 ± 4.2 (806)	24.1 ± 4.1 (113)
WC (cm)	68.7 ± 6.3 (931)	68.2 ± 7.0 (138)	73.6 ± 8.3 (775)	73.5 ± 9.2 (108)	79.6 ± 11.5 (805)	79.6 ± 11.8 (113)
HC (cm)	90.8 ± 6.8 (931) ^d	89.5 ± 6.3 (137) ^d	94.5 ± 7.1 (774)	94.6 ± 7.0 (108)	99.3 ± 8.8 (805)	99.1 ± 8.4 (113)
WHR (units)	0.76 ± 0.05 (931)	0.76 ± 0.06 (137)	0.78 ± 0.06 (774)	0.78 ± 0.06 (108)	0.80 ± 0.07 (805)	0.80 ± 0.08 (113)
WHtR (units)	0.41 ± 0.03 (931)	0.41 ± 0.04 (138)	0.42 ± 0.04 (775)	0.43 ± 0.05 (108)	0.46 ± 0.06 (805)	0.46 ± 0.06 (113)
Sum of 5 sf (mm)	54.3 ± 26.0 (931)	55.1 ± 24.3 (138)	68.4 ± 33.7 (773)	74.3 ± 32.6 (108)	75.7 ± 37.2 (804)	82.3 ± 36.0 (113)
CHL (mmol/L)	4.1 ± 0.7 (922)	4.1 ± 0.7 (138)	4.2 ± 0.8 (759) ^d	4.4 ± 0.9 (107) ^d	4.5 ± 0.8 (792)	4.6 ± 0.8 (112)
HDL-C (mmol/L)	1.4 ± 0.3 (922)	1.4 ± 0.3 (138)	1.5 ± 0.4 (759)	1.5 ± 0.4 (107)	1.5 ± 0.4 (792)	1.6 ± 0.5 (112)
LDL-C (mmol/L)	2.3 ± 0.6 (417)	2.4 ± 0.6 (54)	2.4 ± 0.7 (759) ^d	2.6 ± 0.7 (107) ^d	2.7 ± 0.8 (792)	2.7 ± 0.7 (112)
TRG (mmol/L)	0.8 ± 0.5 (921)	0.8 ± 0.3 (138)	0.8 ± 0.5 (759)	0.9 ± 0.5 (107)	1.0 ± 0.5 (791)	1.1 ± 0.7 (112)
Glucose (mmol/L)	5.0 ± 0.4 (922)	5.0 ± 0.4 (138)	4.8 ± 0.5 (757)	4.8 ± 0.5 (106)	4.9 ± 0.5 (792)	5.0 ± 0.5 (112)
Insulin (mU/L)	11.9 ± 6.7 (921)	10.8 ± 5.8 (138)	8.1 ± 5.7 (753)	8.2 ± 4.8 (107)	7.7 ± 5.1 (792)	7.4 ± 3.8 (112)
Daily energy intake (kcal)	2241.8 ± 910.5 (927)	2078.8 (137)	2194.1 ± 901.5 (768)	2094.2 ± 786.2 (105)	2003.0 ± 738.7 (794)	1945.1 ± 617.9 (113)
Protein (g)	71.1 ± 32.8 (927)	64.4 ± 27.8 (137)	73.4 ± 33.0 (768)	69.5 ± 31.9 (105)	80.6 ± 34.3 (794) ^d	73.5 ± 25.6 (113) ^d
Lipids (g)	87.9 ± 45.1 (927)	82.3 ± 39.7 (137)	88.8 ± 43.1 (768)	83.9 ± 40.0 (105)	82.2 ± 35.4 (794)	78.3 ± 29.5 (113)
Carbohydrates (g)	283.5 ± 121.6 (927)	263.1 ± 136.4 (137)	260.9 ± 112.1 (768)	248.1 ± 91.3 (105)	209.1 ± 80.7 (794)	207.6 ± 73.0 (113)
Protein E%	13.0 ± 3.1 (927)	13.0 ± 3.3 (137)	13.7 ± 3.0 (768)	13.6 ± 3.1 (105)	16.2 ± 4.1 (794) ^d	15.1 ± 3.2 (113) ^d
Lipids E%	35.1 ± 8.1 (927)	35.8 ± 8.4 (137)	36.2 ± 7.5 (768)	35.8 ± 8.7 (105)	35.7 ± 6.4 (794)	35.2 ± 6.2 (113)
Carbohydrates E%	51.9 ± 9.0 (927)	51.3 ± 9.4 (137)	49.0 ± 8.4 (768)	49.2 ± 9.1 (105)	45.9 ± 8.2 (794)	47.6 ± 7.7 (113)
Systolic BP	111.3 ± 11.7 (931)	109.7 ± 10.2 (138)	114.6 ± 12.8 (776)	112.2 ± 12.9 (108)	116.6 ± 14.4 (806)	114.5 ± 14.0 (113)
Diastolic BP	62.4 ± 6.8 (931)	62.0 ± 6.7 (138)	61.9 ± 7.4 (776)	59.4 ± 7.5 (108)	66.6 ± 9.0 (806)	65.6 ± 9.3 (113)
MPO/kg	2.9 ± 0.7 (926)	2.8 ± 0.7 (138)	2.5 ± 0.7 (725)	2.4 ± 0.7 (99)	2.7 ± 0.7 (772)	2.5 ± 0.7 (105)
Activity score	-0.01 ± 1.00 (891)	0.04 ± 1.01 (136)	0.01 ± 0.99 (110)	-0.10 ± 1.04 (99)	0.002 ± 1.00 (822)	-0.03 ± 1.03 (116)

^d p < 0.05 significant difference between the mean values of the *NPY rs17149106* GG and GT genotypes

BMI – body mass index; WC – waist circumference, HC – hip circumference; WHR – waist-to-hip ratio; WHtR – waist-to-height ratio; sf – skinfolds; CHL – cholesterol; HDL-C – high-density lipoprotein cholesterol; LDL-C – low-density lipoprotein cholesterol; TRG – triglycerides; BP – blood pressure; MPO – maximum power output