

Association between DNA methylation in obesity-related genes and body mass index percentile in adolescents

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Supplementary Table S1. Top 20 genome-wide significant sites in association between 10% increase in DNA methylation and BMI percentile.

Chromosome	Position	Gene Symbol	P value	Function/Disease ¹
chr19	50096127	PRR12	2.9E-06	Nervous system development
chr1	32083651	HCRTR1	8.3E-06	Regulation of feeding behavior
chr19	46307719	RSPH6A	2.9E-05	Primary ciliary dyskinesia-2
chr6	100903612	SIM1	4.3E-05	Energy Homeostasis
chr18	10777054	PIEZO2	8.2E-05	Type 5 distal arthrogryposis
chr12	102271631	DRAM1	9.7E-05	Tumor suppressor pathway
chr14	58618976	ARMH4	1.0E-04	N/A
chr3	197714006	LMLN	1.1E-04	Cell migration and invasion
chr17	79979278	CENPX	1.2E-04	Resistance of DNA damage
chr17	35850659	DUSP14	1.3E-04	Signaling pathways
chr20	61886741	FLJ16779	1.6E-04	N/A
chr7	1571105	MAFK	2.0E-04	Globin gene expression regulation
chr2	177054528	HOXD1	2.0E-04	Limb development
chr5	176278673	UNC5A	2.1E-04	Apoptosis
chr8	21584425	GFRA2	2.2E-04	Neuron survival and differentiation
chr20	33264503	PIGU	2.4E-04	Cell division control
chr19	35633487	FXYD1	2.5E-04	Ion channel activity
chr2	21022251	LDAH	2.6E-04	Cholesterol mobilization
chr16	2581986	MIR3178	2.8E-04	Translational inhibition
chr18	11982237	IMPA2	2.8E-04	Bipolar disorder

Gene Function/Disease were supplied by RefSeq or OMIM and summarized in NCBI.

P threshold for genome-wide significance: < 4.8E-07

Supplementary Table S2. Comparison of demographic characteristic between baseline cohort and subjects with DNA sequencing.

	Baseline N=700	DNA Sequenced N=263	P value
Age (years)	9.2 (1.7)	16.7 (2.2)	<0.001
Male (%)	52.9	55.9	0.40
White (%)	76.3	78.7	0.43
BMI percentile	63.0 (29.0)	65.4 (28.5)	0.77
BMI category ¹ (%)			
Underweight	2.4	1.9	0.55
Normal	65.6	61.6	
Overweight	14.4	20.5	
Obese	17.6	16.0	

Data are presented as mean (SD) and proportions for continuous and categorical variables, respectively. T-test, chi-square test, and Cochran–Mantel–Haenszel test were used to compare the distributions between baseline cohort and subjects with DNA sequenced, as appropriate.

1. Age- and sex-specific BMI categories were defined by U.S. CDC. Underweight: BMI percentile < 5; Normal weight: $5 \leq$ BMI percentile < 85; $85 \leq$ Overweight < 95; Obese: BMI percentile $\geq$ 95.