

Supplementary Table 1.

The primer sequences of seven *MEK6* SNPs.

rs number	Strand	Primer sequence		Tm	Additive
rs12603937	Forward	Forward	CTTTTCCAGGTGAAGGAC	55	Betaine
		Reverse	tattggaacacagccacac		
		Genotyping	GTGTATTSTTTAAGATCATGTCATT		
rs11654541	Forward	Forward	GCCTCCTTTCTGATGTGAT	55	Betaine
		Reverse	CCCTGTTAAGGAGTTTCCA		
		Genotyping	CTTTGCCATACAGAATGCTATAAAAA		
rs10512573	Reverse	Forward	TGAATTTCAAGAGCCTTCAA	55	Betaine
		Reverse	CTAGCAAGTGCCTTCATCA		
		Genotyping	tgaaaagattacctccactaaag		
rs2285601	Forward	Forward	AGCATGCCTTTGTTTTCTT	55	Betaine
		Reverse	TCCCCCATCAATGTTATTT		
		Genotyping	GGTGTTAACATAGGTTAAGTTTTG		
rs2285600	Forward	Forward	ACCTTTTCATTTCCCTCCT	55	Betaine
		Reverse	TTCCTTTCTCCTCAGCAGT		
		Genotyping	CATATTTTAAAAAGTAGGTTTCTGAT		
rs9916229	Reverse	Forward	ttggtttgtgtaaagagca	55	Betaine
		Reverse	TCTAACACCACCAGAAGCA		
		Genotyping	tgttgaactccagattcttctctg		
rs756942	Reverse	Forward	AATGCTGTTTTAGGGATGC	55	Betaine
		Reverse	AGAACAACCTCTTCGCCTTC		
		Genotyping	caataccagaaatttctgaatttggga		

Supplementary Table 2.

The relative frequencies (RF) of obesity including overweight (%), in wild and mutant allele each of 7 SNPs in total, boys and girls.

Gene SNPs	Relative Frequency		BMI	Allele				Chi-Sq (P-value)	
	Major	Minor		wild vs mutant					
rs 12603937	0.746	0.254	Total	Non-OB	288(58.5%)	21.9%	80(16.3%)	34.5%	8.281 (0.004)
				OB	81(16.5%)		43(8.7%)		
			Boys	Non-OB	212(60.2%)	18.7%	66(18.8%)	27.5%	3.075 (0.08)
				OB	49(13.9%)		25(7.1%)		
			Girls	Non-OB	76(54.3%)	29.6%	14(10%)	56.3%	7.619 (0.006)
				OB	32(22.9%)		18(12.9%)		
rs 11654541	0.738	0.262	Total	Non-OB	283(57.5%)	22.3%	83(16.9%)	35.2%	8.276 (0.004)
				OB	81(16.5%)		45(9.1%)		
			Boys	Non-OB	207(58.8%)	19.2%	69(19.6%)	28.2%	3.329 (0.068)
				OB	49(13.9%)		27(7.7%)		
			Girls	Non-OB	76(54.3%)	29.6%	14(10%)	56.3%	7.619 (0.006)
				OB	32(22.9%)		18(12.9%)		
rs 1051273	0.739	0.261	Total	Non-OB	285(57.7%)	21.9%	83(16.8%)	34.5%	8.468 (0.004)
				OB	81(16.4%)		45(9.1%)		
			Boys	Non-OB	209(59%)	18.9%	69(19.5%)	28.2%	3.461 (0.063)
				OB	49(13.8%)		27(7.6%)		
			Girls	Non-OB	76(54.3%)	29.6%	14(10%)	56.3%	7.619 (0.006)
				OB	32(22.9%)		18(12.9%)		
rs 2285601	0.742	0.258	Total	Non-OB	280(58.1%)	21.8%	80(16.6%)	35.5%	9.139 (0.003)
				OB	78(16.2%)		44(9.1%)		
			Boys	Non-OB	206(59.2%)	18.6%	68(19.5%)	28.4%	3.997 (0.056)
				OB	47(13.5%)		27(7.8%)		
			Girls	Non-OB	74(55.2%)	29.5%	12(9%)	58.6%	8.368 (0.004)
				OB	31(23.1%)		17(12.7%)		
rs 2285600	0.741	0.259	Total	Non-OB	286(57.9%)	22.1%	82(16.6%)	35.4%	8.866 (0.003)
				OB	81(16.4%)		45(9.1%)		
			Boys	Non-OB	210(59.3%)	18.9%	68(19.2%)	28.4%	3.722 (0.058)
				OB	49(13.8%)		27(7.6%)		
			Girls	Non-OB	76(54.3%)	29.6%	14(10%)	56.3%	7.619 (0.006)
				OB	32(22.9%)		18(12.9%)		
rs 9916229	0.675	0.325	Total	Non-OB	258(52.2%)	21.6%	110(22.3%)	33.3%	7.989 (0.005)
				OB	71(14.4%)		55(11.1%)		
			Boys	Non-OB	193(54.5%)	18.2%	85(24%)	27.9%	4.432 (0.035)
				OB	43(12.1%)		33(9.3%)		
			Girls	Non-OB	65(46.4%)	30.1%	25(17.9%)	46.8%	3.793 (0.059)
				OB	28(20%)		22(15.7%)		
rs 756942	0.395	0.305	Total	Non-OB	267(54%)	21.7%	101(20.4%)	33.9%	8.39 (0.004)
				OB	74(15%)		52(10.5%)		
			Boys	Non-OB	201(56.8%)	18.3%	77(21.8%)	28.7%	4.825 (0.028)
				OB	45(12.7%)		31(8.8%)		
			Girls	Non-OB	66(47.1%)	30.5%	24(17.1%)	48.3%	3.465 (0.063)
				OB	29(20.7%)		21(15%)		

Supplementary Figure 1

De Finetti plot to assess the Hardy-Weinberg Equilibrium

