

Supplementary Table S1. Association between BMI and affective symptoms and *FTO* rs9939609 genotype in men.

Dependent variables	Independent variables	Main effect				Interaction by the <i>FTO</i> gene			
		Standardized coefficients	SE	Z	P value	Standardized coefficients	SE	Z	P value
BMI at age 11 years	FTO risk allele	0.078	0.034	2.27	0.023				
	Emotional problem at 13 and 15 years†	-0.168	0.034	-4.95	<0.001				
BMI change between 11—20 years	FTO risk allele	0.035	0.042	0.84	0.40				
	Emotional problem at 13 and 15 years	0.035	0.043	0.81	0.42	0.008	0.041	0.21	0.84
BMI change between 20—36 years	FTO risk allele	-0.012	0.036	-0.32	0.75				
	Emotional problem at 13 and 15 years	0.037	0.041	0.91	0.36	0.062	0.042	1.48	0.14
BMI change between 36—53 years	FTO risk allele	-0.023	0.038	-0.62	0.54				
	Emotional problem at 13 and 15 years	0.002	0.044	0.04	0.97	0.017	0.042	0.41	0.69
	PSE at age 36 years	0.006	0.043	0.14	0.89	-0.015	0.039	-0.40	0.69
	PSF at age 43 years	0.054	0.050	1.08	0.28	-0.020	0.042	-0.48	0.64
Emotional problem at 13 and 15 years	FTO risk allele	0.013	0.031	0.43	0.67				
PSE at age 36 years	FTO risk allele	-0.048	0.032	-1.49	0.14				
	Emotional problem at 13 and 15 years	0.087	0.033	2.60	0.009				
	BMI at age 11 years	0.062	0.033	1.86	0.063	0.011	0.039	0.27	0.79
	BMI change between 11—20 years	-0.009	0.046	-0.20	0.84	0.033	0.044	0.74	0.46
	BMI change between 20—36 years	-0.070	0.037	-1.90	0.058	-0.095	0.035	-2.67	0.008
PSF at age 43 years	FTO risk allele	0.003	0.031	0.11	0.91				
	Emotional problem at 13 and 15 years	0.044	0.037	1.18	0.24				
	PSE at age 36 years	0.294	0.038	7.65	<0.001				
	BMI at age 11 years	-0.024	0.032	-0.75	0.45	0.048	0.037	1.27	0.20
	BMI change between 11—20 years	-0.013	0.043	-0.30	0.76	0.009	0.051	0.17	0.86

GHQ at age 53 years	BMI change between 20—36 years	0.007	0.042	0.18	0.86	0.018	0.038	0.46	0.64
	FTO risk allele	-0.053	0.028	-1.90	0.057				
	Emotional problem at 13 and 15 years	0.040	0.026	1.52	0.13				
	PSE at age 36 years	0.129	0.041	3.17	0.002				
	PSF at age 43 years	0.267	0.037	7.17	<0.001				
GHQ at age 63 years	BMI at age 11 years	-0.009	0.030	-0.30	0.77	-0.027	0.032	-0.84	0.40
	BMI change between 11—20 years	0.024	0.036	0.67	0.50	-0.025	0.034	-0.73	0.47
	BMI change between 20—36 years	-0.002	0.040	-0.04	0.97	0.016	0.047	0.35	0.73
	BMI change between 36—53 years	-0.010	0.044	-0.23	0.82	-0.085	0.060	-1.41	0.16
	FTO risk allele	0.041	0.033	1.26	0.21				
	Emotional problem at 13 and 15 years	0.042	0.034	1.23	0.22				
	PSE at age 36 years	0.141	0.044	3.18	0.001				
	PSF at age 43 years	0.180	0.050	3.60	<0.001				
	GHQ at age 53 years	0.274	0.052	5.30	<0.001				
	BMI at age 11 years	0.034	0.033	1.02	0.31	-0.010	0.039	-0.27	0.79
BMI change between 11—20 years	0.020	0.043	0.45	0.65	-0.071	0.040	-1.78	0.074	
BMI change between 20—36 years	0.075	0.042	1.79	0.074	0.063	0.041	1.54	0.12	
BMI change between 36—53 years	0.074	0.049	1.49	0.14	-0.018	0.047	-0.39	0.70	

Bold shows $p < .05$.

† Correlation between BMI at age 11 years and emotional problem at ages 13 and 15 years.

Abbreviations: BMI, body mass index; PSE, a short version of the Present State Examination; PSF, the Psychiatric Symptom Frequency scale; GHQ, the 28-item version of the General Health Questionnaire; FTO, fat mass and obesity associated gene.

Supplementary Table S2. Association between BMI and affective symptoms and *FTO* rs9939609 genotype in women.

Dependent variables	Independent variables	Main effect				Interaction by the <i>FTO</i> gene			
		Standardized coefficients	SE	Z	P value	Standardized coefficients	SE	Z	P value
BMI at age 11 years	FTO risk allele	0.105	0.035	2.98	0.003				
	Emotional problem at 13 and 15 years†	-0.048	0.038	-1.27	0.20				
BMI change between 11—20 years	FTO risk allele	0.077	0.044	1.75	0.079				
	Emotional problem at 13 and 15 years	-0.005	0.046	-0.11	0.92	-0.014	0.041	-0.34	0.73
BMI change between 20—36 years	FTO risk allele	-0.056	0.036	-1.55	0.12				
	Emotional problem at 13 and 15 years	0.076	0.037	2.04	0.041	-0.087	0.037	-2.37	0.018
BMI change between 36—53 years	FTO risk allele	0.009	0.034	0.28	0.78				
	Emotional problem at 13 and 15 years	0.056	0.037	1.52	0.13	0.039	0.036	1.09	0.28
	PSE at age 36 years	0.023	0.040	0.58	0.57	-0.021	0.041	-0.52	0.60
	PSF at age 43 years	0.051	0.038	1.35	0.18	-0.001	0.038	-0.02	0.99
Emotional problem at 13 and 15 years	FTO risk allele	-0.021	0.032	-0.68	0.50				
PSE at age 36 years	FTO risk allele	-0.023	0.030	-0.76	0.45				
	Emotional problem at 13 and 15 years	0.092	0.035	2.67	0.008				
	BMI at age 11 years	0.031	0.035	0.87	0.38	0.067	0.035	1.90	0.058
	BMI change between 11—20 years	0.017	0.043	0.39	0.70	0.061	0.039	1.59	0.11
	BMI change between 20—36 years	-0.018	0.037	-0.49	0.62	-0.049	0.039	-1.26	0.21
PSF at age 43 years	FTO risk allele	-0.046	0.027	-1.67	0.095				
	Emotional problem at 13 and 15 years	-0.014	0.031	-0.46	0.64				
	PSE at age 36 years	0.321	0.034	9.37	<0.001				
	BMI at age 11 years	-0.015	0.032	-0.48	0.63	-0.005	0.032	-0.16	0.87
	BMI change between 11—20 years	0.069	0.045	1.53	0.13	-0.064	0.034	-1.88	0.060

GHQ at age 53 years	BMI change between 20—36 years	0.010	0.033	0.31	0.76	-0.073	0.029	-2.51	0.012
	FTO risk allele	0.013	0.028	0.46	0.65				
	Emotional problem at 13 and 15 years	0.070	0.029	2.44	0.015				
	PSE at age 36 years	0.177	0.032	5.49	<0.001				
	PSF at age 43 years	0.261	0.035	7.44	<0.001				
GHQ at age 63 years	BMI at age 11 years	0.028	0.033	0.83	0.41	-0.022	0.035	-0.63	0.53
	BMI change between 11—20 years	0.034	0.042	0.80	0.42	0.037	0.038	0.97	0.33
	BMI change between 20—36 years	0.094	0.036	2.63	0.009	-0.103	0.046	-2.23	0.025
	BMI change between 36—53 years	-0.069	0.037	-1.85	0.065	0.135	0.047	2.87	0.004
	FTO risk allele	-0.014	0.030	-0.47	0.64				
	Emotional problem at 13 and 15 years	-0.048	0.032	-1.52	0.13				
	PSE at age 36 years	0.111	0.036	3.10	0.002				
	PSF at age 43 years	0.281	0.042	6.63	<0.001				
	GHQ at age 53 years	0.227	0.045	5.06	<0.001				
BMI at age 11 years	0.056	0.039	1.44	0.15	-0.085	0.036	-2.34	0.019	
BMI change between 11—20 years	-0.048	0.043	-1.12	0.26	-0.012	0.034	-0.36	0.72	
BMI change between 20—36 years	0.034	0.039	0.87	0.39	-0.001	0.042	-0.02	0.98	
BMI change between 36—53 years	0.036	0.042	0.86	0.39	0.004	0.044	0.10	0.92	

Bold shows $p < .05$.

† Correlation between BMI at age 11 years and emotional problem at ages 13 and 15 years.

Abbreviations: BMI, body mass index; PSE, a short version of the Present State Examination; PSF, the Psychiatric Symptom Frequency scale; GHQ, the 28-item version of the General Health Questionnaire; FTO, fat mass and obesity associated gene.

