

Table S1: intra-pair correlations of brain regional GMV associated with BMI within identical twin pairs

Brain Region	cluster extent	pFWE*	r	MNI (mm)		
				x	y	z
BMI pos.						
L Rectal Gyrus	157	<0.001	0.78	0	24	-27
R Rectal Gyrus		<0.001	0.72	8	26	-24
R Cerebellum, Tonsil*	6	<0.001	0.68	29	-46	-44
BMI neg.						
L Cerebellum, Tonsil	69749	<0.001	0.86	-6	-55	-47
L Caudate		<0.001	0.85	-15	11	10
L Cerebellum, Tuber		<0.001	0.84	-39	-58	-33
R Cerebellum, Tuber		<0.001	0.83	32	-70	-36
R Cerebellum, Uvula of Vermis		<0.001	0.83	2	-72	-42
R Thalamus		<0.001	0.82	6	-13	1
R Thalamus		<0.001	0.82	8	-16	6
R Cerebellum, Inferior Semi-Lunar Lobule		<0.001	0.82	2	-58	-57
L Parahippocampal Gyrus		<0.001	0.82	-29	-12	-21
R Cerebellum, *		<0.001	0.82	18	-60	-27
L Cerebellum, Inferior Semi-Lunar Lobule		<0.001	0.82	-9	-75	-47
L Lingual Gyrus		<0.001	0.82	-18	-52	-2
R Parahippocampal Gyrus		<0.001	0.81	23	-9	-24
R Cerebellum, Declive		<0.001	0.81	35	-69	-30
L Cerebellum, Declive		<0.001	0.81	-6	-67	-23
R Cuneus		<0.001	0.81	2	-84	6
L Lingual Gyrus		<0.001	0.81	-17	-67	1
R Lingual Gyrus		<0.001	0.81	15	-72	4
R Cerebellum, Culmen		<0.001	0.81	36	-60	-32
L Cerebellum, Culmen		<0.001	0.80	-32	-42	-36
R Cerebellum, Tonsil		<0.001	0.80	30	-58	-50
L Cuneus		<0.001	0.80	-14	-70	10
L Cerebellum, Culmen		<0.001	0.80	-6	-55	-24
L Thalamus		<0.001	0.80	-3	-21	0
R Posterior Cingulate		<0.001	0.80	12	-70	9
L Lentiform Nucleus		<0.001	0.79	-21	14	-9
L Thalamus		<0.001	0.79	-11	-18	6
L Middle Temporal Gyrus		<0.001	0.79	-60	-12	-11
L Lingual Gyrus		<0.001	0.79	-18	-46	-2
L Lingual Gyrus		<0.001	0.78	-21	-63	0
L Claustrum		<0.001	0.78	-38	-12	0
R Posterior Cingulate		<0.001	0.78	6	-58	15
R Medial Frontal Gyrus	322	<0.001	0.69	6	38	-12
R Anterior Cingulate		<0.001	0.66	14	47	-3
R Medial Frontal Gyrus		<0.001	0.62	9	47	13
R Middle Frontal Gyrus	421	<0.001	0.69	53	35	18
R Sub-Gyral		<0.001	0.68	44	42	4
R Orbital Gyrus	227	<0.001	0.63	14	45	-24
R Rectal Gyrus		0.009	0.53	2	39	-30
L Superior Frontal Gyrus	384	<0.001	0.62	-15	60	24
L Superior Frontal Gyrus		<0.001	0.62	-3	53	34
L Superior Frontal Gyrus		<0.001	0.60	-18	63	15
L Cingulate Gyrus	76	<0.001	0.62	-9	-18	34
L Cingulate Gyrus		<0.001	0.62	-8	-27	33
L Postcentral Gyrus	99	<0.001	0.60	-35	-24	48
R Superior Frontal Gyrus	269	<0.001	0.60	6	65	4
R Middle Temporal Gyrus	71	<0.001	0.60	56	-66	3
R Postcentral Gyrus	50	<0.001	0.59	54	-28	51
R Precentral Gyrus	75	0.001	0.58	39	-21	54
R Fusiform Gyrus	62	0.001	0.57	53	-52	-23
R Fusiform Gyrus		0.008	0.53	51	-58	-15
L Inferior Parietal Lobule	72	0.002	0.56	-57	-43	25

Results are listed that survived a threshold of $r > 0.5$ with a cluster extent threshold of 50 continuous voxels.

MNI: Montreal Neurological Institute.

*p value FWE corrected on the voxel-level for the search volume;

Bold data indicate primary peak within a cluster; Non-bold data indicate secondary peaks.

Table S2: Intra-pair correlations of brain regional GMV associated with BMI within fraternal twin pairs

Brain Region	cluster extent	pFWE*	r	MNI (mm)		
				x	y	z
<u>BMI pos.</u>	No suprathreshold correlations					
<u>BMI neg.</u>						
R Superior Temporal Gyrus	555	<0.001	0.68	33	12	-47
R Middle Temporal Gyrus		<0.001	0.62	45	8	-39
L Cerebellum, Tonsil	5214	<0.001	0.67	0	-51	-50
L Cerebellum, Tonsil		<0.001	0.67	-9	-57	-45
L Cerebellum, Inferior Semi-Lunar Lobule		<0.001	0.65	-11	-73	-48
R Lingual Gyrus	3935	<0.001	0.66	2	-75	-2
L Cuneus		<0.001	0.66	-12	-78	6
R Cuneus		<0.001	0.64	17	-75	7
L Lentiform Nucleus	929	<0.001	0.64	-33	-15	7
L Claustrum		0.001	0.57	-32	-28	7
L Lentiform Nucleus		0.003	0.56	-30	-4	9
R Superior Frontal Gyrus	122	<0.001	0.63	21	54	-21
L Parahippocampal Gyrus	1995	<0.001	0.63	-24	-19	-20
L Extra-Nuclear		<0.001	0.60	-38	12	-9
L Fusiform Gyrus		0.001	0.58	-41	-3	-24
L Uncus	297	<0.001	0.62	-29	-3	-48
L Uncus		0.003	0.55	-21	-9	-42
L Uncus		0.051	0.50	-33	-12	-36
R Parahippocampal Gyrus	707	<0.001	0.62	24	-13	-24
R Uncus		<0.001	0.60	30	-3	-27
L Middle Temporal Gyrus	71	<0.001	0.60	-38	9	-45
L Superior Temporal Gyrus		0.015	0.53	-38	18	-41
R Inferior Frontal Gyrus	78	<0.001	0.60	35	11	-15
R Superior Temporal Gyrus	374	<0.001	0.59	59	3	-8
R Superior Temporal Gyrus		0.005	0.55	51	12	-11
R Parahippocampal Gyrus	268	0.001	0.58	27	-28	-8
R Parahippocampal Gyrus		0.001	0.58	39	-31	-14
R Superior Temporal Gyrus	81	0.002	0.57	59	-12	4
L Parahippocampal Gyrus	66	0.002	0.56	-23	-60	-5
L Medial Frontal Gyrus	143	0.005	0.55	-18	65	9
L Medial Frontal Gyrus		0.010	0.54	-8	66	1
R Claustrum	364	0.007	0.54	38	-21	-5
R Claustrum		0.008	0.54	35	-19	9
R Insula		0.008	0.54	42	-22	9
R Superior Temporal Gyrus	57	0.008	0.54	41	14	-32
R Cerebellum, Inferior Semi-Lunar Lobule	51	0.010	0.54	38	-68	-51

Results are listed that survived a threshold of $r > 0.5$ with a cluster extent threshold of 50 continuous voxels.

MNI: Montreal Neurological Institute.

*p value FWE corrected on the voxel-level for the search volume;

Bold data indicate primary peak within a cluster; Non-bold data indicate secondary peaks.