

## Whole genome analyses of whole brain data: working within an expanded search space

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YEAR	Imaging Phenotype(s)	Number of imaging measures assessed	Type of genome-wide study	Sample size	Reported significant after correction?	PubMed ID
2005	leukoariosis and brain atrophy	2	GW micro-satellite markers	488	no	<a href="#">15699467</a>
2006	WMH volume	1	GW-linkage	747	yes	<a href="#">16322484</a>
2007	various regional brain volumes	9	GWAS	705	no	<a href="#">17903297</a>
2009	hippocampal atrophy	1	GWAS	381	no	<a href="#">19668339</a>
2009	left dorsal lateral prefrontal cortex activation	1	GWAS	172	no	<a href="#">19065146</a>
2009	dorsal lateral prefrontal cortex activation	2	GWAS	138	no	<a href="#">19023125</a>
2010	brain infarct	1	GWAS	9401	no	<a href="#">20044523</a>
2010	brain glutamate concentration	1	GWAS	382	no	<a href="#">20802204</a>
2010	WMH volume	1	bivariate GW linkage	357	yes	<a href="#">20724716</a>
2010	amygdala activation	2	GWAS	68	no	<a href="#">20215924</a>
2010	temporal lobe volume	1	GWAS	742	no	<a href="#">20197096</a>
2010	voxelwise volume change	31622	GWAS	740	no	<a href="#">20171287</a>
2010	GM density, volume and cortical thickness	142	GWAS	733	no	<a href="#">20100581</a>
2011	cortical thickness	1	GWAS	1054	yes	<a href="#">21810643</a>
2011	WMH burden	1	GWAS	9361	yes	<a href="#">21681796</a>
2011	caudate volume	1	GWAS	1198	no	<a href="#">21502949</a>
2011	voxelwise volume change	31622	gene-wide(PCR)	731	no	<a href="#">21497199</a>
2011	hippocampal and entorhinal cortical volume/thickness	4	GWAS	1004	no	<a href="#">21116278</a>
2012	brain size	1	GWAS	557	yes	<a href="#">22156575</a>
2012	auditory cortical activation	2	GW-linkage	212	yes	<a href="#">23077036</a>
2012	global FA	1	GWAS	668	no	<a href="#">22425255</a>
2012	global FA	1	GWAS	150	no	<a href="#">23218918</a>
2012	voxelwise volume change	148023	genetic pathway	253	N/A	<a href="#">22982105</a>
2012	surface area of visual cortex	1	GWAS	1181	yes	<a href="#">22343285</a>
2012	temporal lobe volume	1	gene-wide (Lasso)	742	yes	<a href="#">22888310</a>
2012	top L/R voxel amygdala function	2	GWAS	224	yes	<a href="#">22856363</a>
2012	voxelwise fusiform brain	19800	GWAS	284	yes	<a href="#">22828495</a>

	activity					
2012	total, HV and WMH	3	GWAS	981	yes	<a href="#">22745009</a>
2012	FA correlation network	18	GWAS	472	yes	<a href="#">22723713</a>
2012	HV, brain volume, ICV	3	GWAS	21151	yes	<a href="#">22504417</a>
2012	brain volume, ICV, head circumference	3	GWAS	8175	yes	<a href="#">22504418</a>
2012	head circumference	1	GWAS	19,089	yes	<a href="#">22504419</a>
2012	HV	1	GWAS	9232	yes	<a href="#">22504421</a>
2013	GM thickness	1	transcriptome-wide	379	yes	<a href="#">23707588</a>
2013	hippocampal surface regions	2	GWAS	1254	yes	<a href="#">24579201</a>
2013	cortical connectivity	59	GWAS	366	yes	<a href="#">23471985</a>
2013	lesional voxels	3	GWAS	284	no	<a href="#">23412934</a>
2013	gray matter volume	3	GWAS	125	no	<a href="#">24086445</a>
2013	hippocampal volume	1	GWAS	328	no	<a href="#">23805179</a>
2013	L/R HV and entorhinal cortex volumes	4	SNP-SNP interactions	577	yes	<a href="#">23107432</a>
2013	lentiform nucleus volume	1	GWAS	1345	yes	<a href="#">22903471</a>
2014	AB load	1	GWAS	555	yes	<a href="#">23419831</a>

**Supplementary Table 1.** Here we summarize neuroimaging GWAS studies found through a literature search. This table includes genome-wide studies of cohorts evaluated at a single site, and from multi-site neuroimaging initiatives such as IMAGEN, fBIRN, PING and ADNI, and from still larger consortia, such as CHARGE and ENIGMA, which combine data from many of these groups and others. GM: gray matter; WM: white matter; WMH: white matter hyperintensities; ICV: intracranial volume; HV: hippocampal volume; L/R: left or right; AB: amyloid -Beta; FA: fractional anisotropy.