

Supplementary Online Material

Georgakis MK, Gill D, Webb AJS, et al. Genetically determined blood pressure, antihypertensive drug classes and risk of stroke subtypes: a Mendelian Randomization Study.

eMethods

Table e-1. Genome-wide significant ($p < 5 \times 10^{-8}$) and independent ($r^2 < 0.001$) single nucleotide polymorphisms (SNP) that were used as instruments for systolic blood pressure (SBP).

Table e-2. Genome-wide significant ($p < 5 \times 10^{-8}$) and independent ($r^2 < 0.001$) single nucleotide polymorphisms (SNP) that were used as instruments for diastolic blood pressure (DBP).

Table e-3. Single nucleotide polymorphisms (SNP) that fulfilled our selection criteria to be used as proxies for the effects for antihypertensive drug classes.

Table e-4. Genomic regions of encoding genes and regulatory regions (promoters or enhancers) of known antihypertensive drug targets, as identified via GeneHancer. These regions were screened for instrument selection of single nucleotide polymorphisms (SNP) that were associated with systolic blood pressure at genome-wide significance.

Table e-5. Sensitivity analyses for the Mendelian randomization associations between genetically determined systolic and diastolic blood pressure and risk of stroke and stroke subtypes.

Table e-6. Sensitivity analyses for the Mendelian randomization associations between genetic proxies for beta blockers and calcium channel blockers and risk of stroke, risk of stroke subtypes, and WMH volume.

eMethods

Genome-wide association analysis for WMH volume in the UK Biobank individual-level data

We performed a genome-wide association study (GWAS) analysis for total volume of white matter hyperintensities (WMH), derived from T1 and T2-FLAIR images in the UK Biobank data. Total WMH volume definition was based on the field 25781 from the UK Biobank dataset. We followed the methodology, as has been previously described.¹ Specifically, we log-transformed WMH volume to approximate a normal distribution. For the GWAS, we excluded related participants (π -hat >0.1875) and participants of non-White-British descent. This resulted in 10,597 individuals with available data on WMH volume, who were included in the analyses. SNPs with MAF <0.01 were excluded, as were SNPs not imputed from the HRC panel. We fit a linear regression model with $\log(\text{WMHV}) \sim \text{SNP} + \text{age at MRI} + \text{sex} + \text{PCs1-10} + \text{genotyping chip}$ for each SNP.

1. Rutten-Jacobs LCA, Tozer DJ, Duering M, et al. Genetic Study of White Matter Integrity in UK Biobank (N=8448) and the Overlap With Stroke, Depression, and Dementia. *Stroke* 2018;49:1340-1347.

Table e-1. Genome-wide significant ($p < 5 \times 10^{-8}$) and independent ($r^2 < 0.001$) single nucleotide polymorphisms (SNP) that were used as instruments for systolic blood pressure (SBP).

SNP	Chr	Position (GRCh37/hg19)	Effect allele	Other allele	EAF	beta	SE	p-value	R ² ^a	F ^b
rs488834	1	10767902	t	c	0.765	-0.380	0.037	2.4E-25	3.8E-04	272.5
rs10776752	1	113044328	t	g	0.081	0.821	0.058	4.6E-46	3.4E-04	247.8
rs59980837	1	115827266	t	g	0.018	1.100	0.116	3.3E-21	1.1E-04	77.7
rs6699618	1	11881441	c	g	0.840	0.912	0.041	1.7E-109	6.7E-04	497.1
rs11585169	1	150572037	a	t	0.577	0.180	0.031	5.3E-09	2.4E-04	175.5
rs76719272	1	156129796	t	c	0.131	-0.274	0.046	3.0E-09	1.7E-04	126.5
rs75461554	1	15810172	t	c	0.201	-0.302	0.038	1.2E-15	2.7E-04	196.3
rs1889785	1	16348729	a	g	0.455	0.178	0.030	4.4E-09	2.4E-04	179.3
rs7796	1	1684169	c	g	0.511	0.339	0.031	5.0E-27	4.6E-04	338.1
rs12731646	1	169090660	t	c	0.409	-0.189	0.031	7.2E-10	2.5E-04	185.2
rs1043069	1	180859368	t	g	0.616	0.234	0.031	5.3E-14	3.0E-04	224.7
rs4651224	1	184585182	t	c	0.447	0.199	0.031	9.0E-11	2.7E-04	199.0
rs12042924	1	197297417	t	c	0.528	-0.181	0.030	2.6E-09	2.5E-04	182.7
rs11120093	1	207211326	t	c	0.408	-0.179	0.031	5.1E-09	2.4E-04	175.7
rs2724377	1	207974818	a	g	0.530	0.194	0.030	1.3E-10	2.7E-04	195.9
rs7555285	1	209970355	c	g	0.801	0.229	0.038	1.1E-09	2.0E-04	148.3
rs263532	1	2164116	t	c	0.576	0.180	0.031	4.7E-09	2.4E-04	177.5
rs68085857	1	217737629	t	c	0.234	0.274	0.036	1.7E-14	2.7E-04	199.3
rs72742507	1	221265336	t	c	0.300	-0.205	0.033	3.8E-10	2.4E-04	174.9
rs708117	1	228199902	a	g	0.520	0.287	0.030	1.6E-21	3.9E-04	291.1
rs699	1	230845794	a	g	0.593	-0.375	0.031	5.6E-34	5.0E-04	358.8
rs1565440	1	243387788	a	g	0.375	0.175	0.031	1.9E-08	2.2E-04	166.1
rs4926499	1	249155909	c	g	0.826	0.297	0.044	1.3E-11	2.3E-04	166.4
rs404100	1	25366987	t	c	0.451	0.194	0.030	1.7E-10	2.6E-04	194.2
rs34079867	1	27407850	t	c	0.266	0.199	0.035	1.8E-08	2.1E-04	157.6
rs4908348	1	28706949	t	g	0.694	0.237	0.033	8.1E-13	2.8E-04	203.5
rs2493296	1	3327032	t	c	0.143	0.418	0.044	3.1E-21	2.8E-04	203.5
rs11210029	1	41865293	a	g	0.632	-0.203	0.031	8.9E-11	2.6E-04	191.3
rs1408945	1	42364877	t	g	0.424	-0.320	0.030	8.3E-26	4.3E-04	316.4
rs1209384	1	43765089	a	g	0.388	0.256	0.031	2.8E-16	3.3E-04	244.8
rs778124	1	56606206	a	g	0.374	0.297	0.031	1.5E-21	3.8E-04	281.6
rs61772592	1	56979681	a	g	0.875	-0.318	0.046	2.9E-12	1.9E-04	141.7
rs12063372	1	59621911	a	g	0.385	0.199	0.032	3.9E-10	2.6E-04	190.8
rs10779795	1	6677064	a	g	0.661	0.219	0.032	7.4E-12	2.7E-04	196.9
rs12136922	1	67007389	a	g	0.495	0.203	0.030	2.7E-11	2.8E-04	200.3
rs658780	1	78555928	t	g	0.745	-0.203	0.035	5.3E-09	2.1E-04	156.2
rs786923	1	89242954	t	c	0.624	-0.308	0.031	2.8E-23	4.0E-04	293.1
rs7514579	1	94051350	a	c	0.771	0.224	0.036	5.5E-10	2.2E-04	160.6
rs1006545	10	102553647	t	g	0.887	0.685	0.048	3.5E-46	3.8E-04	278.1
rs11191580	10	104906211	t	c	0.918	1.100	0.055	7.7E-89	4.6E-04	337.4
rs117464403	10	107158054	a	g	0.018	0.864	0.120	5.8E-13	8.5E-05	62.1
rs12255372	10	114808902	t	g	0.288	0.236	0.034	1.9E-12	2.7E-04	194.1
rs1801253	10	115805056	c	g	0.734	0.463	0.034	2.8E-41	5.0E-04	366.8

rs72842207	10	121433675	t	c	0.214	-0.203	0.037	3.1E-08	1.9E-04	138.7
rs11592107	10	122968964	a	g	0.310	0.302	0.033	1.5E-20	3.6E-04	262.3
rs7093894	10	124234880	a	c	0.151	0.236	0.043	3.2E-08	1.7E-04	122.9
rs7912283	10	133773019	a	g	0.647	-0.214	0.032	2.9E-11	2.7E-04	198.2
rs1133400	10	134459388	a	g	0.786	-0.298	0.038	2.5E-15	2.8E-04	198.8
rs1623474	10	18471794	t	c	0.330	0.383	0.032	7.7E-33	4.7E-04	343.6
rs12258967	10	18727959	c	g	0.705	0.633	0.034	1.1E-78	7.2E-04	533.8
rs3802517	10	28233469	a	t	0.462	0.253	0.030	4.6E-17	3.5E-04	254.9
rs12264186	10	32289986	t	c	0.187	0.214	0.039	3.6E-08	1.8E-04	131.8
rs11252324	10	4124568	t	g	0.077	-0.416	0.057	3.6E-13	1.6E-04	120.2
rs4948643	10	45379759	t	c	0.282	0.226	0.034	2.4E-11	2.5E-04	185.2
rs34130368	10	48411796	t	g	0.117	-0.302	0.050	1.3E-09	1.7E-04	126.1
rs4245599	10	60365755	a	g	0.458	-0.179	0.031	4.0E-09	2.4E-04	180.7
rs57946343	10	63499951	t	c	0.853	0.716	0.043	2.1E-63	4.9E-04	364.0
rs2236295	10	64564892	t	g	0.398	-0.303	0.031	1.0E-22	4.0E-04	294.4
rs2177843	10	75409877	t	c	0.151	0.439	0.043	2.8E-24	3.1E-04	228.0
rs10749572	10	82136664	t	g	0.544	-0.203	0.030	1.9E-11	2.8E-04	204.3
rs111866816	10	94441507	t	c	0.071	0.357	0.060	2.3E-09	1.3E-04	95.3
rs2689690	10	95899706	t	c	0.368	-0.270	0.032	1.1E-17	3.5E-04	251.3
rs2274224	10	96039597	c	g	0.432	-0.452	0.030	6.0E-50	6.1E-04	449.4
rs604723	11	100610546	t	c	0.276	-0.655	0.034	2.5E-83	7.2E-04	530.2
rs7926110	11	107086143	t	g	0.673	0.260	0.032	5.7E-16	3.1E-04	232.4
rs641620	11	117074229	t	c	0.855	-0.319	0.044	3.7E-13	2.2E-04	159.0
rs573455	11	117267884	a	g	0.461	0.199	0.030	4.8E-11	2.7E-04	200.8
rs11222084	11	130273230	a	t	0.638	-0.336	0.032	1.8E-26	4.3E-04	314.9
rs7944927	11	130490917	t	c	0.782	0.224	0.039	1.2E-08	2.1E-04	154.4
rs2014408	11	16365282	t	c	0.209	0.517	0.037	1.3E-43	4.7E-04	346.5
rs7926335	11	16917869	t	c	0.269	0.314	0.034	2.5E-20	3.4E-04	249.5
rs569550	11	1887068	t	g	0.604	-0.577	0.032	1.3E-73	7.6E-04	544.8
rs74048190	11	2114221	t	c	0.952	-0.440	0.076	6.1E-09	1.1E-04	79.1
rs17762	11	22492454	a	g	0.078	0.412	0.057	5.6E-13	1.6E-04	119.7
rs1382472	11	27273967	a	g	0.404	-0.192	0.031	4.5E-10	2.5E-04	187.3
rs871004	11	28512458	a	g	0.348	0.234	0.032	1.6E-13	2.9E-04	215.1
rs1340030	11	30182068	t	c	0.635	0.194	0.031	5.8E-10	2.5E-04	182.2
rs11604310	11	45351420	t	c	0.166	-0.278	0.041	1.5E-11	2.1E-04	155.7
rs7107356	11	47676170	a	g	0.496	-0.460	0.030	1.6E-52	6.3E-04	466.6
rs2904315	11	48109948	a	g	0.313	-0.208	0.033	1.6E-10	2.5E-04	181.6
rs7125196	11	61272565	t	c	0.882	0.442	0.047	7.3E-21	2.5E-04	186.6
rs2306363	11	65405600	t	g	0.205	-0.436	0.038	5.2E-31	3.9E-04	287.7
rs7395791	11	69262916	a	g	0.442	-0.216	0.031	2.2E-12	2.9E-04	216.4
rs10501410	11	72088806	a	g	0.069	0.412	0.061	1.1E-11	1.5E-04	107.7
rs7927515	11	76125330	a	c	0.346	0.227	0.032	1.0E-12	2.8E-04	206.2
rs2289124	11	89224477	a	g	0.167	-0.308	0.042	1.1E-13	2.4E-04	173.9
rs360153	11	9762274	t	c	0.417	-0.345	0.031	1.7E-29	4.6E-04	339.8
rs67885470	11	99998431	t	c	0.209	-0.209	0.038	4.1E-08	1.9E-04	140.0
rs10207726	2	112744260	t	c	0.296	-0.214	0.033	8.1E-11	2.5E-04	181.1
rs6737318	2	114083120	a	g	0.778	0.235	0.036	1.1E-10	2.2E-04	164.5

rs2580350	2	121996007	a	g	0.561	0.177	0.031	8.4E-09	2.4E-04	176.6
rs17257081	2	135630498	a	g	0.807	0.227	0.039	6.4E-09	2.0E-04	140.9
rs55944332	2	145726621	a	g	0.763	-0.261	0.036	1.8E-13	2.6E-04	191.6
rs62170470	2	146989797	t	c	0.602	0.197	0.032	7.7E-10	2.6E-04	189.3
rs62187653	2	162469128	t	c	0.903	0.329	0.051	1.2E-10	1.6E-04	116.9
rs4667454	2	164867726	a	g	0.671	0.264	0.032	2.6E-16	3.2E-04	236.3
rs73029563	2	165008166	c	g	0.455	-0.514	0.030	4.2E-64	7.0E-04	516.7
rs11694601	2	174949358	a	g	0.597	-0.191	0.031	6.4E-10	2.5E-04	184.3
rs34727427	2	177016728	t	c	0.683	-0.235	0.032	4.0E-13	2.8E-04	206.7
rs1882212	2	182981968	a	g	0.779	0.275	0.036	3.3E-14	2.6E-04	191.9
rs13412750	2	191634958	a	g	0.271	-0.289	0.034	2.3E-17	3.1E-04	228.9
rs17760259	2	19744462	t	c	0.572	-0.265	0.030	2.3E-18	3.6E-04	263.6
rs12693982	2	204085635	t	c	0.402	0.258	0.031	7.5E-17	3.4E-04	250.3
rs3845811	2	208521512	c	g	0.566	-0.294	0.031	1.9E-21	4.0E-04	292.9
rs12694277	2	213188795	t	c	0.295	-0.202	0.034	1.8E-09	2.3E-04	170.2
rs2161967	2	218680529	t	g	0.428	0.284	0.031	2.9E-20	3.8E-04	281.8
rs3828282	2	218779144	c	g	0.428	0.186	0.032	5.3E-09	2.5E-04	184.2
rs10804330	2	227185749	t	c	0.567	0.235	0.031	1.6E-14	3.2E-04	233.6
rs1044822	2	230629138	t	c	0.148	-0.248	0.042	5.2E-09	1.7E-04	127.0
rs28365916	2	231280791	t	c	0.415	-0.171	0.031	2.2E-08	2.3E-04	168.5
rs139354822	2	242344695	t	c	0.970	0.612	0.098	3.5E-10	9.7E-05	69.5
rs2384063	2	25187115	t	c	0.761	0.327	0.036	6.3E-20	3.3E-04	240.9
rs1275988	2	26914364	t	c	0.611	-0.541	0.031	4.4E-69	7.1E-04	521.9
rs13420463	2	37517566	a	g	0.773	0.314	0.036	2.7E-18	3.0E-04	220.9
rs4952609	2	40555733	a	g	0.744	0.212	0.035	9.6E-10	2.2E-04	164.0
rs115262049	2	43196694	a	t	0.913	0.589	0.055	1.3E-26	2.6E-04	189.6
rs12464602	2	43397614	a	g	0.621	-0.244	0.032	1.0E-14	3.2E-04	232.8
rs13016772	2	55779476	t	c	0.765	0.252	0.036	1.2E-12	2.5E-04	183.9
rs2249105	2	65287896	a	g	0.632	0.293	0.031	7.6E-21	3.7E-04	273.2
rs10188003	2	66773469	t	c	0.393	0.188	0.031	8.8E-10	2.5E-04	182.0
rs6731373	2	68503044	a	g	0.349	0.191	0.033	4.2E-09	2.4E-04	176.2
rs6732123	2	69534650	c	g	0.417	-0.174	0.031	1.5E-08	2.3E-04	171.4
rs4577304	2	73403040	t	c	0.523	-0.177	0.030	5.0E-09	2.4E-04	178.9
rs72847885	2	86326717	a	g	0.663	0.241	0.032	3.1E-14	3.0E-04	218.5
rs9848170	3	11495983	c	g	0.597	0.323	0.031	7.0E-26	4.3E-04	315.5
rs12637573	3	121682388	a	g	0.472	-0.173	0.030	9.9E-09	2.4E-04	174.8
rs6438857	3	124557643	t	c	0.577	0.274	0.031	3.1E-19	3.7E-04	270.9
rs9880098	3	133949366	a	g	0.395	0.308	0.031	1.6E-23	4.0E-04	298.7
rs1199330	3	138101529	a	g	0.882	-0.265	0.047	1.7E-08	1.5E-04	110.5
rs9876694	3	141152017	t	c	0.058	0.471	0.065	4.6E-13	1.4E-04	105.0
rs11925504	3	14943965	a	g	0.572	-0.290	0.031	1.8E-21	3.9E-04	287.8
rs4408839	3	153729768	a	g	0.743	-0.230	0.035	2.4E-11	2.4E-04	178.2
rs79539362	3	154680449	t	c	0.899	0.400	0.050	2.1E-15	2.0E-04	147.2
rs17684859	3	158213841	t	c	0.734	-0.224	0.034	4.2E-11	2.4E-04	177.8
rs3980686	3	168697602	t	g	0.108	-0.500	0.049	1.0E-24	2.6E-04	194.6
rs1290784	3	169096900	t	c	0.448	0.412	0.030	3.0E-42	5.6E-04	412.9
rs2111557	3	169325621	t	c	0.468	0.176	0.030	5.2E-09	2.4E-04	178.2

rs4955575	3	169534538	a	c	0.746	0.216	0.035	5.6E-10	2.2E-04	165.9
rs262986	3	183435713	a	g	0.470	-0.237	0.031	7.7E-15	3.2E-04	239.7
rs13091418	3	185329756	c	g	0.666	-0.223	0.033	6.1E-12	2.7E-04	201.4
rs9869437	3	196228360	a	c	0.352	-0.200	0.032	3.2E-10	2.5E-04	185.0
rs189267552	3	20073193	a	t	0.013	-0.866	0.139	4.6E-10	6.2E-05	45.6
rs2643826	3	27562988	t	c	0.451	0.447	0.031	1.7E-48	6.1E-04	449.5
rs68115553	3	27704702	a	g	0.980	-0.645	0.114	1.7E-08	6.9E-05	50.3
rs743395	3	37598382	t	c	0.383	0.260	0.032	2.6E-16	3.4E-04	248.8
rs6788984	3	41107173	a	g	0.856	0.300	0.043	3.8E-12	2.0E-04	149.7
rs1052501	3	41925398	t	c	0.833	0.226	0.041	4.1E-08	1.7E-04	126.3
rs6771917	3	48108442	t	c	0.248	-0.379	0.036	1.4E-26	3.9E-04	286.9
rs7615099	3	53143901	a	g	0.668	0.189	0.032	3.9E-09	2.3E-04	170.1
rs6445583	3	53562894	a	g	0.747	0.277	0.035	1.9E-15	2.9E-04	213.0
rs3772219	3	56771251	a	c	0.682	0.273	0.032	3.1E-17	3.3E-04	240.4
rs7618284	3	66422246	c	g	0.339	-0.189	0.033	1.1E-08	2.3E-04	171.8
rs4499560	3	70920485	a	t	0.317	-0.220	0.033	1.5E-11	2.6E-04	193.0
rs9857362	3	74710462	a	c	0.529	0.173	0.031	1.6E-08	2.4E-04	170.6
rs1375564	3	85656311	t	c	0.640	0.258	0.032	2.8E-16	3.3E-04	240.6
rs13107325	4	103188709	t	c	0.074	-0.909	0.059	4.2E-53	3.4E-04	251.3
rs11097909	4	106911321	t	c	0.147	-0.363	0.043	3.4E-17	2.5E-04	184.1
rs1493132	4	108861082	t	c	0.660	-0.177	0.032	2.7E-08	2.2E-04	160.1
rs1814951	4	111408718	a	g	0.879	-0.323	0.047	3.9E-12	1.9E-04	139.4
rs4834792	4	120555696	a	t	0.480	0.197	0.030	7.2E-11	2.7E-04	199.0
rs7439567	4	138464842	t	c	0.411	0.254	0.031	2.3E-16	3.4E-04	247.8
rs72719160	4	144051276	a	t	0.683	-0.224	0.032	4.3E-12	2.7E-04	196.3
rs2353940	4	145740898	t	c	0.751	-0.208	0.036	6.8E-09	2.1E-04	156.4
rs73855810	4	148383424	a	g	0.141	0.273	0.043	3.0E-10	1.8E-04	134.0
rs7683728	4	156402654	t	c	0.531	-0.365	0.030	2.4E-33	5.0E-04	364.4
rs12643599	4	156639846	a	g	0.640	0.313	0.031	1.2E-23	4.0E-04	293.2
rs17035181	4	157678511	t	g	0.855	0.307	0.043	7.6E-13	2.1E-04	154.2
rs869396	4	169688000	a	c	0.466	-0.212	0.031	4.1E-12	2.9E-04	213.3
rs2610990	4	18008232	a	g	0.264	-0.290	0.034	2.9E-17	3.1E-04	228.0
rs34535756	4	2246927	t	c	0.039	0.478	0.079	1.2E-09	9.9E-05	73.3
rs1290933	4	2668217	a	c	0.692	-0.285	0.033	3.2E-18	3.3E-04	246.3
rs55924432	4	26812737	t	c	0.401	0.265	0.032	5.7E-17	3.5E-04	257.0
rs2498323	4	3451109	a	g	0.098	0.317	0.052	8.5E-10	1.5E-04	113.4
rs2291434	4	38387244	t	g	0.534	-0.262	0.030	5.1E-18	3.6E-04	263.8
rs12511987	4	46595623	t	g	0.823	-0.233	0.040	5.4E-09	1.9E-04	137.9
rs62309747	4	48713862	a	g	0.473	-0.224	0.030	1.6E-13	3.1E-04	226.7
rs60991988	4	54801228	t	g	0.893	0.379	0.050	2.8E-14	2.0E-04	145.1
rs13107261	4	63768826	a	g	0.369	-0.178	0.031	1.6E-08	2.3E-04	166.1
rs10008637	4	77414144	t	c	0.541	0.216	0.030	9.2E-13	2.9E-04	217.4
rs12509595	4	81182554	t	c	0.708	-0.837	0.033	2.6E-138	9.5E-04	701.9
rs60909079	4	83830244	c	g	0.249	-0.211	0.035	1.7E-09	2.2E-04	159.8
rs17010957	4	86719165	t	c	0.854	-0.534	0.043	1.8E-35	3.7E-04	269.6
rs10028284	4	89752913	a	t	0.818	0.294	0.040	1.7E-13	2.4E-04	176.2
rs11241313	5	114428167	t	c	0.311	-0.207	0.033	2.2E-10	2.4E-04	180.1

rs1624822	5	122475437	t	c	0.620	-0.336	0.031	5.1E-27	4.4E-04	321.7
rs9327297	5	122835051	c	g	0.668	0.275	0.032	8.1E-18	3.4E-04	247.4
rs758180	5	127354423	a	t	0.225	0.208	0.037	1.3E-08	2.0E-04	146.8
rs6892983	5	127845030	a	c	0.402	0.343	0.031	7.1E-29	4.5E-04	334.0
rs10069690	5	1279790	t	c	0.258	0.310	0.037	4.5E-17	3.3E-04	230.8
rs702395	5	140086677	t	c	0.437	0.232	0.031	3.2E-14	3.1E-04	231.1
rs2913920	5	141726983	t	c	0.765	0.242	0.036	1.6E-11	2.4E-04	175.7
rs7725413	5	15695987	t	c	0.770	-0.199	0.036	3.1E-08	1.9E-04	142.5
rs1957563	5	157474590	t	c	0.265	0.363	0.034	2.3E-26	3.9E-04	285.7
rs11960210	5	157817634	t	c	0.625	0.473	0.031	1.3E-51	6.1E-04	443.1
rs13358657	5	157938070	a	g	0.867	-0.388	0.045	3.0E-18	2.5E-04	181.0
rs3860770	5	173301427	a	g	0.292	-0.266	0.033	1.2E-15	3.0E-04	221.7
rs12153395	5	179411477	a	g	0.115	-0.330	0.049	1.1E-11	1.8E-04	135.4
rs12656497	5	32831939	t	c	0.403	-0.638	0.031	7.1E-96	8.4E-04	621.9
rs10941043	5	33194751	t	g	0.710	-0.259	0.033	6.4E-15	2.9E-04	216.1
rs4957026	5	361148	a	g	0.340	0.198	0.032	8.1E-10	2.4E-04	179.7
rs2113077	5	50799442	a	g	0.430	0.210	0.031	6.1E-12	2.8E-04	208.3
rs1694068	5	53283630	a	t	0.614	0.266	0.031	1.2E-17	3.5E-04	255.6
rs13179413	5	55868097	t	c	0.282	0.224	0.035	1.1E-10	2.5E-04	183.6
rs34496659	5	61798934	a	g	0.070	0.455	0.062	1.5E-13	1.6E-04	120.4
rs6870654	5	63831964	t	c	0.745	0.214	0.035	7.6E-10	2.2E-04	162.7
rs4286632	5	66291370	a	g	0.731	0.211	0.034	7.6E-10	2.3E-04	168.5
rs7703560	5	67678506	a	g	0.700	-0.225	0.033	1.5E-11	2.6E-04	189.1
rs246973	5	68007803	t	c	0.288	0.248	0.034	1.5E-13	2.8E-04	206.1
rs6452769	5	87389027	a	g	0.205	-0.314	0.038	7.8E-17	2.8E-04	207.8
rs76443575	5	96211594	c	g	0.036	-0.523	0.082	1.4E-10	1.0E-04	73.4
rs1871190	5	97953719	t	g	0.335	0.195	0.032	1.7E-09	2.4E-04	176.4
rs9486916	6	109013930	t	c	0.198	0.266	0.039	5.4E-12	2.3E-04	169.1
rs961764	6	117522156	c	g	0.425	-0.191	0.031	3.7E-10	2.6E-04	189.4
rs1630736	6	12295987	t	c	0.465	-0.171	0.031	3.5E-08	2.3E-04	172.0
rs10782230	6	126228512	a	g	0.485	0.211	0.030	2.9E-12	2.9E-04	213.5
rs9401913	6	127159982	a	g	0.439	0.520	0.031	3.7E-65	7.0E-04	520.0
rs9349379	6	12903957	a	g	0.593	0.266	0.031	1.3E-17	3.5E-04	260.6
rs9285476	6	134159976	c	g	0.707	0.184	0.033	3.1E-08	2.1E-04	155.0
rs13204703	6	140692862	t	c	0.751	0.197	0.035	1.9E-08	2.0E-04	149.2
rs8180684	6	143200936	t	c	0.290	0.213	0.034	1.8E-10	2.4E-04	177.9
rs7765526	6	147713764	a	g	0.463	0.201	0.031	5.9E-11	2.7E-04	202.5
rs17080102	6	151004770	c	g	0.069	-0.809	0.059	3.5E-42	2.9E-04	211.9
rs1293969	6	151959945	t	c	0.748	-0.199	0.035	1.0E-08	2.1E-04	151.9
rs509833	6	159711515	a	g	0.139	0.329	0.044	7.1E-14	2.2E-04	159.2
rs2745599	6	1613686	a	g	0.552	0.216	0.032	9.0E-12	2.9E-04	214.3
rs12661036	6	163737476	t	c	0.775	-0.210	0.037	1.8E-08	2.0E-04	148.7
rs7744902	6	166176722	a	g	0.077	-0.409	0.059	5.6E-12	1.6E-04	113.4
rs9368222	6	20686996	a	c	0.269	0.228	0.034	1.8E-11	2.5E-04	181.9
rs9393231	6	22123695	a	c	0.492	-0.215	0.031	3.4E-12	3.0E-04	217.6
rs7753826	6	26042239	a	t	0.190	0.428	0.039	1.0E-28	3.6E-04	267.0
rs2596498	6	31322688	t	c	0.638	-0.233	0.034	4.9E-12	3.0E-04	204.8

rs3132442	6	31839494	t	c	0.520	0.393	0.030	2.6E-38	5.4E-04	392.7
rs7763558	6	43349215	a	g	0.324	0.336	0.032	1.2E-25	4.0E-04	299.0
rs11967262	6	43760327	c	g	0.513	-0.172	0.031	3.4E-08	2.4E-04	172.0
rs78648104	6	50683009	t	c	0.908	-0.429	0.054	2.4E-15	2.0E-04	145.4
rs1575290	6	7715689	t	c	0.473	0.197	0.030	5.6E-11	2.7E-04	199.6
rs1984195	6	79657391	a	g	0.489	0.241	0.030	1.8E-15	3.3E-04	241.6
rs9361836	6	82235408	t	c	0.317	0.220	0.032	1.2E-11	2.6E-04	193.0
rs6921291	6	97066242	t	c	0.191	0.358	0.039	1.6E-20	3.0E-04	223.9
rs2392929	7	106414069	t	g	0.797	-0.751	0.038	2.0E-87	6.7E-04	491.9
rs34072724	7	130432469	a	g	0.489	-0.242	0.030	1.4E-15	3.3E-04	244.9
rs35680304	7	130973495	t	c	0.593	0.269	0.031	3.8E-18	3.6E-04	263.1
rs75672964	7	131321010	t	c	0.042	0.589	0.084	2.3E-12	1.3E-04	92.3
rs6957161	7	131361319	a	g	0.262	0.206	0.035	2.2E-09	2.2E-04	161.2
rs73727605	7	149474622	a	g	0.066	0.362	0.062	6.6E-09	1.2E-04	89.4
rs3918226	7	150690176	t	c	0.081	0.664	0.058	8.5E-31	2.7E-04	199.0
rs10224210	7	151413194	t	c	0.721	-0.383	0.034	1.6E-29	4.2E-04	312.7
rs1870735	7	155744303	c	g	0.453	0.206	0.031	3.6E-11	2.8E-04	206.9
rs3807925	7	18543250	a	g	0.650	-0.186	0.032	5.4E-09	2.3E-04	171.2
rs28688791	7	19039605	t	c	0.802	-0.322	0.038	2.3E-17	2.8E-04	207.8
rs6978112	7	1966841	t	c	0.411	0.229	0.031	1.3E-13	3.0E-04	223.7
rs112509803	7	24735004	c	g	0.114	-0.264	0.048	3.2E-08	1.5E-04	108.1
rs10282122	7	2529623	t	c	0.668	-0.302	0.033	2.5E-20	3.7E-04	270.5
rs3735533	7	27245893	t	c	0.074	-0.910	0.058	5.3E-56	3.4E-04	253.7
rs6961048	7	27328187	c	g	0.896	-0.530	0.050	1.4E-26	2.7E-04	199.5
rs11977526	7	46008110	a	g	0.401	-0.321	0.031	6.6E-25	4.2E-04	310.7
rs73049928	7	4669949	a	g	0.806	-0.238	0.039	1.2E-09	2.0E-04	150.8
rs12668436	7	47548893	t	c	0.754	-0.215	0.035	7.9E-10	2.2E-04	161.9
rs848445	7	77572461	t	c	0.285	-0.203	0.034	2.3E-09	2.3E-04	167.5
rs67617547	7	90297177	c	g	0.670	0.180	0.032	2.4E-08	2.2E-04	161.5
rs42032	7	92237426	a	g	0.264	-0.323	0.035	7.4E-21	3.5E-04	254.1
rs79069610	8	105921209	t	c	0.950	-0.401	0.073	3.7E-08	1.0E-04	77.2
rs35783704	8	105966258	a	g	0.104	-0.462	0.051	8.8E-20	2.4E-04	174.7
rs1821002	8	10640065	c	g	0.411	0.379	0.031	5.2E-35	5.0E-04	372.7
rs7830607	8	110097287	a	g	0.305	-0.206	0.033	3.1E-10	2.4E-04	177.1
rs2470004	8	120358445	t	c	0.818	-0.345	0.039	1.3E-18	2.8E-04	209.1
rs6986368	8	126513197	a	t	0.673	-0.213	0.033	9.6E-11	2.6E-04	187.5
rs2608029	8	129170126	c	g	0.665	0.181	0.032	1.6E-08	2.2E-04	162.9
rs4260863	8	129386613	c	g	0.616	0.191	0.031	1.2E-09	2.5E-04	180.3
rs7012866	8	135616959	t	g	0.499	-0.233	0.030	1.2E-14	3.2E-04	235.6
rs4440615	8	141057641	a	g	0.632	-0.220	0.031	1.9E-12	2.8E-04	207.7
rs4961293	8	141812374	t	c	0.451	0.227	0.030	7.4E-14	3.1E-04	227.9
rs7463212	8	143991858	a	t	0.545	-0.275	0.031	1.8E-19	3.8E-04	273.6
rs71499040	8	1711918	c	g	0.708	0.222	0.034	5.6E-11	2.5E-04	184.6
rs7844887	8	23402482	a	g	0.221	0.266	0.036	2.4E-13	2.5E-04	185.9
rs7821832	8	25889446	t	g	0.745	0.422	0.035	6.7E-34	4.4E-04	322.1
rs77375686	8	26043622	a	g	0.888	-0.347	0.049	8.4E-13	1.9E-04	139.6
rs1906672	8	38130025	a	g	0.232	0.297	0.036	1.2E-16	2.9E-04	214.4

rs4873492	8	51947549	t	c	0.172	0.343	0.040	1.6E-17	2.7E-04	198.7
rs2354862	8	64501744	a	c	0.641	0.251	0.032	2.4E-15	3.2E-04	231.4
rs13253358	8	68920135	t	c	0.298	0.213	0.033	1.1E-10	2.4E-04	180.5
rs2126474	8	76878957	t	g	0.413	-0.260	0.031	1.9E-17	3.5E-04	255.4
rs9918876	8	77681097	a	c	0.104	-0.298	0.050	2.3E-09	1.5E-04	112.2
rs148401029	8	81386066	a	c	0.035	-0.462	0.085	5.0E-08	8.6E-05	63.7
rs10091532	8	82853793	a	c	0.417	-0.207	0.031	1.3E-11	2.8E-04	203.9
rs843093	8	92528310	a	g	0.709	-0.209	0.034	7.0E-10	2.4E-04	174.4
rs2613203	8	95253197	a	t	0.815	-0.268	0.039	5.8E-12	2.2E-04	164.2
rs10980408	9	113249071	t	c	0.964	-0.761	0.083	3.8E-20	1.4E-04	107.9
rs7026176	9	116670743	t	g	0.512	-0.187	0.030	4.0E-10	2.6E-04	191.5
rs34025993	9	123516572	a	g	0.414	0.223	0.031	4.7E-13	3.0E-04	221.5
rs4838021	9	125657099	t	c	0.129	-0.301	0.045	3.1E-11	1.9E-04	136.9
rs13289468	9	128180332	a	c	0.574	0.249	0.031	3.9E-16	3.3E-04	249.1
rs6271	9	136522274	t	c	0.074	-0.555	0.061	1.2E-19	2.1E-04	153.0
rs11145807	9	139520789	a	g	0.406	0.214	0.032	3.5E-11	2.8E-04	204.2
rs9886665	9	22942770	t	c	0.267	0.205	0.034	2.5E-09	2.2E-04	162.2
rs4553000	9	34223553	t	c	0.514	-0.204	0.030	1.1E-11	2.8E-04	208.4
rs76452347	9	35906471	t	c	0.205	-0.297	0.040	7.1E-14	2.7E-04	198.2
rs927315	9	4117713	t	c	0.471	0.169	0.030	2.4E-08	2.3E-04	172.3
rs60191654	9	753648	a	g	0.812	-0.238	0.039	5.9E-10	2.0E-04	149.2
rs1410222	9	77239540	t	c	0.817	0.217	0.039	2.2E-08	1.8E-04	133.4
rs1332813	9	9350706	t	c	0.351	0.220	0.031	2.3E-12	2.8E-04	205.9
rs7045409	9	95201540	a	t	0.367	-0.186	0.031	2.5E-09	2.4E-04	176.4
rs5742643	12	102837863	t	c	0.249	-0.223	0.035	1.5E-10	2.3E-04	169.9
rs7310615	12	111865049	c	g	0.482	0.585	0.031	1.3E-81	8.0E-04	592.1
rs1896326	12	115342956	a	g	0.229	-0.280	0.037	4.4E-14	2.7E-04	202.0
rs35444	12	115552437	a	g	0.614	0.437	0.031	3.5E-45	5.7E-04	420.0
rs6490019	12	115920472	a	g	0.380	-0.290	0.031	6.6E-21	3.7E-04	279.8
rs1169078	12	122416254	c	g	0.688	-0.197	0.033	1.7E-09	2.3E-04	173.3
rs2024385	12	12888438	a	t	0.424	-0.264	0.031	5.9E-18	3.5E-04	264.6
rs117206641	12	133086888	t	c	0.111	0.315	0.050	2.7E-10	1.7E-04	123.9
rs1010064	12	20000315	a	c	0.816	0.357	0.039	3.0E-20	2.9E-04	219.6
rs73075659	12	20373541	a	g	0.665	0.396	0.032	5.5E-35	4.8E-04	361.2
rs3819532	12	2436837	t	c	0.391	-0.188	0.031	9.4E-10	2.5E-04	182.9
rs2129869	12	26457650	a	t	0.778	-0.264	0.036	2.4E-13	2.5E-04	186.8
rs78998485	12	434755	c	g	0.744	-0.245	0.035	1.5E-12	2.6E-04	190.8
rs61917655	12	48210787	t	c	0.101	0.343	0.051	2.7E-11	1.7E-04	128.0
rs57342147	12	50129422	a	g	0.903	0.279	0.051	4.2E-08	1.3E-04	100.4
rs12426261	12	50573037	a	g	0.379	0.378	0.031	2.3E-34	4.9E-04	364.4
rs7134440	12	53450097	t	c	0.082	0.479	0.056	1.6E-17	2.0E-04	148.1
rs7134677	12	54441498	t	c	0.298	-0.385	0.033	4.5E-31	4.4E-04	329.8
rs7306710	12	66376091	t	c	0.481	-0.243	0.030	1.0E-15	3.3E-04	248.6
rs4143175	12	67782397	t	c	0.241	0.219	0.035	5.1E-10	2.2E-04	163.7
rs7963801	12	79685226	t	c	0.422	-0.236	0.031	2.9E-14	3.2E-04	235.9
rs6539467	12	79955306	a	g	0.166	0.265	0.040	5.6E-11	2.0E-04	150.5
rs113695818	12	8837407	t	c	0.303	-0.184	0.033	2.6E-08	2.1E-04	158.9

rs17249754	12	90060586	a	g	0.168	-0.845	0.040	1.3E-97	6.5E-04	483.5
rs10777213	12	90349999	a	g	0.524	-0.179	0.030	2.5E-09	2.4E-04	182.6
rs9549627	13	113652369	a	g	0.118	0.285	0.050	1.2E-08	1.6E-04	118.3
rs7331680	13	115000650	t	g	0.149	0.410	0.042	3.4E-22	2.9E-04	212.5
rs483071	13	22294117	t	c	0.625	0.271	0.031	5.1E-18	3.5E-04	260.0
rs9507885	13	27951090	t	c	0.095	-0.321	0.054	3.2E-09	1.5E-04	112.6
rs7338758	13	30137828	t	c	0.245	0.355	0.035	7.0E-24	3.6E-04	266.1
rs4274337	13	41967193	a	g	0.170	-0.297	0.041	2.5E-13	2.3E-04	171.5
rs7491248	13	47180671	a	g	0.224	0.216	0.036	2.4E-09	2.1E-04	152.4
rs9526707	13	51489186	a	g	0.322	-0.204	0.032	2.8E-10	2.4E-04	182.1
rs75961402	13	56398286	a	g	0.153	0.266	0.042	1.9E-10	1.9E-04	141.6
rs17245822	13	73131694	a	c	0.627	-0.190	0.031	1.2E-09	2.4E-04	182.1
rs78474310	13	73826901	a	g	0.955	-0.470	0.073	1.5E-10	1.1E-04	82.4
rs6562778	13	74223828	a	g	0.459	0.178	0.030	5.0E-09	2.4E-04	181.0
rs17562391	14	100133250	t	c	0.419	0.197	0.031	1.3E-10	2.6E-04	196.3
rs75016974	14	100197940	t	c	0.142	-0.251	0.044	1.0E-08	1.7E-04	125.6
rs12885878	14	104007555	a	g	0.234	-0.229	0.037	4.3E-10	2.3E-04	168.0
rs365990	14	23861811	a	g	0.634	0.225	0.031	6.0E-13	2.9E-04	214.0
rs8904	14	35871217	a	g	0.368	0.306	0.031	1.7E-22	3.9E-04	289.5
rs7493678	14	39400917	a	t	0.651	-0.189	0.032	2.3E-09	2.4E-04	176.0
rs72683923	14	50735947	t	c	0.979	0.959	0.110	3.1E-18	1.1E-04	81.3
rs35413927	14	53420358	a	g	0.695	-0.300	0.033	5.3E-20	3.5E-04	261.1
rs12883810	14	68032235	t	c	0.146	-0.238	0.043	2.7E-08	1.6E-04	120.4
rs57786342	14	69260028	a	g	0.206	0.232	0.037	5.6E-10	2.1E-04	155.3
rs8003103	14	71451265	a	g	0.345	-0.176	0.032	3.6E-08	2.2E-04	162.5
rs3815460	14	73422259	c	g	0.898	-0.285	0.050	1.2E-08	1.4E-04	106.7
rs11159091	14	75074316	a	g	0.462	0.198	0.030	6.8E-11	2.7E-04	198.9
rs7154723	14	98590629	a	g	0.385	0.253	0.031	2.7E-16	3.3E-04	245.3
rs4606697	15	100087596	a	g	0.104	-0.320	0.052	9.7E-10	1.6E-04	121.3
rs8030856	15	40314967	c	g	0.605	-0.176	0.031	1.2E-08	2.3E-04	172.6
rs28866311	15	41442195	t	g	0.526	-0.276	0.030	5.5E-20	3.8E-04	282.4
rs4775769	15	48939888	t	g	0.095	-0.416	0.052	7.8E-16	2.0E-04	146.0
rs3098186	15	50810621	t	c	0.516	-0.242	0.030	1.4E-15	3.3E-04	248.0
rs2652812	15	63406170	t	c	0.754	-0.252	0.035	1.0E-12	2.6E-04	190.9
rs28429256	15	66931617	a	g	0.334	0.215	0.033	3.9E-11	2.6E-04	195.6
rs11636952	15	75114322	t	c	0.314	0.531	0.033	4.2E-59	6.3E-04	458.2
rs2627313	15	81006712	t	c	0.445	0.321	0.030	3.6E-26	4.4E-04	321.2
rs1994158	15	86064327	a	g	0.819	0.251	0.039	1.2E-10	2.0E-04	152.1
rs17807723	15	90023558	a	g	0.138	-0.272	0.044	8.4E-10	1.8E-04	131.3
rs4932373	15	91429287	a	c	0.674	-0.635	0.033	2.5E-83	7.7E-04	556.0
rs12906962	15	95312071	t	c	0.676	-0.265	0.033	3.3E-16	3.2E-04	237.3
rs2589218	15	96785017	t	c	0.730	-0.226	0.034	2.5E-11	2.4E-04	182.1
rs11075030	16	11976414	a	c	0.594	-0.175	0.031	1.7E-08	2.3E-04	168.7
rs11641374	16	1347717	a	c	0.600	-0.194	0.031	3.3E-10	2.6E-04	190.2
rs77924615	16	20392332	a	g	0.199	-0.408	0.039	1.1E-25	3.6E-04	265.6
rs12596630	16	2065666	t	c	0.090	0.428	0.055	5.0E-15	1.9E-04	139.7
rs7186298	16	21088031	t	c	0.430	-0.232	0.030	1.9E-14	3.1E-04	232.6

rs8044992	16	24811207	t	c	0.712	0.214	0.033	1.1E-10	2.4E-04	179.6
rs7189884	16	4145164	a	g	0.115	-0.314	0.048	4.2E-11	1.7E-04	130.5
rs12446456	16	4922201	t	c	0.427	-0.300	0.030	3.0E-23	4.0E-04	301.4
rs34941092	16	50550137	a	g	0.150	-0.323	0.043	3.2E-14	2.3E-04	168.4
rs4784541	16	51704452	t	c	0.475	-0.202	0.031	4.9E-11	2.8E-04	205.7
rs35098810	16	60635748	a	c	0.768	0.197	0.036	3.2E-08	1.9E-04	143.6
rs146550789	16	66781040	t	c	0.958	-0.482	0.078	5.6E-10	1.1E-04	79.0
rs62047964	16	70729954	t	c	0.062	0.512	0.069	9.3E-14	1.6E-04	120.8
rs1012089	16	74171973	c	g	0.475	-0.192	0.030	2.0E-10	2.6E-04	196.3
rs4888408	16	75432824	a	g	0.586	0.365	0.031	1.4E-32	4.9E-04	363.1
rs12926550	16	81510155	a	g	0.316	-0.255	0.032	3.4E-15	3.0E-04	225.7
rs8054587	16	86170044	t	c	0.527	0.167	0.030	3.4E-08	2.3E-04	169.9
rs3950627	16	86436343	a	c	0.531	0.185	0.031	1.8E-09	2.5E-04	187.2
rs6540119	16	87984477	a	t	0.334	0.202	0.032	3.9E-10	2.5E-04	183.9
rs908951	16	89697625	t	c	0.438	-0.226	0.032	7.1E-13	3.1E-04	224.6
rs8079811	17	1371473	c	g	0.348	-0.210	0.033	1.0E-10	2.6E-04	193.7
rs4925159	17	18185510	a	g	0.425	0.217	0.031	9.7E-13	2.9E-04	215.4
rs7211535	17	19922364	a	g	0.476	-0.178	0.030	4.6E-09	2.4E-04	179.9
rs2760748	17	2001604	a	t	0.098	0.363	0.051	1.1E-12	1.8E-04	131.3
rs1551355	17	30032420	t	c	0.233	0.210	0.036	3.9E-09	2.1E-04	153.9
rs9899540	17	30777924	a	t	0.400	0.201	0.032	1.9E-10	2.7E-04	197.6
rs7213273	17	43155914	a	g	0.655	-0.400	0.032	6.2E-37	5.0E-04	370.7
rs17608766	17	45013271	t	c	0.856	-0.690	0.043	2.5E-57	4.7E-04	346.1
rs3764400	17	46123932	t	c	0.864	0.375	0.045	3.7E-17	2.4E-04	180.9
rs9897429	17	47518378	a	g	0.520	0.265	0.032	1.2E-16	3.6E-04	270.3
rs1000423	17	59475642	t	c	0.732	0.414	0.035	6.5E-33	4.5E-04	329.3
rs56288724	17	60767135	a	g	0.583	-0.218	0.031	2.0E-12	2.9E-04	216.8
rs62076622	17	61090958	a	g	0.801	0.236	0.038	3.8E-10	2.1E-04	154.3
rs6504213	17	62381714	t	c	0.418	-0.298	0.031	1.2E-21	4.0E-04	297.1
rs113086489	17	7171356	t	c	0.553	0.325	0.031	3.8E-26	4.4E-04	329.0
rs4511593	17	7455536	t	c	0.653	-0.288	0.032	1.3E-19	3.6E-04	264.8
rs1436138	17	75316880	a	g	0.637	0.312	0.032	4.7E-23	4.0E-04	295.4
rs9302885	17	76799898	a	g	0.445	0.224	0.030	1.0E-13	3.0E-04	226.7
rs79930761	17	7815712	t	c	0.087	-0.469	0.056	4.9E-17	2.1E-04	153.0
rs11655604	17	79365861	t	c	0.358	-0.203	0.033	1.1E-09	2.6E-04	179.7
rs62082230	18	22676071	a	t	0.277	-0.188	0.035	4.7E-08	2.1E-04	154.6
rs1154214	18	24546824	t	g	0.396	-0.203	0.031	3.3E-11	2.7E-04	198.9
rs56407827	18	42179819	t	c	0.269	0.360	0.034	2.8E-26	3.9E-04	289.9
rs11874246	18	42596789	t	c	0.296	0.286	0.033	3.2E-18	3.3E-04	244.2
rs7236548	18	43097750	a	c	0.185	0.343	0.039	8.5E-19	2.8E-04	211.9
rs1437649	18	48132646	a	g	0.235	-0.219	0.036	8.6E-10	2.2E-04	161.1
rs665445	18	51842682	a	c	0.279	-0.191	0.033	1.2E-08	2.1E-04	157.6
rs10048404	18	54578482	t	c	0.370	-0.261	0.032	1.9E-16	3.3E-04	248.9
rs10460108	18	73034151	a	g	0.480	0.214	0.030	1.1E-12	2.9E-04	219.1
rs34413141	18	777282	a	t	0.182	-0.353	0.039	2.5E-19	2.9E-04	215.7
rs3816865	19	11507855	a	g	0.080	0.309	0.057	4.4E-08	1.3E-04	92.4
rs167479	19	11526765	t	g	0.473	-0.564	0.033	7.2E-67	7.7E-04	522.5

rs698748	19	1424888	a	g	0.421	0.187	0.033	8.9E-09	2.5E-04	181.0
rs8106184	19	17159779	a	c	0.745	-0.237	0.035	8.3E-12	2.5E-04	184.7
rs149339216	19	2144046	t	c	0.957	-0.691	0.078	6.9E-19	1.6E-04	114.2
rs4319878	19	21924452	t	c	0.561	0.169	0.031	3.8E-08	2.3E-04	170.9
rs8108027	19	22115901	c	g	0.295	0.195	0.033	3.7E-09	2.2E-04	166.0
rs28572357	19	31867447	a	c	0.602	-0.273	0.031	6.3E-19	3.6E-04	266.8
rs1433121	19	32591878	t	c	0.691	-0.228	0.033	2.7E-12	2.7E-04	199.7
rs33836	19	34008600	t	c	0.462	0.177	0.030	6.6E-09	2.4E-04	180.0
rs10420519	19	45298461	t	g	0.035	-0.492	0.089	2.9E-08	9.1E-05	66.9
rs7255933	19	45766729	a	g	0.257	0.231	0.035	2.4E-11	2.4E-04	180.7
rs11672660	19	46180184	t	c	0.200	0.221	0.038	6.3E-09	1.9E-04	143.2
rs571689	19	49207554	t	c	0.520	0.228	0.030	6.8E-14	3.1E-04	230.6
rs73046792	19	49605705	a	g	0.159	-0.355	0.043	7.2E-17	2.6E-04	192.4
rs68096471	19	5175709	a	g	0.266	-0.210	0.034	9.3E-10	2.3E-04	167.9
rs12985940	19	7262734	t	c	0.841	0.464	0.043	1.1E-26	3.4E-04	246.5
rs2423514	20	10693337	a	g	0.541	0.301	0.030	1.8E-23	4.1E-04	306.6
rs6108787	20	10967214	t	g	0.530	-0.427	0.030	5.4E-46	5.9E-04	435.5
rs6078093	20	11168669	a	g	0.428	-0.185	0.030	1.2E-09	2.5E-04	185.3
rs8125763	20	17883531	a	c	0.472	0.176	0.030	4.8E-09	2.4E-04	179.9
rs17812022	20	19007099	t	c	0.096	-0.361	0.053	5.6E-12	1.7E-04	128.1
rs6058088	20	30139886	t	g	0.844	0.283	0.042	1.1E-11	2.1E-04	153.0
rs79384779	20	31214944	t	c	0.151	0.318	0.043	1.1E-13	2.2E-04	167.3
rs6029756	20	40266681	a	g	0.323	-0.271	0.033	1.9E-16	3.3E-04	242.6
rs6031431	20	42795152	a	g	0.538	-0.262	0.030	7.0E-18	3.6E-04	266.0
rs2598	20	47241618	a	g	0.533	0.168	0.030	2.9E-08	2.3E-04	171.4
rs6090907	20	47410231	a	g	0.147	-0.385	0.043	1.3E-19	2.7E-04	198.1
rs234623	20	57488964	a	g	0.504	-0.180	0.030	2.4E-09	2.5E-04	183.8
rs6026744	20	57742388	a	t	0.877	-0.713	0.046	7.0E-54	4.2E-04	313.3
rs28374392	20	61189717	t	c	0.623	0.192	0.034	1.2E-08	2.5E-04	168.4
rs6062324	20	62446351	a	g	0.236	-0.329	0.036	1.2E-19	3.3E-04	241.5
rs6054139	20	6327810	a	g	0.606	0.209	0.031	8.2E-12	2.7E-04	205.0
rs2776037	21	16317933	t	c	0.415	-0.185	0.031	2.1E-09	2.5E-04	183.7
rs1882961	21	16556367	t	c	0.309	0.244	0.033	6.7E-14	2.9E-04	213.8
rs2833834	21	33814378	a	c	0.277	0.218	0.034	1.2E-10	2.4E-04	176.6
rs12627651	21	44760603	a	g	0.287	0.350	0.034	1.0E-24	3.9E-04	292.0
rs34487963	21	44838330	a	c	0.019	-0.882	0.124	1.4E-12	8.8E-05	63.0
rs7278003	21	44966069	t	c	0.438	-0.188	0.030	6.6E-10	2.5E-04	189.1
rs2238787	22	19976406	a	g	0.292	0.255	0.033	1.5E-14	2.9E-04	215.7
rs12321	22	29453193	c	g	0.433	-0.229	0.030	3.8E-14	3.1E-04	230.7
rs112854918	22	30588910	c	g	0.975	-0.558	0.100	2.8E-08	7.6E-05	56.7
rs8142376	22	32001037	t	c	0.491	0.168	0.030	2.2E-08	2.3E-04	171.7
rs148140538	22	50228044	t	c	0.081	-0.325	0.056	7.4E-09	1.3E-04	98.5
rs28578714	22	50727921	t	c	0.606	0.207	0.033	2.5E-10	2.7E-04	193.3

^a $R^2 = \frac{2 \times EAF \times (1 - EAF) \times \beta^2}{SD^2}$, where EAF is the effect allele frequency and beta is the effect estimate of the SNP on SBP (Shim 2015, PLoS One;10(4):e0120758).

^b $F = \frac{R^2 \times (N - 2)}{1 - R^2}$ where R^2 is the variance of SBP explained by the specific SNP (as explained above) and N the number of individuals in the GWAS analysis (Palmer 2012, Stat Methods Med Res;21(3):223-42).

CHR: chromosome; EAF: effect allele frequency; SE: standard error; SNP: single nucleotide polymorphism.

Table e-2. Genome-wide significant ($p < 5 \times 10^{-8}$) and independent ($r^2 < 0.001$) single nucleotide polymorphisms (SNP) that were used as instruments for diastolic blood pressure (DBP).

SNP	Chr	Position (GRCh37/hg19)	Effect allele	Other allele	EAF	beta	SE	p-value	R ² ^a	F ^b
rs488834	1	10767902	t	c	0.764	-0.193	0.021	1.9E-20	1.9E-04	142.4
rs10776752	1	1.13E+08	t	g	0.081	0.457	0.033	1.2E-43	1.9E-04	141.0
rs57748895	1	1.16E+08	a	t	0.982	-0.663	0.067	2.5E-23	6.4E-05	48.4
rs55857306	1	11895795	a	g	0.160	-0.522	0.024	5.1E-109	3.9E-04	292.0
rs72704264	1	1.46E+08	c	g	0.217	0.117	0.021	3.6E-08	1.1E-04	82.8
rs1819663	1	1.54E+08	a	g	0.507	0.115	0.017	4.6E-11	1.6E-04	118.0
rs11578696	1	1.56E+08	a	g	0.866	0.146	0.026	1.7E-08	9.3E-05	70.5
rs1889785	1	16348729	a	g	0.455	0.126	0.017	5.6E-13	1.7E-04	129.6
rs7524019	1	1.67E+08	t	c	0.492	0.104	0.017	2.6E-09	1.4E-04	107.8
rs12405515	1	1.72E+08	t	g	0.570	-0.170	0.017	1.9E-22	2.3E-04	172.8
rs34645159	1	1724366	a	g	0.501	-0.133	0.017	2.1E-14	1.8E-04	138.5
rs150816167	1	1.8E+08	t	c	0.955	-0.287	0.045	1.2E-10	6.8E-05	51.5
rs1999996	1	1.85E+08	a	g	0.559	-0.112	0.018	1.7E-10	1.5E-04	112.4
rs882624	1	2.02E+08	t	c	0.333	-0.157	0.019	2.3E-17	1.9E-04	143.6
rs2169137	1	2.04E+08	c	g	0.729	0.159	0.019	3.2E-16	1.7E-04	130.7
rs1502358	1	2.17E+08	a	g	0.681	-0.113	0.019	1.1E-09	1.3E-04	101.8
rs68085857	1	2.18E+08	t	c	0.234	0.191	0.021	9.8E-21	1.9E-04	142.6
rs35981664	1	2.19E+08	a	t	0.688	-0.161	0.019	2.0E-17	1.9E-04	143.4
rs2760061	1	2.28E+08	a	t	0.480	0.177	0.018	1.0E-23	2.4E-04	183.9
rs699	1	2.31E+08	a	g	0.593	-0.236	0.018	1.3E-40	3.1E-04	231.8
rs3943093	1	2.43E+08	t	c	0.323	0.248	0.018	3.9E-41	3.0E-04	225.7
rs4926499	1	2.49E+08	c	g	0.826	0.169	0.025	9.4E-12	1.3E-04	97.8
rs6686889	1	25030470	t	c	0.253	0.192	0.020	6.9E-22	2.0E-04	151.1
rs12728150	1	27268737	a	g	0.919	-0.205	0.032	1.3E-10	8.4E-05	63.4
rs2493296	1	3327032	t	c	0.142	0.250	0.025	7.5E-23	1.7E-04	124.2
rs2146315	1	42050366	t	c	0.232	-0.120	0.021	5.0E-09	1.2E-04	88.6
rs710249	1	43869235	c	g	0.426	0.150	0.017	6.4E-18	2.0E-04	152.9
rs4926901	1	48025824	a	g	0.355	0.098	0.018	4.8E-08	1.2E-04	93.8
rs4926923	1	48109225	t	c	0.912	0.192	0.031	4.7E-10	8.5E-05	63.6
rs78256308	1	50814474	t	g	0.981	0.411	0.066	3.7E-10	4.3E-05	32.5
rs10493408	1	66992054	a	c	0.133	0.158	0.026	5.1E-10	1.0E-04	75.3
rs34517439	1	78450517	a	c	0.120	-0.251	0.028	2.0E-19	1.5E-04	110.2
rs786921	1	89286673	a	g	0.596	-0.115	0.018	8.6E-11	1.5E-04	113.3
rs17396055	1	94730954	a	g	0.332	-0.115	0.018	4.1E-10	1.4E-04	105.1
rs1006545	10	1.03E+08	t	g	0.888	0.363	0.028	8.0E-40	2.0E-04	151.1
rs2273654	10	1.03E+08	t	c	0.561	0.117	0.018	2.8E-11	1.6E-04	118.2
rs12414028	10	1.05E+08	a	t	0.088	-0.514	0.031	1.6E-60	2.3E-04	172.0
rs2067831	10	1.06E+08	c	g	0.272	-0.128	0.020	5.1E-11	1.4E-04	105.6
rs2484294	10	1.16E+08	a	g	0.733	0.317	0.020	1.2E-58	3.4E-04	258.2
rs72842207	10	1.21E+08	t	c	0.215	-0.211	0.021	1.1E-23	2.0E-04	148.4
rs11592107	10	1.23E+08	a	g	0.309	0.120	0.019	1.2E-10	1.4E-04	107.0
rs10490923	10	1.24E+08	a	g	0.126	0.153	0.026	5.0E-09	9.3E-05	70.1
rs9419374	10	1.34E+08	a	g	0.354	0.116	0.019	3.4E-10	1.5E-04	110.6

rs1133400	10	1.34E+08	a	g	0.785	-0.132	0.022	8.3E-10	1.2E-04	90.7
rs6602177	10	17167141	t	c	0.707	-0.120	0.021	6.5E-09	1.4E-04	103.6
rs1623474	10	18471794	t	c	0.330	0.223	0.018	6.2E-34	2.7E-04	205.7
rs12258967	10	18727959	c	g	0.704	0.354	0.019	3.3E-75	4.1E-04	306.7
rs3802517	10	28233469	a	t	0.462	0.129	0.017	9.3E-14	1.8E-04	133.1
rs1265842	10	28924901	t	c	0.483	0.111	0.017	1.7E-10	1.5E-04	115.7
rs2487926	10	30300787	a	g	0.571	0.097	0.018	3.3E-08	1.3E-04	99.2
rs3006583	10	31280845	t	c	0.811	-0.130	0.022	4.7E-09	1.1E-04	83.0
rs11252324	10	4124568	t	g	0.077	-0.234	0.033	1.0E-12	9.1E-05	69.2
rs4948643	10	45379759	t	c	0.282	0.159	0.019	2.3E-16	1.8E-04	134.0
rs34130368	10	48411796	t	g	0.117	-0.203	0.028	8.8E-13	1.2E-04	87.1
rs72831343	10	63515681	t	g	0.858	0.494	0.025	4.8E-88	3.3E-04	249.0
rs2236295	10	64564892	t	g	0.399	-0.207	0.018	1.4E-31	2.7E-04	206.8
rs35506078	10	65210552	t	c	0.663	-0.135	0.018	1.5E-13	1.7E-04	125.4
rs12247028	10	75410052	a	g	0.632	-0.140	0.019	1.2E-13	1.8E-04	132.8
rs2274224	10	96039597	c	g	0.433	-0.279	0.017	1.2E-57	3.8E-04	284.6
rs604723	11	1.01E+08	t	c	0.275	-0.385	0.019	2.3E-87	4.2E-04	319.4
rs66682451	11	1.07E+08	a	g	0.725	0.135	0.019	3.4E-12	1.5E-04	111.8
rs7106104	11	1.12E+08	t	c	0.719	-0.119	0.019	7.7E-10	1.3E-04	99.8
rs12790943	11	1.2E+08	t	c	0.421	-0.100	0.018	1.1E-08	1.3E-04	101.7
rs12574332	11	1.23E+08	t	c	0.123	0.207	0.027	6.1E-15	1.2E-04	92.9
rs4936099	11	1.3E+08	a	c	0.599	0.175	0.018	1.2E-22	2.3E-04	174.1
rs7107711	11	13255538	c	g	0.778	0.126	0.021	1.7E-09	1.2E-04	90.3
rs7123705	11	14255043	c	g	0.816	-0.147	0.023	7.9E-11	1.2E-04	91.7
rs28570096	11	1616088	t	c	0.309	0.140	0.019	1.1E-13	1.6E-04	124.2
rs10832586	11	16304089	a	c	0.798	-0.308	0.022	2.5E-46	2.7E-04	206.7
rs7926335	11	16917869	t	c	0.270	0.180	0.020	2.0E-20	2.0E-04	147.6
rs79889784	11	1702117	t	g	0.018	-0.394	0.072	3.9E-08	3.7E-05	25.8
rs569550	11	1887068	t	g	0.605	-0.269	0.018	1.2E-49	3.5E-04	260.6
rs147081004	11	1919980	a	c	0.856	0.141	0.026	4.1E-08	9.6E-05	70.9
rs10500932	11	22501446	a	g	0.074	0.278	0.033	5.8E-17	1.1E-04	79.6
rs962369	11	27734420	t	c	0.699	0.168	0.019	6.0E-19	1.9E-04	146.0
rs7933758	11	31000774	t	c	0.305	-0.114	0.019	2.6E-09	1.3E-04	100.3
rs10838702	11	47410888	t	g	0.388	0.238	0.018	1.3E-40	3.1E-04	234.1
rs10839259	11	49321410	t	c	0.763	0.145	0.021	2.1E-12	1.4E-04	109.1
rs751984	11	61278246	t	c	0.883	0.394	0.028	1.4E-46	2.2E-04	167.6
rs35927325	11	63882495	t	c	0.061	0.222	0.036	1.0E-09	7.0E-05	53.1
rs2306363	11	65405600	t	g	0.205	-0.264	0.022	1.6E-34	2.4E-04	179.3
rs11228613	11	69068492	t	g	0.784	0.174	0.021	2.1E-16	1.6E-04	121.5
rs504217	11	72006086	t	c	0.074	0.275	0.034	2.5E-16	1.0E-04	77.1
rs7115331	11	76218590	t	g	0.714	-0.127	0.019	3.9E-11	1.4E-04	107.6
rs11021221	11	95308854	a	t	0.167	-0.188	0.023	6.9E-16	1.4E-04	108.6
rs61909958	11	96151677	c	g	0.812	0.128	0.023	2.2E-08	1.1E-04	81.0
rs360153	11	9762274	t	c	0.417	-0.220	0.018	4.4E-36	2.9E-04	222.6
rs28377357	2	1.13E+08	a	g	0.294	-0.124	0.019	6.0E-11	1.4E-04	107.2
rs62158170	2	1.14E+08	a	g	0.783	0.165	0.021	6.6E-15	1.5E-04	116.2
rs13021015	2	1.27E+08	a	c	0.160	0.152	0.024	2.3E-10	1.1E-04	84.7

rs4954192	2	1.36E+08	t	c	0.387	-0.123	0.018	8.1E-12	1.6E-04	118.5
rs55944332	2	1.46E+08	a	g	0.763	-0.237	0.020	3.3E-31	2.3E-04	178.0
rs12990959	2	1.49E+08	t	c	0.688	-0.127	0.019	1.1E-11	1.5E-04	113.7
rs2444769	2	1.58E+08	a	c	0.795	0.158	0.022	4.8E-13	1.4E-04	107.0
rs7572130	2	1.64E+08	a	g	0.896	-0.180	0.029	4.1E-10	9.2E-05	69.8
rs73029563	2	1.65E+08	c	g	0.455	-0.259	0.017	5.8E-50	3.5E-04	267.4
rs6735275	2	1.74E+08	t	c	0.729	0.123	0.019	2.6E-10	1.3E-04	100.8
rs6715901	2	1.8E+08	a	g	0.496	-0.138	0.017	2.8E-15	1.9E-04	141.7
rs12693302	2	1.83E+08	a	g	0.652	-0.238	0.018	2.2E-39	3.0E-04	224.8
rs7576060	2	1.88E+08	t	c	0.350	-0.102	0.018	2.1E-08	1.3E-04	96.3
rs7592578	2	1.91E+08	t	g	0.194	-0.200	0.022	4.7E-19	1.7E-04	129.8
rs1373780	2	19501029	c	g	0.185	0.125	0.022	2.6E-08	1.0E-04	77.7
rs824523	2	19707855	a	c	0.334	0.123	0.018	2.3E-11	1.5E-04	113.6
rs11692619	2	2.05E+08	t	c	0.361	-0.128	0.018	3.3E-12	1.6E-04	122.9
rs1263671	2	2.08E+08	t	c	0.837	-0.139	0.024	4.7E-09	1.0E-04	79.2
rs4675682	2	2.08E+08	t	c	0.538	-0.141	0.017	4.5E-16	1.9E-04	145.9
rs1035673	2	2.19E+08	t	c	0.397	0.163	0.018	3.0E-20	2.1E-04	162.0
rs13004222	2	2.2E+08	c	g	0.949	0.294	0.039	7.1E-14	7.8E-05	59.3
rs1039897	2	2.2E+08	a	g	0.650	-0.109	0.018	3.3E-09	1.4E-04	102.8
rs10804330	2	2.27E+08	t	c	0.567	0.133	0.018	4.6E-14	1.8E-04	135.7
rs1044822	2	2.31E+08	t	c	0.149	-0.133	0.024	4.1E-08	9.3E-05	70.4
rs4507125	2	2.4E+08	a	c	0.786	-0.124	0.021	3.6E-09	1.1E-04	87.0
rs11687089	2	25082926	t	c	0.583	0.174	0.018	2.8E-23	2.3E-04	176.1
rs1275988	2	26914364	t	c	0.611	-0.295	0.018	1.9E-62	3.8E-04	291.5
rs1468816	2	37595696	a	c	0.772	0.124	0.021	4.6E-09	1.2E-04	89.7
rs11124595	2	37887589	t	g	0.260	0.111	0.020	2.4E-08	1.2E-04	89.1
rs2160236	2	40557276	c	g	0.379	-0.142	0.018	4.3E-15	1.8E-04	137.5
rs76326501	2	43167878	a	c	0.909	0.362	0.031	2.2E-32	1.6E-04	124.6
rs4952668	2	43386568	a	g	0.624	-0.192	0.018	1.1E-26	2.5E-04	187.7
rs2586970	2	55829967	a	g	0.436	-0.149	0.018	1.6E-17	2.0E-04	149.9
rs2421200	2	61711815	t	g	0.488	-0.110	0.017	2.6E-10	1.5E-04	114.1
rs1876490	2	73052351	a	g	0.717	0.136	0.019	1.2E-12	1.5E-04	115.2
rs6546810	2	73389716	t	c	0.648	-0.120	0.018	3.2E-11	1.5E-04	114.1
rs311564	2	86293498	a	g	0.346	-0.133	0.018	4.2E-13	1.7E-04	125.2
rs62155750	2	96491456	a	g	0.693	-0.218	0.020	8.3E-29	2.5E-04	192.1
rs112393817	2	9807226	c	g	0.783	0.116	0.021	3.8E-08	1.1E-04	82.1
rs11923667	3	1.01E+08	a	t	0.407	0.118	0.018	3.1E-11	1.6E-04	118.0
rs28675079	3	1.12E+08	a	g	0.187	-0.144	0.022	8.3E-11	1.2E-04	91.3
rs347585	3	11286220	t	c	0.701	0.151	0.019	1.6E-15	1.7E-04	131.2
rs12152463	3	1.22E+08	t	c	0.425	0.101	0.017	8.0E-09	1.4E-04	102.4
rs4141663	3	1.25E+08	t	c	0.422	-0.150	0.018	1.4E-17	2.0E-04	151.7
rs4077158	3	1.34E+08	t	c	0.471	-0.183	0.017	3.1E-26	2.5E-04	190.1
rs9289557	3	1.38E+08	t	c	0.260	-0.119	0.021	8.7E-09	1.3E-04	95.1
rs6763931	3	1.41E+08	a	g	0.444	0.138	0.017	1.5E-15	1.9E-04	142.2
rs1687295	3	14889756	t	c	0.270	0.206	0.019	3.0E-26	2.2E-04	169.3
rs1527797	3	1.54E+08	t	c	0.740	-0.141	0.020	8.7E-13	1.5E-04	112.7
rs78809139	3	1.55E+08	a	g	0.101	-0.228	0.029	2.6E-15	1.1E-04	86.5

rs78151625	3	1.58E+08	t	c	0.834	-0.187	0.023	1.0E-15	1.4E-04	107.6
rs62234672	3	16592069	a	c	0.175	0.125	0.023	4.9E-08	9.9E-05	75.1
rs16853198	3	1.69E+08	a	g	0.924	0.339	0.033	4.4E-25	1.3E-04	99.3
rs1528293	3	1.69E+08	a	t	0.492	0.276	0.017	1.5E-57	3.8E-04	287.0
rs62294352	3	1.69E+08	t	c	0.216	-0.161	0.022	6.1E-13	1.5E-04	110.0
rs6779368	3	1.85E+08	a	g	0.658	-0.179	0.018	2.3E-22	2.2E-04	167.9
rs147501096	3	1.86E+08	c	g	0.072	-0.196	0.034	9.9E-09	7.2E-05	54.4
rs4244200	3	1.96E+08	c	g	0.280	-0.122	0.019	3.2E-10	1.3E-04	101.8
rs6777317	3	1.97E+08	a	g	0.290	0.125	0.020	1.5E-10	1.4E-04	105.7
rs2643826	3	27562988	t	c	0.451	0.186	0.018	2.8E-26	2.5E-04	191.5
rs7427249	3	37572489	a	g	0.580	-0.110	0.018	4.3E-10	1.5E-04	111.4
rs114714860	3	41882905	c	g	0.168	0.330	0.024	1.4E-44	2.5E-04	192.1
rs6442105	3	48182326	a	g	0.327	-0.249	0.019	3.1E-41	3.0E-04	227.9
rs61018691	3	50538600	c	g	0.135	0.160	0.026	3.4E-10	1.0E-04	77.9
rs1401494	3	53696955	t	c	0.473	-0.138	0.017	1.8E-15	1.9E-04	142.0
rs3772219	3	56771251	a	c	0.681	0.175	0.019	2.9E-21	2.1E-04	158.8
rs11130602	3	57947168	a	g	0.443	0.147	0.018	4.3E-17	2.0E-04	150.7
rs3774702	3	63856870	a	g	0.177	0.147	0.023	1.2E-10	1.2E-04	89.1
rs6795735	3	64705365	t	c	0.411	-0.144	0.018	3.1E-16	1.9E-04	143.1
rs7623706	3	74712754	a	g	0.565	0.098	0.018	2.8E-08	1.3E-04	98.6
rs11923343	3	85668570	a	g	0.360	-0.114	0.018	3.1E-10	1.4E-04	108.9
rs13107325	4	1.03E+08	t	c	0.074	-0.675	0.034	3.7E-88	2.5E-04	192.3
rs12503341	4	1.07E+08	a	g	0.039	-0.299	0.046	9.4E-11	6.2E-05	46.8
rs4245930	4	1.09E+08	a	g	0.632	-0.122	0.018	1.1E-11	1.6E-04	117.6
rs13118687	4	1.11E+08	a	g	0.470	-0.150	0.018	1.4E-17	2.0E-04	154.2
rs66887589	4	1.21E+08	t	c	0.522	-0.161	0.017	1.8E-20	2.2E-04	166.6
rs9286351	4	1.38E+08	a	g	0.581	-0.141	0.018	1.6E-15	1.9E-04	142.4
rs72719149	4	1.44E+08	t	c	0.684	-0.128	0.019	6.3E-12	1.5E-04	114.7
rs13124515	4	1.45E+08	t	c	0.313	-0.105	0.019	2.0E-08	1.2E-04	93.8
rs1123037	4	1.57E+08	a	t	0.477	-0.161	0.017	1.6E-20	2.2E-04	167.1
rs13139571	4	1.57E+08	a	c	0.237	-0.241	0.020	2.3E-32	2.4E-04	181.1
rs1425486	4	1.58E+08	t	c	0.321	-0.133	0.019	1.1E-12	1.6E-04	118.0
rs16896276	4	18015156	a	t	0.263	-0.131	0.020	3.8E-11	1.4E-04	105.1
rs61789369	4	2265295	a	g	0.957	-0.304	0.044	3.1E-12	6.9E-05	52.7
rs28667801	4	26785356	a	t	0.593	-0.162	0.018	1.9E-19	2.2E-04	162.2
rs11721984	4	38343935	t	c	0.453	-0.141	0.018	1.9E-15	1.9E-04	143.0
rs62301873	4	40603821	a	g	0.894	-0.173	0.028	1.1E-09	9.0E-05	68.2
rs11945489	4	56463775	t	c	0.291	-0.139	0.019	4.0E-13	1.6E-04	119.4
rs13152154	4	77417756	t	c	0.729	-0.119	0.020	1.2E-09	1.3E-04	96.4
rs12509595	4	81182554	t	c	0.708	-0.497	0.019	1.6E-148	5.7E-04	428.0
rs72976750	4	86725684	t	c	0.860	-0.172	0.025	7.4E-12	1.1E-04	85.5
rs7694000	4	95324968	a	t	0.539	-0.097	0.018	3.5E-08	1.3E-04	99.5
rs9326869	5	1.12E+08	t	c	0.249	0.110	0.020	4.0E-08	1.1E-04	85.3
rs335170	5	1.22E+08	a	c	0.408	0.113	0.018	1.6E-10	1.5E-04	112.3
rs1582931	5	1.23E+08	a	g	0.475	0.216	0.018	4.5E-35	3.0E-04	224.1
rs17677603	5	1.28E+08	a	g	0.616	-0.200	0.018	3.9E-29	2.6E-04	196.7
rs10069690	5	1279790	t	c	0.258	0.162	0.021	1.4E-14	1.7E-04	123.6

rs11745207	5	1.32E+08	c	g	0.742	0.113	0.020	1.3E-08	1.2E-04	90.2
rs1212061	5	1.42E+08	c	g	0.732	0.128	0.020	7.9E-11	1.4E-04	104.1
rs3776299	5	1.43E+08	a	g	0.456	0.127	0.018	5.1E-13	1.7E-04	128.8
rs78909293	5	1.48E+08	t	c	0.955	0.321	0.043	7.3E-14	7.6E-05	57.1
rs2921604	5	14867948	t	c	0.537	-0.096	0.018	4.5E-08	1.3E-04	99.4
rs3117736	5	1.57E+08	t	c	0.266	0.237	0.020	9.7E-34	2.5E-04	192.3
rs11960210	5	1.58E+08	t	c	0.625	0.247	0.018	3.4E-43	3.2E-04	237.9
rs13358657	5	1.58E+08	a	g	0.867	-0.224	0.026	1.7E-18	1.4E-04	107.3
rs6556384	5	1.58E+08	a	c	0.811	-0.152	0.022	5.9E-12	1.3E-04	96.8
rs114503346	5	1.72E+08	t	c	0.046	-0.268	0.043	3.1E-10	6.5E-05	48.8
rs55993676	5	1.73E+08	t	g	0.292	-0.210	0.019	3.8E-28	2.4E-04	179.7
rs1177764	5	32829975	c	g	0.405	-0.307	0.018	1.4E-67	4.1E-04	307.9
rs10941043	5	33194751	t	g	0.709	-0.127	0.019	2.5E-11	1.4E-04	108.9
rs4645335	5	3704761	a	g	0.336	0.114	0.019	7.0E-10	1.4E-04	106.0
rs1467049	5	42440062	t	g	0.805	0.124	0.022	1.4E-08	1.1E-04	81.3
rs6875967	5	50878292	a	g	0.352	0.134	0.018	1.2E-13	1.7E-04	127.7
rs10054208	5	55688992	t	c	0.362	0.119	0.019	1.5E-10	1.5E-04	114.0
rs12515541	5	57095011	t	g	0.607	0.116	0.018	6.2E-11	1.5E-04	114.8
rs1848510	5	57754005	a	g	0.362	0.126	0.018	4.1E-12	1.6E-04	119.9
rs10062049	5	61553881	t	c	0.136	0.221	0.026	4.5E-18	1.4E-04	106.8
rs2307111	5	75003678	t	c	0.603	-0.174	0.018	1.6E-22	2.3E-04	169.7
rs4704514	5	77820081	t	c	0.283	0.109	0.019	1.7E-08	1.2E-04	91.9
rs62380354	5	89484911	a	c	0.890	0.183	0.029	3.7E-10	9.8E-05	74.2
rs13355146	5	92023661	t	c	0.383	0.122	0.018	6.4E-12	1.6E-04	120.5
rs55770741	5	96220087	t	c	0.561	-0.128	0.018	2.2E-13	1.7E-04	131.4
rs1871190	5	97953719	t	g	0.334	0.108	0.019	6.6E-09	1.3E-04	99.8
rs72613227	6	1.06E+08	a	t	0.873	-0.188	0.029	3.9E-11	1.1E-04	80.1
rs7767235	6	1.16E+08	a	c	0.353	-0.118	0.018	7.9E-11	1.5E-04	112.4
rs509067	6	1.17E+08	t	c	0.414	-0.144	0.018	2.6E-16	1.9E-04	145.1
rs11153730	6	1.19E+08	t	c	0.509	0.155	0.017	2.6E-19	2.1E-04	161.0
rs76785130	6	1.22E+08	a	g	0.980	-0.429	0.066	9.4E-11	4.6E-05	34.4
rs13215166	6	1.27E+08	a	g	0.559	-0.309	0.017	1.8E-70	4.2E-04	317.8
rs9399137	6	1.35E+08	t	c	0.738	0.115	0.020	5.8E-09	1.2E-04	92.3
rs636202	6	1.4E+08	t	c	0.482	0.102	0.017	4.4E-09	1.4E-04	106.2
rs9791312	6	1.43E+08	a	c	0.655	-0.123	0.018	2.9E-11	1.5E-04	115.2
rs62434124	6	1.51E+08	t	c	0.071	-0.485	0.034	7.8E-47	1.8E-04	133.5
rs9478282	6	1.52E+08	t	c	0.112	-0.199	0.028	8.7E-13	1.1E-04	82.2
rs2569882	6	1620147	t	c	0.566	0.120	0.018	4.3E-11	1.6E-04	122.5
rs9365555	6	1.64E+08	a	g	0.674	0.125	0.019	2.0E-11	1.5E-04	114.6
rs11961593	6	1.66E+08	t	c	0.069	-0.316	0.035	1.5E-19	1.1E-04	81.6
rs1322639	6	1.7E+08	a	g	0.777	-0.158	0.021	3.9E-14	1.5E-04	114.3
rs67077402	6	20658978	a	c	0.683	-0.108	0.019	6.3E-09	1.3E-04	97.2
rs6934891	6	22139729	a	g	0.426	0.128	0.018	5.2E-13	1.7E-04	129.6
rs2744133	6	22392260	a	g	0.725	0.144	0.019	1.2E-13	1.6E-04	119.1
rs9467545	6	25638464	a	t	0.843	-0.255	0.024	7.4E-27	1.9E-04	140.4
rs198851	6	26104632	t	g	0.150	0.389	0.024	2.9E-57	2.7E-04	203.6
rs6922353	6	26465768	a	t	0.852	-0.164	0.024	1.4E-11	1.1E-04	86.5

rs389883	6	31947460	t	g	0.686	0.249	0.019	4.8E-40	2.9E-04	220.2
rs115447786	6	34354073	t	c	0.043	0.290	0.046	1.7E-10	6.5E-05	49.1
rs10947786	6	39156410	a	g	0.221	-0.138	0.021	4.6E-11	1.3E-04	98.8
rs6905288	6	43758873	a	g	0.568	0.176	0.018	7.8E-23	2.4E-04	178.4
rs881858	6	43806609	a	g	0.694	0.155	0.019	4.7E-16	1.8E-04	136.2
rs2397060	6	51611470	t	c	0.860	-0.161	0.025	1.5E-10	1.1E-04	79.1
rs1114347	6	51834297	a	g	0.518	-0.179	0.017	3.3E-25	2.5E-04	186.3
rs62413546	6	56012664	t	c	0.085	-0.188	0.032	4.6E-09	8.0E-05	60.5
rs504691	6	72206620	a	c	0.400	-0.118	0.018	3.1E-11	1.6E-04	117.4
rs1984195	6	79657391	a	g	0.488	0.174	0.017	1.4E-23	2.4E-04	178.7
rs9406076	6	8023804	t	c	0.328	0.101	0.019	4.6E-08	1.2E-04	92.7
rs16875357	6	85652904	t	g	0.757	-0.121	0.020	2.7E-09	1.2E-04	91.3
rs3798293	6	97033370	a	g	0.784	-0.133	0.021	2.7E-10	1.2E-04	93.8
rs4556017	7	1.01E+08	t	c	0.852	-0.160	0.025	9.7E-11	1.1E-04	83.3
rs2191046	7	1.08E+08	t	g	0.735	0.118	0.020	1.8E-09	1.3E-04	95.9
rs73033340	7	1195692	a	g	0.964	0.531	0.053	5.1E-24	1.0E-04	72.7
rs11556924	7	1.3E+08	t	c	0.383	-0.181	0.018	1.8E-23	2.4E-04	175.8
rs13237249	7	1.31E+08	t	c	0.398	0.137	0.018	1.0E-14	1.8E-04	136.3
rs75511781	7	1.31E+08	a	g	0.958	-0.372	0.047	2.5E-15	8.3E-05	60.8
rs7800558	7	1.4E+08	t	c	0.578	0.096	0.018	4.5E-08	1.3E-04	97.5
rs1044608	7	1.51E+08	c	g	0.923	-0.202	0.034	2.8E-09	7.9E-05	59.3
rs3918226	7	1.51E+08	t	c	0.081	0.612	0.033	5.3E-77	2.5E-04	188.6
rs310597	7	1.51E+08	a	g	0.631	-0.115	0.018	2.2E-10	1.5E-04	111.6
rs6464165	7	1.51E+08	t	c	0.719	-0.217	0.020	7.3E-29	2.4E-04	182.6
rs1534338	7	1.56E+08	a	g	0.603	-0.114	0.018	1.2E-10	1.5E-04	113.9
rs17432462	7	18548613	t	c	0.623	-0.104	0.018	7.3E-09	1.3E-04	101.2
rs12699415	7	1909479	a	g	0.413	0.124	0.018	3.3E-12	1.6E-04	124.4
rs4507656	7	22156538	c	g	0.693	-0.149	0.020	8.7E-14	1.7E-04	124.3
rs2906152	7	2523003	a	g	0.630	-0.187	0.018	5.5E-25	2.4E-04	181.0
rs7805035	7	25965890	a	t	0.412	0.134	0.018	2.4E-14	1.8E-04	135.2
rs3735533	7	27245893	t	c	0.074	-0.487	0.033	6.3E-49	1.8E-04	139.1
rs6961048	7	27328187	c	g	0.896	-0.273	0.029	1.3E-21	1.4E-04	105.2
rs342977	7	35459888	a	g	0.772	-0.158	0.021	1.7E-14	1.5E-04	115.8
rs2854746	7	45960645	c	g	0.400	0.113	0.018	3.3E-10	1.5E-04	112.0
rs17454517	7	50915776	a	g	0.494	0.122	0.017	2.7E-12	1.7E-04	125.2
rs58407878	7	7260161	a	t	0.150	0.157	0.024	1.2E-10	1.1E-04	83.4
rs1178979	7	72856430	t	c	0.805	0.150	0.022	1.0E-11	1.3E-04	97.2
rs3807101	7	80393418	t	c	0.123	-0.174	0.027	4.6E-11	1.0E-04	78.1
rs1449596	7	96395096	c	g	0.355	-0.109	0.018	1.9E-09	1.4E-04	103.4
rs7788746	7	99612405	t	g	0.669	-0.164	0.018	3.2E-19	2.0E-04	151.4
rs2978098	8	1.02E+08	a	c	0.547	0.155	0.018	1.3E-18	2.1E-04	157.9
rs142449193	8	1.03E+08	t	c	0.046	-0.257	0.043	1.5E-09	6.2E-05	47.0
rs2957468	8	1.06E+08	a	g	0.335	0.138	0.019	8.4E-14	1.7E-04	127.6
rs35091929	8	10693492	t	c	0.397	0.183	0.018	6.5E-25	2.4E-04	182.2
rs722783	8	1.2E+08	a	g	0.222	-0.209	0.021	9.0E-24	2.0E-04	150.4
rs9918907	8	1.25E+08	a	g	0.784	-0.119	0.021	1.6E-08	1.1E-04	83.8
rs7012891	8	1.27E+08	t	c	0.763	-0.139	0.021	1.2E-11	1.4E-04	103.5

rs4909314	8	1.36E+08	a	t	0.395	0.134	0.018	3.4E-14	1.8E-04	133.2
rs4074812	8	1.42E+08	a	g	0.554	-0.134	0.018	2.1E-14	1.8E-04	135.9
rs3802230	8	1.44E+08	a	c	0.545	-0.161	0.017	2.8E-20	2.2E-04	165.6
rs62503324	8	23400615	t	c	0.240	0.203	0.020	2.1E-23	2.0E-04	152.5
rs951914	8	25878995	c	g	0.713	0.190	0.019	5.1E-23	2.1E-04	162.2
rs17832905	8	26038759	a	c	0.072	0.192	0.035	2.8E-08	7.0E-05	53.0
rs17321041	8	26445194	t	c	0.063	0.231	0.036	1.8E-10	7.5E-05	57.0
rs1906672	8	38130025	a	g	0.232	0.140	0.021	8.5E-12	1.4E-04	104.2
rs10087280	8	49391836	a	g	0.832	0.138	0.023	2.5E-09	1.1E-04	80.5
rs4873492	8	51947549	t	c	0.173	0.140	0.023	1.3E-09	1.1E-04	83.3
rs2442618	8	6379832	t	c	0.572	-0.132	0.018	1.2E-13	1.8E-04	133.9
rs11778153	8	64503942	t	c	0.643	0.119	0.018	5.8E-11	1.5E-04	112.6
rs6983239	8	72507296	t	g	0.219	0.116	0.021	3.7E-08	1.1E-04	81.4
rs148401029	8	81386066	a	c	0.035	-0.312	0.049	1.3E-10	5.8E-05	44.1
rs56345595	8	82814156	a	g	0.585	0.133	0.018	5.2E-14	1.8E-04	134.2
rs73276406	8	96021760	c	g	0.146	0.156	0.025	2.0E-10	1.1E-04	81.1
rs4743021	9	1.09E+08	t	c	0.685	-0.108	0.019	2.4E-08	1.3E-04	95.7
rs10980408	9	1.13E+08	t	c	0.964	-0.375	0.048	4.2E-15	7.1E-05	53.8
rs10759697	9	1.17E+08	a	g	0.491	0.131	0.017	3.9E-14	1.8E-04	135.9
rs2133386	9	1.28E+08	a	c	0.433	-0.132	0.018	5.2E-14	1.8E-04	135.0
rs507666	9	1.36E+08	a	g	0.187	-0.285	0.022	2.3E-37	2.4E-04	178.9
rs6271	9	1.37E+08	t	c	0.074	-0.431	0.035	1.7E-34	1.6E-04	121.2
rs11145807	9	1.4E+08	a	g	0.406	0.155	0.018	4.1E-17	2.1E-04	152.0
rs4615669	9	21818674	a	g	0.560	-0.114	0.017	6.1E-11	1.5E-04	117.0
rs10491713	9	2506236	t	g	0.198	-0.122	0.022	2.0E-08	1.1E-04	80.4
rs1243876	9	35693104	t	c	0.701	-0.106	0.019	2.1E-08	1.2E-04	92.7
rs76452347	9	35906471	t	c	0.205	-0.225	0.023	9.4E-23	2.0E-04	152.2
rs12337056	9	628670	t	c	0.176	0.136	0.023	2.2E-09	1.1E-04	82.4
rs11141731	9	89888472	t	c	0.228	-0.126	0.021	1.3E-09	1.2E-04	92.0
rs1332812	9	9350986	a	t	0.647	-0.115	0.018	2.7E-10	1.4E-04	108.9
rs11112548	12	1.06E+08	a	t	0.956	0.274	0.044	5.8E-10	6.4E-05	48.4
rs116063464	12	1.1E+08	a	g	0.060	0.202	0.037	4.7E-08	6.3E-05	47.3
rs7137828	12	1.12E+08	t	c	0.518	-0.503	0.018	4.8E-180	6.9E-04	516.9
rs35443	12	1.16E+08	c	g	0.386	-0.266	0.018	1.2E-50	3.5E-04	262.6
rs7299936	12	1.16E+08	a	g	0.578	0.176	0.018	1.1E-23	2.4E-04	178.7
rs1790123	12	1.24E+08	t	c	0.803	0.199	0.022	6.9E-20	1.7E-04	131.1
rs2271139	12	1.25E+08	a	c	0.286	-0.125	0.019	8.2E-11	1.4E-04	105.7
rs61912333	12	19554817	c	g	0.496	0.119	0.018	1.1E-11	1.6E-04	123.6
rs4306343	12	20190630	a	t	0.279	-0.317	0.019	8.2E-61	3.5E-04	265.5
rs6487076	12	20470857	a	g	0.777	0.174	0.021	8.7E-17	1.7E-04	125.6
rs12229480	12	26472908	t	c	0.723	0.136	0.019	2.1E-12	1.5E-04	113.2
rs1669907	12	42777933	t	g	0.303	0.116	0.019	1.4E-09	1.3E-04	101.6
rs61917655	12	48210787	t	c	0.101	0.225	0.030	3.7E-14	1.1E-04	85.0
rs7967705	12	50511408	t	c	0.380	0.269	0.018	1.5E-51	3.5E-04	264.5
rs7134440	12	53450097	t	c	0.083	0.228	0.032	1.8E-12	9.5E-05	71.9
rs75507123	12	5417856	t	g	0.127	-0.143	0.026	3.9E-08	8.8E-05	66.4
rs6580970	12	54434277	t	c	0.299	-0.166	0.019	4.0E-18	1.9E-04	143.3

rs6581101	12	57136374	a	c	0.604	-0.126	0.018	2.0E-12	1.7E-04	125.5
rs7959649	12	67783108	t	c	0.242	0.117	0.020	8.1E-09	1.2E-04	89.2
rs521033	12	69951428	a	g	0.864	-0.180	0.025	1.1E-12	1.2E-04	88.4
rs710698	12	70369918	a	g	0.587	0.106	0.018	1.9E-09	1.4E-04	105.8
rs7132012	12	8832203	a	g	0.675	0.156	0.019	3.2E-17	1.9E-04	142.9
rs2681485	12	90025622	a	g	0.598	0.295	0.018	1.3E-62	3.9E-04	295.0
rs11108209	12	96109855	t	c	0.907	-0.190	0.030	2.4E-10	8.8E-05	66.9
rs544012	13	1.11E+08	t	g	0.266	0.114	0.020	1.4E-08	1.2E-04	92.6
rs36169093	13	1.14E+08	a	g	0.504	0.123	0.018	5.6E-12	1.7E-04	127.7
rs7321688	13	1.15E+08	a	c	0.233	0.151	0.021	2.0E-13	1.5E-04	111.6
rs682681	13	22294062	t	c	0.334	-0.145	0.019	4.5E-15	1.8E-04	134.4
rs61948065	13	25255052	a	c	0.879	-0.174	0.027	1.2E-10	1.0E-04	76.9
rs7338758	13	30137828	t	c	0.244	0.194	0.020	1.7E-21	2.0E-04	147.3
rs56256111	13	41478963	a	g	0.144	0.193	0.026	2.6E-13	1.3E-04	98.0
rs7992292	13	41968013	a	g	0.824	0.137	0.023	3.2E-09	1.1E-04	82.6
rs9526707	13	51489186	a	g	0.322	-0.122	0.019	6.6E-11	1.5E-04	110.5
rs9563529	13	58316637	t	g	0.204	0.122	0.022	1.4E-08	1.1E-04	82.6
rs3861113	13	72364382	a	c	0.083	0.213	0.032	3.9E-11	8.8E-05	66.2
rs12866098	13	73119617	a	g	0.342	0.103	0.019	2.7E-08	1.3E-04	96.7
rs1215469	13	80707408	a	c	0.230	-0.138	0.021	5.2E-11	1.3E-04	101.6
rs55684003	13	97988689	a	g	0.696	0.122	0.019	1.0E-10	1.4E-04	107.5
rs8014182	14	1.04E+08	t	c	0.132	-0.194	0.026	3.9E-14	1.2E-04	92.6
rs7350752	14	21841154	a	g	0.124	-0.150	0.027	2.0E-08	9.0E-05	68.0
rs17880989	14	23313633	a	g	0.026	0.401	0.059	1.1E-11	5.6E-05	40.3
rs1950500	14	24830850	t	c	0.292	0.140	0.019	2.2E-13	1.6E-04	120.2
rs4424827	14	35110857	t	c	0.567	-0.098	0.018	2.1E-08	1.3E-04	100.3
rs7155504	14	36158828	t	c	0.912	0.229	0.032	5.2E-13	1.0E-04	75.4
rs72683923	14	50735947	t	c	0.979	0.533	0.064	5.0E-17	6.1E-05	45.9
rs35413927	14	53420358	a	g	0.695	-0.127	0.019	1.8E-11	1.5E-04	112.4
rs194742	14	69287483	t	c	0.169	0.128	0.023	3.2E-08	9.9E-05	74.9
rs227426	14	70456664	t	g	0.562	0.112	0.018	1.7E-10	1.5E-04	114.6
rs2239268	14	72469591	a	g	0.701	0.110	0.019	7.4E-09	1.3E-04	95.7
rs4903064	14	73279420	t	c	0.765	0.154	0.021	7.8E-14	1.5E-04	115.4
rs10873612	15	26105602	t	c	0.596	-0.110	0.018	9.5E-10	1.5E-04	109.6
rs11070245	15	40317792	t	g	0.468	-0.129	0.017	1.6E-13	1.8E-04	132.0
rs2925345	15	41311799	t	c	0.468	0.189	0.017	1.6E-27	2.6E-04	195.7
rs2305654	15	42136977	a	c	0.345	0.171	0.019	4.0E-20	2.1E-04	156.5
rs7169864	15	53902901	t	c	0.232	-0.113	0.021	3.4E-08	1.1E-04	83.9
rs28429256	15	66931617	a	g	0.334	0.164	0.019	2.8E-18	2.0E-04	151.2
rs2469141	15	66967398	t	c	0.837	0.135	0.024	1.4E-08	1.0E-04	76.4
rs3743111	15	71587373	a	g	0.613	0.152	0.018	1.6E-17	2.0E-04	149.9
rs11636952	15	75114322	t	c	0.313	0.400	0.019	5.2E-99	4.7E-04	349.6
rs57708073	15	79066653	a	g	0.739	0.191	0.021	4.7E-19	2.0E-04	137.9
rs2627313	15	81006712	t	c	0.446	0.151	0.018	5.9E-18	2.1E-04	153.6
rs17807723	15	90023558	a	g	0.138	-0.176	0.026	7.4E-12	1.1E-04	86.0
rs4932373	15	91429287	a	c	0.674	-0.366	0.019	7.7E-84	4.4E-04	325.9
rs3743369	15	92707569	a	g	0.628	0.104	0.018	6.8E-09	1.3E-04	100.9

rs12906962	15	95312071	t	c	0.677	-0.238	0.019	8.7E-37	2.9E-04	215.8
rs2589218	15	96785017	t	c	0.730	-0.121	0.020	6.9E-10	1.3E-04	98.7
rs77924615	16	20392332	a	g	0.198	-0.316	0.022	3.7E-45	2.8E-04	208.8
rs12596630	16	2065666	t	c	0.091	0.261	0.031	1.0E-16	1.2E-04	86.9
rs9937801	16	21088130	t	c	0.569	0.155	0.017	4.8E-19	2.1E-04	158.5
rs80095680	16	30902353	a	g	0.737	-0.157	0.020	2.8E-15	1.7E-04	126.5
rs917522	16	4097222	t	c	0.885	0.167	0.027	1.0E-09	9.3E-05	70.4
rs12446456	16	4922201	t	c	0.427	-0.181	0.018	4.0E-25	2.4E-04	184.5
rs7192407	16	49783926	t	c	0.472	0.102	0.017	4.5E-09	1.4E-04	105.8
rs62030049	16	50572709	a	g	0.760	0.134	0.021	1.5E-10	1.3E-04	101.5
rs9932220	16	51758116	a	g	0.218	-0.159	0.021	3.8E-14	1.5E-04	112.8
rs12919839	16	56859216	t	c	0.284	-0.110	0.019	1.0E-08	1.2E-04	93.0
rs45474499	16	66914492	t	c	0.047	0.356	0.042	8.5E-18	8.8E-05	66.8
rs28544928	16	69329268	t	g	0.747	0.154	0.020	9.1E-15	1.6E-04	121.6
rs12444212	16	71437689	t	c	0.817	0.129	0.023	1.1E-08	1.1E-04	80.2
rs11859505	16	74195719	a	g	0.420	-0.104	0.018	9.8E-09	1.4E-04	103.8
rs8046697	16	75442144	t	c	0.417	-0.129	0.018	6.1E-13	1.7E-04	130.0
rs12929303	16	81602264	a	g	0.533	0.157	0.017	1.6E-19	2.2E-04	163.0
rs79286081	16	86555837	a	g	0.102	-0.163	0.030	4.8E-08	8.2E-05	61.9
rs908951	16	89697625	t	c	0.437	-0.198	0.018	7.7E-28	2.7E-04	200.0
rs9893005	17	16225506	c	g	0.535	-0.121	0.018	7.9E-12	1.6E-04	124.7
rs12938803	17	19204432	a	c	0.189	-0.160	0.022	8.8E-13	1.3E-04	100.1
rs4362428	17	2090341	a	c	0.409	-0.113	0.018	1.5E-10	1.5E-04	113.4
rs76954792	17	30033514	t	c	0.232	0.121	0.021	5.1E-09	1.2E-04	90.1
rs28661492	17	30609932	t	c	0.202	-0.136	0.022	9.6E-10	1.2E-04	91.2
rs9895032	17	3951946	t	c	0.498	0.107	0.018	1.2E-09	1.5E-04	111.5
rs2239917	17	43165887	t	c	0.425	0.173	0.018	9.7E-23	2.3E-04	176.0
rs55671319	17	43548424	a	g	0.817	0.137	0.023	5.4E-09	1.1E-04	84.2
rs8078510	17	47045862	a	g	0.269	-0.128	0.020	9.8E-11	1.4E-04	104.6
rs9889262	17	47398070	a	t	0.367	0.228	0.018	7.1E-37	2.9E-04	220.5
rs3785837	17	59468942	a	g	0.764	0.145	0.021	9.6E-12	1.4E-04	107.9
rs6504163	17	61545779	t	c	0.624	-0.184	0.018	6.3E-24	2.4E-04	179.5
rs1867624	17	62387091	t	c	0.615	0.141	0.018	2.1E-15	1.8E-04	139.3
rs55868524	17	7170665	a	g	0.611	0.144	0.018	5.5E-16	1.9E-04	142.8
rs1436138	17	75316880	a	g	0.637	0.199	0.018	7.3E-28	2.5E-04	191.5
rs7217916	17	76769434	a	g	0.385	0.111	0.018	5.6E-10	1.4E-04	109.6
rs138420351	17	7700063	t	c	0.016	0.557	0.085	7.1E-11	4.8E-05	35.2
rs74439044	17	7781019	t	c	0.902	-0.350	0.029	1.4E-32	1.7E-04	129.0
rs11077961	17	81012749	a	g	0.632	0.107	0.019	8.5E-09	1.4E-04	102.3
rs11665020	18	10879503	c	g	0.322	-0.142	0.019	2.8E-14	1.7E-04	129.2
rs11664194	18	20021031	a	t	0.460	-0.108	0.018	8.7E-10	1.5E-04	111.4
rs10164193	18	31161426	t	g	0.922	-0.220	0.033	1.9E-11	8.6E-05	65.5
rs11661473	18	42177123	a	g	0.268	0.201	0.020	1.5E-24	2.2E-04	163.6
rs4890499	18	42585761	a	g	0.255	0.113	0.020	1.3E-08	1.2E-04	89.4
rs58693787	18	48141710	a	g	0.754	0.158	0.020	3.8E-15	1.6E-04	122.1
rs1523871	18	51950877	c	g	0.566	-0.119	0.018	1.5E-11	1.6E-04	121.3
rs10048404	18	54578482	t	c	0.369	-0.110	0.018	2.0E-09	1.4E-04	106.2

rs7235890	18	55732115	t	g	0.896	-0.169	0.029	4.1E-09	8.7E-05	65.9
rs1903752	18	7129327	t	c	0.539	-0.099	0.018	3.2E-08	1.3E-04	102.0
rs4891258	18	72995537	a	g	0.683	-0.116	0.019	5.7E-10	1.4E-04	104.6
rs7227492	18	772064	t	c	0.818	0.181	0.023	1.4E-15	1.5E-04	112.3
rs387865	19	11284539	t	c	0.306	-0.106	0.019	3.2E-08	1.2E-04	92.5
rs167479	19	11526765	t	g	0.472	-0.362	0.019	1.7E-82	5.0E-04	340.5
rs73504817	19	17167723	t	c	0.713	0.177	0.019	1.7E-20	2.0E-04	151.3
rs72999033	19	19366632	t	c	0.066	0.279	0.036	5.9E-15	9.4E-05	70.9
rs7257694	19	30314666	t	c	0.400	0.184	0.018	6.3E-25	2.4E-04	182.3
rs1353532	19	31867132	a	t	0.602	-0.127	0.018	1.1E-12	1.7E-04	125.4
rs1433121	19	32591878	t	c	0.691	-0.135	0.019	6.9E-13	1.6E-04	120.3
rs73036520	19	45749484	c	g	0.254	0.156	0.020	1.3E-14	1.6E-04	122.4
rs2548459	19	49209339	t	c	0.481	-0.132	0.018	5.9E-14	1.8E-04	135.0
rs73046792	19	49605705	a	g	0.159	-0.152	0.025	5.9E-10	1.1E-04	83.3
rs10424224	19	7240481	t	c	0.358	0.104	0.018	1.0E-08	1.3E-04	99.8
rs7258382	19	7262569	t	c	0.839	0.262	0.025	3.0E-26	1.9E-04	142.9
rs2009733	19	8398714	a	g	0.500	0.122	0.018	5.1E-12	1.7E-04	123.9
rs693974	20	10557252	t	c	0.604	-0.185	0.018	1.8E-25	2.4E-04	184.1
rs1327235	20	10969030	a	g	0.529	-0.302	0.017	4.8E-68	4.1E-04	313.3
rs6078393	20	11908101	t	g	0.589	0.121	0.018	7.7E-12	1.6E-04	121.3
rs6081555	20	19245723	t	g	0.343	-0.102	0.018	3.1E-08	1.3E-04	95.3
rs2376997	20	30319199	a	c	0.249	-0.139	0.022	1.9E-10	1.4E-04	108.0
rs13042148	20	32298286	t	c	0.154	-0.167	0.024	7.2E-12	1.2E-04	90.7
rs7265695	20	40043096	t	c	0.804	0.197	0.022	2.5E-19	1.7E-04	129.3
rs6031431	20	42795152	a	g	0.538	-0.115	0.018	4.9E-11	1.6E-04	119.0
rs2598	20	47241618	a	g	0.533	0.139	0.018	1.9E-15	1.9E-04	143.8
rs79044887	20	47427831	c	g	0.852	0.243	0.025	4.0E-23	1.7E-04	127.2
rs234623	20	57488964	a	g	0.504	-0.119	0.017	8.6E-12	1.6E-04	123.2
rs6026739	20	57739469	a	t	0.877	-0.503	0.027	1.5E-79	3.0E-04	224.1
rs79208229	20	62516236	t	g	0.088	0.213	0.033	6.5E-11	9.3E-05	70.4
rs35213536	20	62694319	t	g	0.247	0.204	0.021	2.5E-23	2.1E-04	154.2
rs6108168	20	8626271	a	c	0.255	-0.190	0.020	1.1E-21	2.0E-04	150.2
rs1882961	21	16556367	t	c	0.309	0.127	0.019	1.4E-11	1.5E-04	113.1
rs2070527	21	40067495	a	c	0.249	-0.147	0.020	3.1E-13	1.5E-04	113.4
rs12627514	21	44759440	c	g	0.710	-0.216	0.020	2.0E-28	2.4E-04	184.7
rs34487963	21	44838330	a	c	0.019	-0.573	0.071	8.2E-16	5.7E-05	41.6
rs7278003	21	44966069	t	c	0.439	-0.129	0.018	1.8E-13	1.7E-04	132.4
rs5992929	22	18451977	t	c	0.283	0.168	0.019	3.1E-18	1.9E-04	142.4
rs134041	22	28056338	t	c	0.436	0.122	0.018	3.1E-12	1.7E-04	125.1
rs12321	22	29453193	c	g	0.433	-0.149	0.018	1.4E-17	2.0E-04	152.6
rs5753630	22	31861950	a	g	0.562	0.107	0.018	8.8E-10	1.4E-04	109.7

^a $R^2 = \frac{2 \times EAF \times (1 - EAF) \times \beta^2}{SD^2}$, where EAF is the effect allele frequency and beta is the effect estimate of the SNP on SBP (Shim 2015, PLoS One;10(4):e0120758).

^b $F = \frac{R^2 \times (N - 2)}{1 - R^2}$ where R^2 is the variance of SBP explained by the specific SNP (as explained above) and N the number of individuals in the GWAS analysis (Palmer 2012, Stat Methods Med Res;21(3):223-42).

CHR: chromosome; EAF: effect allele frequency; SE: standard error; SNP: single nucleotide polymorphism.

Table e-3. Single nucleotide polymorphisms (SNP) that fulfilled our selection criteria to be used as proxies for the effects for antihypertensive drug classes.

SNP	Chr	Position (GRCh37/hg19)	Gene	Effect allele	EAF	Beta	SE	p-value	R ² ^a	F ^b
ACE inhibitors										
rs4291	17	61554194	ACE	a	0.615	-0.2839	0.0312	8.65E-20	3.7E-04	275.5
Beta blockers										
rs11196549 ^c	10	115707298	ADRB1	a	0.042	0.6884	0.0784	1.58E-18	1.5E-04	113.7
rs460718 ^c	10	115721364	ADRB1	a	0.326	-0.2764	0.0324	1.36E-17	3.3E-04	246.7
rs11196597 ^c	10	115788094	ADRB1	a	0.133	0.2858	0.0458	4.23E-10	1.8E-04	133.5
rs79850079	10	115790006	ADRB1	a	0.031	-0.5804	0.0905	1.45E-10	9.8E-05	72.2
rs17875473 ^c	10	115800294	ADRB1	t	0.087	0.3283	0.0552	2.66E-09	1.4E-04	105.9
rs2429511	10	115801253	ADRB1	t	0.520	-0.3728	0.0303	7.39E-35	5.1E-04	377.7
rs1801253 ^c	10	115805056	ADRB1	c	0.733	0.4626	0.0344	2.84E-41	5.0E-04	366.8
rs4359161 ^c	10	115826508	ADRB1	a	0.181	-0.2662	0.0391	9.46E-12	2.2E-04	160.3
Calcium channel blockers										
rs116556102	12	2303850	CACNA1C	c	0.983	-0.6853	0.1252	4.42E-08	6.0E-05	43.8
rs2239046 ^c	12	2434419	CACNA1C	a	0.681	0.2082	0.0322	9.58E-11	2.5E-04	185.2
rs714277 ^c	12	2514270	CACNA1C	t	0.283	0.1986	0.0333	2.38E-09	2.2E-04	165.4
rs2488136 ^c	10	18334521	CACNB2	a	0.287	0.2261	0.0334	1.22E-11	2.5E-04	187.9
rs1888693 ^c	10	18440444	CACNB2	a	0.344	0.3858	0.0317	4.69E-34	4.8E-04	352.8
rs17604757	10	18442940	CACNB2	a	0.932	-0.5022	0.0606	1.12E-16	1.7E-04	126.8
rs12571593	10	18443222	CACNB2	a	0.907	-0.3996	0.0521	1.71E-14	1.8E-04	136.2
rs12414844	10	18451994	CACNB2	t	0.266	0.2790	0.0342	3.15E-16	3.0E-04	220.8
rs7076319 ^c	10	18459450	CACNB2	a	0.733	-0.3210	0.0341	5.07E-21	3.4E-04	254.0
rs17662793	10	18465479	CACNB2	a	0.712	0.2363	0.0338	2.65E-12	2.7E-04	196.5
rs10828295	10	18466094	CACNB2	a	0.747	-0.3397	0.0349	2.18E-22	3.5E-04	257.6
rs16916922	10	18467744	CACNB2	a	0.858	-0.3662	0.0433	2.86E-17	2.4E-04	180.5
rs61278674 ^c	10	18481737	CACNB2	a	0.906	-0.3298	0.0540	1.03E-09	1.5E-04	113.6
rs4748444	10	18494482	CACNB2	t	0.663	0.1939	0.0327	3.13E-09	2.4E-04	175.1
rs1539680	10	18502889	CACNB2	c	0.792	-0.3259	0.0375	3.37E-18	2.9E-04	214.6
rs1779209 ^c	10	18514561	CACNB2	t	0.287	0.2736	0.0336	4.23E-16	3.1E-04	224.8
rs1757213	10	18537594	CACNB2	a	0.112	0.3084	0.0507	1.15E-09	1.7E-04	124.3
rs10828399 ^c	10	18553968	CACNB2	a	0.521	-0.1947	0.0302	1.10E-10	2.7E-04	197.2
rs10828452 ^c	10	18592450	CACNB2	a	0.793	0.3046	0.0388	4.20E-15	2.7E-04	202.6
rs17610275	10	18621630	CACNB2	t	0.926	0.3868	0.0613	2.87E-10	1.4E-04	106.4
rs10828542 ^c	10	18627285	CACNB2	a	0.613	0.1817	0.0311	5.18E-09	2.4E-04	174.8
rs112701401	10	18644811	CACNB2	c	0.969	0.5026	0.0921	4.92E-08	8.2E-05	60.3
rs7072277	10	18658707	CACNB2	a	0.471	-0.1746	0.0301	6.88E-09	2.4E-04	176.6
rs11013938	10	18669271	CACNB2	c	0.255	-0.3265	0.0350	1.17E-20	3.4E-04	251.6
rs12780039 ^c	10	18678987	CACNB2	c	0.121	0.2852	0.0470	1.26E-09	1.7E-04	123.1
rs79253631 ^c	10	18694223	CACNB2	a	0.986	-0.7774	0.1392	2.32E-08	5.7E-05	41.4
rs112133583 ^c	10	18695681	CACNB2	t	0.029	-0.5546	0.0973	1.18E-08	8.8E-05	65.2
rs7909027 ^c	10	18695892	CACNB2	t	0.649	-0.3312	0.0318	2.01E-25	4.1E-04	302.8
rs10828662	10	18703097	CACNB2	t	0.558	-0.2879	0.0304	2.54E-21	3.9E-04	288.1
rs982003	10	18707296	CACNB2	t	0.756	-0.2414	0.0351	6.21E-12	2.4E-04	180.3
rs1325990	10	18707352	CACNB2	a	0.470	-0.3873	0.0302	1.09E-37	5.3E-04	391.6
rs11014170 ^c	10	18710991	CACNB2	a	0.020	-0.6701	0.1150	5.61E-09	7.4E-05	54.4
rs72786085	10	18713206	CACNB2	c	0.079	-0.5309	0.0595	4.46E-19	2.1E-04	156.9

rs10828689	10	18721957	CACNB2	c	0.443	-0.3634	0.0304	6.94E-33	4.9E-04	364.1
rs67214975	10	18727251	CACNB2	a	0.456	-0.4144	0.0307	1.42E-41	5.7E-04	416.8
rs7923191 ^c	10	18727901	CACNB2	a	0.791	-0.3690	0.0376	1.10E-22	3.3E-04	246.5
rs12258967 ^c	10	18727959	CACNB2	c	0.704	0.6327	0.0337	1.08E-78	7.2E-04	533.8
rs72786098 ^c	10	18729855	CACNB2	a	0.032	-0.5033	0.0883	1.18E-08	8.6E-05	63.5
rs116936375	10	18737135	CACNB2	a	0.040	-0.5739	0.0810	1.40E-12	1.2E-04	90.4
rs12256244	10	18750045	CACNB2	a	0.626	0.4246	0.0315	2.09E-41	5.5E-04	402.8
rs1998822 ^c	10	18755664	CACNB2	a	0.723	-0.1958	0.0343	1.15E-08	2.2E-04	156.6
rs7070582	10	18755942	CACNB2	t	0.383	0.2502	0.0317	2.86E-15	3.3E-04	239.8
rs7076100	10	18759537	CACNB2	a	0.406	-0.3569	0.0308	5.51E-31	4.7E-04	349.1
rs7076247	10	18759629	CACNB2	t	0.388	0.2557	0.0309	1.33E-16	3.3E-04	246.6
rs11014494	10	18780705	CACNB2	a	0.492	0.1676	0.0304	3.37E-08	2.3E-04	170.0
rs10828784	10	18788273	CACNB2	c	0.663	0.2021	0.0345	4.49E-09	2.5E-04	182.9
rs12416030	10	18789075	CACNB2	t	0.796	-0.2088	0.0381	4.32E-08	1.9E-04	136.9
rs12416052	10	18789267	CACNB2	t	0.594	0.1987	0.0311	1.59E-10	2.6E-04	194.1
rs4748476	10	18792875	CACNB2	t	0.777	0.2166	0.0365	2.89E-09	2.1E-04	152.2
rs150857355 ^c	12	49209340	CACNB3	c	0.021	0.9406	0.1122	5.20E-17	1.1E-04	80.3
rs312487	3	53545622	CACNA1D	t	0.478	0.2194	0.0307	9.65E-13	3.0E-04	222.2
rs3821843 ^c	3	53558012	CACNA1D	a	0.680	0.3373	0.0335	6.56E-24	4.0E-04	296.6
rs9311502	3	53560321	CACNA1D	t	0.760	-0.2463	0.0355	3.87E-12	2.5E-04	181.8
rs1547950	3	53568283	CACNA1D	t	0.537	-0.2151	0.0307	2.33E-12	2.9E-04	217.0
rs11709630	3	53577164	CACNA1D	t	0.637	0.1931	0.0320	1.61E-09	2.5E-04	180.9
rs114987861 ^c	3	53605712	CACNA1D	a	0.028	0.5289	0.0958	3.36E-08	8.0E-05	59.1
rs113210396 ^c	3	53612327	CACNA1D	t	0.045	-0.4338	0.0770	1.76E-08	1.0E-04	75.7
rs3774475	3	53650483	CACNA1D	a	0.417	0.1854	0.0307	1.60E-09	2.5E-04	183.0
rs7340705 ^c	3	53734443	CACNA1D	t	0.673	-0.2425	0.0322	4.87E-14	2.9E-04	216.5
rs2633731	3	53738424	CACNA1D	t	0.396	-0.1963	0.0309	2.21E-10	2.6E-04	190.6

^a $R^2 = \frac{2 \times EAF \times (1 - EAF) \times \beta^2}{SD^2}$, where EAF is the effect allele frequency and β is the effect estimate of the SNP on SBP (Shim 2015, PLoS One;10(4):e0120758).

^b $F = \frac{R^2 \times (N - 2)}{1 - R^2}$ where R^2 is the variance of SBP explained by the specific SNP (as explained above) and N the number of individuals in the GWAS analysis (Palmer 2012, Stat Methods Med Res;21(3):223-42).

^c SNPs also included in the sensitivity analyses of the instruments correlated at a lower LD threshold ($r^2 < 0.1$).

ACE: angiotensin converting enzyme; CHR: chromosome; EAF: effect allele frequency; SE: standard error.

Table e-4. Genomic regions of encoding genes and regulatory regions (promoters or enhancers) of known antihypertensive drug targets, as identified via GeneHancer. These regions were screened for instrument selection of single nucleotide polymorphisms (SNP) that were associated with systolic blood pressure at genome-wide significance.

Drug	Gene	Genomic region (GRCh37/hg19)	Function
ACEIs	ACE	chr17:61554422-61599205	Encoding gene
ACEIs	ACE	chr17:61551058-61556950	Promoter/Enhancer
ACEIs	ACE	chr17:61562201-61562303	Promoter/Enhancer
ACEIs	ACE	chr17:61508611-61515166	Promoter/Enhancer
ACEIs	ACE	chr17:61626418-61630304	Promoter/Enhancer
ACEIs	ACE	chr17:61431510-61431613	Enhancer
ACEIs	ACE	chr17:62090924-62103850	Promoter/Enhancer
ACEIs	ACE	chr17:61497048-61498662	Enhancer
ACEIs	ACE	chr17:61505277-61506104	Enhancer
ACEIs	ACE	chr17:61689560-61689960	Enhancer
ACEIs	ACE	chr17:61594421-61594870	Enhancer
ACEIs	ACE	chr17:61502881-61503030	Enhancer
ACEIs	ACE	chr17:61656647-61657871	Enhancer
ACEIs	ACE	chr17:61500762-61501161	Enhancer
ACEIs	ACE	chr17:60855121-60860435	Enhancer
ACEIs	ACE	chr17:61574731-61577281	Enhancer
ACEIs	ACE	chr17:60972606-60973907	Enhancer
ARBs	AGTR1	chr3:148415571-148460795	Encoding gene
ARBs	AGTR1	chr3:148415061-148416388	Promoter/Enhancer
ARBs	AGTR1	chr3:148366071-148367473	Enhancer
ARBs	AGTR1	chr3:148441102-148442130	Enhancer
ARBs	AGTR1	chr3:148360847-148362186	Enhancer
ARBs	AGTR1	chr3:148360520-148360788	Enhancer
ARBs	AGTR1	chr3:148899476-148899525	Enhancer
BBs	ADRB1	chr10:115803806-115806667	Enhancer
BBs	ADRB1	chr10:115802241-115807338	Promoter/Enhancer
BBs	ADRB1	chr10:115716558-115722360	Enhancer
BBs	ADRB1	chr10:115706609-115708137	Enhancer
BBs	ADRB1	chr10:115824009-115824850	Enhancer
BBs	ADRB1	chr10:115548188-115549279	Enhancer
BBs	ADRB1	chr10:115833610-115834154	Enhancer
BBs	ADRB1	chr10:115704333-115705870	Enhancer
BBs	ADRB1	chr10:116441242-116446390	Promoter/Enhancer
BBs	ADRB1	chr10:115842035-115843254	Enhancer
BBs	ADRB1	chr10:115784258-115788102	Enhancer
BBs	ADRB1	chr10:115725160-115725959	Enhancer
BBs	ADRB1	chr10:115697701-115697810	Enhancer
BBs	ADRB1	chr10:115741347-115744110	Enhancer
BBs	ADRB1	chr10:115782141-115782270	Enhancer
BBs	ADRB1	chr10:115559441-115559610	Enhancer
BBs	ADRB1	chr10:115841821-115841970	Enhancer
BBs	ADRB1	chr10:115826224-115827332	Enhancer

BBs	<i>ADRB1</i>	chr10:115827575-115828874	Enhancer
BBs	<i>ADRB1</i>	chr10:115910708-115912162	Enhancer
BBs	<i>ADRB1</i>	chr10:115752960-115753842	Enhancer
BBs	<i>ADRB1</i>	chr10:115651401-115651550	Enhancer
BBs	<i>ADRB1</i>	chr10:115683621-115684573	Enhancer
BBs	<i>ADRB1</i>	chr10:115758960-115759559	Enhancer
BBs	<i>ADRB1</i>	chr10:116457630-116458961	Enhancer
BBs	<i>ADRB1</i>	chr10:115561321-115561530	Enhancer
BBs	<i>ADRB1</i>	chr10:115625638-115626159	Enhancer
BBs	<i>ADRB1</i>	chr10:116437959-116439282	Enhancer
BBs	<i>ADRB1</i>	chr10:115789385-115790216	Enhancer
BBs	<i>ADRB1</i>	chr10:115800822-115802086	Enhancer
BBs	<i>ADRB1</i>	chr10:115799814-115800507	Enhancer
CCBs	<i>CACNA1S</i>	chr1:201008640-201081694	Encoding gene
CCBs	<i>CACNA1S</i>	chr1:201082861-201084129	Promoter/Enhancer
CCBs	<i>CACNA1S</i>	chr1:201079942-201082115	Enhancer
CCBs	<i>CACNA1S</i>	chr1:201122647-201124394	Promoter/Enhancer
CCBs	<i>CACNA1S</i>	chr1:201274996-201282487	Enhancer
CCBs	<i>CACNA1S</i>	chr1:201012141-201012270	Enhancer
CCBs	<i>CACNA1S</i>	chr1:201263489-201273426	Enhancer
CCBs	<i>CACNA1S</i>	chr1:200941201-200941350	Enhancer
CCBs	<i>CACNA1S</i>	chr1:201106054-201107629	Enhancer
CCBs	<i>CACNA1S</i>	chr1:201056384-201057751	Enhancer
CCBs	<i>CACNA1S</i>	chr1:201057880-201061411	Enhancer
CCBs	<i>CACNA1S</i>	chr1:201111781-201111890	Enhancer
CCBs	<i>CACNA1S</i>	chr1:201063580-201070116	Enhancer
CCBs	<i>CACNA1S</i>	chr1:201071203-201078371	Enhancer
CCBs	<i>CACNA1S</i>	chr1:201032066-201032442	Enhancer
CCBs	<i>CACNA1D</i>	chr3:53528683-53847760	Encoding gene
CCBs	<i>CACNA1D</i>	chr3:53526751-53529027	Promoter/Enhancer
CCBs	<i>CACNA1D</i>	chr3:53529053-53530500	Promoter/Enhancer
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CCBs	<i>CACNA1D</i>	chr3:53558098-53559174	Enhancer
CCBs	<i>CACNA1D</i>	chr3:53379987-53382717	Promoter/Enhancer
CCBs	<i>CACNA1D</i>	chr3:53859957-53860202	Enhancer
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CCBs	<i>CACNA2D1</i>	chr7:81841421-81842618	Enhancer
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CCBs	<i>CACNB1</i>	chr17:37329709-37353956	Encoding gene
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CCBs	CACNB2	chr10:18567741-18568674	Enhancer
CCBs	CACNB2	chr10:18621941-18623677	Enhancer
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CCBs	CACNB2	chr10:18817341-18817490	Enhancer
CCBs	CACNB2	chr10:18816741-18816890	Enhancer
CCBs	CACNB2	chr10:18740308-18740990	Enhancer
CCBs	CACNB2	chr10:18741628-18742721	Enhancer
CCBs	CACNB2	chr10:18732026-18732639	Enhancer
CCBs	CACNB2	chr10:18723647-18724379	Enhancer
CCBs	CACNB3	chr12:49207577-49222726	Encoding gene
CCBs	CACNB3	chr12:49203763-49210435	Promoter/Enhancer
CCBs	CACNB3	chr12:49211575-49213450	Promoter/Enhancer
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TDs	<i>SLC12A3</i>	chr16:56899119-56949762	Encoding gene
TDs	<i>SLC12A3</i>	chr16:56899070-56899129	Promoter
TDs	<i>SLC12A3</i>	chr16:56964403-56974458	Promoter/Enhancer
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TDs	<i>SLC12A3</i>	chr16:56834256-56834865	Enhancer
TDs	<i>SLC12A3</i>	chr16:56893506-56897709	Enhancer
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TDs	<i>SLC12A3</i>	chr16:56901241-56901712	Enhancer
TDs	<i>SLC12A3</i>	chr16:56905112-56905513	Enhancer
TDs	<i>SLC12A3</i>	chr16:56948424-56953992	Enhancer
TDs	<i>SLC12A3</i>	chr16:56942554-56948010	Enhancer
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CCBs	<i>CACNA1C</i>	chr12:2112379-2114467	Promoter/Enhancer
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CCBs	<i>CACNA1C</i>	chr12:2118861-2119010	Enhancer
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CCBs	CACNA1C	chr12:2438360-2439517	Enhancer
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CCBs	CACNA1C	chr12:2504526-2506285	Enhancer
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CCBs	CACNA1C	chr12:2512831-2514124	Enhancer
CCBs	CACNA1C	chr12:2565222-2568247	Enhancer
CCBs	CACNA1C	chr12:2749071-2750838	Enhancer
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CCBs	<i>CACNA1C</i>	chr12:2792481-2792530	Enhancer
CCBs	<i>CACNA1C</i>	chr12:2792101-2792350	Enhancer
CCBs	<i>CACNA1C</i>	chr12:2791561-2791670	Enhancer
CCBs	<i>CACNA1C</i>	chr12:2791761-2791970	Enhancer
CCBs	<i>CACNA1C</i>	chr12:2473710-2474314	Enhancer
CCBs	<i>CACNA1C</i>	chr12:2799725-2801764	Promoter/Enhancer
CCBs	<i>CACNA1C</i>	chr12:2603721-2603850	Enhancer
CCBs	<i>CACNA1C</i>	chr12:2724729-2726058	Enhancer
CCBs	<i>CACNA1C</i>	chr12:2500386-2500884	Enhancer
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CCBs	<i>CACNA1C</i>	chr12:2559627-2561813	Enhancer
CCBs	<i>CACNA1C</i>	chr12:2488061-2488210	Enhancer
CCBs	<i>CACNA1C</i>	chr12:2531341-2532583	Enhancer
CCBs	<i>CACNA1C</i>	chr12:2537218-2542473	Enhancer
CCBs	<i>CACNA1C</i>	chr12:2489067-2491096	Enhancer
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CCBs	<i>CACNA1C</i>	chr12:2608221-2608370	Enhancer
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CCBs	<i>CACNA1C</i>	chr12:2610308-2611812	Enhancer
CCBs	<i>CACNA1C</i>	chr12:2481105-2484809	Enhancer
CCBs	<i>CACNA1C</i>	chr12:2486081-2486390	Enhancer
CCBs	<i>CACNA1C</i>	chr12:2491894-2495082	Enhancer

ACEI: angiotensin converting enzyme inhibitors; ARB: angiotensin II receptor blockers; BB: beta blockers; CCB: calcium channel blockers; TD: thiazide diuretics.

Table e-5. Sensitivity analyses for the Mendelian randomization associations between genetically determined systolic and diastolic blood pressure and risk of stroke and stroke subtypes.

Outcome	SBP (10 mm Hg increment)			DBP (5 mm Hg increment)		
	OR	95%CI	p	OR	95%CI	p
Any stroke						
IVW (primary analysis)	1.39	(1.33-1.44)	1.9E-60	1.27	(1.23-1.32)	1.2E-42
MR Egger	1.54	(1.40-1.71)	6.0E-17	1.36	(1.25-1.48)	5.2E-13
Egger Intercept	1.00	(0.99-1.00)	0.056	1.00	(1.00-1.00)	0.136
Weighted median	1.42	(1.35-1.50)	2.0E-38	1.28	(1.22-1.34)	1.3E-27
Weighted modal	1.44	(1.30-1.60)	1.2E-11	1.32	(1.21-1.44)	9.2E-10
IVW after exclusion of MR-PRESSO outliers	1.38	(1.33-1.43)	1.2E-63	1.28	(1.24-1.32)	9.2E-54
IVW restricted in Europeans	1.37	(1.32-1.43)	4.5E-47	1.26	(1.21-1.31)	1.8E-35
IVW based on UKB summary statistics not adjusted for antihypertensive medication use or BMI	1.43	(1.36-1.50)	2.4E-51	1.32	(1.26-1.37)	8.5E-38
Ischemic stroke						
IVW (primary analysis)	1.41	(1.35-1.47)	1.3E-53	1.28	(1.24-1.33)	2.6E-40
MR Egger	1.56	(1.40-1.74)	5.9E-16	1.40	(1.28-1.53)	3.0E-13
Egger Intercept	1.00	(0.99-1.00)	0.134	1.00	(1.00-1.00)	0.134
Weighted median	1.45	(1.37-1.54)	4.7E-38	1.30	(1.25-1.36)	2.0E-33
Weighted modal	1.51	(1.35-1.69)	5.6E-13	1.37	(1.22-1.53)	1.0E-07
IVW after exclusion of MR-PRESSO outliers	1.40	(1.35-1.46)	5.9E-59	1.28	(1.24-1.32)	1.2E-47
IVW restricted in Europeans	1.40	(1.34-1.47)	3.6E-49	1.27	(1.22-1.32)	3.6E-33
IVW based on UKB summary statistics not adjusted for antihypertensive medication use or BMI	1.45	(1.38-1.52)	6.4E-50	1.32	(1.26-1.38)	6.5E-35
Large artery stroke						
IVW (primary analysis)	1.68	(1.54-1.84)	5.2E-30	1.34	(1.25-1.44)	1.0E-14
MR Egger	1.69	(1.35-2.12)	5.2E-06	1.41	(1.18-1.69)	1.7E-04
Egger Intercept	1.00	(0.99-1.01)	0.999	1.00	(1.00-1.00)	0.505
Weighted median	1.70	(1.48-1.95)	1.0E-13	1.37	(1.24-1.52)	1.3E-09
Weighted modal	1.73	(1.30-2.29)	1.5E-04	1.28	(0.94-1.74)	1.2E-01
IVW after exclusion of MR-PRESSO outliers	1.67	(1.53-1.82)	2.1E-31	1.36	(1.26-1.46)	2.4E-17
IVW restricted in Europeans	1.81	(1.63-2.00)	7.1E-29	1.35	(1.24-1.47)	2.0E-11
IVW based on UKB summary statistics not adjusted for antihypertensive medication use or BMI	1.81	(1.64-2.00)	4.5E-32	1.38	(1.27-1.51)	3.1E-13
Cardioembolic stroke						
IVW (primary analysis)	1.24	(1.16-1.34)	9.9E-09	1.17	(1.10-1.24)	2.7E-06
MR Egger	1.49	(1.24-1.80)	2.3E-05	1.33	(1.14-1.56)	3.2E-04
Egger Intercept	0.99	(0.99-1.00)	0.066	1.00	(0.99-1.00)	0.096
Weighted median	1.30	(1.17-1.45)	1.1E-06	1.24	(1.13-1.36)	2.3E-06
Weighted modal	1.31	(0.99-1.75)	0.060	1.54	(1.26-1.89)	3.5E-05
IVW after exclusion of MR-PRESSO outliers	1.25	(1.17-1.35)	1.0E-09	1.18	(1.11-1.25)	1.8E-07
IVW restricted in Europeans	1.21	(1.12-1.31)	1.2E-06	1.15	(1.08-1.23)	4.4E-05
IVW based on UKB summary statistics not adjusted for antihypertensive medication use or BMI	1.27	(1.17-1.38)	8.8E-09	1.19	(1.10-1.28)	8.0E-06
Small vessel stroke						
IVW (primary analysis)	1.47	(1.36-1.58)	3.5E-22	1.36	(1.27-1.45)	7.8E-19
MR Egger	1.44	(1.19-1.76)	2.7E-04	1.39	(1.17-1.64)	1.3E-04
Egger Intercept	1.00	(1.00-1.01)	0.739	1.00	(1.00-1.00)	0.739
Weighted median	1.54	(1.37-1.73)	9.5E-14	1.43	(1.31-1.56)	9.5E-16

Weighted modal	1.74	(1.38-2.18)	1.9E-06	1.54	(1.24-1.92)	9.8E-05
IVW after exclusion of MR-PRESSO outliers	1.47	(1.36-1.58)	7.1E-23	1.38	(1.29-1.47)	4.5E-23
IVW restricted in Europeans	1.57	(1.43-1.72)	1.3E-21	1.39	(1.28-1.50)	1.5E-15
IVW based on UKB summary statistics not adjusted for antihypertensive medication use or BMI	1.52	(1.39-1.66)	4.8E-21	1.41	(1.30-1.53)	5.1E-17
Intracerebral hemorrhage	OR	95%CI	p	OR	95%CI	p
IVW (primary analysis)	1.41	(1.11-1.79)	8.3E-03	1.29	(1.05-1.57)	0.019
MR Egger	1.49	(0.81-2.74)	0.201	1.22	(0.72-2.07)	0.457
Egger Intercept	1.00	(0.98-1.02)	0.824	1.00	(0.99-1.01)	0.841
Weighted median	1.49	(1.09-2.03)	0.012	1.31	(1.00-1.71)	0.047
Weighted modal	1.56	(0.80-3.04)	0.192	1.81	(0.89-3.71)	0.103
IVW after exclusion of MR-PRESSO outliers	1.41	(1.11-1.79)	0.005	1.29	(1.05-1.57)	0.014
IVW based on UKB summary statistics not adjusted for antihypertensive medication use or BMI	1.43	(1.09-1.87)	0.009	1.36	(1.07-1.73)	0.013
Lobar intracerebral hemorrhage	OR	95%CI	p	OR	95%CI	p
IVW (primary analysis)	1.04	(0.77-1.40)	0.389	0.97	(0.76-1.25)	0.391
MR Egger	1.03	(0.48-2.21)	0.936	1.02	(0.53-1.97)	0.960
Egger Intercept	1.00	(0.98-1.02)	0.999	1.00	(0.99-1.01)	0.868
Weighted median	1.26	(0.85-1.87)	0.259	1.12	(0.77-1.63)	0.563
Weighted modal	1.19	(0.62-2.31)	0.596	1.14	(0.62-2.08)	0.671
IVW after exclusion of MR-PRESSO outliers	1.04	(0.77-1.40)	0.819	0.97	(0.76-1.25)	0.837
IVW based on UKB summary statistics not adjusted for antihypertensive medication use or BMI	1.06	(0.79-1.48)	0.738	0.98	(0.71-1.33)	0.889
Deep intracerebral hemorrhage	OR	95%CI	p	OR	95%CI	p
IVW (primary analysis)	1.73	(1.30-2.32)	8.3E-04	1.54	(1.21-1.97)	8.2E-04
MR Egger	1.86	(0.89-3.87)	0.097	1.24	(0.66-2.34)	0.506
Egger Intercept	1.00	(0.98-1.02)	0.856	1.00	(0.99-1.02)	0.505
Weighted median	1.59	(1.01-2.48)	0.043	1.45	(0.99-2.12)	0.055
Weighted modal	1.15	(0.38-3.52)	0.800	1.40	(0.49-3.96)	0.530
IVW after exclusion of MR-PRESSO outliers	1.77	(1.33-2.35)	8.2E-05	1.54	(1.21-1.97)	4.3E-04
IVW based on UKB summary statistics not adjusted for antihypertensive medication use or BMI	1.79	(1.30-2.47)	4.1E-04	1.66	(1.24-2.23)	6.6E-04
WMH volume	β	95%CI	p	β	95%CI	p
IVW (primary analysis)	0.101	(0.053, 0.149)	3.8E-05	0.107	(0.064, 0.150)	1.1E-06
MR Egger	0.159	(0.034, 0.284)	0.013	0.113	(0.007, 0.218)	0.036
Egger Intercept	-0.002	(-0.006, 0.002)	0.323	0.000	(-0.004, 0.004)	0.909
Weighted median	0.130	(0.057, 0.202)	1.5E-06	0.115	(0.051, 0.179)	4.9E-04
Weighted modal	0.211	(-0.026, 0.447)	0.081	0.172	(-0.011, 0.355)	0.065
IVW after exclusion of MR-PRESSO outliers	0.108	(0.059, 0.156)	1.6E-05	0.110	(0.068, 0.151)	3.7E-07
IVW based on UKB summary statistics not adjusted for antihypertensive medication use or BMI	0.088	(0.042, 0.134)	1.9E-04	0.097	(0.053, 0.141)	1.6E-05

BMI: body mass index, DBP: diastolic blood pressure; IVW: inverse variance weighted; MR-PRESSO: Mendelian randomization pleiotropy residual sum and outlier; OR: Odds ratio; SBP: systolic blood pressure; WMH: white matter hyperintensities.

Table e-6. Sensitivity analyses for the Mendelian randomization associations between genetic proxies for beta blockers and calcium channel blockers and risk of stroke, risk of stroke subtypes, and WMH volume.

Outcome	BB (10 mm Hg decrease in SBP)			CCB (10 mm Hg decrease in SBP)		
	OR	95%CI	p	OR	95%CI	p
Any stroke						
Primary MR analysis with SNPs clumped at $r^2 < 0.4$ & adjusted for LD correlation	1.00	(0.84-1.18)	0.997	0.69	(0.64-0.74)	1.7E-26
IVW (SNPs clumped at $r^2 < 0.1$)	0.90	(0.71-1.15)	0.397	0.67	(0.59-0.76)	1.4E-08
MR Egger	1.00	(0.23-4.27)	0.997	0.78	(0.56-1.11)	0.179
Egger Intercept	1.00	(0.95-1.05)	0.885	0.99	(0.98-1.01)	0.318
Weighted median	0.89	(0.65-1.23)	0.485	0.67	(0.55-0.81)	4.5E-05
Weighted modal	0.90	(0.61-1.33)	0.600	0.66	(0.53-0.83)	2.6E-04
IVW after exclusion of MR-PRESSO outliers	0.93*	(0.70-1.23)	0.597	0.67	(0.59-0.76)	1.4E-08
Ischemic stroke						
Primary MR analysis with SNPs clumped at $r^2 < 0.4$ & adjusted for LD correlation	1.02	(0.86-1.23)	0.795	0.71	(0.66-0.76)	4.3E-20
IVW (SNPs clumped at $r^2 < 0.1$)	0.89	(0.72-1.15)	0.439	0.69	(0.60-0.79)	6.7E-07
MR Egger	0.98	(0.17-5.62)	0.978	0.80	(0.56-1.14)	0.220
Egger Intercept	1.00	(0.94-1.06)	0.909	1.00	(0.98-1.01)	0.404
Weighted median	0.95	(0.68-1.32)	0.757	0.71	(0.58-0.86)	7.3E-04
Weighted modal	0.94	(0.64-1.38)	0.752	0.71	(0.57-0.88)	1.5E-03
IVW after exclusion of MR-PRESSO outliers*	0.94*	(0.70-1.27)	0.690	0.69	(0.60-0.79)	2.1E-07
Large artery stroke						
Primary MR analysis with SNPs clumped at $r^2 < 0.4$ & adjusted for LD correlation	0.89	(0.57-1.37)	0.586	0.85	(0.73-0.99)	0.037
IVW (SNPs clumped at $r^2 < 0.1$)	0.91	(0.48-1.75)	0.783	0.83	(0.59-1.17)	0.277
MR Egger	2.12	(0.25-18.1)	0.491	0.75	(0.29-1.94)	0.546
Egger Intercept	0.97	(0.90-1.05)	0.422	1.00	(0.97-1.03)	0.789
Weighted median	1.04	(0.49-2.21)	0.917	0.82	(0.50-1.33)	0.421
Weighted modal	1.13	(0.45-2.85)	0.797	0.85	(0.54-1.33)	0.469
IVW after exclusion of MR-PRESSO outliers*	0.91**	(0.48-1.75)	0.783	0.83**	(0.57-1.20)	0.312
Cardioembolic stroke						
Primary MR analysis with SNPs clumped at $r^2 < 0.4$ & adjusted for LD correlation	1.31	(0.90-1.91)	0.153	0.88	(0.82-0.95)	3.6E-04
IVW (SNPs clumped at $r^2 < 0.1$)	1.03	(0.60-1.77)	0.919	0.82	(0.61-1.10)	0.183
MR Egger	0.72	(0.06-9.22)	0.801	0.84	(0.40-1.77)	0.645
Egger Intercept	1.01	(0.92-1.11)	0.774	1.00	(0.98-1.02)	0.933
Weighted median	1.07	(0.52-2.21)	0.858	0.82	(0.52-1.31)	0.408
Weighted modal	1.57	(0.62-4.00)	0.345	0.77	(0.46-1.26)	0.296
IVW after exclusion of MR-PRESSO outliers*	1.03**	(0.60-1.77)	0.919	0.82**	(0.61-1.10)	0.180
Small vessel stroke						
Primary MR analysis with SNPs clumped at $r^2 < 0.4$ & adjusted for LD correlation	1.09	(0.75-1.59)	0.646	0.60	(0.52-0.71)	4.4E-10
IVW (SNPs clumped at $r^2 < 0.1$)	0.77	(0.45-1.33)	0.344	0.63	(0.46-0.85)	2.9E-03
MR Egger	0.87	(0.02-34.78)	0.942	0.69	(0.25-1.90)	0.474
Egger Intercept	1.00	(0.87-1.13)	0.941	1.00	(0.97-1.03)	0.841
Weighted median	0.79	(0.4-1.57)	0.497	0.55	(0.35-0.87)	0.010
Weighted modal	0.83	(0.43-1.59)	0.567	0.50	(0.31-0.81)	4.9E-03
IVW after exclusion of MR-PRESSO outliers*	0.89**	(0.47-1.69)	0.726	0.63**	(0.44-0.90)	0.010

Intracerebral hemorrhage						
	OR	95%CI	p	OR	95%CI	p
Primary MR analysis with SNPs clumped at $r^2 < 0.4$ & adjusted for LD correlation	1.25	(0.40-3.88)	0.704	1.09	(0.65-1.83)	0.746
IVW (SNPs clumped at $r^2 < 0.1$)	2.56	(0.29-22.4)	0.396	1.23	(0.49-3.08)	0.665
MR Egger	34.8	(0.08-15930)	0.256	3.93	(0.40-38.5)	0.240
Egger Intercept	0.91	(0.73-1.12)	0.372	0.96	(0.90-1.03)	0.274
Weighted median	3.89	(0.27-55.5)	0.316	1.04	(0.27-4.06)	0.951
Weighted modal	5.71	(0.35-86.7)	0.23	1.00	(0.21-5.08)	0.960
IVW after exclusion of MR-PRESSO outliers*	2.56**	(0.29-22.4)	0.396	1.23**	(0.49-3.08)	0.665
Lobar intracerebral hemorrhage						
	OR	95%CI	p	OR	95%CI	p
Primary MR analysis with SNPs clumped at $r^2 < 0.4$ & adjusted for LD correlation	1.66	(0.05-57.49)	0.779	1.70	(0.67-4.35)	0.379
IVW (SNPs clumped at $r^2 < 0.1$)	5.98	(0.33-108)	0.225	1.26	(0.38-4.18)	0.706
MR Egger	4060	(1.22-13537849)	0.045	8.26	(0.42-161)	0.164
Egger Intercept	0.78	(0.59-1.04)	0.092	0.94	(0.86-1.03)	0.175
Weighted median	11.6	(0.36-369)	0.166	1.52	(0.26-8.87)	0.641
Weighted modal	30.7	(0.12-9537)	0.228	1.50	(0.21-10.6)	0.676
IVW after exclusion of MR-PRESSO outliers*	5.98**	(0.33-108)	0.225	1.26**	(0.38-4.18)	0.706
Deep intracerebral hemorrhage						
	OR	95%CI	p	OR	95%CI	p
Primary MR analysis with SNPs clumped at $r^2 < 0.4$ & adjusted for LD correlation	1.74	(0.07-41.9)	0.733	0.66	(0.31-1.40)	0.167
IVW (SNPs clumped at $r^2 < 0.1$)	2.28	(0.18-29.6)	0.528	0.83	(0.28-2.44)	0.734
MR Egger	1.41	(0.01-1905)	0.926	0.95	(0.07-13.5)	0.971
Egger Intercept	1.02	(0.79-1.31)	0.888	1.01	(0.93-1.09)	0.848
Weighted median	3.03	(0.14-67.0)	0.482	0.80	(0.18-3.59)	0.772
Weighted modal	5.72	(0.08-395)	0.416	0.91	(0.15-5.72)	0.911
IVW after exclusion of MR-PRESSO outliers*	2.28**	(0.18-29.6)	0.528	0.83**	(0.28-2.44)	0.734
WMH volume						
	β	95%CI	p	β	95%CI	p
Primary MR analysis with SNPs clumped at $r^2 < 0.4$ & adjusted for LD correlation	-0.146	(-0.448, 0.157)	0.345	-0.491	(-0.591, -0.391)	3.5E-07
IVW (SNPs clumped at $r^2 < 0.1$)	-0.345	(-1.279, 0.588)	0.469	-0.510	(-0.701, -0.319)	1.5E-07
MR Egger	-1.390	(-4.620, 1.840)	0.399	-0.831	(-1.284, -0.377)	3.2E-04
Egger Intercept	0.040	(-0.078, 0.158)	0.505	0.012	(-0.003, 0.027)	0.128
Weighted median	-0.682	(-1.152, -0.213)	0.004	-0.553	(-0.841, -0.265)	1.7E-04
Weighted modal	-0.744	(-1.315, -0.173)	0.011	-0.537	(-0.858, -0.216)	9.1E-04
IVW after exclusion of MR-PRESSO outliers*	-0.515*	(-1.142, 0.112)	0.249	0.510**	(-0.701, -0.319)	1.5E-07

* rs4359161 and rs460718 were identified as outliers with the MR-PRESSO approach.

** No outliers identified with the MR-PRESSO approach.

IVW: inverse-variance weighted; LD: linkage disequilibrium; MR-PRESSO: Mendelian randomization pleiotropy residual sum and outlier; OR: odds ratio; SBP: systolic blood pressure; SNP: single nucleotide polymorphism; WMH: white matter hyperintensities.