Table S1 Data sources

Use in current study	Phenotype	Reference	N	Sex	Ancestry	Link to data source
Exposure IVs extraction	BMR	Neale[1]	354825	46% Male	94% European	https://broad-ukb-sumstats-us-east-1.s3.amazonaws.com/round2/additive-tsvs/23105_irnt.gwas.imputed_v3.both_sexes.tsv.bgz
IVs identification	BMR	Neale[1]	163838	Male	Not available	https://broad-ukb-sumstats-us-east-1.s3.amazonaws.com/round2/additive-tsvs/23105_irnt.gwas.imputed_v3.female.tsv.bgz
IVs identification	BMR	Neale[1]	190987	Female	Not available	https://broad-ukb-sumstats-us-east-1.s3.amazonaws.com/round2/additive-tsvs/23105_irnt.gwas.imputed_v3.male.tsv.bgz
Covariates	Height	Neale[1]	360388	46% Male	94% European	https://broad-ukb-sumstats-us-east-1.s3.amazonaws.com/round2/additive-tsvs/50_irnt.gwas.imputed_v3.both_sexes.tsv.bgz
Covariates	BMI	Neale[1]	354831	46% Male	94% European	https://broad-ukb-sumstats-us-east-1.s3.amazonaws.com/round2/additive-tsvs/23104_irnt.gwas.imputed_v3.both_sexes.tsv.bgz
Covariates	Hypertension	Neale[1]	361194	46% Male	94% European	https://broad-ukb-sumstats-us-east-1.s3.amazonaws.com/round2/additive-tsvs/I9_HYPTENS.gwas.imputed_v3.both_sexes.tsv.bgz
Covariates	Obesity	Neale[1]	361194	46% Male	94% European	https://broad-ukb-sumstats-us-east-1.s3.amazonaws.com/round2/additive-tsvs/E4_OBESITY.gwas.imputed_v3.both_sexes.tsv.bgz
Covariates	Coronary Heart Disease	Neale[1]	361141	46% Male	94% European	https://broad-ukb-sumstats-us-east-1.s3.amazonaws.com/round2/additive-tsvs/I9_CHD.gwas.imputed_v3.both_sexes.tsv.bgz
Covariates	Heart Failure	Neale[1]	361141	46% Male	94% European	https://broad-ukb-sumstats-us-east-1.s3.amazonaws.com/round2/additive-tsvs/I9_HEARTFAIL_NS.gwas.imputed_v3.both_sexes.tsv.bgz
Covariates	Thyrotoxicosis	Neale[1]	361194	46% Male	94% European	https://broad-ukb-sumstats-us-east-1.s3.amazonaws.com/round2/additive-tsvs/E4_THYTOXGOITDIF.gwas.imputed_v3.both_sexes.tsv.bgz

Covariates	Type 2 diabetes	Neale[1]	361194	46% Male	94% European	https://broad-ukb-sumstats-us-east-1.s3.amazonaws.com/round2/additive-tsvs/E4_DM2.gwas.imputed_v3.both_sexes.tsv.bgz
Outcome IVs extraction	AF	FinnGen[2]	164491	44% Male	Not available	https://storage.googleapis.com/finngen-public-data-r6/summary_stats/finngen_R6_I9_AF.gz
Outcome IVs extraction	Plasma protein levels	Sun[3]	3301	51% Male	European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST005001-GCST006000/GCST005806/meta_filtered_final.tar.gz

Note: BMR, basal metabolic rate; BMI, body mass index; AF atrial fibrillation; IV instrument variant

Table S2 Descriptions of significant SNPs for BMR in both sexes in Neale's study

SNP	Beta	Se	P value	Chr	Position	Other allele	Effect allele	Eaf	F statistics
rs12040325	0.0106	0.0015	6.2300E-12	1	1702436	G	A	0.5110	47.2588
rs1692584	0.0099	0.0016	5.0568E-10	1	2172917	T	C	0.3820	38.6576
rs225116	-0.0109	0.0016	2.6993E-11	1	8017651	G	A	0.3400	44.3868
rs475980	-0.0103	0.0016	3.8445E-11	1	10719645	A	G	0.5038	43.6938
rs6691831	0.0161	0.0018	1.5369E-19	1	11220180	A	G	0.2512	81.7685
rs11590433	0.0089	0.0016	4.2019E-08	1	21505827	A	G	0.6469	30.0554
rs7542242	-0.0093	0.0017	2.1282E-08	1	22477493	C	T	0.3287	31.3755
rs111656050	0.0146	0.0020	6.0401E-13	1	26464923	G	A	0.1737	51.8380
rs652112	0.0189	0.0025	6.8682E-14	1	32345980	T	C	0.1040	56.1099
rs55745410	-0.0156	0.0016	7.3277E-22	1	33802817	A	G	0.3534	92.3444
rs272815	0.0108	0.0016	5.2558E-12	1	36648011	T	C	0.5799	47.5920
rs11485595	-0.0090	0.0015	5.1145E-09	1	38411350	C	T	0.4569	34.1468
rs72660086	0.0139	0.0019	1.7101E-13	1	39571992	T	G	0.2110	54.3167
rs2885697	-0.0192	0.0016	3.8103E-32	1	41544279	G	T	0.6642	139.3152
rs4926754	-0.0105	0.0017	6.1195E-10	1	49242966	T	C	0.7100	38.2853
rs12031920	0.0136	0.0016	3.8725E-18	1	51109269	T	A	0.4167	75.3941
rs6657024	0.0151	0.0018	3.0279E-16	1	56592414	G	A	0.2253	66.7917
rs12140153	-0.0190	0.0027	1.1405E-12	1	62579891	G	T	0.0960	50.5898
rs2815753	0.0114	0.0016	3.1235E-13	1	72812324	G	A	0.5990	53.1332
rs3845344	0.0096	0.0016	1.2153E-09	1	75001480	C	T	0.3919	36.9465
rs34517439	0.0372	0.0024	8.1443E-56	1	78450517	C	A	0.1245	247.8095
rs17363646	0.0157	0.0023	3.3489E-12	1	86823503	A	G	0.1347	48.4763
rs273866	0.0113	0.0017	1.3190E-11	1	97263793	C	G	0.3034	45.7893
rs72697614	0.0093	0.0017	2.1534E-08	1	107514107	C	A	0.3208	31.3524
rs77848106	-0.0103	0.0017	1.2156E-09	1	107971673	C	A	0.2961	36.9467
rs17024393	0.0320	0.0049	4.8466E-11	1	110154688	T	C	0.0258	43.2408
rs12738523	-0.0107	0.0017	1.7274E-10	1	118855812	A	T	0.3121	40.7555
rs76798800	0.0225	0.0017	3.3304E-38	1	154994978	G	T	0.2674	167.0478
rs17361789	0.0142	0.0017	1.1276E-17	1	172122601	T	G	0.3230	73.2830
rs1014718	0.0136	0.0017	4.1982E-15	1	176802974	A	G	0.7303	61.6104
rs543874	0.0297	0.0019	2.1836E-55	1	177889480	A	G	0.2075	245.8423
rs12145281	-0.0100	0.0016	1.3837E-10	1	190306734	A	G	0.5616	41.1893
rs2678204	0.0147	0.0016	1.0963E-19	1	201800511	T	G	0.3428	82.4376
rs951366	0.0131	0.0016	8.0815E-17	1	205685352	T	C	0.3954	69.3962
rs1578992	0.0116	0.0016	1.1361E-12	1	212211174	G	T	0.6686	50.5978
rs12072845	-0.0147	0.0016	1.2635E-20	1	214630757	G	A	0.3927	86.7091
rs2803888	-0.0093	0.0016	2.2666E-09	1	219004615	C	A	0.4136	35.7317
rs12725278	-0.0117	0.0020	5.3218E-09	1	224644977	C	G	0.2203	34.0701
rs7518221	-0.0106	0.0016	5.8280E-11	1	225561346	T	C	0.6463	42.8802
rs11580196	-0.0126	0.0021	2.0046E-09	1	227955276	A	G	0.1727	35.9714
rs62107261	-0.0601	0.0036	3.3358E-62	2	422144	T	C	0.0481	277.1364
rs7559547	0.0354	0.0020	3.2101E-68	2	615627	C	T	0.8260	304.7739
rs10203320	0.0125	0.0017	3.0138E-14	2	9771620	T	C	0.3286	57.7300

rs12713004	0.0176	0.0017	2.4134E-24	2	23896049	A	G	0.7261	103.6661
rs11695471	-0.0124	0.0016	3.4296E-14	2	25457708	T	A	0.3323	57.4761
rs1260326	0.0196	0.0016	1.5367E-35	2	27730940	T	C	0.6067	154.8503
rs116072427	-0.0258	0.0030	1.2015E-17	2	33357096	G	C	0.0706	73.1580
rs963025	-0.0192	0.0030	2.9540E-10	2	33490160	C	T	0.0688	39.7071
rs10181664	0.0107	0.0017	1.0546E-10	2	36783215	C	T	0.3134	41.7200
rs13375	-0.0137	0.0023	2.2761E-09	2	42559288	A	G	0.1310	35.7235
rs343954	0.0151	0.0021	1.7523E-13	2	44999709	T	C	0.1728	54.2688
rs74179078	0.0092	0.0016	3.3359E-09	2	46654651	T	A	0.5214	34.9791
rs76179188	0.0158	0.0029	3.9481E-08	2	54614156	C	T	0.0776	30.1760
rs59985551	-0.0204	0.0018	1.9339E-28	2	56106928	C	T	0.2247	122.3725
rs2708147	0.0106	0.0017	2.2246E-10	2	58970323	G	C	0.3099	40.2611
rs56038532	0.0208	0.0038	3.2476E-08	2	69736561	A	G	0.0438	30.5551
rs11545482	-0.0352	0.0054	5.6352E-11	2	70315987	C	T	0.0209	42.9460
rs6740645	-0.0128	0.0016	1.6640E-16	2	71596041	C	T	0.5725	67.9716
rs1374370	0.0112	0.0017	1.7621E-11	2	85818273	G	A	0.3075	45.2213
rs1805165	-0.0094	0.0017	4.4696E-08	2	88874891	C	A	0.7192	29.9354
rs1437377	0.0138	0.0023	1.2840E-09	2	100744924	T	G	0.1324	36.8394
rs1837367	0.0104	0.0015	2.2760E-11	2	111874551	G	A	0.4862	44.7208
rs58584712	0.0103	0.0019	4.2625E-08	2	112249583	G	A	0.2106	30.0275
rs71423264	0.0131	0.0022	3.2495E-09	2	144024811	G	A	0.1405	35.0300
rs12467963	-0.0101	0.0016	1.4276E-10	2	145345343	A	T	0.4036	41.1281
rs2140046	-0.0121	0.0016	4.1982E-14	2	169706079	T	C	0.3635	57.0783
rs1047109	-0.0219	0.0018	7.6381E-35	2	172414553	A	G	0.2507	151.6604
rs1528450	0.0097	0.0016	1.1840E-09	2	181517642	T	C	0.5973	36.9976
rs10931008	-0.0123	0.0016	3.5760E-14	2	183238919	T	C	0.3453	57.3938
rs1064213	0.0108	0.0015	2.5672E-12	2	198950240	G	A	0.4770	48.9976
rs13014796	-0.0115	0.0021	2.3956E-08	2	200321050	G	A	0.1691	31.1456
rs1047891	0.0157	0.0017	2.3593E-21	2	211540507	C	A	0.3158	90.0294
rs13430869	0.0152	0.0018	1.1353E-17	2	218146818	G	T	0.7472	73.2704
rs1478575	0.0193	0.0017	2.7393E-31	2	218278555	T	A	0.6856	135.3966
rs1542224	0.0142	0.0017	2.0981E-16	2	223963874	T	C	0.7219	67.5142
rs2396348	0.0108	0.0017	1.2048E-10	2	227261383	C	T	0.3022	41.4593
rs6755070	-0.0120	0.0016	1.4145E-13	2	233585299	G	T	0.3511	54.6895
rs7568228	-0.0087	0.0015	1.8070E-08	2	236848488	G	C	0.5269	31.6932
rs12695002	-0.0111	0.0016	1.5778E-12	2	242503047	C	T	0.5885	49.9525
rs62246314	0.0149	0.0025	5.1420E-09	3	9504099	G	A	0.1015	34.1366
rs2270894	-0.0176	0.0020	7.3561E-19	3	9975386	C	G	0.2042	78.6746
rs1609783	0.0132	0.0015	1.8374E-17	3	25095911	G	A	0.5272	72.3198
rs7624087	0.0089	0.0015	9.3103E-09	3	30078357	T	C	0.5483	32.9818
rs1002675	0.0091	0.0015	4.7357E-09	3	38445226	C	T	0.5595	34.2970
rs55794710	0.0110	0.0016	1.0199E-11	3	41363677	C	T	0.3662	46.2933
rs6800021	0.0159	0.0016	1.9932E-24	3	50190346	G	A	0.4255	104.0447
rs11712872	0.0168	0.0024	3.1237E-12	3	52835514	G	A	0.1158	48.6126
rs6445198	-0.0099	0.0016	2.4938E-10	3	61219865	G	T	0.4161	40.0379
rs557951	0.0110	0.0017	3.8099E-11	3	62713263	T	G	0.3124	43.7124

rs62263917	-0.0147	0.0016	1.5313E-19	3	85667928	A	G	0.6467	81.7764
rs4858940	0.0162	0.0024	1.4866E-11	3	88254820	T	C	0.8841	45.5546
rs9827857	0.0133	0.0023	4.3353E-09	3	98663533	T	C	0.1339	34.4687
rs6762578	0.0166	0.0019	3.2880E-19	3	128992047	G	A	0.7777	80.2659
rs11709402	0.0116	0.0017	1.5890E-11	3	131551027	A	G	0.2796	45.4243
rs724016	0.0311	0.0015	1.1852E-89	3	141105570	A	G	0.4468	403.2963
rs4635681	0.0128	0.0021	1.5362E-09	3	152310614	A	G	0.1565	36.4896
rs386893	0.0107	0.0015	5.7736E-12	3	153914902	A	G	0.5462	47.4083
rs2271998	0.0104	0.0016	3.2762E-11	3	170625806	C	T	0.4056	44.0074
rs7652177	0.0151	0.0015	1.2041E-22	3	171969077	C	G	0.5049	95.9192
rs4894419	-0.0143	0.0016	2.9673E-20	3	172150836	T	G	0.4428	85.0216
rs1881975	-0.0121	0.0018	2.0490E-11	3	184046042	A	G	0.2446	44.9260
rs73175572	0.0280	0.0025	9.2300E-30	3	185490184	A	G	0.1114	128.4117
rs73052033	-0.0162	0.0020	3.6872E-16	3	185828465	T	C	0.1851	66.4029
rs34801745	0.0088	0.0016	4.2516E-08	3	196115497	G	C	0.3586	30.0325
rs111632154	-0.0288	0.0036	1.7699E-15	4	1012300	T	C	0.0482	63.3116
rs2592831	0.0136	0.0016	6.6640E-17	4	1711404	T	C	0.3349	69.7770
rs62275882	-0.0125	0.0022	1.5805E-08	4	3469987	G	A	0.1402	31.9532
rs223942	-0.0104	0.0016	4.2061E-11	4	12912629	A	G	0.6153	43.5181
rs7663887	-0.0306	0.0021	3.2648E-47	4	17902920	C	A	0.1564	208.3371
rs10939795	0.0109	0.0017	1.5142E-10	4	18495811	A	G	0.3021	41.0129
rs56311196	-0.0128	0.0022	7.6171E-09	4	28502335	C	T	0.1395	33.3723
rs4527444	0.0097	0.0015	4.2796E-10	4	30842780	A	G	0.5405	38.9830
rs10938397	0.0148	0.0016	1.9565E-21	4	45182527	A	G	0.4343	90.4012
rs2102278	0.0119	0.0017	5.5021E-13	4	52818664	A	G	0.3229	52.0207
rs10028214	-0.0132	0.0022	9.0273E-10	4	54331923	A	G	0.8491	37.5263
rs1878528	0.0142	0.0017	1.7386E-17	4	82184234	A	G	0.3128	72.4283
rs186281175	0.0274	0.0042	1.1683E-10	4	87598333	T	C	0.0342	41.5199
rs10024321	-0.0097	0.0015	3.4176E-10	4	88647674	G	C	0.4961	39.4223
rs7377083	0.0103	0.0016	4.6404E-11	4	102708997	C	A	0.4313	43.3253
rs11726786	-0.0172	0.0016	2.8578E-27	4	106120756	T	G	0.3701	117.0285
rs6821305	0.0135	0.0016	1.0543E-17	4	122713863	A	C	0.3972	73.4154
rs34848742	-0.0148	0.0019	6.2388E-15	4	123828042	T	G	0.7915	60.8305
rs9985795	-0.0089	0.0015	7.8750E-09	4	135213286	T	C	0.4815	33.3076
rs2035901	0.0140	0.0015	1.5402E-19	4	145521867	A	G	0.4662	81.7647
rs7689420	0.0290	0.0021	2.9326E-45	4	145568352	T	C	0.8314	199.3800
rs10015974	0.0099	0.0018	3.5135E-08	4	184196254	A	G	0.7590	30.4024
rs55884613	0.0137	0.0024	8.6861E-09	5	264646	G	A	0.1235	33.1167
rs274677	-0.0093	0.0016	1.3102E-08	5	6754402	T	C	0.6713	32.3179
rs72740637	0.0106	0.0017	7.9198E-10	5	32710486	G	A	0.2718	37.7817
rs292168	-0.0139	0.0016	4.1736E-19	5	36807189	A	G	0.4469	79.7944
rs10062079	0.0090	0.0016	9.4920E-09	5	39393733	G	A	0.4231	32.9443
rs55681913	0.0272	0.0025	3.3912E-27	5	42687629	T	C	0.1070	116.6890
rs4865956	-0.0105	0.0017	4.2376E-10	5	54882505	T	A	0.6960	39.0026
rs7709645	-0.0104	0.0015	1.5091E-11	5	60731458	G	C	0.4935	45.5252
rs6873192	-0.0130	0.0015	4.2830E-17	5	67598184	A	G	0.5178	70.6491

rs2307111	-0.0201	0.0016	4.6341E-37	5	75003678	T	C	0.3929	161.8118
rs365352	-0.0188	0.0018	6.0331E-26	5	77401152	G	A	0.2453	110.9791
rs4588572	0.0102	0.0018	2.6226E-08	5	77631634	A	G	0.2280	30.9700
rs7718514	0.0138	0.0023	3.2135E-09	5	88041854	T	A	0.1241	35.0516
rs2115459	-0.0108	0.0015	3.3385E-12	5	88430633	T	C	0.5289	48.4824
rs2009416	-0.0090	0.0016	1.8818E-08	5	92415111	C	T	0.3592	31.6142
rs6235	0.0163	0.0017	5.1242E-21	5	95728898	C	G	0.2676	88.4957
rs28445331	0.0092	0.0016	8.8215E-09	5	105885913	A	C	0.6311	33.0865
rs6898801	-0.0096	0.0016	4.5451E-09	5	111250615	A	G	0.6596	34.3768
rs2952615	-0.0122	0.0016	1.5153E-14	5	112138888	G	C	0.6182	59.0836
rs1582931	-0.0206	0.0016	5.8262E-40	5	122657199	G	A	0.4723	175.0975
rs9327336	0.0096	0.0016	2.5903E-09	5	123990270	T	C	0.3450	35.4715
rs35897671	0.0107	0.0016	3.4518E-11	5	127349745	C	T	0.3455	43.9052
rs247008	0.0150	0.0016	8.5524E-20	5	131447104	A	G	0.6711	82.9273
rs33967909	0.0153	0.0019	4.5489E-16	5	137603293	G	A	0.2136	65.9887
rs7730885	0.0155	0.0016	3.6389E-22	5	139042547	A	G	0.3715	93.7293
rs6876587	-0.0086	0.0016	3.2969E-08	5	153103261	G	A	0.4308	30.5257
rs17115481	-0.0101	0.0017	7.0769E-09	5	153358226	G	A	0.2683	33.5152
rs4282339	-0.0166	0.0019	1.7261E-18	5	168256240	G	A	0.2069	76.9899
rs4073717	-0.0193	0.0019	9.3137E-24	5	170864021	G	T	0.2014	100.9899
rs254963	-0.0092	0.0016	3.4586E-09	5	171224403	A	G	0.4463	34.9085
rs55758152	0.0116	0.0017	2.9206E-12	5	171317318	G	A	0.3269	48.7444
rs6874142	0.0191	0.0026	8.2221E-14	5	172753555	T	G	0.1143	55.7567
rs183041	0.0142	0.0017	2.2825E-16	5	176526270	G	A	0.7260	67.3486
rs9379084	-0.0147	0.0025	2.9867E-09	6	7231843	G	A	0.1153	35.1944
rs9379130	0.0183	0.0015	3.8909E-32	6	7702659	G	C	0.4917	139.2732
rs12213070	-0.0092	0.0016	1.4702E-08	6	12131542	G	A	0.3466	32.0937
rs12216497	-0.0111	0.0016	1.1082E-12	6	19028623	C	T	0.5623	50.6464
rs6909668	-0.0104	0.0016	3.1563E-11	6	19724989	T	C	0.4148	44.0805
rs41271299	0.0442	0.0035	4.4667E-37	6	19839415	C	T	0.0519	161.8851
rs62396185	-0.0258	0.0018	2.1541E-48	6	26180634	G	C	0.2572	213.7520
rs9260324	-0.0119	0.0017	7.8885E-12	6	29917077	G	A	0.2862	46.7965
rs111841857	-0.0219	0.0016	1.2154E-40	6	32571508	G	A	0.6133	178.2162
rs9273453	0.0279	0.0025	1.3711E-29	6	32627812	C	G	0.1282	127.6258
rs2744965	0.0415	0.0022	9.2022E-78	6	34589632	C	T	0.1392	348.6239
rs3734554	0.0129	0.0017	1.0000E-14	6	40360781	C	T	0.3069	59.9011
rs6933697	-0.0140	0.0017	7.9915E-16	6	41915351	A	G	0.2668	64.8781
rs567230078	-0.0268	0.0048	1.9413E-08	6	43588227	T	A	0.0269	31.5539
rs3798519	0.0238	0.0020	1.9580E-32	6	50788778	A	C	0.1793	140.6384
rs2474898	0.0095	0.0016	3.6794E-09	6	51769245	C	T	0.3462	34.7883
rs12209223	0.0175	0.0026	6.6853E-12	6	76164589	C	A	0.1021	47.1212
rs9341808	-0.0134	0.0015	5.5927E-18	6	80953257	C	A	0.4793	74.6675
rs2503756	0.0097	0.0016	6.9448E-10	6	81360693	C	T	0.6051	38.0383
rs2917460	0.0107	0.0016	7.5308E-12	6	83343317	A	C	0.4774	46.8870
rs9362662	-0.0094	0.0015	1.0941E-09	6	90296588	A	G	0.5241	37.1514
rs1006399	-0.0089	0.0015	9.2226E-09	6	101039470	G	A	0.4599	33.0002

rs6902789	0.0105	0.0016	6.2998E-11	6	105358192	G	A	0.3695	42.7277
rs768023	0.0197	0.0016	2.6083E-35	6	108876002	G	A	0.6286	153.7974
rs1476387	-0.0148	0.0016	3.1571E-21	6	109764535	G	T	0.4079	89.4534
rs13209968	0.0139	0.0015	1.8583E-19	6	126089285	G	C	0.5270	81.3947
rs9388498	0.0172	0.0020	2.9213E-17	6	126873423	G	T	0.1858	71.4041
rs1415700	-0.0285	0.0017	1.0441E-64	6	130345791	G	A	0.6951	288.6405
rs599004	-0.0135	0.0017	3.7296E-15	6	140439740	C	T	0.2796	61.8432
rs6570509	-0.0178	0.0017	1.7770E-25	6	142716286	G	T	0.2853	108.8368
rs11968025	0.0167	0.0016	5.0102E-27	6	152168974	T	G	0.4569	115.9153
rs116156838	0.0139	0.0022	2.4126E-10	6	154335719	A	T	0.1456	40.1023
rs730536	-0.0108	0.0017	2.2016E-10	6	155549240	G	C	0.7090	40.2810
rs1832871	-0.0094	0.0016	9.0722E-09	6	158722034	A	G	0.6641	33.0321
rs68022888	-0.0085	0.0016	4.5325E-08	6	169359664	T	C	0.4280	29.9083
rs2533879	-0.0232	0.0017	1.6629E-43	7	2859847	G	A	0.3015	191.3408
rs836511	0.0128	0.0019	2.8712E-11	7	6458319	A	G	0.1984	44.2657
rs34776209	-0.0168	0.0018	4.9518E-21	7	23513093	C	T	0.2482	88.5630
rs2122823	0.0113	0.0019	5.5972E-09	7	25939161	C	T	0.2099	33.9718
rs508347	-0.0142	0.0017	3.5147E-17	7	28212824	T	C	0.7008	71.0391
rs17157112	-0.0089	0.0015	8.3043E-09	7	28779946	T	G	0.4705	33.2043
rs723149	-0.0125	0.0016	8.3928E-16	7	46577056	A	G	0.5636	64.7818
rs58511572	0.0177	0.0023	1.9881E-14	7	50641187	A	G	0.1298	58.5484
rs10260993	-0.0115	0.0019	3.4259E-09	7	55884295	T	G	0.1938	34.9270
rs2866719	0.0100	0.0016	4.5655E-10	7	70106061	C	T	0.3701	38.8567
rs13244614	0.0128	0.0017	7.4449E-14	7	72973854	C	A	0.2845	55.9513
rs6953561	-0.0184	0.0021	7.1401E-19	7	76637391	G	A	0.8292	78.7332
rs740157	-0.0092	0.0016	3.3687E-09	7	77055885	A	G	0.5688	34.9598
rs1544459	0.0092	0.0015	2.6629E-09	7	77417584	T	C	0.4545	35.4178
rs10269774	0.0279	0.0016	2.4118E-64	7	92253972	G	A	0.3239	286.9706
rs10230506	0.0116	0.0021	3.4317E-08	7	92471518	T	A	0.1596	30.4479
rs6976031	0.0133	0.0015	5.2401E-18	7	93088426	G	C	0.4931	74.7968
rs10243988	-0.0115	0.0019	3.1306E-09	7	99528761	G	A	0.1948	35.1028
rs36078773	0.0099	0.0016	2.2898E-10	7	103427228	T	G	0.4257	40.2048
rs10247983	0.0165	0.0029	1.7770E-08	7	114590228	G	A	0.9231	31.7258
rs10237306	0.0133	0.0016	5.8574E-17	7	121955981	G	T	0.3810	70.0316
rs62621812	0.0441	0.0056	3.4905E-15	7	127015083	G	A	0.0204	61.9736
rs7781964	0.0138	0.0020	3.3916E-12	7	139749346	G	A	0.1842	48.4510
rs10236214	0.0209	0.0016	2.4387E-38	7	150668070	C	T	0.6414	167.6675
rs2442497	-0.0131	0.0023	8.3821E-09	8	6326748	C	T	0.8665	33.1862
rs6601527	-0.0103	0.0016	4.0436E-11	8	10665444	C	A	0.5886	43.5954
rs76364830	-0.0221	0.0032	4.4541E-12	8	13372120	G	A	0.0629	47.9169
rs7824070	0.0096	0.0016	5.0272E-09	8	23136793	C	T	0.6739	34.1804
rs73228208	0.0124	0.0019	2.4010E-11	8	23381769	G	A	0.2263	44.6158
rs2013265	-0.0099	0.0018	3.0832E-08	8	24092500	C	T	0.2487	30.6559
rs61051750	-0.0090	0.0017	4.8188E-08	8	25397262	A	C	0.3191	29.7897
rs1910252	0.0146	0.0021	2.0284E-12	8	49407362	C	T	0.1644	49.4597
rs72656010	-0.0350	0.0023	5.5888E-53	8	57122215	T	C	0.1311	234.7921

rs62515437	0.0190	0.0018	4.1427E-25	8	57160328	G	T	0.2260	107.1579
rs13264909	-0.0105	0.0016	1.6416E-11	8	64702385	A	T	0.4289	45.3604
rs7824350	-0.0101	0.0016	1.3071E-10	8	73452488	A	G	0.5953	41.3007
rs61729527	-0.0250	0.0035	6.7564E-13	8	77761919	C	T	0.0516	51.6179
rs67674827	0.0192	0.0017	2.4049E-29	8	78124967	C	T	0.2857	126.5102
rs1504797	-0.0096	0.0017	9.3273E-09	8	89434405	T	C	0.3041	32.9783
rs13258769	-0.0118	0.0017	1.0276E-12	8	95583809	G	A	0.3172	50.7939
rs2142331	-0.0139	0.0016	1.1508E-18	8	116636719	C	T	0.6014	77.7905
rs60869342	-0.0140	0.0018	2.0169E-15	8	120456193	A	T	0.2680	63.0546
rs10283100	0.0250	0.0034	1.2010E-13	8	120596023	A	G	0.9445	55.0115
rs72675793	-0.0112	0.0019	2.9838E-09	8	121211230	C	T	0.2113	35.1961
rs6470764	-0.0155	0.0019	4.3553E-16	8	130725665	C	T	0.2022	66.0750
rs529009210	-0.0093	0.0016	5.4375E-09	8	134607567	A	C	0.6060	34.0277
rs6995599	-0.0187	0.0017	4.0907E-29	8	135653535	C	T	0.3070	125.4556
rs10094200	-0.0127	0.0017	5.1298E-14	8	135843916	C	G	0.2944	56.6843
rs7460093	0.0103	0.0016	3.2972E-11	8	144876159	G	A	0.5345	43.9942
rs9314420	-0.0085	0.0016	4.4293E-08	8	144986108	A	G	0.5735	29.9529
rs10962427	0.0093	0.0016	6.6892E-09	9	16463915	G	C	0.3869	33.6249
rs34522021	0.0103	0.0015	2.4602E-11	9	23350420	C	T	0.4562	44.5684
rs1412234	0.0126	0.0016	1.9323E-14	9	28410683	T	C	0.3300	58.6052
rs10746837	-0.0110	0.0016	2.7637E-12	9	90873653	G	A	0.5815	48.8530
rs2482357	-0.0108	0.0016	2.9980E-12	9	94179978	G	A	0.4302	48.6938
rs28457693	0.0252	0.0025	7.1967E-24	9	98217348	A	G	0.1066	101.5002
rs113457986	0.0377	0.0064	4.4667E-09	9	98430421	A	G	0.0151	34.4106
rs111821073	0.0177	0.0021	1.0176E-16	9	99084793	C	T	0.1570	68.9423
rs3931548	0.0133	0.0016	2.2327E-16	9	103113652	C	A	0.3777	67.3922
rs1341217	0.0123	0.0020	4.3211E-10	9	111662727	G	A	0.1888	38.9645
rs7043919	0.0142	0.0024	4.9001E-09	9	118550806	G	A	0.8870	34.2304
rs12347137	-0.0238	0.0019	1.8639E-35	9	119122721	A	C	0.2034	154.4640
rs56141370	0.0133	0.0024	3.0522E-08	9	127056213	C	T	0.1167	30.6755
rs35843221	-0.0104	0.0016	1.8523E-11	9	128013848	T	G	0.4514	45.1239
rs7020201	0.0088	0.0015	1.3091E-08	9	139377498	G	C	0.5442	32.3192
rs35288270	-0.0156	0.0023	6.1608E-12	10	4961278	T	C	0.1336	47.2811
rs73601548	0.0149	0.0024	7.7082E-10	10	18549889	C	T	0.1146	37.8347
rs7898308	-0.0090	0.0016	8.9256E-09	10	22832662	C	T	0.5739	33.0636
rs11014285	0.0173	0.0021	1.5800E-16	10	25178864	G	A	0.1660	68.0746
rs12247156	-0.0137	0.0022	4.5896E-10	10	34635529	C	T	0.1435	38.8470
rs10995366	-0.0115	0.0018	1.0736E-10	10	52772113	G	A	0.2520	41.6856
rs68156080	-0.0103	0.0017	3.5133E-09	10	63781673	A	G	0.2728	34.8776
rs224049	-0.0087	0.0016	3.2433E-08	10	64492433	T	A	0.6001	30.5577
rs56139009	0.0121	0.0016	1.3155E-14	10	70248688	T	C	0.4280	59.3609
rs7910087	-0.0116	0.0016	1.0833E-13	10	77209145	T	C	0.5523	55.2146
rs117543413	-0.0415	0.0059	1.8796E-12	10	79543740	C	T	0.0177	49.6092
rs4980067	-0.0115	0.0015	8.0112E-14	10	81136129	C	A	0.5038	55.8076
rs7080472	0.0127	0.0016	4.3435E-16	10	96012950	G	T	0.4220	66.0801
rs2902406	0.0175	0.0016	3.0935E-29	10	102660281	G	C	0.4314	126.0109

rs1926034	0.0128	0.0016	7.4612E-16	10	104829102	G	A	0.3749	65.0134
rs4917451	0.0093	0.0016	2.1768E-09	10	107568816	T	C	0.5696	35.8105
rs7912286	-0.0095	0.0016	2.3472E-09	10	114693230	A	G	0.6000	35.6635
rs11593630	-0.0091	0.0016	1.4486E-08	10	120491506	C	T	0.3534	32.1225
rs6585827	0.0127	0.0015	1.8610E-16	10	124165615	G	A	0.4702	67.7513
rs705159	0.0089	0.0015	8.1909E-09	10	125233053	G	A	0.4509	33.2310
rs4478950	0.0143	0.0021	6.9758E-12	10	126596425	T	C	0.1634	47.0374
rs6597975	0.0087	0.0016	2.5049E-08	11	838842	C	G	0.5464	31.0590
rs73398080	-0.0102	0.0018	7.0851E-09	11	2094599	G	A	0.2580	33.5127
rs35506085	-0.0198	0.0020	7.6896E-23	11	2165576	G	A	0.1824	96.8079
rs61869763	0.0184	0.0025	3.0393E-13	11	2813345	C	T	0.1058	53.1865
rs7939724	0.0098	0.0015	2.4528E-10	11	9545849	G	T	0.4955	40.0701
rs12277651	0.0151	0.0026	1.1782E-08	11	12895233	A	G	0.0939	32.5241
rs61884008	0.0227	0.0034	1.6842E-11	11	14413213	G	A	0.0566	45.3104
rs11030119	0.0194	0.0017	3.7225E-31	11	27728102	G	A	0.3088	134.7874
rs10835367	-0.0101	0.0016	3.0775E-10	11	28642593	C	A	0.3856	39.6273
rs1222219	-0.0114	0.0018	5.3932E-10	11	30344345	G	C	0.2277	38.5315
rs35827570	0.0119	0.0018	1.5962E-11	11	30510599	C	T	0.2666	45.4154
rs57635800	0.0147	0.0017	7.9609E-18	11	43878485	G	A	0.2901	73.9703
rs1228024	-0.0105	0.0016	9.2504E-11	11	47951353	C	A	0.6604	41.9766
rs7952436	-0.0348	0.0028	7.6514E-36	11	67024534	C	T	0.0832	156.2361
rs7129320	-0.0227	0.0021	3.0011E-28	11	68388220	G	A	0.1676	121.5007
rs667515	-0.0105	0.0016	3.8637E-11	11	69449076	G	C	0.3869	43.6848
rs11233117	-0.0099	0.0015	1.8247E-10	11	69924352	C	G	0.4527	40.6480
rs1813212	-0.0090	0.0016	5.7962E-09	11	89301382	A	G	0.4458	33.9036
rs607472	0.0111	0.0016	1.0648E-12	11	118680072	C	G	0.4143	50.7246
rs76693355	-0.0164	0.0024	8.7435E-12	11	120292477	T	C	0.1160	46.5947
rs7930275	0.0104	0.0019	3.6033E-08	11	134611807	C	T	0.2216	30.3533
rs55726687	0.0157	0.0019	6.3260E-17	12	991306	G	A	0.2114	69.8796
rs67551338	0.0230	0.0032	1.2613E-12	12	3393100	C	T	0.0616	50.3921
rs76895963	0.1047	0.0059	5.9586E-70	12	4384844	T	G	0.0210	312.7264
rs2900208	0.0140	0.0016	4.3341E-18	12	11878464	C	A	0.3553	75.1713
rs35756741	-0.0177	0.0027	3.6439E-11	12	12868701	C	T	0.0921	43.7993
rs7134283	-0.0134	0.0017	6.1565E-15	12	24071748	G	A	0.2841	60.8558
rs10843139	-0.0129	0.0017	2.3765E-14	12	28380093	T	G	0.2939	58.1974
rs1458156	0.0101	0.0015	6.2385E-11	12	41887940	C	T	0.4887	42.7472
rs2408507	0.0155	0.0016	7.0418E-23	12	46729407	A	G	0.6073	96.9821
rs7132908	0.0185	0.0016	1.4797E-31	12	50263148	G	A	0.3838	136.6197
rs705698	-0.0105	0.0016	1.0050E-10	12	56384687	T	C	0.3380	41.8141
rs11175891	-0.0106	0.0018	1.6748E-09	12	66126255	G	A	0.2544	36.3216
rs1351394	-0.0264	0.0015	4.9221E-66	12	66351826	T	C	0.5088	294.7347
rs10748128	0.0110	0.0016	9.9093E-12	12	69827658	G	T	0.3447	46.3492
rs374335	-0.0118	0.0017	1.0437E-12	12	77457439	A	G	0.3189	50.7640
rs12814495	-0.0114	0.0019	8.0733E-10	12	90206216	A	G	0.2316	37.7444
rs7977788	0.0248	0.0018	2.7980E-41	12	93982332	G	A	0.2255	181.1388
rs146714063	0.0116	0.0021	4.7713E-08	12	97498661	G	A	0.1574	29.8091

rs10777860	-0.0135	0.0015	1.8612E-18	12	97792792	G	A	0.5285	76.8406
rs10860874	-0.0126	0.0022	4.4767E-09	12	102930095	T	C	0.8495	34.4062
rs2287163	-0.0101	0.0016	2.2334E-10	12	107349294	C	T	0.3718	40.2531
rs1541597	0.0133	0.0019	5.6765E-12	12	110044918	G	T	0.2004	47.4418
rs7137828	0.0141	0.0015	4.9549E-20	12	111932800	C	T	0.5171	84.0072
rs1667586	-0.0119	0.0019	1.9617E-10	12	122382179	A	G	0.7842	40.5071
rs147730268	-0.0286	0.0028	4.8424E-25	12	123024476	G	T	0.0887	106.8497
rs1716162	-0.0126	0.0019	2.0274E-11	12	123642538	T	A	0.7879	44.9470
rs12314162	0.0221	0.0021	5.9136E-26	12	124826676	C	T	0.1607	111.0191
rs882378	0.0106	0.0017	2.0599E-10	12	133374682	A	C	0.3087	40.4115
rs1218826	0.0100	0.0016	1.1693E-09	13	27995760	A	G	0.6657	37.0219
rs7338445	-0.0086	0.0016	4.2030E-08	13	28613499	C	T	0.5922	30.0547
rs61947180	0.0139	0.0019	3.1375E-13	13	30169861	C	A	0.2110	53.1243
rs6563808	-0.0107	0.0017	1.0307E-09	13	40766662	T	C	0.7350	37.2676
rs6650366	0.0098	0.0017	4.0531E-09	13	42809961	C	T	0.3061	34.5998
rs2812208	0.0730	0.0054	2.4536E-42	13	50707087	G	C	0.0211	185.9833
rs9535463	-0.0313	0.0019	7.8588E-63	13	51121547	G	A	0.2159	280.0194
rs9568856	0.0126	0.0023	4.7502E-08	13	54064981	G	A	0.1269	29.8175
rs9540493	-0.0100	0.0016	1.4687E-10	13	66205704	A	G	0.5437	41.0723
rs3818416	0.0163	0.0018	3.6651E-19	13	78474468	A	C	0.7659	80.0514
rs55911231	0.0104	0.0016	3.1485E-11	13	96983940	C	T	0.4103	44.0852
rs7318788	-0.0104	0.0017	6.2129E-10	13	99578265	T	C	0.6989	38.2551
rs10870597	-0.0104	0.0018	1.0942E-08	13	114999636	A	G	0.2348	32.6680
rs12895726	-0.0131	0.0024	4.2311E-08	14	21587865	C	T	0.1284	30.0419
rs17197114	0.0129	0.0020	1.8525E-10	14	21894526	T	C	0.1781	40.6185
rs3212260	0.0136	0.0018	1.0398E-14	14	24804088	A	T	0.2598	59.8246
rs12879423	0.0152	0.0017	4.9610E-20	14	25927832	A	G	0.6808	84.0048
rs8007644	0.0099	0.0016	4.5621E-10	14	35218831	G	A	0.3906	38.8582
rs112957890	0.0117	0.0018	3.2732E-11	14	36220876	A	G	0.2665	44.0093
rs12889702	0.0096	0.0017	7.1341E-09	14	42894143	A	C	0.3112	33.4996
rs1950210	-0.0096	0.0018	4.9351E-08	14	54774011	G	A	0.7415	29.7436
rs10483727	-0.0219	0.0016	1.0981E-43	14	61072875	T	C	0.6132	192.1690
rs2296316	-0.0112	0.0016	7.2306E-13	14	65520246	T	C	0.4645	51.4846
rs8007058	0.0112	0.0018	1.1618E-09	14	73360258	G	A	0.2254	37.0346
rs7141420	0.0136	0.0016	1.8794E-18	14	79899454	C	T	0.5148	76.8208
rs1286138	0.0122	0.0016	1.2818E-13	14	91485445	T	G	0.6743	54.8834
rs2148564	0.0113	0.0017	5.4814E-11	14	94073093	A	G	0.7226	43.0004
rs735241	-0.0120	0.0018	1.2275E-11	14	101141726	G	A	0.7458	45.9299
rs3803286	-0.0111	0.0016	1.1854E-11	14	103246470	A	G	0.6670	45.9986
rs752268	-0.0110	0.0019	6.4570E-09	14	104011494	C	T	0.2103	33.6939
rs12906197	-0.0127	0.0016	4.4024E-16	15	38492199	C	T	0.4247	66.0534
rs11855017	0.0136	0.0020	8.1958E-12	15	42096146	C	A	0.1827	46.7213
rs376071810	-0.0174	0.0027	1.7361E-10	15	55705972	A	C	0.0878	40.7454
rs8029942	-0.0104	0.0015	1.3572E-11	15	62353458	G	A	0.4726	45.7336
rs3809570	0.0133	0.0018	1.7770E-13	15	67000117	C	A	0.2423	54.2416
rs35874463	0.0241	0.0033	2.3440E-13	15	67457698	A	G	0.0580	53.6970

rs4776970	-0.0126	0.0016	4.4562E-15	15	68080886	A	T	0.3553	61.4926
rs9920235	-0.0100	0.0016	2.6635E-10	15	79384021	C	T	0.4006	39.9095
rs2759301	0.0110	0.0015	1.4486E-12	15	80994288	G	A	0.4495	50.1209
rs12907384	-0.0127	0.0016	1.6128E-15	15	86276000	T	C	0.5361	63.4951
rs28559926	-0.0386	0.0041	9.9845E-21	15	89400043	G	C	0.0388	87.1757
rs1573891	-0.0228	0.0021	9.1385E-27	15	99186488	G	C	0.1569	114.7225
rs74032128	0.0264	0.0044	1.3356E-09	15	99495351	A	G	0.0324	36.7626
rs72755233	-0.0172	0.0024	1.5017E-12	15	100692953	G	A	0.1131	50.0497
rs113851505	-0.0128	0.0020	9.9788E-11	16	341988	C	T	0.1860	41.8277
rs11648796	0.0168	0.0019	1.9531E-18	16	792190	A	G	0.2303	76.7449
rs71385734	-0.0252	0.0021	2.4756E-34	16	2160503	T	G	0.1691	149.3242
rs2539999	0.0171	0.0017	1.1231E-23	16	2266173	T	C	0.2859	100.6188
rs9934930	0.0129	0.0015	5.5572E-17	16	4902038	A	G	0.4788	70.1351
rs4985124	-0.0116	0.0017	4.7640E-12	16	15125441	T	G	0.2962	47.7848
rs72771080	0.0133	0.0019	1.3293E-12	16	20021383	C	T	0.2127	50.2894
rs4788062	0.0150	0.0016	8.0921E-22	16	28641179	T	C	0.4108	92.1481
rs35467921	0.0241	0.0016	3.0534E-53	16	30048553	C	T	0.4023	235.9954
rs72801843	0.0154	0.0017	3.7602E-20	16	53508802	T	A	0.3014	84.5524
rs56094641	0.0409	0.0016	1.5981E-149	16	53806453	A	G	0.4031	678.9078
rs37036	0.0104	0.0018	5.4698E-09	16	58553348	T	C	0.2468	34.0166
rs71393968	0.0240	0.0037	8.3502E-11	16	67847341	G	A	0.0454	42.1766
rs76513770	-0.0160	0.0023	2.8186E-12	16	72505534	T	C	0.1296	48.8143
rs4887925	-0.0088	0.0016	2.3511E-08	16	73784416	G	C	0.4141	31.1818
rs7184768	0.0099	0.0016	2.8278E-10	16	81663793	G	A	0.4137	39.7926
rs8059189	-0.0113	0.0016	2.5719E-12	16	86417349	G	A	0.4029	48.9944
rs10775348	0.0125	0.0017	1.1375E-13	16	88806348	A	G	0.7018	55.1182
rs4525525	-0.0112	0.0018	2.7077E-10	17	1866892	G	T	0.2652	39.8770
rs57307236	0.0094	0.0016	2.5879E-09	17	2159502	A	G	0.3982	35.4736
rs55831773	-0.0154	0.0020	4.3976E-15	17	7559037	C	T	0.1980	61.5187
rs78378222	0.0859	0.0070	2.9968E-34	17	7571752	T	G	0.0126	148.9440
rs1242507	0.0094	0.0016	4.8703E-09	17	17365399	G	A	0.5624	34.2420
rs6505216	-0.0280	0.0019	1.6413E-49	17	29206421	G	T	0.2337	218.8809
rs584438	-0.0103	0.0016	1.2308E-10	17	38599172	C	A	0.3764	41.4182
rs6503600	-0.0109	0.0017	8.3808E-11	17	39270542	G	C	0.6945	42.1695
rs9894577	-0.0138	0.0017	6.6558E-17	17	43223292	G	A	0.3173	69.7792
rs573982914	0.0229	0.0027	6.0327E-17	17	47063204	A	C	0.0900	69.9733
rs757608	-0.0147	0.0016	2.1805E-19	17	59497277	A	G	0.6700	81.0781
rs2005172	0.0213	0.0016	1.6793E-39	17	61996255	A	C	0.6400	172.9912
rs7218014	0.0126	0.0019	8.2203E-11	17	65832016	T	C	0.1969	42.2075
rs7218899	-0.0113	0.0015	2.8298E-13	17	76739850	C	T	0.5125	53.3269
rs147576596	-0.0129	0.0017	3.9637E-14	17	78722281	T	G	0.3010	57.1914
rs36000545	-0.0150	0.0016	6.0436E-21	17	79093822	A	G	0.3942	88.1686
rs57126421	-0.0112	0.0018	7.1111E-10	18	2656989	A	G	0.2357	37.9924
rs6505781	-0.0101	0.0018	9.2562E-09	18	13161682	G	C	0.2602	32.9932
rs7235010	0.0273	0.0019	1.7224E-48	18	20724810	G	A	0.7839	214.1983

rs9960148	-0.0087	0.0016	3.1750E-08	18	23417359	G	T	0.3926	30.5989
rs1941697	0.0094	0.0015	1.2947E-09	18	31251276	G	A	0.4503	36.8231
rs59066169	-0.0163	0.0029	9.9669E-09	18	46277324	C	T	0.0790	32.8491
rs7229491	-0.0109	0.0016	2.5104E-11	18	46516424	G	C	0.6606	44.5286
rs34776495	0.0116	0.0016	7.2015E-14	18	46813666	A	G	0.4415	56.0172
rs9951619	0.0132	0.0018	7.8734E-13	18	56882326	T	G	0.7694	51.3175
rs66922415	0.0466	0.0018	4.9669E-145	18	57848651	A	G	0.2335	658.2161
rs57636386	-0.0276	0.0028	4.5798E-23	18	58048295	T	C	0.0834	97.8347
rs74494415	-0.0289	0.0040	2.7239E-13	18	74972138	C	T	0.0400	53.4020
rs11880992	0.0138	0.0016	1.0246E-18	19	2176403	G	A	0.4076	78.0199
rs7247738	-0.0109	0.0016	2.6505E-11	19	3407354	A	G	0.6479	44.4221
rs2602713	0.0099	0.0016	2.6559E-10	19	4910021	A	C	0.4373	39.9148
rs73000135	-0.0109	0.0016	5.5819E-12	19	7208744	C	T	0.4095	47.4745
rs62621197	-0.0400	0.0043	8.3547E-21	19	8670147	C	T	0.0362	87.5280
rs3843751	-0.0138	0.0016	3.3163E-17	19	10748121	C	T	0.6637	71.1537
rs35928002	-0.0096	0.0017	2.2669E-08	19	18116144	A	G	0.3056	31.2528
rs10404726	-0.0092	0.0015	2.3741E-09	19	18834514	C	T	0.4664	35.6414
rs73004967	-0.0175	0.0030	8.6371E-09	19	19717056	A	G	0.0695	33.1276
rs111640872	0.0160	0.0016	2.1239E-22	19	30290357	G	C	0.3311	94.7957
rs10417156	-0.0092	0.0016	4.5168E-09	19	32810229	G	C	0.4227	34.3888
rs185350	0.0088	0.0015	1.3374E-08	19	34306816	C	T	0.4993	32.2779
rs1043413	0.0095	0.0016	1.6103E-09	19	41939297	C	G	0.3879	36.3980
rs3810291	0.0186	0.0016	9.8548E-30	19	47569003	G	A	0.6771	128.2817
rs1060967	-0.0090	0.0016	1.8721E-08	19	49621592	G	C	0.3730	31.6244
rs147110934	-0.0306	0.0050	1.0357E-09	19	55993436	G	T	0.0240	37.2586
rs1407031	-0.0088	0.0016	2.0499E-08	20	6542634	C	T	0.3982	31.4483
rs2650965	-0.0117	0.0016	1.0708E-12	20	6709838	A	G	0.3278	50.7133
rs2093147	-0.0091	0.0016	1.7927E-08	20	9033462	T	C	0.6408	31.7087
rs16996657	0.0126	0.0023	4.8851E-08	20	15816236	T	C	0.1291	29.7630
rs6081869	-0.0103	0.0016	1.3443E-10	20	20060745	T	G	0.3869	41.2455
rs2252720	-0.0129	0.0017	5.8940E-15	20	21223663	C	T	0.6732	60.9419
rs187449369	-0.0210	0.0018	4.3096E-33	20	32077916	C	A	0.2678	143.6454
rs6142059	0.0122	0.0015	2.0157E-15	20	32544327	T	C	0.4927	63.0553
rs143384	0.0372	0.0016	3.2731E-124	20	34025756	A	G	0.4018	562.3310
rs1001352	0.0127	0.0020	2.1758E-10	20	35872647	C	T	0.8160	40.3043
rs11907497	0.0117	0.0018	1.4681E-10	20	47843620	T	C	0.2381	41.0734
rs6096886	-0.0204	0.0020	1.9425E-25	20	50951298	A	G	0.1903	108.6610
rs4341996	-0.0114	0.0019	1.7894E-09	20	54377866	A	C	0.2114	36.1927
rs6026579	-0.0089	0.0016	4.8684E-08	20	57463993	C	T	0.6590	29.7699
rs73619441	-0.0169	0.0022	2.6405E-14	20	61564901	T	G	0.1410	57.9906
rs8126213	-0.0126	0.0022	1.7684E-08	20	62611478	G	A	0.1377	31.7349
rs2298333	-0.0132	0.0016	1.9811E-17	21	39673981	C	T	0.5697	72.1702
rs4819021	-0.0093	0.0016	2.6151E-09	21	46466927	T	C	0.4762	35.4531
rs35665085	-0.0199	0.0033	2.5132E-09	22	17625915	G	A	0.0562	35.5306

rs4680	0.0086	0.0015	1.9885E-08	22	19951271	G	A	0.5163	31.5073
rs5752989	-0.0114	0.0016	2.1564E-13	22	30365780	G	A	0.5727	53.8608
rs41311445	-0.0243	0.0026	1.4146E-20	22	42070374	A	C	0.0960	86.4870
rs112022355	0.0334	0.0058	8.7034E-09	22	46387296	T	C	0.0178	33.1128

Note: Eaf, effect allele frequency

Table S3 Descriptions of SNPs for BMR in both sexes from significant SNPs in female in Neale's study

SNP	Beta	Se	P value	Chr	Position	Other allele	Effect allele	Eaf	F statistics
rs12040325	0.0106	0.0015	6.2300E-12	1	1702436	G	A	0.5110	47.2588
rs585672	0.0104	0.0016	2.5696E-10	1	7973170	C	T	0.6737	39.9789
rs475980	-0.0103	0.0016	3.8445E-11	1	10719645	A	G	0.5038	43.6938
rs6691831	0.0161	0.0018	1.5369E-19	1	11220180	A	G	0.2512	81.7685
rs55745410	-0.0156	0.0016	7.3277E-22	1	33802817	A	G	0.3534	92.3444
rs272815	0.0108	0.0016	5.2558E-12	1	36648011	T	C	0.5799	47.5920
rs72660086	0.0139	0.0019	1.7101E-13	1	39571992	T	G	0.2110	54.3167
rs2885697	-0.0192	0.0016	3.8103E-32	1	41544279	G	T	0.6642	139.3152
rs111901479	0.0225	0.0027	9.9030E-17	1	51072387	G	A	0.0882	68.9957
rs706413	0.0151	0.0018	1.7735E-16	1	56602992	A	G	0.2287	67.8460
rs12140153	-0.0190	0.0027	1.1405E-12	1	62579891	G	T	0.0960	50.5898
rs7552518	0.0097	0.0016	1.2391E-09	1	74999375	A	C	0.3769	36.9090
rs34517439	0.0372	0.0024	8.1443E-56	1	78450517	C	A	0.1245	247.8095
rs17363646	0.0157	0.0023	3.3489E-12	1	86823503	A	G	0.1347	48.4763
rs12738523	-0.0107	0.0017	1.7274E-10	1	118855812	A	T	0.3121	40.7555
rs76798800	0.0225	0.0017	3.3304E-38	1	154994978	G	T	0.2674	167.0478
rs60077625	0.0141	0.0017	1.4747E-17	1	172098794	G	A	0.3154	72.7535
rs543874	0.0297	0.0019	2.1836E-55	1	177889480	A	G	0.2075	245.8423
rs12145281	-0.0100	0.0016	1.3837E-10	1	190306734	A	G	0.5616	41.1893
rs581571	-0.0070	0.0016	1.5547E-05	1	195122910	T	C	0.3461	18.6699
rs2678204	0.0147	0.0016	1.0963E-19	1	201800511	T	G	0.3428	82.4376
rs951366	0.0131	0.0016	8.0815E-17	1	205685352	T	C	0.3954	69.3962
rs1578992	0.0116	0.0016	1.1361E-12	1	212211174	G	T	0.6686	50.5978
rs12072845	-0.0147	0.0016	1.2635E-20	1	214630757	G	A	0.3927	86.7091
rs12146057	0.0150	0.0032	3.3966E-06	1	215419622	T	C	0.0609	21.5791
rs62107261	-0.0601	0.0036	3.3358E-62	2	422144	T	C	0.0481	277.1364
rs7559547	0.0354	0.0020	3.2101E-68	2	615627	C	T	0.8260	304.7739
rs10203320	0.0125	0.0017	3.0138E-14	2	9771620	T	C	0.3286	57.7300
rs12713004	0.0176	0.0017	2.4134E-24	2	23896049	A	G	0.7261	103.6661
rs11695471	-0.0124	0.0016	3.4296E-14	2	25457708	T	A	0.3323	57.4761
rs1260326	0.0196	0.0016	1.5367E-35	2	27730940	T	C	0.6067	154.8503
rs116072427	-0.0258	0.0030	1.2015E-17	2	33357096	G	C	0.0706	73.1580
rs9295	0.0120	0.0017	1.4379E-12	2	36777825	G	A	0.2953	50.1347
rs56162919	0.0079	0.0016	3.9077E-07	2	55658674	A	G	0.5600	25.7404
rs59985551	-0.0204	0.0018	1.9339E-28	2	56106928	C	T	0.2247	122.3725
rs2708147	0.0106	0.0017	2.2246E-10	2	58970323	G	C	0.3099	40.2611

rs6740645	-0.0128	0.0016	1.6640E-16	2	71596041	C	T	0.5725	67.9716
rs13002946	-0.0066	0.0017	1.4946E-04	2	100801959	T	A	0.2685	14.3794
rs1837367	0.0104	0.0015	2.2760E-11	2	111874551	G	A	0.4862	44.7208
rs1047109	-0.0219	0.0018	7.6381E-35	2	172414553	A	G	0.2507	151.6604
rs10931008	-0.0123	0.0016	3.5760E-14	2	183238919	T	C	0.3453	57.3938
rs1064213	0.0108	0.0015	2.5672E-12	2	198950240	G	A	0.4770	48.9976
rs1047891	0.0157	0.0017	2.3593E-21	2	211540507	C	A	0.3158	90.0294
rs13430869	0.0152	0.0018	1.1353E-17	2	218146818	G	T	0.7472	73.2704
rs1478575	0.0193	0.0017	2.7393E-31	2	218278555	T	A	0.6856	135.3966
rs1542224	0.0142	0.0017	2.0981E-16	2	223963874	T	C	0.7219	67.5142
rs6755070	-0.0120	0.0016	1.4145E-13	2	233585299	G	T	0.3511	54.6895
rs12695002	-0.0111	0.0016	1.5778E-12	2	242503047	C	T	0.5885	49.9525
rs2270894	-0.0176	0.0020	7.3561E-19	3	9975386	C	G	0.2042	78.6746
rs1609783	0.0132	0.0015	1.8374E-17	3	25095911	G	A	0.5272	72.3198
rs55794710	0.0110	0.0016	1.0199E-11	3	41363677	C	T	0.3662	46.2933
rs6800021	0.0159	0.0016	1.9932E-24	3	50190346	G	A	0.4255	104.0447
rs557951	0.0110	0.0017	3.8099E-11	3	62713263	T	G	0.3124	43.7124
rs62263917	-0.0147	0.0016	1.5313E-19	3	85667928	A	G	0.6467	81.7764
rs6762578	0.0166	0.0019	3.2880E-19	3	128992047	G	A	0.7777	80.2659
rs724016	0.0311	0.0015	1.1852E-89	3	141105570	A	G	0.4468	403.2963
rs57444720	0.0095	0.0016	1.9006E-09	3	161421867	T	C	0.5126	36.0750
rs7652177	0.0151	0.0015	1.2041E-22	3	171969077	C	G	0.5049	95.9192
rs4894419	-0.0143	0.0016	2.9673E-20	3	172150836	T	G	0.4428	85.0216
rs73175572	0.0280	0.0025	9.2300E-30	3	185490184	A	G	0.1114	128.4117
rs73052033	-0.0162	0.0020	3.6872E-16	3	185828465	T	C	0.1851	66.4029
rs112069922	-0.0289	0.0036	9.1638E-16	4	1034997	C	T	0.0492	64.6083
rs7663887	-0.0306	0.0021	3.2648E-47	4	17902920	C	A	0.1564	208.3371
rs4527444	0.0097	0.0015	4.2796E-10	4	30842780	A	G	0.5405	38.9830
rs10938397	0.0148	0.0016	1.9565E-21	4	45182527	A	G	0.4343	90.4012
rs2102278	0.0119	0.0017	5.5021E-13	4	52818664	A	G	0.3229	52.0207
rs1878528	0.0142	0.0017	1.7386E-17	4	82184234	A	G	0.3128	72.4283
rs186281175	0.0274	0.0042	1.1683E-10	4	87598333	T	C	0.0342	41.5199
rs11726786	-0.0172	0.0016	2.8578E-27	4	106120756	T	G	0.3701	117.0285
rs6821305	0.0135	0.0016	1.0543E-17	4	122713863	A	C	0.3972	73.4154
rs34848742	-0.0148	0.0019	6.2388E-15	4	123828042	T	G	0.7915	60.8305
rs2035901	0.0140	0.0015	1.5402E-19	4	145521867	A	G	0.4662	81.7647
rs7689420	0.0290	0.0021	2.9326E-45	4	145568352	T	C	0.8314	199.3800
rs750090	-0.0088	0.0016	5.6118E-08	4	152931436	T	C	0.3565	29.4943
rs292168	-0.0139	0.0016	4.1736E-19	5	36807189	A	G	0.4469	79.7944
rs55681913	0.0272	0.0025	3.3912E-27	5	42687629	T	C	0.1070	116.6890
rs6873192	-0.0130	0.0015	4.2830E-17	5	67598184	A	G	0.5178	70.6491
rs2307111	-0.0201	0.0016	4.6341E-37	5	75003678	T	C	0.3929	161.8118
rs365352	-0.0188	0.0018	6.0331E-26	5	77401152	G	A	0.2453	110.9791
rs2115459	-0.0108	0.0015	3.3385E-12	5	88430633	T	C	0.5289	48.4824
rs6235	0.0163	0.0017	5.1242E-21	5	95728898	C	G	0.2676	88.4957
rs2952615	-0.0122	0.0016	1.5153E-14	5	112138888	G	C	0.6182	59.0836

rs1582931	-0.0206	0.0016	5.8262E-40	5	122657199	G	A	0.4723	175.0975
rs247008	0.0150	0.0016	8.5524E-20	5	131447104	A	G	0.6711	82.9273
rs33967909	0.0153	0.0019	4.5489E-16	5	137603293	G	A	0.2136	65.9887
rs7730885	0.0155	0.0016	3.6389E-22	5	139042547	A	G	0.3715	93.7293
rs4282339	-0.0166	0.0019	1.7261E-18	5	168256240	G	A	0.2069	76.9899
rs4073717	-0.0193	0.0019	9.3137E-24	5	170864021	G	T	0.2014	100.9899
rs9379130	0.0183	0.0015	3.8909E-32	6	7702659	G	C	0.4917	139.2732
rs12216497	-0.0111	0.0016	1.1082E-12	6	19028623	C	T	0.5623	50.6464
rs41271299	0.0442	0.0035	4.4667E-37	6	19839415	C	T	0.0519	161.8851
rs62396185	-0.0258	0.0018	2.1541E-48	6	26180634	G	C	0.2572	213.7520
rs9260324	-0.0119	0.0017	7.8885E-12	6	29917077	G	A	0.2862	46.7965
rs111841857	-0.0219	0.0016	1.2154E-40	6	32571508	G	A	0.6133	178.2162
rs9273453	0.0279	0.0025	1.3711E-29	6	32627812	C	G	0.1282	127.6258
rs2744965	0.0415	0.0022	9.2022E-78	6	34589632	C	T	0.1392	348.6239
rs3734554	0.0129	0.0017	1.0000E-14	6	40360781	C	T	0.3069	59.9011
rs3798519	0.0238	0.0020	1.9580E-32	6	50788778	A	C	0.1793	140.6384
rs12209223	0.0175	0.0026	6.6853E-12	6	76164589	C	A	0.1021	47.1212
rs9341808	-0.0134	0.0015	5.5927E-18	6	80953257	C	A	0.4793	74.6675
rs6902789	0.0105	0.0016	6.2998E-11	6	105358192	G	A	0.3695	42.7277
rs768023	0.0197	0.0016	2.6083E-35	6	108876002	G	A	0.6286	153.7974
rs1476387	-0.0148	0.0016	3.1571E-21	6	109764535	G	T	0.4079	89.4534
rs13209968	0.0139	0.0015	1.8583E-19	6	126089285	G	C	0.5270	81.3947
rs9388498	0.0172	0.0020	2.9213E-17	6	126873423	G	T	0.1858	71.4041
rs1415700	-0.0285	0.0017	1.0441E-64	6	130345791	G	A	0.6951	288.6405
rs599004	-0.0135	0.0017	3.7296E-15	6	140439740	C	T	0.2796	61.8432
rs6570509	-0.0178	0.0017	1.7770E-25	6	142716286	G	T	0.2853	108.8368
rs11968025	0.0167	0.0016	5.0102E-27	6	152168974	T	G	0.4569	115.9153
rs9688977	0.0137	0.0022	3.4832E-10	6	154336892	T	C	0.1459	39.3852
rs2533879	-0.0232	0.0017	1.6629E-43	7	2859847	G	A	0.3015	191.3408
rs836511	0.0128	0.0019	2.8712E-11	7	6458319	A	G	0.1984	44.2657
rs34776209	-0.0168	0.0018	4.9518E-21	7	23513093	C	T	0.2482	88.5630
rs4392803	-0.0171	0.0022	3.5532E-15	7	46538362	G	A	0.1474	61.9387
rs78027553	0.0146	0.0019	3.1188E-14	7	50663819	G	T	0.2037	57.6630
rs13244614	0.0128	0.0017	7.4449E-14	7	72973854	C	A	0.2845	55.9513
rs6953561	-0.0184	0.0021	7.1401E-19	7	76637391	G	A	0.8292	78.7332
rs10269774	0.0279	0.0016	2.4118E-64	7	92253972	G	A	0.3239	286.9706
rs62466118	-0.0265	0.0049	5.3615E-08	7	92716556	G	A	0.0282	29.5827
rs6976031	0.0133	0.0015	5.2401E-18	7	93088426	G	C	0.4931	74.7968
rs10237306	0.0133	0.0016	5.8574E-17	7	121955981	G	T	0.3810	70.0316
rs62621812	0.0441	0.0056	3.4905E-15	7	127015083	G	A	0.0204	61.9736
rs7781964	0.0138	0.0020	3.3916E-12	7	139749346	G	A	0.1842	48.4510
rs10236214	0.0209	0.0016	2.4387E-38	7	150668070	C	T	0.6414	167.6675
rs2979256	0.0094	0.0016	1.5695E-09	8	8871710	C	T	0.4498	36.4481
rs7832926	0.0103	0.0016	3.4125E-10	8	23355620	A	C	0.3269	39.4253
rs72656010	-0.0350	0.0023	5.5888E-53	8	57122215	T	C	0.1311	234.7921
rs62515437	0.0190	0.0018	4.1427E-25	8	57160328	G	T	0.2260	107.1579

rs13264909	-0.0105	0.0016	1.6416E-11	8	64702385	A	T	0.4289	45.3604
rs349367	-0.0121	0.0020	6.0494E-10	8	73426759	G	A	0.8078	38.3071
rs67674827	0.0192	0.0017	2.4049E-29	8	78124967	C	T	0.2857	126.5102
rs2737218	-0.0162	0.0019	1.2286E-17	8	116631278	T	C	0.2097	73.1131
rs6995599	-0.0187	0.0017	4.0907E-29	8	135653535	C	T	0.3070	125.4556
rs1412234	0.0126	0.0016	1.9323E-14	9	28410683	T	C	0.3300	58.6052
rs1243872	-0.0083	0.0015	7.4659E-08	9	35686407	T	G	0.4615	28.9413
rs28457693	0.0252	0.0025	7.1967E-24	9	98217348	A	G	0.1066	101.5002
rs3931548	0.0133	0.0016	2.2327E-16	9	103113652	C	A	0.3777	67.3922
rs12347137	-0.0238	0.0019	1.8639E-35	9	119122721	A	C	0.2034	154.4640
rs73601548	0.0149	0.0024	7.7082E-10	10	18549889	C	T	0.1146	37.8347
rs10740991	-0.0097	0.0017	1.6235E-08	10	22058137	G	C	0.7187	31.9010
rs11014285	0.0173	0.0021	1.5800E-16	10	25178864	G	A	0.1660	68.0746
rs12768645	0.0132	0.0018	2.9078E-13	10	70208723	T	C	0.7318	53.2733
rs7080472	0.0127	0.0016	4.3435E-16	10	96012950	G	T	0.4220	66.0801
rs2902406	0.0175	0.0016	3.0935E-29	10	102660281	G	C	0.4314	126.0109
rs1926034	0.0128	0.0016	7.4612E-16	10	104829102	G	A	0.3749	65.0134
rs6585827	0.0127	0.0015	1.8610E-16	10	124165615	G	A	0.4702	67.7513
rs3781446	0.0102	0.0016	6.4753E-11	10	126684134	T	C	0.5445	42.6740
rs35506085	-0.0198	0.0020	7.6896E-23	11	2165576	G	A	0.1824	96.8079
rs1530179	0.0147	0.0026	1.5663E-08	11	12896590	A	G	0.0972	31.9708
rs11030119	0.0194	0.0017	3.7225E-31	11	27728102	G	A	0.3088	134.7874
rs10835367	-0.0101	0.0016	3.0775E-10	11	28642593	C	A	0.3856	39.6273
rs57635800	0.0147	0.0017	7.9609E-18	11	43878485	G	A	0.2901	73.9703
rs1228024	-0.0105	0.0016	9.2504E-11	11	47951353	C	A	0.6604	41.9766
rs7952436	-0.0348	0.0028	7.6514E-36	11	67024534	C	T	0.0832	156.2361
rs7129320	-0.0227	0.0021	3.0011E-28	11	68388220	G	A	0.1676	121.5007
rs11233117	-0.0099	0.0015	1.8247E-10	11	69924352	C	G	0.4527	40.6480
rs11217843	-0.0145	0.0021	3.5021E-12	11	120239937	A	G	0.1626	48.3883
rs55726687	0.0157	0.0019	6.3260E-17	12	991306	G	A	0.2114	69.8796
rs76895963	0.1047	0.0059	5.9586E-70	12	4384844	T	G	0.0210	312.7264
rs2900208	0.0140	0.0016	4.3341E-18	12	11878464	C	A	0.3553	75.1713
rs11049704	-0.0127	0.0017	5.8290E-14	12	28691701	C	G	0.2949	56.4325
rs2408507	0.0155	0.0016	7.0418E-23	12	46729407	A	G	0.6073	96.9821
rs7132908	0.0185	0.0016	1.4797E-31	12	50263148	G	A	0.3838	136.6197
rs6581627	-0.0100	0.0015	1.0424E-10	12	65719229	G	C	0.5218	41.7429
rs1351394	-0.0264	0.0015	4.9221E-66	12	66351826	T	C	0.5088	294.7347
rs7977788	0.0248	0.0018	2.7980E-41	12	93982332	G	A	0.2255	181.1388
rs10777860	-0.0135	0.0015	1.8612E-18	12	97792792	G	A	0.5285	76.8406
rs7137828	0.0141	0.0015	4.9549E-20	12	111932800	C	T	0.5171	84.0072
rs147730268	-0.0286	0.0028	4.8424E-25	12	123024476	G	T	0.0887	106.8497
rs12314162	0.0221	0.0021	5.9136E-26	12	124826676	C	T	0.1607	111.0191
rs882378	0.0106	0.0017	2.0599E-10	12	133374682	A	C	0.3087	40.4115
rs2812208	0.0730	0.0054	2.4536E-42	13	50707087	G	C	0.0211	185.9833
rs9535463	-0.0313	0.0019	7.8588E-63	13	51121547	G	A	0.2159	280.0194
rs7989022	-0.0081	0.0016	2.0195E-07	13	54104672	G	A	0.4258	27.0154

rs3818416	0.0163	0.0018	3.6651E-19	13	78474468	A	C	0.7659	80.0514
rs3212260	0.0136	0.0018	1.0398E-14	14	24804088	A	T	0.2598	59.8246
rs12879423	0.0152	0.0017	4.9610E-20	14	25927832	A	G	0.6808	84.0048
rs12879030	-0.0081	0.0017	1.7790E-06	14	42169429	A	G	0.2932	22.8209
rs10483727	-0.0219	0.0016	1.0981E-43	14	61072875	T	C	0.6132	192.1690
rs2296316	-0.0112	0.0016	7.2306E-13	14	65520246	T	C	0.4645	51.4846
rs7141420	0.0136	0.0016	1.8794E-18	14	79899454	C	T	0.5148	76.8208
rs1286138	0.0122	0.0016	1.2818E-13	14	91485445	T	G	0.6743	54.8834
rs735241	-0.0120	0.0018	1.2275E-11	14	101141726	G	A	0.7458	45.9299
rs3803286	-0.0111	0.0016	1.1854E-11	14	103246470	A	G	0.6670	45.9986
rs12906197	-0.0127	0.0016	4.4024E-16	15	38492199	C	T	0.4247	66.0534
rs28413009	-0.0171	0.0027	1.9705E-10	15	55656250	C	T	0.0922	40.4981
rs12908182	-0.0103	0.0015	2.2197E-11	15	62186447	C	T	0.4663	44.7703
rs4776970	-0.0126	0.0016	4.4562E-15	15	68080886	A	T	0.3553	61.4926
rs2759301	0.0110	0.0015	1.4486E-12	15	80994288	G	A	0.4495	50.1209
rs12907384	-0.0127	0.0016	1.6128E-15	15	86276000	T	C	0.5361	63.4951
rs28559926	-0.0386	0.0041	9.9845E-21	15	89400043	G	C	0.0388	87.1757
rs1573891	-0.0228	0.0021	9.1385E-27	15	99186488	G	C	0.1569	114.7225
rs71385734	-0.0252	0.0021	2.4756E-34	16	2160503	T	G	0.1691	149.3242
rs2539999	0.0171	0.0017	1.1231E-23	16	2266173	T	C	0.2859	100.6188
rs7195505	-0.0106	0.0016	1.7589E-11	16	4002422	T	C	0.3854	45.2250
rs9934930	0.0129	0.0015	5.5572E-17	16	4902038	A	G	0.4788	70.1351
rs72771080	0.0133	0.0019	1.3293E-12	16	20021383	C	T	0.2127	50.2894
rs4483850	-0.0098	0.0015	2.1975E-10	16	20375776	A	T	0.4977	40.2851
rs4788062	0.0150	0.0016	8.0921E-22	16	28641179	T	C	0.4108	92.1481
rs35467921	0.0241	0.0016	3.0534E-53	16	30048553	C	T	0.4023	235.9954
rs72801843	0.0154	0.0017	3.7602E-20	16	53508802	T	A	0.3014	84.5524
rs56094641	0.0409	0.0016	1.5981E-149	16	53806453	A	G	0.4031	678.9078
rs2242171	0.0118	0.0016	1.2542E-13	16	88793910	C	T	0.5974	54.9256
rs71396916	0.0124	0.0018	6.6934E-12	16	89507971	G	C	0.2601	47.1185
rs78378222	0.0859	0.0070	2.9968E-34	17	7571752	T	G	0.0126	148.9440
rs6505216	-0.0280	0.0019	1.6413E-49	17	29206421	G	T	0.2337	218.8809
rs573982914	0.0229	0.0027	6.0327E-17	17	47063204	A	C	0.0900	69.9733
rs757608	-0.0147	0.0016	2.1805E-19	17	59497277	A	G	0.6700	81.0781
rs2005172	0.0213	0.0016	1.6793E-39	17	61996255	A	C	0.6400	172.9912
rs7218899	-0.0113	0.0015	2.8298E-13	17	76739850	C	T	0.5125	53.3269
rs147576596	-0.0129	0.0017	3.9637E-14	17	78722281	T	G	0.3010	57.1914
rs36000545	-0.0150	0.0016	6.0436E-21	17	79093822	A	G	0.3942	88.1686
rs7235010	0.0273	0.0019	1.7224E-48	18	20724810	G	A	0.7839	214.1983
rs1941697	0.0094	0.0015	1.2947E-09	18	31251276	G	A	0.4503	36.8231
rs7229491	-0.0109	0.0016	2.5104E-11	18	46516424	G	C	0.6606	44.5286
rs12957894	0.0114	0.0016	2.9433E-13	18	46843923	C	G	0.4731	53.2499
rs1062557	0.0125	0.0018	1.2322E-12	18	56887507	C	A	0.7448	50.4377
rs66922415	0.0466	0.0018	4.9669E-145	18	57848651	A	G	0.2335	658.2161

rs57636386	-0.0276	0.0028	4.5798E-23	18	58048295	T	C	0.0834	97.8347
rs11880992	0.0138	0.0016	1.0246E-18	19	2176403	G	A	0.4076	78.0199
rs73000135	-0.0109	0.0016	5.5819E-12	19	7208744	C	T	0.4095	47.4745
rs62621197	-0.0400	0.0043	8.3547E-21	19	8670147	C	T	0.0362	87.5280
rs10404726	-0.0092	0.0015	2.3741E-09	19	18834514	C	T	0.4664	35.6414
rs111640872	0.0160	0.0016	2.1239E-22	19	30290357	G	C	0.3311	94.7957
rs3810291	0.0186	0.0016	9.8548E-30	19	47569003	G	A	0.6771	128.2817
rs6105744	0.0121	0.0023	2.4053E-07	20	17322687	G	A	0.1247	26.6775
rs187449369	-0.0210	0.0018	4.3096E-33	20	32077916	C	A	0.2678	143.6454
rs6142059	0.0122	0.0015	2.0157E-15	20	32544327	T	C	0.4927	63.0553
rs143384	0.0372	0.0016	3.2731E-124	20	34025756	A	G	0.4018	562.3310
rs76287132	0.0264	0.0059	7.1315E-06	20	50717982	C	T	0.0177	20.1582
rs6096886	-0.0204	0.0020	1.9425E-25	20	50951298	A	G	0.1903	108.6610
rs4481060	-0.0091	0.0016	1.3514E-08	20	57457769	G	A	0.6255	32.2573
rs73619441	-0.0169	0.0022	2.6405E-14	20	61564901	T	G	0.1410	57.9906
rs2298333	-0.0132	0.0016	1.9811E-17	21	39673981	C	T	0.5697	72.1702
rs41311445	-0.0243	0.0026	1.4146E-20	22	42070374	A	C	0.0960	86.4870

Table S4 Descriptions of SNPs for BMR in both sexes from significant SNPs in male in Neale's study

SNP	Beta	Se	P value	Chr	Position	Other allele	Effect allele	Eaf	F statistics
rs6691831	0.0161	0.0018	1.5369E-19	1	11220180	A	G	0.2512	81.7685
rs212532	0.0093	0.0016	3.3554E-09	1	21588603	C	G	0.6034	34.9678
rs11591214	-0.0125	0.0023	5.8821E-08	1	22485138	G	A	0.1296	29.4032
rs652112	0.0189	0.0025	6.8682E-14	1	32345980	T	C	0.1040	56.1099
rs55745410	-0.0156	0.0016	7.3277E-22	1	33802817	A	G	0.3534	92.3444
rs2885697	-0.0192	0.0016	3.8103E-32	1	41544279	G	T	0.6642	139.3152
rs12031920	0.0136	0.0016	3.8725E-18	1	51109269	T	A	0.4167	75.3941
rs6657024	0.0151	0.0018	3.0279E-16	1	56592414	G	A	0.2253	66.7917
rs2815753	0.0114	0.0016	3.1235E-13	1	72812324	G	A	0.5990	53.1332
rs34517439	0.0372	0.0024	8.1443E-56	1	78450517	C	A	0.1245	247.8095
rs273866	0.0113	0.0017	1.3190E-11	1	97263793	C	G	0.3034	45.7893
rs76798800	0.0225	0.0017	3.3304E-38	1	154994978	G	T	0.2674	167.0478
rs17361789	0.0142	0.0017	1.1276E-17	1	172122601	T	G	0.3230	73.2830
rs1014718	0.0136	0.0017	4.1982E-15	1	176802974	A	G	0.7303	61.6104
rs543874	0.0297	0.0019	2.1836E-55	1	177889480	A	G	0.2075	245.8423
rs2678204	0.0147	0.0016	1.0963E-19	1	201800511	T	G	0.3428	82.4376
rs951366	0.0131	0.0016	8.0815E-17	1	205685352	T	C	0.3954	69.3962
rs12072845	-0.0147	0.0016	1.2635E-20	1	214630757	G	A	0.3927	86.7091
rs62107261	-0.0601	0.0036	3.3358E-62	2	422144	T	C	0.0481	277.1364
rs7559547	0.0354	0.0020	3.2101E-68	2	615627	C	T	0.8260	304.7739
rs55921604	0.0125	0.0017	3.5944E-14	2	9774846	G	C	0.3236	57.3836
rs12713004	0.0176	0.0017	2.4134E-24	2	23896049	A	G	0.7261	103.6661
rs1260326	0.0196	0.0016	1.5367E-35	2	27730940	T	C	0.6067	154.8503

rs11607242									
7	-0.0258	0.0030	1.2015E-17	2	33357096	G	C	0.0706	73.1580
rs10202845	-0.0155	0.0025	3.0517E-10	2	42575820	A	G	0.1130	39.6433
rs74179078	0.0092	0.0016	3.3359E-09	2	46654651	T	A	0.5214	34.9791
rs59985551	-0.0204	0.0018	1.9339E-28	2	56106928	C	T	0.2247	122.3725
rs11545482	-0.0352	0.0054	5.6352E-11	2	70315987	C	T	0.0209	42.9460
rs6740645	-0.0128	0.0016	1.6640E-16	2	71596041	C	T	0.5725	67.9716
rs14976	0.0112	0.0017	2.0416E-11	2	85818886	C	T	0.3077	44.9337
rs1805165	-0.0094	0.0017	4.4696E-08	2	88874891	C	A	0.7192	29.9354
rs3811059	-0.0085	0.0015	4.4720E-08	2	113962071	C	T	0.4818	29.9346
rs7584391	-0.0126	0.0020	2.0578E-10	2	142290620	G	A	0.1860	40.4131
rs540652	0.0115	0.0015	8.3412E-14	2	169707428	C	T	0.4690	55.7280
rs1047109	-0.0219	0.0018	7.6381E-35	2	172414553	A	G	0.2507	151.6604
rs1047891	0.0157	0.0017	2.3593E-21	2	211540507	C	A	0.3158	90.0294
rs13430869	0.0152	0.0018	1.1353E-17	2	218146818	G	T	0.7472	73.2704
rs1478575	0.0193	0.0017	2.7393E-31	2	218278555	T	A	0.6856	135.3966
rs1542224	0.0142	0.0017	2.0981E-16	2	223963874	T	C	0.7219	67.5142
rs2396348	0.0108	0.0017	1.2048E-10	2	227261383	C	T	0.3022	41.4593
rs3116201	-0.0189	0.0026	3.9477E-13	2	233074205	G	A	0.0969	52.6730
rs2270894	-0.0176	0.0020	7.3561E-19	3	9975386	C	G	0.2042	78.6746
rs1609783	0.0132	0.0015	1.8374E-17	3	25095911	G	A	0.5272	72.3198
rs6800021	0.0159	0.0016	1.9932E-24	3	50190346	G	A	0.4255	104.0447
rs11712872	0.0168	0.0024	3.1237E-12	3	52835514	G	A	0.1158	48.6126
rs6445198	-0.0099	0.0016	2.4938E-10	3	61219865	G	T	0.4161	40.0379
rs11128264	-0.0081	0.0015	1.5235E-07	3	72392310	C	T	0.4935	27.5605
rs62263917	-0.0147	0.0016	1.5313E-19	3	85667928	A	G	0.6467	81.7764
rs6762578	0.0166	0.0019	3.2880E-19	3	128992047	G	A	0.7777	80.2659
rs724016	0.0311	0.0015	1.1852E-89	3	141105570	A	G	0.4468	403.2963
rs2271998	0.0104	0.0016	3.2762E-11	3	170625806	C	T	0.4056	44.0074
rs7652177	0.0151	0.0015	1.2041E-22	3	171969077	C	G	0.5049	95.9192
rs4894419	-0.0143	0.0016	2.9673E-20	3	172150836	T	G	0.4428	85.0216
rs1881975	-0.0121	0.0018	2.0490E-11	3	184046042	A	G	0.2446	44.9260
rs73175572	0.0280	0.0025	9.2300E-30	3	185490184	A	G	0.1114	128.4117
rs2592831	0.0136	0.0016	6.6640E-17	4	1711404	T	C	0.3349	69.7770
rs7663887	-0.0306	0.0021	3.2648E-47	4	17902920	C	A	0.1564	208.3371
rs10938397	0.0148	0.0016	1.9565E-21	4	45182527	A	G	0.4343	90.4012
rs4865160	-0.0093	0.0017	1.6628E-08	4	57744023	G	A	0.3204	31.8545
rs1878528	0.0142	0.0017	1.7386E-17	4	82184234	A	G	0.3128	72.4283
rs7377083	0.0103	0.0016	4.6404E-11	4	102708997	C	A	0.4313	43.3253
rs11726786	-0.0172	0.0016	2.8578E-27	4	106120756	T	G	0.3701	117.0285
rs2035901	0.0140	0.0015	1.5402E-19	4	145521867	A	G	0.4662	81.7647
rs7689420	0.0290	0.0021	2.9326E-45	4	145568352	T	C	0.8314	199.3800
rs292168	-0.0139	0.0016	4.1736E-19	5	36807189	A	G	0.4469	79.7944
rs55681913	0.0272	0.0025	3.3912E-27	5	42687629	T	C	0.1070	116.6890
rs4865956	-0.0105	0.0017	4.2376E-10	5	54882505	T	A	0.6960	39.0026
rs6873192	-0.0130	0.0015	4.2830E-17	5	67598184	A	G	0.5178	70.6491

rs2307111	-0.0201	0.0016	4.6341E-37	5	75003678	T	C	0.3929	161.8118
rs365352	-0.0188	0.0018	6.0331E-26	5	77401152	G	A	0.2453	110.9791
rs6235	0.0163	0.0017	5.1242E-21	5	95728898	C	G	0.2676	88.4957
rs1582931	-0.0206	0.0016	5.8262E-40	5	122657199	G	A	0.4723	175.0975
rs35897671	0.0107	0.0016	3.4518E-11	5	127349745	C	T	0.3455	43.9052
rs7341051	-0.0174	0.0021	3.0711E-17	5	130367792	A	G	0.1823	71.3057
rs31210	-0.0128	0.0018	4.3038E-13	5	134361020	G	A	0.2525	52.5038
rs7730885	0.0155	0.0016	3.6389E-22	5	139042547	A	G	0.3715	93.7293
rs10477175	-0.0074	0.0017	2.5341E-05	5	141788346	C	G	0.2692	17.7393
rs4282339	-0.0166	0.0019	1.7261E-18	5	168256240	G	A	0.2069	76.9899
rs4073717	-0.0193	0.0019	9.3137E-24	5	170864021	G	T	0.2014	100.9899
rs11950253	-0.0091	0.0016	6.1996E-09	5	171217371	G	A	0.4221	33.7728
rs6874142	0.0191	0.0026	8.2221E-14	5	172753555	T	G	0.1143	55.7567
rs183041	0.0142	0.0017	2.2825E-16	5	176526270	G	A	0.7260	67.3486
rs9379084	-0.0147	0.0025	2.9867E-09	6	7231843	G	A	0.1153	35.1944
rs9379130	0.0183	0.0015	3.8909E-32	6	7702659	G	C	0.4917	139.2732
rs41271299	0.0442	0.0035	4.4667E-37	6	19839415	C	T	0.0519	161.8851
rs62396185	-0.0258	0.0018	2.1541E-48	6	26180634	G	C	0.2572	213.7520
rs11184185 7	-0.0219	0.0016	1.2154E-40	6	32571508	G	A	0.6133	178.2162
rs9273453	0.0279	0.0025	1.3711E-29	6	32627812	C	G	0.1282	127.6258
rs2744965	0.0415	0.0022	9.2022E-78	6	34589632	C	T	0.1392	348.6239
rs6933697	-0.0140	0.0017	7.9915E-16	6	41915351	A	G	0.2668	64.8781
rs3798519	0.0238	0.0020	1.9580E-32	6	50788778	A	C	0.1793	140.6384
rs9474729	0.0182	0.0038	1.3485E-06	6	53947038	T	C	0.0443	23.3537
rs9350850	0.0234	0.0028	1.6017E-16	6	81050236	T	C	0.0804	68.0469
rs240164	-0.0087	0.0015	2.0150E-08	6	101044487	T	A	0.5285	31.4815
rs768023	0.0197	0.0016	2.6083E-35	6	108876002	G	A	0.6286	153.7974
rs1476387	-0.0148	0.0016	3.1571E-21	6	109764535	G	T	0.4079	89.4534
rs13209968	0.0139	0.0015	1.8583E-19	6	126089285	G	C	0.5270	81.3947
rs9388498	0.0172	0.0020	2.9213E-17	6	126873423	G	T	0.1858	71.4041
rs1415700	-0.0285	0.0017	1.0441E-64	6	130345791	G	A	0.6951	288.6405
rs6570509	-0.0178	0.0017	1.7770E-25	6	142716286	G	T	0.2853	108.8368
rs11968025	0.0167	0.0016	5.0102E-27	6	152168974	T	G	0.4569	115.9153
rs9356132	0.0104	0.0017	4.9155E-10	6	164102214	T	C	0.3050	38.7127
rs2533879	-0.0232	0.0017	1.6629E-43	7	2859847	G	A	0.3015	191.3408
rs508347	-0.0142	0.0017	3.5147E-17	7	28212824	T	C	0.7008	71.0391
rs723149	-0.0125	0.0016	8.3928E-16	7	46577056	A	G	0.5636	64.7818
rs7809758	0.0110	0.0016	6.7685E-12	7	50573333	A	G	0.3596	47.0962
rs6953561	-0.0184	0.0021	7.1401E-19	7	76637391	G	A	0.8292	78.7332
rs10269774	0.0279	0.0016	2.4118E-64	7	92253972	G	A	0.3239	286.9706
rs6976031	0.0133	0.0015	5.2401E-18	7	93088426	G	C	0.4931	74.7968
rs10237306	0.0133	0.0016	5.8574E-17	7	121955981	G	T	0.3810	70.0316
rs10236214	0.0209	0.0016	2.4387E-38	7	150668070	C	T	0.6414	167.6675
rs11250072	-0.0099	0.0016	3.6037E-10	8	10632121	C	T	0.6109	39.3189
rs1911250	0.0092	0.0016	8.0755E-09	8	25245151	A	G	0.3885	33.2582

rs72639077	0.0177	0.0026	8.8586E-12	8	49527235	T	G	0.0984	46.5690
rs72656010	-0.0350	0.0023	5.5888E-53	8	57122215	T	C	0.1311	234.7921
rs62515437	0.0190	0.0018	4.1427E-25	8	57160328	G	T	0.2260	107.1579
rs61729527	-0.0250	0.0035	6.7564E-13	8	77761919	C	T	0.0516	51.6179
rs67674827	0.0192	0.0017	2.4049E-29	8	78124967	C	T	0.2857	126.5102
rs13258769	-0.0118	0.0017	1.0276E-12	8	95583809	G	A	0.3172	50.7939
rs2142331	-0.0139	0.0016	1.1508E-18	8	116636719	C	T	0.6014	77.7905
rs60869342	-0.0140	0.0018	2.0169E-15	8	120456193	A	T	0.2680	63.0546
rs6470764	-0.0155	0.0019	4.3553E-16	8	130725665	C	T	0.2022	66.0750
rs6995599	-0.0187	0.0017	4.0907E-29	8	135653535	C	T	0.3070	125.4556
rs10094200	-0.0127	0.0017	5.1298E-14	8	135843916	C	G	0.2944	56.6843
rs10746837	-0.0110	0.0016	2.7637E-12	9	90873653	G	A	0.5815	48.8530
rs2482357	-0.0108	0.0016	2.9980E-12	9	94179978	G	A	0.4302	48.6938
rs12344584	-0.0142	0.0028	2.8462E-07	9	97787336	A	G	0.0841	26.3525
rs28457693	0.0252	0.0025	7.1967E-24	9	98217348	A	G	0.1066	101.5002
rs11182107 3	0.0177	0.0021	1.0176E-16	9	99084793	C	T	0.1570	68.9423
rs10979612	0.0188	0.0029	1.5484E-10	9	111687379	T	C	0.0739	40.9693
rs12347137	-0.0238	0.0019	1.8639E-35	9	119122721	A	C	0.2034	154.4640
rs6478243	0.0103	0.0016	8.4352E-11	9	119296073	T	C	0.3932	42.1569
rs2274116	-0.0091	0.0016	2.6255E-08	9	139094805	C	T	0.3444	30.9675
rs35288270	-0.0156	0.0023	6.1608E-12	10	4961278	T	C	0.1336	47.2811
rs56139009	0.0121	0.0016	1.3155E-14	10	70248688	T	C	0.4280	59.3609
rs7910087	-0.0116	0.0016	1.0833E-13	10	77209145	T	C	0.5523	55.2146
rs11754341 3	-0.0415	0.0059	1.8796E-12	10	79543740	C	T	0.0177	49.6092
rs4980067	-0.0115	0.0015	8.0112E-14	10	81136129	C	A	0.5038	55.8076
rs7080472	0.0127	0.0016	4.3435E-16	10	96012950	G	T	0.4220	66.0801
rs2902406	0.0175	0.0016	3.0935E-29	10	102660281	G	C	0.4314	126.0109
rs1926034	0.0128	0.0016	7.4612E-16	10	104829102	G	A	0.3749	65.0134
rs6585827	0.0127	0.0015	1.8610E-16	10	124165615	G	A	0.4702	67.7513
rs17151676	0.0145	0.0022	4.1090E-11	10	126583640	T	C	0.1473	43.5638
rs35506085	-0.0198	0.0020	7.6896E-23	11	2165576	G	A	0.1824	96.8079
rs61869763	0.0184	0.0025	3.0393E-13	11	2813345	C	T	0.1058	53.1865
rs11030119	0.0194	0.0017	3.7225E-31	11	27728102	G	A	0.3088	134.7874
rs1765133	-0.0114	0.0018	4.9049E-10	11	30339400	C	T	0.2276	38.7166
rs57635800	0.0147	0.0017	7.9609E-18	11	43878485	G	A	0.2901	73.9703
rs7952436	-0.0348	0.0028	7.6514E-36	11	67024534	C	T	0.0832	156.2361
rs7129320	-0.0227	0.0021	3.0011E-28	11	68388220	G	A	0.1676	121.5007
rs499635	0.0112	0.0016	4.8284E-12	11	118590266	A	G	0.3813	47.7587
rs55726687	0.0157	0.0019	6.3260E-17	12	991306	G	A	0.2114	69.8796
rs74891390	0.0214	0.0032	1.7288E-11	12	3373823	G	C	0.0626	45.2590
rs76895963	0.1047	0.0059	5.9586E-70	12	4384844	T	G	0.0210	312.7264
rs2900208	0.0140	0.0016	4.3341E-18	12	11878464	C	A	0.3553	75.1713
rs7134283	-0.0134	0.0017	6.1565E-15	12	24071748	G	A	0.2841	60.8558
rs2408507	0.0155	0.0016	7.0418E-23	12	46729407	A	G	0.6073	96.9821

rs7132908	0.0185	0.0016	1.4797E-31	12	50263148	G	A	0.3838	136.6197
rs1351394	-0.0264	0.0015	4.9221E-66	12	66351826	T	C	0.5088	294.7347
rs374335	-0.0118	0.0017	1.0437E-12	12	77457439	A	G	0.3189	50.7640
rs7977788	0.0248	0.0018	2.7980E-41	12	93982332	G	A	0.2255	181.1388
rs11111200	0.0137	0.0029	2.1841E-06	12	102587924	C	A	0.0771	22.4266
rs7137828	0.0141	0.0015	4.9549E-20	12	111932800	C	T	0.5171	84.0072
rs2242259	-0.0101	0.0016	6.7795E-11	12	122265106	T	C	0.5561	42.5844
rs147730268	-0.0286	0.0028	4.8424E-25	12	123024476	G	T	0.0887	106.8497
rs12314162	0.0221	0.0021	5.9136E-26	12	124826676	C	T	0.1607	111.0191
rs61947180	0.0139	0.0019	3.1375E-13	13	30169861	C	A	0.2110	53.1243
rs6563808	-0.0107	0.0017	1.0307E-09	13	40766662	T	C	0.7350	37.2676
rs2812208	0.0730	0.0054	2.4536E-42	13	50707087	G	C	0.0211	185.9833
rs9535463	-0.0313	0.0019	7.8588E-63	13	51121547	G	A	0.2159	280.0194
rs3818416	0.0163	0.0018	3.6651E-19	13	78474468	A	C	0.7659	80.0514
rs12879423	0.0152	0.0017	4.9610E-20	14	25927832	A	G	0.6808	84.0048
rs10483727	-0.0219	0.0016	1.0981E-43	14	61072875	T	C	0.6132	192.1690
rs7141420	0.0136	0.0016	1.8794E-18	14	79899454	C	T	0.5148	76.8208
rs12906197	-0.0127	0.0016	4.4024E-16	15	38492199	C	T	0.4247	66.0534
rs11855017	0.0136	0.0020	8.1958E-12	15	42096146	C	A	0.1827	46.7213
rs893902	-0.0128	0.0017	1.1827E-13	15	67014742	T	C	0.7247	55.0413
rs12907384	-0.0127	0.0016	1.6128E-15	15	86276000	T	C	0.5361	63.4951
rs28559926	-0.0386	0.0041	9.9845E-21	15	89400043	G	C	0.0388	87.1757
rs1573891	-0.0228	0.0021	9.1385E-27	15	99186488	G	C	0.1569	114.7225
rs11648796	0.0168	0.0019	1.9531E-18	16	792190	A	G	0.2303	76.7449
rs71385734	-0.0252	0.0021	2.4756E-34	16	2160503	T	G	0.1691	149.3242
rs2539999	0.0171	0.0017	1.1231E-23	16	2266173	T	C	0.2859	100.6188
rs9934930	0.0129	0.0015	5.5572E-17	16	4902038	A	G	0.4788	70.1351
rs4985148	-0.0117	0.0017	1.7086E-12	16	15147788	A	C	0.3082	49.7963
rs4788062	0.0150	0.0016	8.0921E-22	16	28641179	T	C	0.4108	92.1481
rs35467921	0.0241	0.0016	3.0534E-53	16	30048553	C	T	0.4023	235.9954
rs72801843	0.0154	0.0017	3.7602E-20	16	53508802	T	A	0.3014	84.5524
rs56094641	0.0409	0.0016	1.5981E-149	16	53806453	A	G	0.4031	678.9078
rs1991530	-0.0114	0.0020	1.1544E-08	16	72524060	T	C	0.1831	32.5636
rs12444827	-0.0110	0.0017	3.9097E-11	16	73094493	T	A	0.6853	43.6616
rs13339546	-0.0108	0.0016	8.8768E-12	16	89573230	A	G	0.4409	46.5649
rs55831773	-0.0154	0.0020	4.3976E-15	17	7559037	C	T	0.1980	61.5187
rs78378222	0.0859	0.0070	2.9968E-34	17	7571752	T	G	0.0126	148.9440
rs6505216	-0.0280	0.0019	1.6413E-49	17	29206421	G	T	0.2337	218.8809
rs6503600	-0.0109	0.0017	8.3808E-11	17	39270542	G	C	0.6945	42.1695
rs9894577	-0.0138	0.0017	6.6558E-17	17	43223292	G	A	0.3173	69.7792
rs573982914	0.0229	0.0027	6.0327E-17	17	47063204	A	C	0.0900	69.9733
rs227723	0.0082	0.0017	8.4981E-07	17	54778904	C	T	0.3111	24.2424
rs757608	-0.0147	0.0016	2.1805E-19	17	59497277	A	G	0.6700	81.0781
rs2005172	0.0213	0.0016	1.6793E-39	17	61996255	A	C	0.6400	172.9912

rs7216472	-0.0119	0.0016	7.1017E-14	17	71123063	A	G	0.3861	56.0445
rs36000545	-0.0150	0.0016	6.0436E-21	17	79093822	A	G	0.3942	88.1686
rs7235010	0.0273	0.0019	1.7224E-48	18	20724810	G	A	0.7839	214.1983
rs12969480	0.0096	0.0018	7.4950E-08	18	35147621	C	G	0.7538	28.9335
rs34776495	0.0116	0.0016	7.2015E-14	18	46813666	A	G	0.4415	56.0172
rs1517037	-0.0139	0.0020	1.6227E-12	18	56878274	C	T	0.1873	49.8977
rs66922415	0.0466	0.0018	4.9669E-145	18	57848651	A	G	0.2335	658.2161
rs74494415	-0.0289	0.0040	2.7239E-13	18	74972138	C	T	0.0400	53.4020
rs11880992	0.0138	0.0016	1.0246E-18	19	2176403	G	A	0.4076	78.0199
rs2602713	0.0099	0.0016	2.6559E-10	19	4910021	A	C	0.4373	39.9148
rs62621197	-0.0400	0.0043	8.3547E-21	19	8670147	C	T	0.0362	87.5280
rs3843751	-0.0138	0.0016	3.3163E-17	19	10748121	C	T	0.6637	71.1537
rs29938	0.0109	0.0016	1.8831E-11	19	34311481	T	C	0.6584	45.0916
rs1043413	0.0095	0.0016	1.6103E-09	19	41939297	C	G	0.3879	36.3980
rs3810291	0.0186	0.0016	9.8548E-30	19	47569003	G	A	0.6771	128.2817
rs14711093 4	-0.0306	0.0050	1.0357E-09	19	55993436	G	T	0.0240	37.2586
rs6133328	-0.0084	0.0016	1.1494E-07	20	6495414	C	A	0.4015	28.1057
rs2650965	-0.0117	0.0016	1.0708E-12	20	6709838	A	G	0.3278	50.7133
rs2252720	-0.0129	0.0017	5.8940E-15	20	21223663	C	T	0.6732	60.9419
rs18744936 9	-0.0210	0.0018	4.3096E-33	20	32077916	C	A	0.2678	143.6454
rs6142059	0.0122	0.0015	2.0157E-15	20	32544327	T	C	0.4927	63.0553
rs143384	0.0372	0.0016	3.2731E-124	20	34025756	A	G	0.4018	562.3310
rs2143491	-0.0062	0.0016	1.0567E-04	20	46228667	G	A	0.3567	15.0331
rs6096886	-0.0204	0.0020	1.9425E-25	20	50951298	A	G	0.1903	108.6610
rs2298333	-0.0132	0.0016	1.9811E-17	21	39673981	C	T	0.5697	72.1702
rs41311445	-0.0243	0.0026	1.4146E-20	22	42070374	A	C	0.0960	86.4870

Table S5 Protein biomarkers associated with incident AF in prospective cohort studies

Protein[REF]	Study sample	HR (95% CI)	p-value	HR (95% CI)	p-value
GDF-15[4]	PIVUS, ULSAM	1.27 (1.13-1.44)	0.0001*	1.25 (1.09-1.44)	0.0018
GDF-15[5]	FHS	NR	NR	1.20 (1.02-1.41)	0.02
Resistin[4]	PIVUS, ULSAM	1.23 (1.08-1.39)	0.002	1.17 (1.02-1.333)	0.022
VCAM-1[6]	Bruneck, Italy	1.35 (1.12-1.63)	0.001	NR	NR
NT-proBNP[4]	PIVUS, ULSAM	1.57 (1.41-1.76)	<0.0001*	1.57 (1.39-1.76)	<0.0001*
NT-proBNP[7]	FHS	1.44 (1.24–1.69)	<0.0001	1.44 (1.22–1.70)	<0.0001
NT-proBNP[5]	FHS	NR	NR	1.64 (1.45-1.84)	<0.0001
FGF-23[4]	PIVUS, ULSAM	1.26 (1.14-1.4)	<0.0001*	1.18 (1.06-1.32)	0.0025
FGF-23[6]	Bruneck, Italy	1.04 (0.80-1.36)	0.75	NR	NR
FGF-23[5]	FHS	NR	NR	1.12 (1.01-1.23)	0.03
IL-6[4]	PIVUS, ULSAM	1.26 (1.13-1.4)	<0.0001*	1.25 (1.11-1.4)	0.0001*
IL-6[6]	Bruneck, Italy	1.19 (0.98-1.45)	0.08	NR	NR
IL-6[5]	FHS	NR	NR	1.76 (1.17-2.66)	0.007
FABP4[4]	PIVUS, ULSAM	1.32 (1.16-1.5)	<0.0001*	1.22 (1.05-1.43)	0.012
FABP4[6]	Bruneck, Italy	1.41 (1.07-1.87)	0.02	NR	NR
CRP[6]	Bruneck, Italy	0.94 (0.77-1.15)	0.56	NR	NR
CRP[5]	FHS	NR	NR	1.20 (1.07-1.35)	0.002
NCAM-120[7]	FHS	0.74 (0.67–0.82)	<0.0001	0.84 (0.74–0.95)	0.0052
Angiopoietin-2[7]	FHS	1.27 (1.15–1.41)	<0.0001	1.16 (1.04–1.31)	0.011
BMPR1A[7]	FHS	0.75 (0.66–0.85)	<0.0001	0.82 (0.72–0.93)	0.0023

Note:

*Significance level of p-value <0.000588 (Bonferroni correction). GDF-15, Growth/differentiation factor 15;VCAM-1, Vascular cell adhesion protein 1; NT-proBNP, N-terminal pro-brain natriuretic peptide; FGF-23, Fibroblast growth factor 23; IL-6, Interleukin-6; FABP4, Fatty acid-binding protein, adipocyte; CRP, C-reactive protein; IGF-1, Insulin-like growth factor I; NCAM-120, Neural cell adhesion molecule 1, 120 kDa isoform; ADAMTS13, A disintegrin and metalloproteinase with thrombospondin motifs 13; BMPR1A, Bone morphogenetic protein receptor type-1A; NR, not reported

Table S6 I^2 statistic for the heterogeneity of SNP-exposure effects

Exposure	I^2
SNPs in both sex	0.901
SNPs from female	0.933
SNPs from male	0.934

Table S7 Tests of directional pleiotropic effects of the genetic instruments for BMR on AF.

Exposure	Intercept	Intercept SE	Intercept P-value
SNPs in both sex	-0.0040	0.0025	0.1112
SNPs from female	-0.0045	0.0036	0.2080
SNPs from male	-0.0062	0.0037	0.0949

Table S8 Tests of heterogeneity for BMR as the exposure and AF as the outcome.

Exposure	N (SNPs)	Cochran's Q	Cochran's Q P-value	Rücker's Q	Rücker's Q P-value
SNPs in both sex	396	696.25	<0.001	683.25	<0.001
SNPs from female	199	371.10	<0.001	365.32	<0.001
SNPs from male	197	385.16	<0.001	382.98	<0.001

Note: Presence of heterogeneity between individual SNP effect estimates was assessed using Cochrane's Q test for inverse variance weighted analyses and Rücker's Q test for MR-Egger analyses.

Table S9 Tests of horizontal pleiotropy of the genetic instruments for BMR on AF with MR-PRESSO method

Exposure	MR-PRESSO global test	MR-PRESSO global test P-value	MR-PRESSO Estimate	MR-PRESSO SE	MR-PRESSO P-value
SNPs in both sex	687	<0.001	0.773	0.0647	3.26E-28
SNPs from female	370	<0.001	0.861	0.0773	1.23E-22
SNPs from male	388	<0.001	0.847	0.0799	5.68E-21

Note: MR-PRESSO, mendelian randomization pleiotropy residual sum and outlier

Table S10 Bidirectional two-sample MR analysis: the effect of AF on BMR outcomes in both sexes

Method	N (SNPs)	Beta (95%CI)	P-value
MR Egger	44	-0.018 (-0.059-0.022)	0.375
Weighted median	44	-0.001 (-0.010-0.007)	0.773
Inverse variance weighted	44	0.008 (-0.009-0.026)	0.351
LASSO	26	0.003 (-0.003-0.009)	0.312
RAPS		0.004 (0.000-0.009)	0.368
Conmix	29	-0.003 (-0.003-0.027)	0.346

Note: MR Egger, Mendelian randomization Egger; LASSO, least absolute shrinkage and selection operator; *RAPS,* robust adjusted profile score; *Conmix*: contamination mixture method.

Table S11 The Multivariable Mendelian Randomization results of Basal Metabolic Rate on Atrial Fibrillation

		Model 1			Model 2			Model 3		
Method		IVW	MR Egger	LASSO	IVW	MR Egger	LASSO	IVW	MR Egger	LASSO
N (SNPs)		587	587	587	416	416	416	396	396	396
Exposure	BMR	0.913***	1.038***	0.949***	0.723***	0.752***	0.756***	0.752***	0.752***	0.770***
		(0.138)	(0.153)	(0.121)	(0.096)	(0.099)	(0.080)	(0.073)	(0.073)	(0.062)
Covariate	Height	-0.084	-0.018	-0.052						
		(0.080)	(0.087)	(0.069)						
	BMI				0.061	0.156	0.059			
					(0.091)	(0.118)	(0.077)			
	Hypertension							19.297***	18.624***	22.940***
								(6.107)	(10.151)	(5.287)
	Coronary Heart Disease							6.322***	6.320***	5.132***
								(1.619)	(1.621)	(1.468)
	Heart Failure							7.599	7.580	2.676
								(5.992)	(6.005)	(4.959)
	Obesity							-8.573	-8.611	-3.663
								(9.734)	(9.758)	(8.418)
	Diabetes							2.677	2.696	5.185
								(6.600)	(6.612)	(5.558)
	Thyrotoxicosis							-6.106	-6.313	-16.563
								(17.511)	(17.709)	(14.319)
Intercept			-0.003*			-0.002			0.000	
			(0.002)			(0.002)			(0.002)	
RSE		1.300	1.297	NA	1.322	1.321	NA	1.296	1.298	NA

Note: Data were represented as estimated β(SE). SNP, single nucleotide polymorphism; BMR, basal metabolic rate; BMI, body mass index; AF, atrial fibrillation; IVW, Inverse variance weighted; MR Egger, Mendelian randomization Egger; LASSO, least absolute shrinkage and selection operator; RSE, residual standard error. *p<0.1; **p<0.05; ***p<0.01

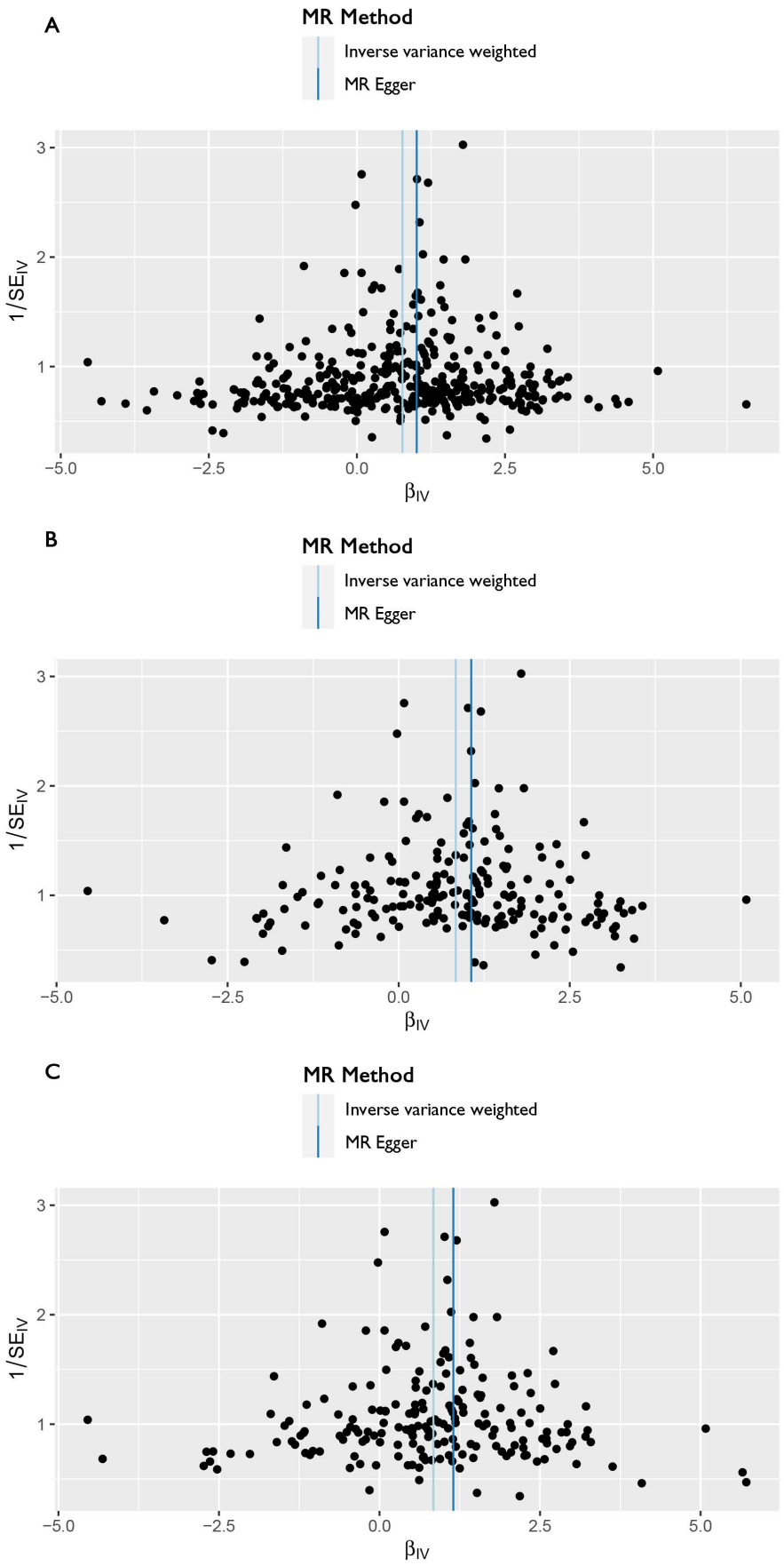

Figure S1 Funnel plot of individual SNP effects of BMR on AF. MR Egger and Inverse variance weighted estimates are represented with blue lines. On the x-axis, β_{IV} represents the effect size of each SNP. On the y-axis, $1/SE_{IV}$ represents the inverse

standard error for each SNP effect. A, significant SNPs for BMR in both sex; B, SNPs for BMR in both sex from significant SNPs in females; C, SNPs for BMR in both sex from significant SNPs in males.

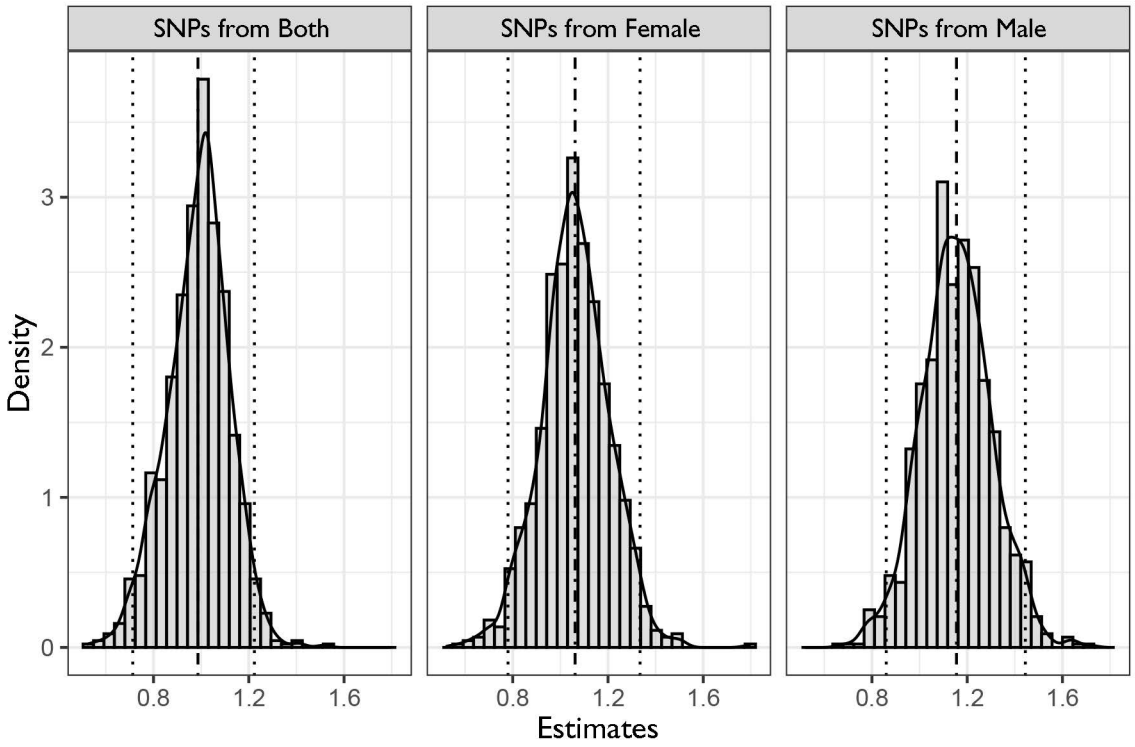

Figure S2 MR-Egger across 1000 Bootstrap by random exclusion of 30% SNPs. Each histogram with a density plot shows the distribution of 1000 MR Egger estimates by randomly leaving 30% of SNPs. The left graph samples significant SNPs for BMR in both sexes. The middle one samples SNPs for BMR in both sexes that are significant in females. The right one samples SNPs for BMR in both sexes that are significant in males.

Supplementary References

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