

## Supplementary

**Table S1** Instrumental variables used in MR analysis of the association between PCOS and OSA from GWAS involving European participants

SNP	Chromosome	Effect allele	Other allele	EAF	$\beta$	SE	P	F-statistic
rs7563201	2:43561780	G	A	0.451	-0.108	0.017	3.68E-10	39.427
rs2178575	2:213391766	A	G	0.151	0.166	0.022	3.34E-14	57.663
rs13164856	5:131813204	T	C	0.729	0.124	0.019	1.45E-10	40.947
rs804279	8:11623889	T	A	0.262	0.128	0.018	3.76E-12	48.091
rs10739076	9:5440589	A	C	0.308	0.110	0.020	2.51E-08	31.009
rs7864171	9:97723266	A	G	0.428	-0.093	0.017	2.95E-08	30.644
rs9696009	9:126619233	A	G	0.068	0.202	0.031	7.96E-11	42.187
rs11031005	11:30226356	T	C	0.854	-0.159	0.022	8.66E-13	51.030
rs1784692	11:113949232	A	G	0.824	0.144	0.023	1.88E-10	40.486
rs2271194	12:56477694	T	A	0.416	0.097	0.017	4.57E-09	34.215
rs1795379	12:75941042	T	C	0.240	-0.117	0.020	1.81E-09	36.247
rs8043701	16:52375777	A	T	0.815	-0.127	0.021	9.61E-10	37.457

MR, Mendelian randomization; PCOS, polycystic ovary syndrome; OSA, obstructive sleep apnea; GWAS, genome-wide association studies; SNP, single-nucleotide polymorphism; EAF, effect allele frequency; SE, standard error.

**Table S2** Instrumental variables used in MR analysis of the association between PCOS and OSA from GWAS involving Asian participants

SNP	Chromosome	Effect allele	Other allele	EAF	$\beta$	SE	P	F-statistic
rs13429458	2:43638838	A	T	0.81	0.401	0.040	1.73E-23	100.501
rs13405728	2:48978159	A	G	0.754	0.343	0.037	7.55E-21	85.938
rs2268361	2:49201612	C	T	0.504	0.139	0.020	9.89E-13	48.303
rs2349415	2:49247832	T	C	0.181	0.174	0.025	2.35E-12	48.442
rs4385527	9:97648587	G	A	0.781	0.174	0.030	5.87E-09	33.640
rs3802457	9:97741336	G	A	0.904	0.261	0.035	5.28E-14	55.609
rs2479106	9:126525212	G	A	0.222	0.293	0.033	8.12E-19	78.833
rs1894116	11:102070639	G	A	0.194	0.239	0.024	1.08E-22	99.168
rs705702	12:56390636	G	A	0.245	0.239	0.023	8.64E-26	107.979
rs2272046	12:66224461	A	C	0.907	0.357	0.038	1.95E-21	88.261
rs4784165	16:52347819	G	T	0.325	0.14	0.021	3.64E-11	44.444
rs2059807	19:7166109	G	A	0.301	0.131	0.023	1.09E-08	32.440
rs6022786	20:52447303	A	G	0.339	0.122	0.020	1.83E-09	37.210

MR, Mendelian randomization; PCOS, polycystic ovary syndrome; OSA, obstructive sleep apnea; GWAS, genome-wide association studies; SNP, single-nucleotide polymorphism; EAF, effect allele frequency; SE, standard error.