Supplementary Information

Genome-wide association study identifies a locus at 7p15.2 associated with endometriosis

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Supplementary Table 4. Japanese[26], QIMR and Oxford "all" endometriosis and meta-analysis results for 93 of the top 100 SNPs in Uno *et al*.[26] for which we had genotype data passing QC. SNPs with nominal evidence for replication (P <= 0.05 and effect in the same direction) in the QIMR and Oxford data are highlighted in bold.

Supplementary Figure 1. Post-QC Q-Q plots assessing genomic inflation of observed vs. expected chisquare statistic a) comparing women vs. men among WTCCC and QIMR controls; b) in GWA of Oxford/WTCCC, QIMR/QIMR and combined datasets.

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Supplementary Note

QIMR and Oxford sample information. In total, 8,967 individuals, consisting of 3,908 endometriosis patients and their family members, were recruited by The Queensland Institute of Medical Research (QIMR), Brisbane, Australia, between 1995-2002 (each completing a questionnaire and providing a blood sample). Surgical diagnosis for all endometriosis cases was confirmed from retrospective examination of medical records[1]. The QIMR case sample consisted of one case per family from 931 families with affected sister pairs and other affected relatives, a case from each of 980 triad families (one affected plus her parents) and a further 440 cases with no ascertained family members. QIMR controls were a sample of 1,870 parents and siblings of adolescent twins recruited as part of the Brisbane Adolescent Twin Study[2,3], where adolescent twins, their siblings and parents were recruited through schools around Brisbane, Australia. Approval to obtain medical records, for collection of blood for DNA extraction and all questionnaires and interview schedules, and for the inclusion of some twins from the Australian Twin Registry, was obtained from the QIMR Human Research Ethics Committee (HREC). All participants gave written informed consent.

From 1995-2006, the Oxford Endometriosis Gene (OXEGENE) study, Oxford, UK, recruited 245 families with ≥2 affected sisters with surgically confirmed endometriosis, and 785 single cases. All cases were aged ≥18 years and of self-reported European descent. Surgical confirmation was obtained for 97% of cases from medical records. Of the 924 cases included in the GWA after genotyping quality control, 81% were from the UK, 10% from other European countries and 9% from the US. Oxford controls consisted of 3,000 individuals from the 1958 British Birth Cohort and 3,000 individuals from National Blood Service donors provided by the Wellcome Trust Case Control Consortium 2 (WTCCC2). The study received approval from the regional Multi-centre and Local Research Ethics Committees.

The QIMR and Oxford studies used the same principles for confirmation of diagnosis and staging of disease, based on the revised American Fertility Society (rAFS) classification system[4]. Disease severity was assessed retrospectively from medical records by use of the rAFS classification system, which assigns patients to one of four stages (I–IV) on the basis of the extent of disease and the associated adhesions present. As it can be difficult retrospectively to stage disease accurately using clinical records alone, a simplified two-stage system was used[4,5]: stage A (rAFS I-II or some ovarian disease plus a few adhesions) and stage B (rAFS III-IV). Of the 3,194 cases included in the GWA analysis, 1,686 had stage A disease (52.7%), 1,364 stage B disease (42.7%), whilst 144 (4.6%) had unknown disease stage. Additional phenotypic data for both datasets are shown in **Supplementary Table 1.**

Harvard sample information. The replication cohort of endometriosis cases were drawn from US Nurses' Health Study (NHS) II[6,7], a prospective cohort study with follow-up from 1989-2007. Biennially, 116,678 registered female nurses – aged 25-53 and residing in 14 of the US states – complete questionnaire information on incidence of disease outcomes and biological, environmental, dietary, and life-style risk factors. From 1996-1998, blood samples were collected from 29,613 participants 32-53 years of age. Women were asked if they had "ever had physician-diagnosed endometriosis", the date of diagnosis, and

whether diagnosis had been confirmed by laparoscopy. To assess the validity of self-reported endometriosis, the laparoscopy records of 200 randomly selected women who had reported a diagnosis from 1989-1993 were sought; the diagnosis was confirmed in 96% of 105 women who had surgery and whose records were available[6,7]. The US case dataset comprised 2,392 cases with a self-reported laparoscopy-confirmed diagnosis of endometriosis and available blood samples, all of self-reported European descent.

The US controls were selected from two previous GWA studies conducted in the Nurses' Health Study I (NHS) and NHSII, including 1,142 postmenopausal, breast-cancer-free subjects from a study of breast cancer[8] and 1,129 (504 NHS, 625 NHSII) subjects from a genome-wide association study of kidney function[9]. The NHS (control) cohort was initiated in 1976 with 121,700 female registered nurses aged 30-55. Participants completed biannual questionnaires on disease outcomes and biological, environmental, dietary, and life-style risk factors; blood samples were collected between 1989-1990. No endometriosis or symptom-related phenotypic information was available on the controls. All case and control subjects were of self-described European descent and cluster tightly with the HapMap CEU panel. Participant enrolment, questionnaire and clinical data, and biologic sample collection for the NHS and NHSII have been approved by the Human Subject Committee of Harvard School of Public Health and by the Institutional Review Board of Brigham and Women's Hospital.

Genotyping quality control. Quality control procedures for the QIMR genotype data have been described in detail[10]. Briefly, individuals with call rates <0.95 then SNPs with a mean BeadStudio GenCall score <0.7, call rates <0.95, Hardy-Weinberg equilibrium $P < 10^{-6}$, and MAF <0.01 were excluded. Cryptic relatedness between individuals was identified through a full identity-by-state matrix. Ancestry outliers were identified using data from 11 populations of the HapMap 3 and five Northern European populations genotyped by the GenomeEUtwin consortium, using EIGENSOFT[11].

Quality control procedures for the Oxford genotype data resulted in the removal of SNPs with a genotype call rate <0.99 and/or heterozygosity <0.31 or >0.33. Genome-wide IBS was estimated for each pair of individuals and one individual from each duplicate or related pair (IBS>0.82) was removed. Genotype data were combined with CEU, CHB&JPT and YRI genotype data from HapMap 3 and individuals of non Northern European ancestry were identified using the EIGENSOFT package[11,12] and subsequently removed. SNPs with a genotype call rate <0.95 were removed, and this threshold was increased to 0.99 for SNPs with MAF <0.05. In addition, SNPs showing a significant a) deviation from HWE ($P < 1 \times 10^{-6}$); b) difference in call rate between 58BC and NBS control groups ($P < 1 \times 10^{-4}$); c) difference in allele/genotype frequency between control groups ($P < 1 \times 10^{-4}$); d) difference in call rate between cases and controls ($P < 1 \times 10^{-4}$) and e) a MAF <0.01 were removed.

Imputation and subsequent analysis. In order to assess the impact of variants not present on the Illumina Human670Quad Beadarray, we imputed genotypes using CEU and TSI reference panels from the 1000 Genomes project and HapMap phase III. Imputation was performed using IMPUTEv2[13] with two publicly available reference panels of haplotypes from European ancestry populations: (i) phased CEU (CEPH from Utah) samples from the 1000 Genomes project; and (ii) additional phased CEU samples and

phased TSI (Tuscans from Italy) samples from HapMap phase III. Analysis of imputed genotype data was performed using SNPTESTv2 via a missing data likelihood score test with adjustment for centre as covariate. The quality of imputation was assessed by means of the score test "info" statistic. Results for poorly imputed SNPs, defined to have an info score of less than 40%, were subsequently removed.

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Supplementary Table 1. Numbers and phenotypic characteristics of endometriosis cases and controls by dataset.

Characteristic	Total	Dataset		
		QIMR	Oxford	NHSII
Total N				
Cases	5586	2270	924	2392
Controls	9331	1870	5190[a]	2271
Endometriosis cases				
Stage (%)[b]				
Stage A	1686 (30.2%)	1357 (59.8%)	329 (35.6%)	0 (0%)
Stage B	1364 (24.4%)	910 (40.1%)	454 (49.1%)	0 (0%)
Unknown	2536 (45.5%)	3 (0.1%)	141 (15.3%)	2392(100%)
Mean age at first symptom onset[c] (SD)		19.6 (6.4)	22.3 (8.4)	N/A
Mean age at diagnosis[c] (SD)		26.7 (7.4)	30.1 (7.1)	36.9 (6.9)
Number reporting subfertility[c] (%)		1024 (46.3%)	344 (43.6%)	1204 (50.3%)
Number reporting pelvic pain[c] (%)		1848 (82.7%)	672 (98.0%)	N/A

[a] Control genotypes for the Oxford dataset were from the Wellcome Trust Case Control Consortium (WTCCC2).

[b] Stage information is currently unavailable for the US cases.

[c] Variables were based on self-report. Age at diagnosis was defined as either age at first diagnosis (QIMR) or age at first surgically confirmed diagnosis (Oxford and NHSII). Subfertility was defined as ever having attempted unsuccessfully to conceive for at least 12 months; pelvic pain as ever having had severe pelvic pain (QIMR), or reporting pelvic pain as reason for gynaecological consultation (Oxford). Percentages were calculated after excluding women with missing information.

Supplementary Table 2 Estimates of proportion of variation due to common SNPs for all endometriosis, stage A and stage B endometriosis in the QIMR and Oxford cases.

Phenotypes	Cases	Controls	Proportion of variation (SE)	P-value
QIMR				
All Endometriosis	2235	1827	0.24 (0.08)	5.0×10^{-4}
Stage A	1340	1827	0.16 (0.10)	9.0×10^{-2}
Stage B	895	1827	0.42 (0.11)	1.1×10^{-4}
Oxford				
All Endometriosis	921	5158	0.35 (0.05)	1.5×10^{-12}
Stage A	327	5158	0.20 (0.06)	5.3×10^{-4}
Stage B	453	5158	0.30 (0.06)	4.3×10^{-8}

Supplementary Table 3 GWA ("all" endometriosis and stage B), follow-up and "all endometriosis" meta-analysis[a] results for 73 SNPs passing the inclusion threshold for replication[b] and for which genotype data were available in the NHS control dataset. SNPs are sorted by chromosomal location. The rs12700667 SNP reaching genome-wide significance in the meta-analysis is highlighted in bold.

				GWA -All Endometriosis			GWA – Stage B Endometriosis			Replication – All Endometriosis			Meta-analysis	
SNP	Chr	Location	Gene[c]	RAF[d] (allele)	*P*-value	OR (95% CIs)	RAF[d] (allele)	*P*-value	OR (95% CIs)	RAF[d] (allele)	*P*-value	OR (95% CIs)	*P*-value	OR (95% CI
rs7515106	1	22345997	*WNT4*	0.22 (C)	3.6×10^{-5}	1.1 (1.09-1.27)	0.22 (C)	9.9×10^{-4}	1.19 (1.07-1.31)	0.23 (C)	0.11	1.08 (0.98-1.19)	4.7×10^{-5}	1.13 (1.07-1.
rs12742458	1	30349160	Inter	0.30 (C)	5.4×10^{-5}	1.15 (1.08-1.24)	0.30 (C)	4.8×10^{-4}	1.18 (1.08-1.30)	0.29 (C)	0.05	0.92 (0.84-1.00)	0.08	1.05 (0.99-1.
rs12024204	1	80015589	Inter	0.52 (G)	3.8×10^{-5}	1.15 (1.07-1.22)	0.52 (G)	3.9×10^{-3}	1.14 (1.04-1.24)	0.54 (G)	4.6×10^{-2}	1.08 (1.00-1.17)	6.3×10^{-6}	1.22 (1.07-1.
rs1218598	1	153062013	*KCNN3*	0.23 (G)	9.1×10^{-5}	1.17 (1.08-1.26)	0.23 (G)	0.16	1.09 (0.98-1.21)	0.22 (G)	0.88	1.00 (0.91-1.11)	1.3×10^{-3}	1.10 (1.04-1.
rs4845396	1	153095033	*KCNN3*	0.51 (G)	6.5×10^{-5}	1.14 (1.07-1.22)	0.51 (G)	0.26	1.05 (0.96-1.15)	0.51 (G)	0.11	1.07 (0.98-1.16)	2.3×10^{-5}	1.11 (1.06-1.
rs12125690	1	220077489	Inter	0.21 (G)	9.2×10^{-4}	1.14 (1.05-1.24)	0.21 (G)	1.4×10^{-5}	1.26 (1.13-1.39)	0.21 (G)	0.87	0.99 (0.89-1.10)	2.3×10^{-2}	1.07 (1.01-1.
rs10910389	1	232430908	Inter	0.09 (A)	7.9×10^{-4}	1.22 (1.09-1.36)	0.09 (A)	7.1×10^{-5}	1.34 (1.16-1.55)	0.09 (A)	0.72	0.97 (0.85-1.12)	1.5×10^{-2}	1.11 (1.02-1.
rs13407457	2	11572938	Inter	0.15 (T)	3.6×10^{-5}	1.21 (1.10-1.32)	0.15 (T)	2.4×10^{-6}	1.32 (1.18-1.48)	0.15 (T)	0.97	0.99 (0.89-1.12)	1.8×10^{-3}	1.12 (1.04-1.
rs2373327	2	38075590	*FAM82A1*	0.30 (G)	2.4×10^{-4}	1.14 (1.06-1.22)	0.30 (G)	8.4×10^{-5}	1.20 (1.10-1.32)	0.31 (G)	0.39	0.96 (0.88-1.05)	2.2×10^{-2}	1.06 (1.01-1.
rs7580660	2	41990292	Inter	0.40 (C)	9.6×10^{-5}	1.14 (1.07-1.22)	0.40 (C)	2.8×10^{-4}	1.18 (1.08-1.28)	0.42 (C)	0.72	1.01 (0.95-1.13)	1.7×10^{-3}	1.08 (1.03-1.
rs2861638	2	67630022	Inter	0.45 (A)	4.5×10^{-4}	1.12 (1.05-1.20)	0.45 (A)	2.4×10^{-6}	1.23 (1.13-1.34)	0.44 (A)	0.54	1.02 (0.94-1.11)	1.4×10^{-3}	1.08 (1.03-1.
rs9917294	2	82935950	Inter	0.33 (A)	8.2×10^{-5}	1.15 (1.07-1.23)	0.33 (A)	1.3×10^{-2}	1.12 (1.02-1.23)	0.33 (A)	0.71	0.98 (0.90-1.07)	8.3×10^{-3}	1.07 (1.02-1.
rs16829241	2	134249092	Inter	0.18 (A)	8.3×10^{-5}	1.18	0.18 (A)	6.1×10^{-3}	1.17	0.20 (A)	0.35	0.95	1.7×10^{-2}	1.08

						(1.09-1.28)			(1.04-1.30)			(0.86-1.05)		(1.01-1.
						1.17			1.30			1.02		1.11
rs1250248	2	215995338	*FN1*	0.27 (A)	1.7×10^{-5}	(1.09-1.26)	0.27 (A)	3.2×10^{-8}	(1.19-1.43)	0.28 (A)	0.57	(0.94-1.12)	1.6×10^{-4}	(1.05-1.
						1.15			1.18			0.96		1.07
rs4858692	3	25050171	Inter	0.63 (T)	2.7×10^{-5}	(1.08-1.23)	0.63 (T)	2.4×10^{-4}	(1.08-1.30)	0.62 (T)	0.35	(0.88-1.04)	6.1×10^{-3}	(1.02-1.
						1.19			1.10			0.93		1.07
rs12636066	3	30888649	*GADL1*	0.83 (C)	8.6×10^{-5}	(1.09-1.30)	0.83 (C)	0.11	(0.98-1.23)	0.83 (C)	0.26	(0.84-1.05)	4.7×10^{-2}	(1.00-1.
						1.28			1.30			0.83		1.08
rs9860107	3	60015145	*FHIT*	0.07 (G)	5.7×10^{-5}	(1.14-1.45)	0.07 (G)	1.3×10^{-3}	(1.11-1.52)	0.08 (G)	2.4×10^{-2}	(0.72-0.98)	0.11	(0.98-1.
						1.16			1.14			1.03		1.10
rs9865110	3	74064463	Inter	0.38 (C)	1.8×10^{-5}	(1.08-1.24)	0.38 (C)	4.3×10^{-3}	(1.04-1.24)	0.40 (C)	0.48	(0.95-1.12)	2.7×10^{-4}	(1.04-1.
						1.24			1.28			0.93		1.09
rs7618969	3	75086179	Inter	0.89 (G)	8.6×10^{-5}	(1.11-1.38)	0.89 (G)	9.2×10^{-4}	(1.14-1.48)	0.88 (G)	0.31	(0.82-1.06)	2.2×10^{-2}	(1.01-1.
						1.21			1.18			0.98		1.12
rs2053016	3	129127878	*KLHDC6*	0.16 (C)	2.4×10^{-5}	(1.10-1.32)	0.16 (C)	6.1×10^{-3}	(1.05-1.32)	0.16 (C)	0.79	(0.88-1.10)	1.1×10^{-3}	(1.04-1.
						1.30			1.44			0.92		1.11
rs9820182	3	135486035	Inter	0.06 (G)	1.1×10^{-4}	(1.14-1.49)	0.06 (G)	2.5×10^{-5}	(1.21-1.71)	0.06 (G)	0.32	(0.77-1.09)	4.1×10^{-2}	(1.00-1.
						1.15			1.13			1.02		1.09
rs10008492	4	38442115	Inter	0.33 (T)	7.1×10^{-5}	(1.07-1.23)	0.33 (T)	7.3×10^{-3}	(1.03-1.24)	0.37 (T)	0.71	(0.93-1.10)	8.4×10^{-4}	(1.04-1
						1.14			1.16			1.07		1.11
rs1402142	4	64653543	Inter	0.53 (C)	8.0×10^{-5}	(1.07-1.22)	0.53 (C)	8.0×10^{-4}	(1.06-1.26)	0.56 (C)	0.08	(0.99-1.16)	2.4×10^{-5}	(1.05-1
						1.15			1.09			1.02		1.09
-rs1392764	4	117980897	Inter	0.45 (G)	2.9×10^{-5}	(1.08-1.23)	0.45 (G)	4.9×10^{-2}	(1.00-1.19)	0.45 (G)	0.57	(0.94-1.11)	3.4×10^{-4}	(1.04-1.
						1.31			1.30			1.07		1.19
rs17014446	4	130347853	Inter	0.06 (T)	7.0×10^{-5}	(1.15-1.49)	0.06 (T)	2.9×10^{-3}	(1.09-1.55)	0.07 (T)	0.37	(0.92-1.27)	6.1×10^{-4}	(1.08-1.
						1.17			1.20			1.04		1.11
rs2066865	4	155744726	*FGG*	0.77 (G)	7.0×10^{-5}	(1.08-1.26)	0.77 (G)	5.8×10^{-4}	(1.08-1.33)	0.78 (G)	0.38	(0.95-1.14)	3.1×10^{-4}	(1.05-1.
						1.63			1.78			1.25		1.42
rs2010146	4	168154501	*SPOCK3*	0.02 (T)	4.3×10^{-5}	(1.28-2.06)	0.02 (T)	8.4×10^{-5}	(1.32-2.39)	0.02 (T)	0.15	(0.92-1.71)	1.6×10^{-3}	(1.18-1.
						1.15			1.09			0.93		1.04
rs268979	5	22682205	*CDH12*	0.70 (A)	6.7×10^{-5}	(1.07-1.24)	0.70 (A)	5.7×10^{-2}	(1.00-1.20)	0.69 (A)	0.09	(0.85-1.01)	0.11	(0.99-1.
rs2619939	5	25837347	Inter	0.12 (T)	2.7×10^{-5}	1.23	0.12 (T)	3.0×10^{-3}	1.22	0.12 (T)	0.43	1.05	1.4×10^{-4}	1.16

						(1.12-1.36)			(1.07-1.39)			(0.93-1.18)		(1.07-1.
						1.14			1.10			0.99		1.07
rs855367	6	9943180	*OFCC1*	0.61 (C)	6.9×10^{-5}	(1.07-1.22)	0.61 (C)	3.3×10^{-2}	(1.00-1.20)	0.61 (C)	0.91	(0.91-1.08)	4.0×10^{-3}	(1.02-1.
						1.14			1.21			1.01		1.09
rs7739264	6	19893567	Inter	0.52 (T)	4.5×10^{-5}	(1.07-1.22)	0.52 (T)	1.6×10^{-5}	(1.11-1.32)	0.53 (T)	0.76	(0.93-1.10)	6.5×10^{-4}	(1.03-1.
						1.45			1.51			1.05		1.26
rs17644393	6	34715936	*C6orf106*	0.96 (G)	6.5×10^{-5}	(1.20-1.74)	0.96 (G)	1.3×10^{-3}	(1.17-1.95)	0.96 (G)	0.62	(0.85-1.31)	9.9×10^{-4}	(1.10-1.
						1.15			1.15			1.06		1.12
rs9349553	6	50823366	*TFAP2D*	0.29 (C)	7.6×10^{-5}	(1.07-1.24)	0.29 (C)	4.1×10^{-3}	(1.04-1.26)	0.31 (C)	0.23	(0.97-1.15)	6.44×10^{-5}	(1.06-1.
						1.18			1.12			0.97		1.08
rs1741916	6	57297595	*PRIM2*	0.74 (G)	2.0×10^{-5}	(1.09-1.27)	0.74 (G)	2.2×10^{-2}	(1.02-1.24)	0.74 (G)	0.47	(0.88-1.06)	5.6×10^{-3}	(1.02-1.
						1.20			1.25			1.10		1.15
rs12110479	6	152596089	*SYNE1*	0.19 (T)	1.2×10^{-5}	(1.10-1.30)	0.19 (T)	2.7×10^{-5}	(1.13-1.40)	0.21 (T)	0.07	(0.99-1.21)	9.9×10^{-6}	(1.08-1.
						1.17			1.19			1.03		1.12
rs1890100	6	152679902	*SYNE1*	0.30 (A)	1.6×10^{-5}	(1.09-1.25)	0.30 (A)	2.5×10^{-4}	(1.08-1.30)	0.31 (A)	0.47	(0.94-1.13)	4.2×10^{-5}	(1.06-1.
						1.18			1.34			1.17		1.18
rs7798431	7	25827337	Inter	0.77 (G)	1.9×10^{-5}	(1.09-1.28)	0.77 (G)	6.0×10^{-8}	(1.21-1.49)	0.75 (G)	1.6×10^{-3}	(1.06-1.28)	1.1×10^{-7}	(1.11-1.
						1.22			**1.38**			**1.17**		**1.20**
rs12700667	**7**	**25868163**	**Inter**	**0.76 (A)**	**2.6×10^{-7}**	**(1.13-1.32)**	**0.76 (A)**	**1.5×10^{-9}**	**(1.24-1.53)[f]**	**0.74 (A)**	**1.2×10^{-3}**	**(1.06-1.28)**	**1.4×10^{-9}**	**(1.13-1.**
						1.24			1.20			1.00		1.14
rs4719955	7	28851437	Inter	0.88 (T)	5.5×10^{-5}	(1.11-1.37)	0.88 (T)	9.0×10^{-3}	(1.05-1.38)	0.88 (T)	0.94	(0.88-1.14)	1.0×10^{-3}	(1.05-1.
						1.17			1.14			1.03		1.11
rs10953541	7	107031781	Inter	0.75 (C)	3.2×10^{-5}	(1.09-1.27)	0.75 (C)	9.1×10^{-3}	(1.03-1.26)	0.75 (C)	0.53	(0.93-1.13)	5.4×10^{-4}	(1.04-1.
						1.17			1.17			1.04		1.11
rs1544832	7	132002029	*AC009365.1*	0.35 (T)	1.0×10^{-5}	(1.09-1.25)	0.35 (T)	5.6×10^{-4}	(1.07-1.28)	0.35 (T)	0.32	(0.96-1.14)	5.5×10^{-5}	(1.06-1.
						1.14			1.14			1.06		1.10
rs7809057	7	134258216	*CALD1*	0.53 (A)	4.3×10^{-5}	(1.07-1.22)	0.53 (A)	2.9×10^{-3}	(1.05-1.24)	0.55 (A)	0.18	(0.97-1.15)	1.7×10^{-4}	(1.05-1.
						1.16			1.14			1.14		1.15
rs2738113	8	6816495	Inter	0.44 (G)	6.3×10^{-6}	(1.09-1.24)	0.44 (G)	2.9×10^{-3}	(1.05-1.25)	0.45 (G)	1.3×10^{-2}	(1.03-1.26)	2.8×10^{-7}	(1.09-1.
						1.17			1.12			1.04		1.12
rs13268432	8	8544244	Inter	0.77 (C)	6.3×10^{-5}	(1.09-1.27)	0.77 (C)	3.0×10^{-2}	(1.01-1.25)	0.78 (C)	0.43	(0.94-1.15)	2.6×10^{-4}	(1.05-1.
rs2593353	9	17494609	*CNTLN*	0.63 (G)	2.1×10^{-4}	1.14	0.63 (G)	1.2×10^{-5}	1.22	0.62 (G)	0.23	1.05	2.6×10^{-4}	1.10

						(1.06-1.21)			(1.12-1.34)			(0.97-1.14)		(1.04-1.
						1.14			1.21			1.01		1.09
rs2015920	10	30977962	Inter	0.27 (G)	5.5×10^{-4}	(1.06-1.22)	0.27 (G)	9.8×10^{-5}	(1.10-1.33)	0.27 (G)	0.77	(0.93-1.11)	3.2×10^{-3}	(1.03-1.
						1.15			1.17			1.06		1.11
rs7896859	10	101653428	*DNMBP*	0.58 (G)	2.2×10^{-5}	(1.08-1.23)	0.58 (G)	6.1×10^{-4}	(1.07-1.27)	0.60 (G)	0.17	(0.97-1.15)	5.3×10^{-5}	(1.05-1.
						1.17			1.20			0.93		1.07
rs1572396	10	117315011	*ATRNL1*	0.71 (C)	1.4×10^{-5}	(1.09-1.26)	0.71 (C)	2.1×10^{-4}	(1.09-1.32)	0.71 (C)	0.14	(0.85-1.02)	1.5×10^{-2}	(1.01-1.
						1.17			1.17			0.97		1.08
rs2218868	11	57682553	*OR9Q1*	0.42 (C)	1.9×10^{-6}	(1.10-1.25)	0.42 (C)	3.1×10^{-4}	(1.08-1.28)	0.44 (C)	0.43	(0.89-1.05)	1.8×10^{-3}	(1.03-1.
						1.12			1.19			1.03		1.05
rs4073612	11	93505299	*PANX1*	0.51 (G)	8.3×10^{-4}	(1.05-1.19)	0.51 (G)	7.1×10^{-5}	(1.09-1.30)	0.50 (G)	0.47	(0.95-1.12)	3.3×10^{-2}	(1.00-1.
						1.15			1.14			0.98		1.09
rs635984	11	100428376	*PGR*	0.49 (C)	3.2×10^{-5}	(1.07-1.22)	0.49 (C)	3.9×10^{-3}	(1.04-1.24)	0.50 (C)	0.61	(0.90-1.06)	9.9×10^{-4}	(1.03-1.
						1.24			1.25			1.07		1.15
rs962656	12	25095620	*LRMP*	0.11 (C)	4.9×10^{-5}	(1.12-1.37)	0.11 (C)	9.2×10^{-4}	(1.10-1.43)	0.13 (C)	0.27	(0.95-1.21)	2.7×10^{-4}	(1.07-1.
						1.20			1.16			0.99		1.10
rs1163039	12	79555672	Inter	0.17 (C)	2.2×10^{-5}	(1.10-1.31)	0.17 (C)	8.7×10^{-3}	(1.04-1.30)	0.17 (C)	0.85	(0.95-1.21)	4.2×10^{-3}	(1.03-1.
						1.18			1.20			1.01		1.11
rs10859871	12	94236007	Inter	0.31 (C)	2.9×10^{-6}	(1.10-1.27)	0.31 (C)	1.3×10^{-4}	(1.09-1.31)	0.32 (C)	0.78	(0.93-1.10)	1.9×10^{-4}	(1.05-1.
						1.20			1.07			1.09		1.15
rs3015404	13	104643603	Inter	0.15 (T)	7.8×10^{-5}	(1.10-1.31)	0.15 (T)	0.29	(0.95-1.21)	0.16 (T)	0.13	(0.97-1.22)	9.56×10^{-5}	(1.07-1.
						1.16			1.12			1.02		1.09
rs9559922	13	110435375	Inter	0.70 (C)	5.4×10^{-5}	(1.08-1.24)	0.70 (C)	2.4×10^{-2}	(1.01-1.23)	0.72 (C)	0.72	(0.93-1.11)	9.8×10^{-4}	(1.04-1.
						1.16			1.15			0.97		1.08
rs7158744	14	23787631	*TGM1*	0.65 (T)	2.0×10^{-5}	(1.08-1.24)	0.65 (T)	2.8×10^{-3}	(1.05-1.26)	0.66 (T)	0.54	(0.89-1.06)	2.0×10^{-3}	(1.03-1.
						1.16			1.22			1.00		1.08
rs4900756	14	46948718	*MDGA2*	0.27 (C)	8.5×10^{-5}	(1.07-1.24)	0.27 (C)	3.7×10^{-5}	(1.11-1.34)	0.28 (C)	0.98	(0.91-1.10)	5.8×10^{-3}	(1.02-1.
						1.24			1.42			1.00		1.14
rs1951297	14	95503995	Inter	0.07 (A)	5.1×10^{-4}	(1.10-1.41)	0.07 (A)	1.0×10^{-5}	(1.22-1.66)	0.08 (A)	0.99	(0.86-1.17)	7.6×10^{-3}	(1.03-1.
						1.14			1.23			0.95		1.05
rs936532	15	37585407	Inter	0.29 (A)	4.4×10^{-4}	(1.06-1.22)	0.29 (A)	1.1×10^{-5}	(1.12-1.35)	0.30 (A)	0.28	(0.87-1.04)	0.08	(0.99-1.
rs6496857	15	90050851	Inter	0.88 (T)	6.1×10^{-6}	1.26	0.88 (T)	4.8×10^{-5}	1.33	0.88 (T)	0.34	0.94	4.3×10^{-3}	1.12

						(1.14-1.40)			(1.16-1.53)			(0.83-1.07)		(1.03-1.
						1.28			1.47			0.91		1.11
rs709423	16	12212119	*SNX29*	0.07 (T)	1.1×10^{-4}	(1.13-1.45)	0.07 (T)	1.5×10^{-6}	(1.25-1.71)	0.07 (T)	0.22	(0.78-1.06)	2.8×10^{-2}	(1.01-1.
						1.17			1.31			0.98		1.09
rs1990629	16	48275072	*ZNF423*	0.14 (G)	9.0×10^{-4}	(1.07-1.29)	0.14 (G)	7.7×10^{-6}	(1.16-1.48)	0.13 (G)	0.79	(0.87-1.11)	1.8×10^{-2}	(1.01-1.
						1.17			1.21			0.97		1.09
rs2107654	17	61063535	*CCDC46*	0.47 (C)	1.8×10^{-6}	(1.10-1.25)	0.47 (C)	1.9×10^{-5}	(1.11-1.32)	0.47 (C)	0.53	(0.90-1.06)	9.9×10^{-4}	(1.03-1.
						1.18			1.22			0.98		1.09
rs1790644	18	32300382	*FHOD3*	0.28 (A)	4.1×10^{-6}	(1.10-1.27)	0.28 (A)	3.0×10^{-5}	(1.11-1.35)	0.28 (A)	0.75	(0.90-1.08)	1.4×10^{-3}	(1.03-1.
						1.20			1.39			0.86		1.04
rs6507701	18	42216915	*RNF165*	0.89 (C)	8.6×10^{-4}	(1.08-1.34)	0.89 (C)	2.1×10^{-5}	(1.20-1.62)	0.88 (C)	2.5×10^{-2}	(0.75-0.98)	0.30	(0.96-1.
						1.19			1.30			1.04		1.12
rs12455952	18	56991498	Inter	0.19 (G)	2.0×10^{-5}	(1.10-1.29)	0.19 (G)	1.3×10^{-6}	(1.17-1.44)	0.20 (G)	0.24	(0.93-1.15)	1.7×10^{-4}	(1.06-1.
						1.17			1.13			1.02		1.10
rs6567322	18	58886429	Inter	0.22 (G)	8.8×10^{-5}	(1.08-1.26)	0.22 (G)	2.1×10^{-2}	(1.02-1.25)	0.24 (G)	0.72	(0.92-1.12)	1.5×10^{-3}	(1.04-1.
						1.15			1.16			1.00		1.08
rs12052035	18	60569964	Inter	0.53 (C)	2.1×10^{-5}	(1.08-1.23)	0.53 (C)	9.7×10^{-4}	(1.06-1.26)	0.54 (C)	0.92	(0.92-1.08)	1.3×10^{-3}	(1.03-1.
						1.18			1.25			1.04		1.12
rs12955300	18	74516951	Inter	0.75 (C)	1.6×10^{-5}	(1.10-1.28)	0.75 (C)	2.8×10^{-5}	(1.13-1.39)	0.76 (C)	0.39	(0.95-1.14)	7.4×10^{-5}	(1.06-1.
						1.15			1.18			1.03		1.12
rs12463130	19	34803496	Inter	0.43 (T)	2.6×10^{-5}	(1.08-1.23)	0.43 (T)	2.2×10^{-4}	(1.08-1.29)	0.43 (T)	0.41	(0.95-1.14)	7.8×10^{-5}	(1.06-1.
						1.38			1.40			1.02		1.23
rs6133922	20	10349073	*MKKS*	0.06 (G)	4.4×10^{-6}	(1.20-1.58)	0.06 (G)	1.8×10^{-4}	(1.18-1.68)	0.06 (G)	0.79	(0.85-1.22)	1.0×10^{-4}	(1.11-1.
						1.22			1.19			1.06		1.17
rs17653586	X	154568340	*SPRY3*	0.83 (G)	1.4×10^{-5}	(1.11-1.33)	0.83 (G)	4.5×10^{-3}	(1.06-1.34)	0.85 (G)	0.42	(0.92-1.22)	3.0×10^{-3}	(1.05-1.

[a.] Meta-analysis included "all" endometriosis QIMR and Oxford endometriosis cases and all NHSII (replication) cases.

[b] SNPs were included for replication in the NHS cohort if they reached the following thresholds: (1) $P < 1.0 \times 10^{-4}$ in the association analysis with all QIMR and Oxford endometriosis cases, or (2) any SNPs not already included with a $P < 1.0 \times 10^{-4}$ in the association analysis including only Stage B cases *and* $P < 1.0 \times 10^{-3}$ in the total endometriosis analysis.

[c] Gene name is provided if the genotyped SNP is located in upstream, 3'UTR, intronic, exonic, 5'UTR, or downstream regions of that gene as annotated by Ensembl Genome Browser GRCh37 (Feb 2009). *Inter* denotes a SNP is located in an intergenic region.

[d] RAF= Risk allele frequency for the total case and control cohorts.

[e] Combined results for the QIMR/Oxford stage B data with the replication data for rs12700667 and rs7798431 were P = 7.6 x 10^{-11}; OR = 1.26 (1.17-1.35) and P = 1.8 x 10^{-9}; OR = 1.24 (1.16-1.33), respectively].

[f] Analysis including only stage A cases: *P* = 0.02, OR = 1.12 (1.02-1.24)

Supplementary Table 4 Japanese[26], QIMR plus Oxford "all" endometriosis and meta-analysis results for 93 of the top 100 SNPs in Uno *et al*.[26] for which we had genotype data passing QC. SNPs with nominal evidence for replication (*P* <= 0.05 and effect in the same direction) in the QIMR and Oxford data are highlighted in bold.

Uno *et al*.[26] GWA[a]							QIMR+OX GWA			GWAMA meta-analysis of Uno *et al.*[26] and QIMR+OX				
No.	Chr	SNP	Ref/ Other[b]	*P*	OR (95% CIs)	Gene[c]	Ref/ Other[b]	*P*	OR (95% CIs)	Ref/ Other[b]	*P*	OR (95% CIs)	q_statistic *P*[d]	Ef
1	1	rs7550872	T/C	2.7×10^{-6}	1.37 (1.21-1.56)	Inter	T/C	4.9×10^{-1}	0.97 (0.87-1.07)	T/C	1.0×10^{-2}	1.11 (1.02-1.20)	1.6×10^{-5}	+-
2	14	rs12888049	G/A	2.7×10^{-6}	1.36 (1.19-1.54)	*TCRA*	G/A	7.6×10^{-1}	1.01 (0.94-1.09)	G/A	1.2×10^{-2}	1.09 (1.02-1.17)	1.7×10^{-4}	+-
3	1	rs12568930	T/C	2.8×10^{-6}	1.37 (1.20-1.55)	Inter	T/C	1.4×10^{-1}	0.94 (0.86-1.02)	T/C	1.9×10^{-1}	1.05 (0.98-1.13)	2.5×10^{-6}	+-
4	1	rs7542242	T/C	2.9×10^{-6}	1.36 (1.20-1.54)	Inter	C/T	8.5×10^{-2}	0.94 (0.88-1.01)	T/C	1.2×10^{-4}	1.13 (1.06-1.20)	7.8×10^{-4}	+-
5	1	rs6696981	A/G	3.7×10^{-6}	1.37 (1.20-1.56)	Inter	G/T	5.0×10^{-1}	0.97 (0.87-1.07)	A/G	3.2×10^{-6}	1.37 (1.20-1.56)	1.00	+1
6	1	rs7524102	A/G	3.8×10^{-6}	1.36 (1.20-1.54)	Inter	A/G	1.2×10^{-1}	0.93 (0.86-1.02)	A/G	1.5×10^{-1}	1.05 (0.98-1.13)	1.2×10^{-6}	+-
7	1	rs12723796	A/G	9.0×10^{-6}	1.36 (1.19-1.55)	Inter	G/A	4.5×10^{-1}	0.96 (0.87-1.06)	A/G	9.4×10^{-4}	1.14 (1.06-1.24)	1.5×10^{-3}	+-
8	15	rs685850	G/A	9.6×10^{-6}	1.47 (1.24-1.74)	Inter	G/A	6.7×10^{-1}	1.01 (0.95-1.08)	G/A	4.8×10^{-2}	1.06 (1.00-1.13)	6.4×10^{-5}	+-
9	6	rs12525163	C/T	9.8×10^{-6}	1.38 (1.20-1.60)	*ESR1*	T/C	5.1×10^{-2}	1.08 (1.00-1.16)	C/T	7.3×10^{-1}	1.01 (0.95-1.08)	9.1×10^{-7}	+-
10	20	rs11698045	T/C	1.5×10^{-5}	1.37 (1.19-1.59)	Inter	C/T	3.7×10^{-1}	0.97 (0.91-1.04)	T/C	8.2×10^{-3}	1.08 (1.02-1.15)	3.1×10^{-4}	+-
11	15	rs735980	A/G	1.7×10^{-5}	1.27 (1.14-1.41)	*CCDC33*	G/A	1.2×10^{-1}	0.93 (0.86-1.02)	A/G	9.6×10^{-5}	1.14 (1.07-1.22)	1.4×10^{-2}	+-
12	1	rs2501279	T/C	1.9×10^{-5}	1.30 (1.15-1.46)	Inter	T/C	1.5×10^{-1}	1.05 (0.98-1.12)	T/C	1.2×10^{-3}	1.10 (1.04-1.17)	2.5×10^{-3}	+-
13	20	rs4396776	A/C	2.0×10^{-5}	1.26 (1.13-1.41)	Inter	C/A	6.9×10^{-1}	0.99 (0.92-1.05)	A/C	1.3×10^{-2}	1.07 (1.01-1.14)	7.7×10^{-4}	+-
14	6	rs1159327	C/T	2.0×10^{-5}	1.34 (1.17-1.53)	*ESR1*	C/T	7.9×10^{-2}	1.07 (0.99-1.15)	C/T	4.0×10^{-4}	1.12 (1.05-1.20)	3.6×10^{-3}	+-
15	12	rs10771314	A/G	2.3×10^{-5}	1.48 (1.23-1.77)	*TM7SF3*	G/A	6.1×10^{-1}	1.03 (0.92-1.15)	A/G	1.0×10^{-1}	1.08 (0.98-1.19)	1.2×10^{-4}	+-
16	**7**	**rs993183**	**G/A**	**2.3×10^{-5}**	**1.26 (1.13-1.40)**	**Inter**	**G/A**	**2.5×10^{-2}**	**1.08 (1.01-1.15)**	**G/A**	**5.2×10^{-5}**	**1.12 (1.06-1.19)**	**1.5×10^{-2}**	**+-**
17	11	rs7481100	A/G	2.4×10^{-5}	1.41 (1.20-1.65)	Inter	A/G	5.1×10^{-1}	1.04 (0.92-1.18)	A/G	2.4×10^{-3}	1.16 (1.05-1.28)	3.3×10^{-3}	+-
18	11	rs12420264	T/C	3.2×10^{-5}	1.40 (1.19-1.64)	Inter	T/C	4.8×10^{-1}	1.04 (0.93-1.17)	T/C	3.6×10^{-3}	1.15 (1.05-1.26)	3.6×10^{-3}	+-
19	**1**	**rs16826658**	**T/G**	**3.5×10^{-5}**	**1.25 (1.13-1.39)**	**Inter**	**T/G**	**3.4×10^{-3}**	**1.10 (1.03-1.18)**	**T/G**	**1.5×10^{-6}**	**1.15 (1.08-1.21)**	**4.4×10^{-2}**	**+-**
20	7	rs767395	G/A	3.5×10^{-5}	1.25 (1.13-1.39)	Inter	G/A	2.4×10^{-2}	0.93 (0.87-0.99)	G/A	6.4×10^{-1}	1.01 (0.96-1.07)	1.1×10^{-6}	+-
21	1	rs2421987	A/G	3.5×10^{-5}	1.25 (1.12-1.39)	*DNM3*	G/A	8.8×10^{-1}	0.99 (0.91-1.09)	A/G	9.4×10^{-3}	1.09 (1.02-1.17)	2.5×10^{-3}	+-
22	11	rs12418031	A/G	3.7×10^{-5}	1.39 (1.19-1.63)	Inter	G/A	4.8×10^{-1}	1.04 (0.93-1.17)	A/G	5.7×10^{-2}	1.09 (1.00-1.20)	1.7×10^{-4}	+-
24	11	rs4584564	A/G	3.9×10^{-5}	1.36 (1.17-1.57)	Inter	G/A	3.2×10^{-1}	1.05 (0.96-1.14)	A/G	2.5×10^{-1}	1.05 (0.97-1.13)	7.4×10^{-5}	+-
25	8	rs13255500	A/G	3.9×10^{-5}	1.25 (1.12-1.39)	*ANGPT1*	A/G	1.8×10^{-1}	0.94 (0.85-1.03)	A/G	1.0×10^{-1}	1.06 (0.99-1.14)	1.1×10^{-4}	+-
26	8	rs1433168	C/T	4.1×10^{-5}	1.26 (1.13-1.40)	*ANGPT1*	T/C	5.2×10^{-1}	0.98 (0.92-1.05)	C/T	6.9×10^{-3}	1.08 (1.02-1.14)	1.2×10^{-3}	+-
27	3	rs9876198	T/C	4.1×10^{-5}	1.48 (1.23-1.78)	Inter	C/T	1.1×10^{-1}	1.06 (0.99-1.13)	T/C	9.4×10^{-1}	1.00 (0.94-1.06)	8.7×10^{-6}	+-
28	3	rs2369950	T/C	4.1×10^{-5}	1.48 (1.23-1.78)	Inter	C/T	1.1×10^{-1}	1.06 (0.99-1.13)	T/C	9.5×10^{-1}	1.00 (0.94-1.06)	8.8×10^{-6}	+-
29	**1**	**rs7521902**	**C/A**	**4.2×10^{-5}**	**1.25 (1.12-1.39)**	**Inter**	**C/A**	**8.9×10^{-5}**	**1.16 (1.08-1.25)**	**C/A**	**4.2×10^{-8}**	**1.19 (1.12-1.27)**	**0.28**	**+-**

30	20	rs6087487	A/G	4.5×10^{-5}	1.33 (1.16-1.52)	*SNTA1*	A/G	1.2×10^{-1}	1.05 (0.99-1.13)	A/G	1.4×10^{-3}	1.10 (1.04-1.17)	2.6×10^{-3}	+-
31	20	rs293712	A/G	4.8×10^{-5}	1.32 (1.15-1.52)	Inter	G/A	5.4×10^{-1}	0.98 (0.92-1.05)	A/G	2.3×10^{-2}	1.07 (1.01-1.14)	1.0×10^{-3}	+-
32	3	rs6763720	A/G	5.1×10^{-5}	1.47 (1.22-1.77)	Inter	G/A	1.2×10^{-1}	1.06 (0.99-1.13)	A/G	9.1×10^{-1}	1.00 (0.94-1.06)	1.4×10^{-5}	+-
33	8	rs10098499	C/T	5.1×10^{-5}	1.26 (1.12-1.40)	*ANGPT1*	T/C	6.8×10^{-1}	0.99 (0.92-1.05)	C/T	2.6×10^{-2}	1.07 (1.01-1.13)	1.6×10^{-3}	+-
34	11	rs989357	A/G	5.3×10^{-5}	1.34 (1.16-1.55)	Inter	G/A	2.3×10^{-1}	1.05 (0.97-1.13)	A/G	4.1×10^{-1}	1.03 (0.96-1.10)	4.7×10^{-5}	+-
35	3	rs275365	T/C	5.3×10^{-5}	1.28 (1.14-1.45)	Inter	T/C	6.0×10^{-1}	0.98 (0.91-1.06)	T/C	6.1×10^{-2}	1.06 (1.00-1.13)	1.6×10^{-4}	+-
36	4	rs9308012	G/T	5.5×10^{-5}	1.25 (1.12-1.39)	Inter	G/T	4.3×10^{-2}	0.93 (0.88-1.00)	G/T	7.7×10^{-1}	1.01 (0.95-1.07)	8.2×10^{-6}	+-
37	1	rs4920421	T/C	5.5×10^{-5}	1.33 (1.16-1.53)	Inter	C/T	1.9×10^{-1}	0.94 (0.86-1.03)	T/C	9.2×10^{-4}	1.13 (1.05-1.22)	6.3×10^{-3}	+-
38	10	rs11193670	A/G	5.6×10^{-5}	1.26 (1.12-1.40)	Inter	G/A	4.1×10^{-1}	0.97 (0.91-1.04)	A/G	8.6×10^{-3}	1.08 (1.02-1.15)	3.4×10^{-3}	+-
39	8	rs13263947	A/G	5.9×10^{-5}	1.24 (1.12-1.39)	*ANGPT1*	G/A	2.0×10^{-1}	0.93 (0.82-1.04)	A/G	7.1×10^{-5}	1.17 (1.08-1.26)	8.4×10^{-2}	+-
41	12	rs11054328	T/C	5.9×10^{-5}	3.55 (1.85-6.79)	*LOC100129640*	C/T	7.6×10^{-2}	0.91 (0.81-1.01)	T/C	1.8×10^{-2}	1.14 (1.02-1.26)	5.2×10^{-4}	+-
42	11	rs10899440	A/G	6.3×10^{-5}	1.27 (1.13-1.43)	*ALG8*	A/G	8.4×10^{-1}	1.01 (0.94-1.08)	A/G	3.2×10^{-2}	1.06 (1.01-1.13)	6.8×10^{-4}	+-
43	1	rs10518295	A/G	6.3×10^{-5}	1.40 (1.18-1.65)	Inter	G/A	1.7×10^{-1}	0.91 (0.80-1.04)	A/G	5.2×10^{-4}	1.21 (1.08-1.34)	2.9×10^{-2}	+-
44	8	rs13280030	A/G	6.5×10^{-5}	1.24 (1.11-1.38)	*ANGPT1*	A/G	1.7×10^{-1}	0.93 (0.85-1.03)	A/G	1.4×10^{-1}	1.06 (0.98-1.14)	1.6×10^{-4}	+-
45	1	rs12030710	A/G	6.5×10^{-5}	1.40 (1.18-1.65)	*RPE65*	G/A	1.6×10^{-1}	0.91 (0.79-1.04)	A/G	4.8×10^{-4}	1.21 (1.09-1.34)	3.1×10^{-2}	+-
46	19	rs2290650	G/A	6.7×10^{-5}	1.36 (1.17-1.59)	*FXYD3*	A/G	2.7×10^{-1}	0.95 (0.86-1.04)	G/A	2.3×10^{-3}	1.13 (1.04-1.22)	4.7×10^{-3}	+-
47	11	rs1874445	T/C	6.8×10^{-5}	2.19 (1.48-3.25)	*MRVI1*	C/T	1.7×10^{-1}	1.05 (0.98-1.12)	T/C	4.9×10^{-1}	0.98 (0.91-1.04)	4.2×10^{-5}	+-
48	3	rs674628	G/A	6.9×10^{-5}	1.27 (1.13-1.43)	Inter	G/A	4.8×10^{-1}	0.98 (0.91-1.04)	G/A	1.8×10^{-1}	1.04 (0.98-1.10)	1.2×10^{-4}	+-
49	1	rs821426	A/C	7.1×10^{-5}	1.30 (1.14-1.49)	*PGLYRP3*	A/C	3.8×10^{-1}	0.96 (0.88-1.05)	A/C	1.3×10^{-1}	1.06 (0.98-1.14)	2.1×10^{-4}	+-
50	11	rs4598655	A/G	7.3×10^{-5}	1.34 (1.16-1.56)	Inter	A/G	2.2×10^{-1}	1.05 (0.97-1.13)	A/G	3.5×10^{-3}	1.10 (1.03-1.18)	3.1×10^{-3}	+-
51	6	rs3020348	C/A	7.5×10^{-5}	1.29 (1.14-1.47)	*ESR1*	A/C	6.4×10^{-1}	0.98 (0.92-1.05)	C/A	2.0×10^{-2}	1.07 (1.01-1.14)	8.4×10^{-4}	+-
53	1	rs664673	C/T	7.7×10^{-5}	1.51 (1.23-1.87)	Inter	T/C	9.1×10^{-1}	1 (0.93-1.06)	C/T	1.8×10^{-1}	1.04 (0.98-1.11)	2.1×10^{-4}	+-
54	**6**	**rs16900375**	**G/A**	**7.9×10^{-5}**	**1.31 (1.15-1.49)**	**Inter**	**G/A**	**4.3×10^{-2}**	**1.24 (1.01-1.54)**	**G/A**	**6.5×10^{-6}**	**1.29 (1.16-1.44)**	**0.67**	**+-**
55	13	rs4773225	A/G	7.9×10^{-5}	1.24 (1.11-1.38)	Inter	G/A	5.7×10^{-1}	0.98 (0.92-1.05)	A/G	1.5×10^{-2}	1.07 (1.01-1.13)	2.8×10^{-3}	+-
56	20	rs11907901	T/C	7.9×10^{-5}	1.31 (1.15-1.51)	Inter	T/C	4.1×10^{-1}	1.03 (0.96-1.10)	T/C	1.0×10^{-2}	1.08 (1.02-1.15)	1.1×10^{-3}	+-
57	1	rs12405430	G/T	8.0×10^{-5}	1.27 (1.13-1.43)	Inter	T/G	1.8×10^{-1}	1.05 (0.98-1.12)	G/T	4.1×10^{-1}	1.02 (0.97-1.09)	3.4×10^{-5}	+-
58	13	rs7317733	A/C	8.3×10^{-5}	1.25 (1.12-1.40)	*COL4A2*	C/A	6.2×10^{-2}	1.06 (1.00-1.14)	A/C	6.7×10^{-1}	1.01 (0.96-1.07)	1.2×10^{-5}	+-
60	1	rs10753536	A/G	8.9×10^{-5}	1.25 (1.12-1.39)	Inter	G/A	5.6×10^{-2}	0.94 (0.88-1.00)	A/G	2.1×10^{-4}	1.11 (1.05-1.18)	1.6×10^{-2}	+-
61	6	rs3020343	C/T	9.6×10^{-5}	1.29 (1.13-1.46)	*ESR1*	T/C	5.3×10^{-1}	0.98 (0.92-1.05)	C/T	2.5×10^{-2}	1.07 (1.01-1.13)	1.9×10^{-3}	+-
62	3	rs6780855	A/C	9.7×10^{-5}	1.42 (1.19-1.70)	Inter	C/A	9.1×10^{-2}	1.07 (0.99-1.15)	A/C	9.7×10^{-1}	1.00 (0.93-1.07)	2.2×10^{-5}	+-
63	1	rs2473277	A/G	1.0×10^{-4}	1.25 (1.12-1.41)	Inter	A/G	1.4×10^{-1}	1.05 (0.98-1.12)	A/G	9.9×10^{-4}	1.10 (1.04-1.16)	7.5×10^{-3}	+-
64	8	rs13271465	C/T	1.1×10^{-4}	1.23 (1.11-1.37)	Inter	C/T	3.7×10^{-1}	1.04 (0.95-1.15)	C/T	8.7×10^{-4}	1.12 (1.05-1.21)	2.1×10^{-2}	+-
65	3	rs279545	G/A	1.1×10^{-4}	1.29 (1.13-1.46)	*IL17RC*	A/G	3.2×10^{-1}	0.96 (0.89-1.04)	G/A	5.1×10^{-3}	1.10 (1.03-1.18)	6.7×10^{-3}	+-
66	8	rs951759	C/A	1.1×10^{-4}	1.24 (1.11-1.39)	*ANGPT1*	C/A	3.6×10^{-1}	0.97 (0.91-1.04)	C/A	2.3×10^{-1}	1.04 (0.98-1.10)	1.9×10^{-4}	+-
67	20	rs910397	T/C	1.1×10^{-4}	1.29 (1.13-1.46)	*PXMP4*	C/T	1.8×10^{-1}	1.05 (0.98-1.12)	T/C	6.3×10^{-1}	1.01 (0.96-1.08)	7.1×10^{-5}	+-

68	12	rs10862978	C/T	1.1×10^{-4}	1.35 (1.16-1.58)	*E2F7*	T/C	1.6×10^{-1}	0.94 (0.86-1.02)	C/T	1.8×10^{-3}	1.13 (1.05-1.21)	7.0×10^{-2}	+-
69	13	rs9555714	A/G	1.2×10^{-4}	1.24 (1.11-1.39)	*COL4A2*	A/G	2.4×10^{-1}	1.04 (0.97-1.11)	A/G	3.2×10^{-3}	1.09 (1.03-1.15)	7.5×10^{-3}	+-
70	19	rs4807140	C/T	1.2×10^{-4}	1.23 (1.11-1.37)	*ONECUT3*	C/T	8.4×10^{-1}	1.01 (0.94-1.08)	C/T	2.1×10^{-2}	1.07 (1.01-1.13)	1.3×10^{-3}	+-
71	9	rs7851482	T/G	1.2×10^{-4}	1.25 (1.12-1.40)	Inter	G/T	6.9×10^{-1}	0.99 (0.92-1.05)	T/G	1.6×10^{-2}	1.07 (1.01-1.13)	1.3×10^{-3}	+-
72	8	rs11991529	T/C	1.2×10^{-4}	1.23 (1.11-1.37)	*ANGPT1*	C/T	2.3×10^{-1}	0.93 (0.83-1.05)	T/C	1.6×10^{-4}	1.16 (1.07-1.25)	9.4×10^{-2}	+-
73	2	rs1027928	G/A	1.3×10^{-4}	1.24 (1.11-1.39)	Inter	G/A	2.6×10^{-1}	0.95 (0.87-1.04)	G/A	1.5×10^{-1}	1.05 (0.98-1.12)	2.1×10^{-4}	+-
74	22	rs13056641	A/G	1.3×10^{-4}	1.34 (1.16-1.56)	*KIAA1671*	G/A	6.0×10^{-1}	0.98 (0.90-1.06)	A/G	1.6×10^{-2}	1.09 (1.02-1.17)	1.4×10^{-3}	+-
75	12	rs7978167	A/G	1.4×10^{-4}	1.45 (1.21-1.75)	*TM7SF3*	G/A	4.0×10^{-1}	1.05 (0.94-1.17)	A/G	1.8×10^{-1}	1.07 (0.97-1.17)	1.0×10^{-4}	+-
76	**6**	**rs9487982**	**T/C**	**1.4×10^{-4}**	**1.45 (1.20-1.75)**	**Inter**	**C/T**	**7.9×10^{-3}**	**0.86 (0.78-0.96)**	**T/C**	**2.5×10^{-5}**	**1.22 (1.11-1.34)**	**4.2×10^{-2}**	**+-**
77	10	rs17413155	G/T	1.4×10^{-4}	1.37 (1.16-1.60)	*NRP1*	T/G	5.5×10^{-1}	1.03 (0.94-1.12)	G/T	2.5×10^{-1}	1.05 (0.97-1.13)	3.5×10^{-4}	+-
78	6	rs7739145	T/G	1.5×10^{-4}	1.44 (1.19-1.75)	Inter	T/G	1.1×10^{-2}	0.87 (0.78-0.97)	T/G	6.9×10^{-1}	0.98 (0.89-1.08)	6.2×10^{-6}	+-
79	4	rs2007366	T/G	1.5×10^{-4}	1.53 (1.23-1.91)	Inter	T/G	3.3×10^{-1}	0.97 (0.90-1.04)	T/G	8.0×10^{-1}	1.01 (0.94-1.08)	8.4×10^{-5}	+-
80	4	rs4835286	A/C	1.5×10^{-4}	1.53 (1.23-1.91)	Inter	A/C	2.4×10^{-1}	0.96 (0.89-1.03)	A/C	9.3×10^{-1}	1.00 (0.94-1.07)	6.6×10^{-5}	+-
81	1	rs2802841	G/A	1.5×10^{-4}	1.35 (1.16-1.57)	*NFASC*	G/A	1.2×10^{-1}	0.95 (0.89-1.01)	G/A	9.2×10^{-1}	1.00 (0.94-1.06)	2.9×10^{-5}	+-
82	12	rs16944632	T/C	1.5×10^{-4}	1.86 (1.34-2.58)	Inter	C/T	2.8×10^{-1}	1.1 (0.93-1.29)	T/C	4.7×10^{-1}	1.06 (0.91-1.22)	1.5×10^{-4}	+-
83	1	rs983332	T/G	1.5×10^{-4}	1.26 (1.12-1.42)	Inter	G/T	8.1×10^{-1}	1.01 (0.93-1.10)	T/G	4.1×10^{-2}	1.07 (1.00-1.15)	1.1×10^{-3}	+-
86	1	rs2146901	T/C	1.6×10^{-4}	1.22 (1.10-1.36)	*LOC100128178*	T/C	6.8×10^{-1}	1.02 (0.93-1.11)	T/C	6.6×10^{-3}	1.10 (1.03-1.17)	8.4×10^{-3}	+-
87	8	rs1559681	C/T	1.6×10^{-4}	1.42 (1.18-1.71)	Inter	T/C	4.3×10^{-1}	1.03 (0.96-1.10)	C/T	5.7×10^{-1}	1.02 (0.95-1.09)	1.7×10^{-4}	+-
88	8	rs892248	G/A	1.6×10^{-4}	1.27 (1.12-1.44)	*ANGPT1*	A/G	3.4×10^{-1}	0.96 (0.89-1.04)	G/A	5.9×10^{-3}	1.10 (1.03-1.17)	7.3×10^{-3}	+-
89	8	rs10086318	G/A	1.6×10^{-4}	1.23 (1.10-1.37)	Inter	G/A	5.5×10^{-1}	1.02 (0.95-1.09)	G/A	1.6×10^{-2}	1.07 (1.01-1.14)	5.2×10^{-3}	+-
90	9	rs10511833	A/G	1.6×10^{-4}	1.26 (1.12-1.42)	Inter	A/G	8.7×10^{-1}	0.99 (0.93-1.07)	A/G	7.1×10^{-2}	1.06 (1.00-1.12)	6.8×10^{-4}	+-
91	**1**	**rs12028945**	**A/G**	**1.6×10^{-4}**	**1.32 (1.15-1.53)**	***IL28RA***	**G/A**	**2.5×10^{-2}**	**0.89 (0.80-0.99)**	**A/G**	**2.9×10^{-5}**	**1.20 (1.10-1.30)**	**8.0×10^{-2}**	**+-**
92	9	rs10511885	A/G	1.7×10^{-4}	1.24 (1.11-1.39)	Inter	G/A	3.8×10^{-1}	0.97 (0.91-1.04)	A/G	7.2×10^{-3}	1.08 (1.02-1.14)	4.6×10^{-3}	+-
93	9	rs10511886	T/C	1.7×10^{-4}	1.24 (1.11-1.39)	Inter	C/T	4.1×10^{-1}	0.97 (0.91-1.04)	T/C	7.1×10^{-3}	1.08 (1.02-1.15)	4.9×10^{-3}	+-
94	**1**	**rs3121310**	**G/A**	**1.7×10^{-4}**	1.24 (1.11-1.39)	***WNT3A***	**G/A**	**1.2×10^{-2}**	**1.09 (1.02-1.17)**	**G/A**	**3.6×10^{-5}**	**1.13 (1.07-1.20)**	**5.6×10^{-2}**	**+-**
95	12	rs7305123	C/T	1.7×10^{-4}	1.36 (1.16-1.59)	Inter	T/C	3.9×10^{-1}	0.97 (0.89-1.05)	C/T	1.4×10^{-2}	1.09 (1.02-1.17)	2.6×10^{-3}	+-
96	13	rs9585276	A/G	1.7×10^{-4}	1.23 (1.10-1.36)	Inter	G/A	2.3×10^{-2}	1.09 (1.01-1.17)	A/G	9.5×10^{-1}	1.00 (0.94-1.06)	1.8×10^{-5}	+-
98	14	rs854384	T/C	1.8×10^{-4}	7.25 (2.15-24.41)	Inter	C/T	2.5×10^{-1}	1.05 (0.97-1.14)	T/C	3.4×10^{-1}	0.96 (0.89-1.04)	1.1×10^{-3}	+-
99	3	rs9821034	A/G	1.8×10^{-4}	1.31 (1.14-1.51)	Inter	A/G	4.8×10^{-2}	0.94 (0.88-1.00)	A/G	8.7×10^{-1}	1.00 (0.94-1.06)	1.8×10^{-5}	+-
100	20	rs6061641	A/C	1.8×10^{-4}	1.27 (1.12-1.44)	*CDH4*	C/A	4.1×10^{-1}	1.03 (0.95-1.12)	A/C	1.9×10^{-1}	1.05 (0.98-1.12)	3.3×10^{-4}	+-

[a] SNP order and *P-values* as in Uno *et al*. (2010)[26]

[b] Reference allele/other allele, with ORs calculated against the reference allele for each study.

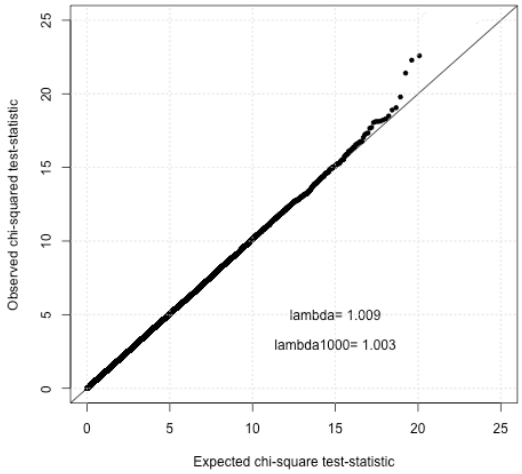
[c] Gene name is provided if the genotyped SNP is located in upstream, 3'UTR, intronic, exonic, 5'UTR, or downstream regions of that gene as annotated by Ensembl Genome Browser GRCh37 (Feb 2009). *Inter* denotes a SNP is located in an intergenic region.

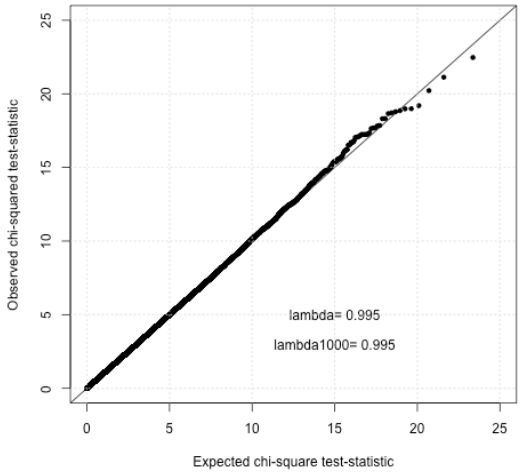
[d] *P* value for Cochrane's Q statistic (indicating heterogeneity between study results) as implemented in PLINK[35]

[e] Direction of effect of ORs for Uno *et al*. (2010)[26] and QIMR+Oxford "all" endometriosis GWA data sets, calculated against the same reference allele.

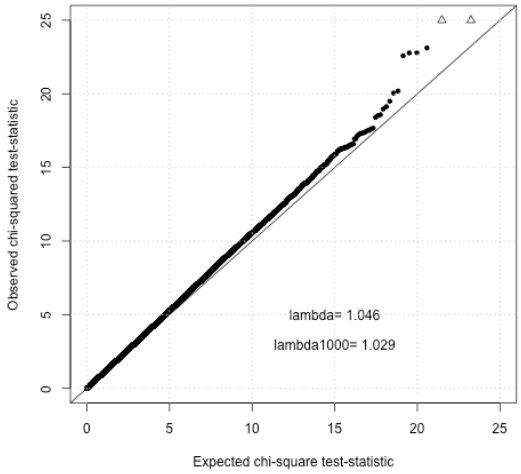
Supplementary Figure 1 Post-QC Q-Q plots assessing genomic inflation of observed vs. expected chisquare statistic a) comparing women vs men among WTCCC and QIMR controls; b) in GWA of Oxford/WTCCC, QIMR/QIMR and c) combined datasets.

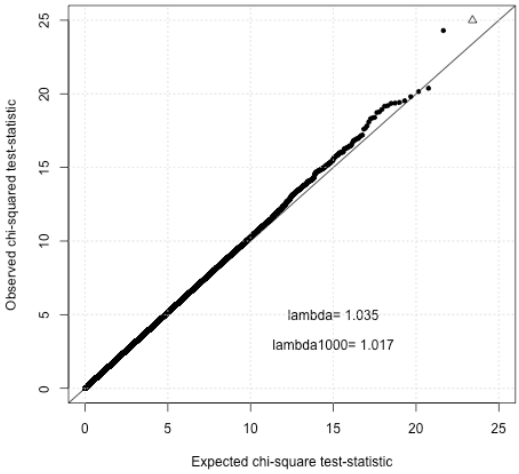
a. i. WTCCC2 controls **ii. QIMR controls**



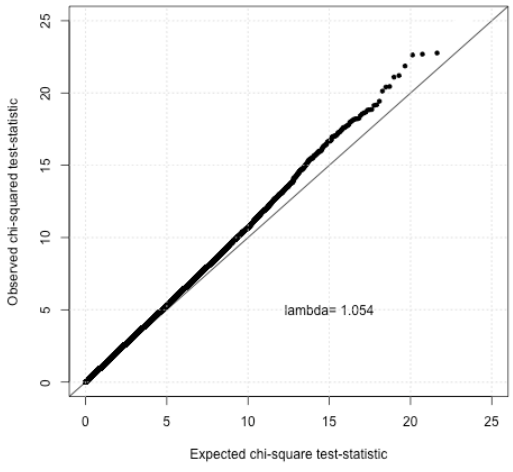


b. i. Oxford **ii. QIMR**





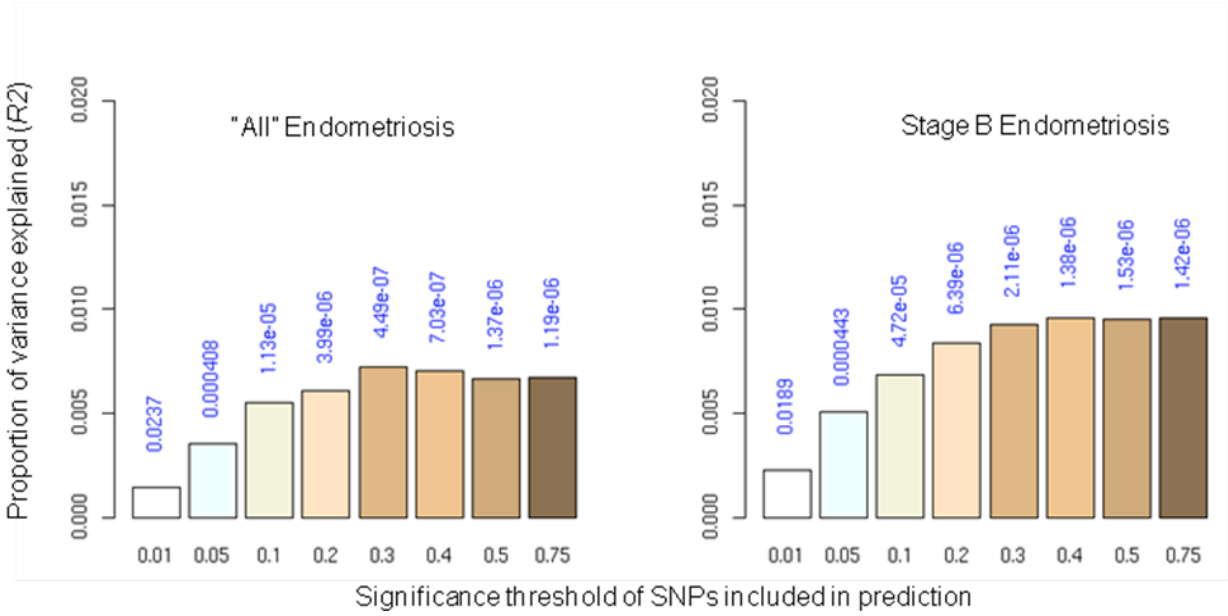
iii. QIMR + Oxford



Supplementary Figure 2. Allele specific score prediction for "all" and stage B endometriosis, using (a, b) QIMR as discovery and Oxford as target datasets and (c, d) Oxford as discovery and QIMR as target datasets. Variance explained in the target dataset on the basis of scores derived in the discovery dataset for eight significance thresholds (P<0.01, P<0.05, P<0.1, P<0.2, P<0.3, P<0.4, P<0.5, P<0.75, plotted left to right in each study). The y-axis indicates Nagelkerke's pseudo R^2 representing the proportion of variance explained. The number above each bar is the p-value for the target dataset analysis. Together, these figures show that the results were not driven by a few highly associated regions, indicating a substantial number of common variants underlying disease.

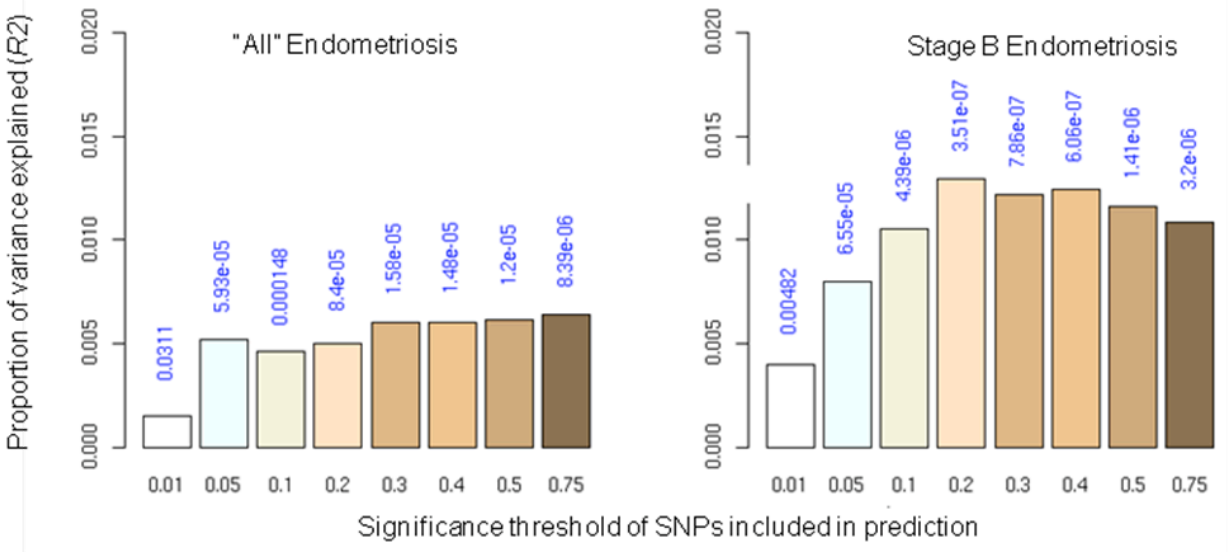
QIMR as discovery, Oxford as target

a. **b.**



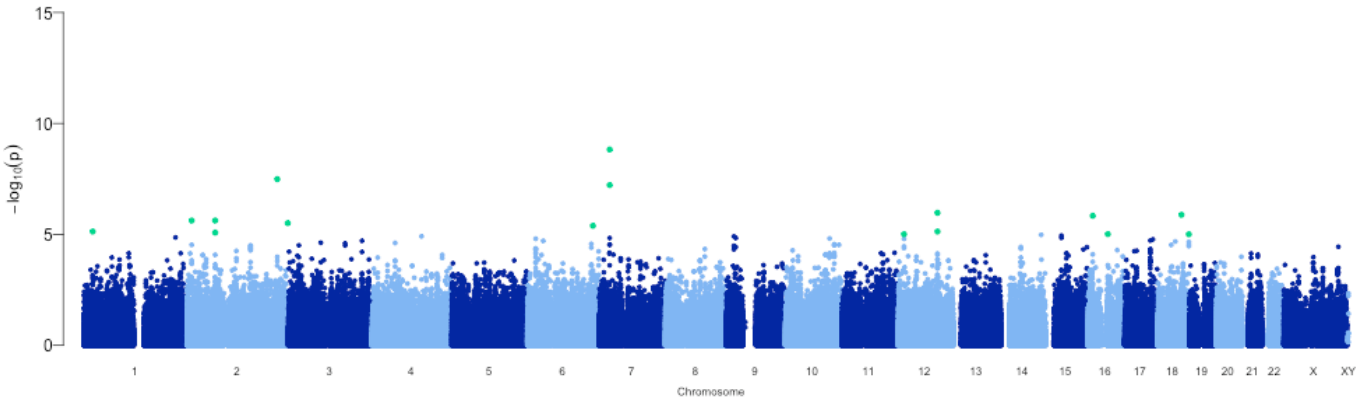
Oxford as discovery, QIMR as target

c. **d.**



Supplementary Figure 3. Genome-wide association results from Cochran-Mantel-Haenszel tests for (a) "all" endometriosis and (b) stage B endometriosis in QIMR and Oxford datasets. Green points indicate SNPs with $P < 1 \times 10^{-5}$.

A.



B.