

Table S1. 40 selected SNPs tested for association of tanning ability in the controls of the skin cancer study within the NHS and pooled data.

SNP	Chromosome	Location	Gene Neighborhood	WT/VT	in skin cancer controls			in pooled data		
					beta	s.e.	p value	beta	s.e.	p value
rs966321	1	4225577	LOC401937	A/C	*	*	*	*	*	*
rs1028889	1	98518442		C/T	*	*	*	*	*	*
rs12750212	1	206070491		G/A	*	*	*	*	*	*
rs1345151	2	30286837	YPEL5	G/A	*	*	*	*	*	*
rs12493507	3	140744316	RBP1	C/T	*	*	*	*	*	*
rs11931790	4	187715837	LOC285441	C/T	*	*	*	*	*	*
rs11133935	5	2244437		C/T	*	*	*	*	*	*
rs40132	5	33986460	MATP	T/C	*	*	*	*	*	*
rs35391	5	33991430	MATP	C/T	*	*	*	*	*	*
rs28777	5	33994716	MATP	A/C	-0.18	0.12	0.11	-0.41	0.06	2.2E-10
rs32579	5	149191041	PPARGC1B	G/A	*	*	*	*	*	*
rs12203592	6	341321	IRF4	C/T	0.40	0.06	1.7E-12	0.40	0.03	4.5E-42
rs12210050	6	420489	EXOC2	C/T	*	*	*	*	*	*
rs1409937	9	75220958		A/G	*	*	*	*	*	*
rs10831496	11	88197639	GRM5	A/G	*	*	*	*	*	*
rs10830236	11	88540464	TYR	C/T	*	*	*	*	*	*
rs1393350	11	88650694	TYR	G/A	*	*	*	*	*	*
rs11054623	12	7626586		G/T	*	*	*	*	*	*
rs1805761	12	8990800	M6PR	A/G	*	*	*	*	*	*
rs7974991	12	19082600	LOC90193	G/A	*	*	*	*	*	*
rs7969151	12	52445544	LOC440100	G/A	*	*	*	*	*	*
rs17094273	14	96173560		G/A	*	*	*	*	*	*
rs7495174	15	26017833	OCA2	A/G	-0.22	0.08	4.1E-03	-0.26	0.04	1.5E-10
rs12913832	15	26039213	HERC2/OCA2	G/A	-0.33	0.05	4.4E-11	-0.26	0.03	3.3E-25
rs352935	16	88176081	MC1R	A/G	*	*	*	*	*	*
rs464349	16	88183752	MC1R	C/T	*	*	*	*	*	*
rs154659	16	88194838	MC1R	T/C	*	*	*	*	*	*
rs164741	16	88219799	MC1R	C/T	0.10	0.05	0.05	0.16	0.02	1.0E-10
rs7188458	16	88253985	MC1R	G/A	0.11	0.05	0.02	0.14	0.02	6.9E-09
rs258322	16	88283404	MC1R	C/T	0.27	0.07	2.1E-04	0.39	0.04	1.2E-24

rs7204478	16	88322986	MC1R	C/T	0.09	0.04	0.05	0.11	0.02	2.4E-06
rs8049897	16	88551703	MC1R	G/A	0.24	0.06	2.0E-04	0.30	0.03	9.5E-22
rs4408545	16	88571529	MC1R	T/C	0.11	0.04	0.01	0.16	0.02	1.2E-12
rs4238833	16	88578190	MC1R	T/G	0.15	0.05	2.3E-03	0.18	0.02	1.5E-14
rs4785763	16	88594437	MC1R	C/A	0.14	0.05	3.7E-03	0.20	0.02	4.3E-17
rs11648785	16	88612062	MC1R	C/T	*	*	*	*	*	*
rs2241039	16	88615938	MC1R	C/T	-0.13	0.04	3.0E-03	-0.13	0.02	3.2E-08
rs10852800	17	11825241	ZNF18	C/T	*	*	*	*	*	*
rs9960018	18	3783080	DLGAP1	C/T	*	*	*	*	*	*
rs7279297	21	42100984	PRDM15	A/G	*	*	*	*	*	*

\* The results are presented in Table 2.

The results presented here are from our previous GWAS for hair color.

Table S2. 27 selected SNPs in the initial GWAS and controls of the skin cancer study within the NHS, and pooled data after excluding individuals with red hair color.

SNP	Chromosome	Location	Gene Neighborhood	WT/VT	in initial scan			in skin cancer control			in pooled data		
					beta	s.e.	p value	beta	s.e.	p value	beta	s.e.	p value
rs966321	1	4225577	LOC401937	A/C	-0.11	0.03	1.0E-05	-0.13	0.05	5.6E-03	-0.13	0.02	2.2E-08
rs12750212	1	206070491		G/A	-0.18	0.04	2.0E-05	-0.06	0.08	0.44	-0.17	0.04	1.0E-05
rs1028889	1	98518442		C/T	0.11	0.03	1.3E-04	0.02	0.05	0.64	0.09	0.03	6.5E-04
rs1345151	2	30286837	YPEL5	G/A	0.12	0.03	1.8E-04	0.05	0.06	0.34	0.11	0.03	1.1E-04
rs12493507	3	140744316	RBP1	C/T	0.16	0.04	8.0E-05	0.05	0.07	0.46	0.14	0.04	1.6E-04
rs11931790	4	187715837	LOC285441	C/T	-0.13	0.03	3.0E-05	-0.03	0.05	0.54	-0.10	0.03	1.2E-04
rs35391	5	33991430	MATP	C/T	-0.43	0.08	1.5E-07	-0.35	0.13	8.4E-03	-0.47	0.07	1.8E-11
rs40132	5	33986460	MATP	T/C	-0.50	0.11	3.5E-06	-0.51	0.18	4.5E-03	-0.56	0.09	1.4E-09
rs11133935	5	2244437		C/T	-0.12	0.03	1.0E-05	-0.04	0.04	0.33	-0.09	0.02	1.1E-04
rs32579	5	149191041	PPARGC1B	G/A	-0.12	0.03	1.0E-05	-0.05	0.05	0.26	-0.11	0.02	1.0E-05
rs12210050	6	420489	EXOC2	C/T	0.15	0.03	2.0E-05	0.28	0.06	8.0E-07	0.21	0.03	7.0E-13
rs1409937	9	75220958		A/G	0.11	0.03	2.0E-05	0.06	0.04	0.19	0.09	0.02	5.0E-05
rs1393350	11	88650694	TYR	G/A	0.16	0.03	3.7E-08	0.17	0.05	3.3E-04	0.19	0.03	6.7E-14
rs10831496	11	88197639	GRM5	A/G	-0.14	0.03	3.7E-07	-0.09	0.05	0.07	-0.14	0.02	4.0E-09
rs10830236	11	88540464	TYR	C/T	0.11	0.03	4.0E-05	0.08	0.05	0.11	0.12	0.02	2.5E-07
rs1805761	12	8990800	M6PR	A/G	0.11	0.03	3.0E-05	0.04	0.04	0.39	0.10	0.02	2.0E-05
rs7974991	12	19082600	LOC90193	G/A	0.23	0.06	5.0E-05	-0.08	0.09	0.39	0.13	0.05	9.5E-03
rs7969151	12	52445544	LOC440100	G/A	0.11	0.03	3.2E-04	0.09	0.05	0.09	0.12	0.03	3.0E-05
rs11054623	12	7626586		G/T	-0.15	0.04	7.3E-04	0.02	0.08	0.75	-0.10	0.04	6.9E-03
rs17094273	14	96173560		G/A	0.18	0.04	2.0E-05	0.19	0.07	8.6E-03	0.19	0.04	3.3E-07
rs11648785	16	88612062	MC1R	C/T	-0.13	0.03	2.0E-06	-0.10	0.05	0.03	-0.13	0.02	2.8E-08
rs464349	16	88183752	MC1R	C/T	-0.11	0.03	3.0E-05	-0.12	0.04	7.5E-03	-0.12	0.02	5.6E-07
rs352935	16	88176081	MC1R	A/G	0.10	0.03	1.8E-04	0.09	0.04	0.03	0.10	0.02	1.0E-05
rs154659	16	88194838	MC1R	T/C	0.11	0.03	2.2E-04	0.10	0.05	0.06	0.12	0.03	3.1E-06
rs10852800	17	11825241	ZNF18	C/T	0.15	0.03	1.0E-05	0.05	0.06	0.43	0.12	0.03	2.0E-05
rs9960018	18	3783080	DLGAP1	C/T	-0.14	0.04	1.0E-04	-0.05	0.06	0.46	-0.13	0.03	5.0E-05
rs7279297	21	42100984	PRDM15	A/G	-0.13	0.03	1.0E-05	-0.02	0.05	0.73	-0.11	0.02	1.0E-05