

**Supplementary Table S5. Association between genetically increased telomere length and prin**

Disease	Tumor/disease subty	No. of cases	No. of contro	No. of SNPs	log OR
<b>Cancer</b>					
Glioma		1130	6300	12	1.66
Ovarian cancer	serous low malignan	972	30816	13	1.47
Lung cancer	Adenocarcinoma	3442	14894	13	1.16
Neuroblastoma		2101	4202	12	1.09
Bladder cancer		1601	1819	10	0.79
Skin cancer	Melanoma	15976	26451	13	0.63
Testicular germ cell cancer		985	4945	11	0.57
Kidney cancer		2461	5081	12	0.44
Endometrial cancer		6607	36811	12	0.27
Skin cancer	Basal cell carcinoma	3361	11518	13	0.2
Ovarian cancer	Endometriod	2154	30816	13	0.19
Breast cancer	ER-ve	7465	42175	13	0.13
Ovarian cancer	Serous invasive	9608	30816	13	0.12
Prostate cancer		22297	22323	11	0.11
Colorectal cancer		14537	16922	9	0.09
Lung cancer	Squamous cell carcin	3275	15038	13	0.07
Breast cancer	ER+	27074	41749	13	0.05
Ovarian cancer	Clear cell	1016	30816	13	0.04
Ovarian cancer	Mucinous	1643	30816	13	0.04
Esophageal cancer	Squamous cell carcin	1942	2111	8	0.03
Pancreatic cancer	Adenocarcinoma	5105	8739	12	-0.15
Head & neck cancer		2082	3477	12	-0.15
<b>Neurological / psychiatric diseases</b>					
Anorexia Nervosa		2907	14860	9	0.13
Bipolar disorder		7481	9250	9	0.12
Tourette syndrome		1177	4955	13	0.1
Major depressive disorder		9240	9519	8	0.07
Autism		4949	5314	7	0.01
Schizophrenia		9379	7736	12	0.01
Alzheimer's		17008	37154	12	-0.18
<b>Cardiovascular diseases</b>					
Heart failure		2526	20926	13	0.02
Ischemic stroke	Small vessel disease	1894	62004	13	-0.0652
Sudden cardiac arrest		3954	21200	13	-0.08
Haemorrhagic stroke		2973	5503	12	-0.09
Ischemic stroke	Cardioembolic	2365	62004	13	-0.124
Coronary heart disease		22233	64762	13	-0.25
Ischemic stroke	Large vessel disease	2167	62004	13	-0.306
Abdominal aortic aneurysm		4545	38335	13	-0.46

**Autoimmune / inflammatory diseases**

Alopecia areata	2332	5233	7	0.14
Inflammatory bowel Crohn's disease	5956	14927	11	0.12
Periodontitis	888	6789	13	0.11
Atopic dermatitis	10788	30047	13	0.05
Inflammatory bowel Ulcerative colitis	6968	20464	12	0.03
Multiple sclerosis	14498	24091	3	-0.02
Rheumatoid arthritis	5538	20163	11	-0.14
Juvenile idiopathic arthritis	1866	14786	11	-0.16
Celiac disease	4533	10750	3	-0.88

**Other diseases**

Retinopathy	1126	18315	12	0.33
Age-related macular degeneration	7473	51177	13	0.17
Type 2 diabetes	10415	53655	11	0
Endometriosis	4604	9393	11	-0.02
Chronic kidney disease	5807	56430	13	-0.06
Chronic obstructive pulmonary disease	2812	2534	12	-0.1
Asthma	13034	20638	4	-0.21
Type 1 diabetes	7514	9045	6	-0.35
Interstitial lung disease	1616	4683	9	-2.38

nary non-communicable diseases

SE	OR	95% LCI	95% UCI	P*	Phet	SNPs used
0.26	5.27	3.15	8.81	0	0.0135	rs10936599,r
0.31	4.35	2.39	7.94	0	0.082	rs10936599,r
0.14	3.19	2.4	4.22	0	0.0001	rs10936599,r
0.22	2.98	1.92	4.62	0	0.3799	rs10936599,r
0.26	2.19	1.32	3.66	0.0026	0.2541	rs10936599,r
0.1	1.87	1.55	2.26	0	0.086	rs10936599,r
0.28	1.76	1.02	3.04	0.0423	0.3002	rs10936599,r
0.18	1.55	1.08	2.23	0.0164	0.251	rs10936599,r
0.1	1.31	1.07	1.61	0.0091	0.1436	rs10936599,r
0.15	1.22	0.9	1.65	0.203	0.0398	rs10936599,r
0.17	1.21	0.87	1.68	0.2499	0.3319	rs10936599,r
0.12	1.14	0.91	1.43	0.2543	0	rs10936599,r
0.09	1.12	0.94	1.34	0.2089	0.0407	rs10936599,r
0.08	1.12	0.96	1.3	0.1533	0	rs10936599,r
0.09	1.09	0.91	1.31	0.3436	0.0156	rs10936599,r
0.13	1.07	0.82	1.39	0.6212	0.9042	rs10936599,r
0.05	1.06	0.95	1.17	0.2912	0.0228	rs10936599,r
0.23	1.04	0.66	1.63	0.8676	0.3226	rs10936599,r
0.18	1.04	0.73	1.47	0.8396	0.3147	rs10936599,r
0.26	1.03	0.62	1.72	0.90547	0.45129	rs10936601,r
0.22	0.86	0.56	1.32	0.5009	0.0016	rs10936599,r
0.21	0.86	0.57	1.3	0.4768	0.0763	rs10936599,r
0.17	1.14	0.82	1.58	0.4406	0.1797	rs10936599,r
0.12	1.13	0.89	1.44	0.315	0.1428	rs10936599,r
0.25	1.1	0.68	1.78	0.6936	0.4978	rs10936599,r
0.12	1.07	0.84	1.37	0.5646	0.254	rs10936599,r
0.16	1.01	0.73	1.39	0.9515	0.8232	rs10936599,r
0.06	1.01	0.9	1.12	0.9245	0.0053	rs10936599,r
0.08	0.84	0.71	0.98	0.0296	0.1451	rs10936599,r
0.14	1.02	0.77	1.35	0.8931	0.5348	rs10936599,r
0.1779	0.94	0.66	1.33	0.7141	0.23583	rs10936599,r
0.16	0.92	0.68	1.26	0.62	0.54	rs10936599,r
0.21	0.92	0.61	1.37	0.6719	0.0002	rs10936599,r
0.1629	0.88	0.64	1.22	0.44644	0.03737	rs10936599,r
0.08	0.78	0.67	0.9	0.0009	0.2441	rs10936599,r
0.1748	0.74	0.52	1.04	0.08014	0.15779	rs10936599,r
0.13	0.63	0.49	0.81	0.0003	0.0617	rs10936599,r

0.21	1.15	0.76	1.75	0.4994	0.9505	rs10936599,r
0.13	1.12	0.87	1.45	0.3586	0.0585	rs10936599,r
0.26	1.12	0.67	1.87	0.6702	0.0066	rs10936599,r
0.09	1.05	0.88	1.24	0.6095	0.1194	rs10936599,r
0.12	1.03	0.81	1.29	0.8303	0.0984	rs10936599,r
0.17	0.98	0.7	1.36	0.8885	0.1455	rs10936599,r
0.14	0.87	0.65	1.15	0.3184	0.1828	rs10936599,r
0.18	0.85	0.59	1.21	0.3669	0.922	rs10936599,r
0.2	0.42	0.28	0.61	0	0.0028	rs10936599,r
0.23	1.39	0.89	2.16	0.1453	0.3831	rs10936599,r
0.11	1.19	0.96	1.48	0.1206	0.209	rs10936599,r
0.09	1	0.84	1.2	0.9837	0.6811	rs10936599,r
0.13	0.98	0.75	1.27	0.8606	0.0576	rs10936599,r
0.1	0.94	0.77	1.16	0.5859	0.6972	rs10936599,r
0.18	0.9	0.64	1.27	0.5598	0.3807	rs11125529,r
0.12	0.81	0.64	1.02	0.0779	0.3213	rs10936599,r
0.17	0.71	0.51	0.98	0.0378	0.0586	rs10936599,r
0.26	0.09	0.05	0.15	0	0.0014	rs10936599,r

Telomere length variance explained by independent SNPs	Statistic power
0.022	0.72
0.023	0.73
0.023	1
0.021	0.87
0.02	0.62
0.023	1
0.018	0.52
0.021	0.93
0.021	1
0.023	1
0.023	0.98
0.023	1
0.023	1
0.021	1
0.017	1
0.023	1
0.023	1
0.023	0.76
0.023	0.94
0.018	0.64
0.021	1
0.021	0.84
0.014	0.93
0.017	1
0.023	0.74
0.011	0.99
0.01	0.82
0.021	1
0.021	1
0.023	0.99
0.0226	0.9707129
0.023	1
0.021	0.96
0.0226	0.99175134
0.023	1
0.0226	0.98582169
0.023	1

0.01	0.6
0.018	1
0.023	0.63
0.023	1
0.02	1
0.009	1
0.018	1
0.017	0.87
0.008	0.82
0.021	0.75
0.023	1
0.02	1
0.02	1
0.023	1
0.021	0.85
0.008	1
0.009	0.95
0.014	0.6