SUPPLEMENTAL

Table S1: Negative selection on disease categories. Each disease category is represented by four lines of data. Each line has the population (African American/European American), annotation (conserved non-coding [CNC]/coding sequence [CDS]), the number of genes associated with that disease category for which we have data, the number of genes excluding all disease categories for which we have data, the mean probability of negative selection across genes associated with the disease category, the mean probability of negative selection across genes excluding all disease categories, and the Mann-Whitney U p-value comparing the distributions of the probability of negative selection across genes associated with the disease category versus other genes. P-values that are significant at the 0.05 level are in bold.

	pop	data	#Assoc.	Other	meanAssoc	meanOther	p-value
Aging	AA	CNC	24	7388	0.3265958	0.3237955	0.2325
	AA	CDS	23	6358	0.5557435	0.5191416	0.1582
	CA	CNC	24	7155	0.3305875	0.329751	0.2628
	CA	CDS	25	6160	0.611008	0.5676958	0.1655
Cancer	**AA**	**CNC**	**173**	**7388**	**0.3394023**	**0.3237955**	**0.04529**
	AA	CDS	179	6358	0.5228251	0.5191416	0.4443
	CA	**CNC**	**167**	**7155**	**0.3636581**	**0.329751**	**0.00352**
	CA	CDS	180	6160	0.5773372	0.5676958	0.298
Cardiovascular	AA	CNC	201	7388	0.3282109	0.3237955	0.358
	AA	**CDS**	**219**	**6358**	**0.549905**	**0.5191416**	**0.02862**
	CA	CNC	193	7155	0.3330347	0.329751	0.5163
	CA	CDS	220	6160	0.5893723	0.5676958	0.09786
Chemical Dependency	AA	CNC	41	7388	0.3458439	0.3237955	0.109
	AA	CDS	30	6358	0.4423467	0.5191416	0.9755
	CA	CNC	38	7155	0.3224895	0.329751	0.4995
	CA	CDS	31	6160	0.5411226	0.5676958	0.766
Developmental	AA	CNC	48	7388	0.3366521	0.3237955	0.1805

	AA	CDS	38	6358	0.5402158	0.5191416	0.2671
	CA	CNC	47	7155	0.3592085	0.329751	0.1082
	CA	**CDS**	**42**	**6160**	**0.6416595**	**0.5676958**	**0.00902**
Hematological	AA	CNC	24	7388	0.3427	0.3237955	0.09617
	AA	CDS	32	6358	0.46665	0.5191416	0.9219
	CA	CNC	20	7155	0.316215	0.329751	0.8341
	CA	CDS	31	6160	0.4790323	0.5676958	0.9956
Immune	AA	CNC	169	7388	0.3211533	0.3237955	0.3441
	AA	CDS	198	6358	0.5317793	0.5191416	0.1912
	CA	CNC	165	7155	0.3414776	0.329751	0.05543
	CA	CDS	192	6160	0.5686474	0.5676958	0.5519
Infection	AA	CNC	49	7388	0.3055	0.3237955	0.574
	AA	CDS	64	6358	0.5347484	0.5191416	0.303
	CA	CNC	49	7155	0.3555531	0.329751	0.07868
	CA	CDS	61	6160	0.5717836	0.5676958	0.5154
Metabolic	AA	CNC	237	7388	0.3333046	0.3237955	0.1513
	AA	**CDS**	**249**	**6358**	**0.5379739**	**0.5191416**	**0.04641**
	CA	**CNC**	**231**	**7155**	**0.3581805**	**0.329751**	**0.0161**
	CA	**CDS**	**245**	**6160**	**0.5910837**	**0.5676958**	**0.03799**
Neurological	AA	CNC	120	7388	0.3113	0.3237955	0.8659
	AA	CDS	100	6358	0.518476	0.5191416	0.5738
	CA	CNC	113	7155	0.3291496	0.329751	0.6071
	CA	CDS	97	6160	0.5722299	0.5676958	0.5123
Other	AA	CNC	219	7388	0.3244265	0.3237955	0.4513
	AA	**CDS**	**225**	**6358**	**0.5389133**	**0.5191416**	**0.04889**
	CA	CNC	206	7155	0.3275316	0.329751	0.3597
	CA	CDS	219	6160	0.5750078	0.5676958	0.2851
Pharmacogenomic	AA	CNC	56	7388	0.3357036	0.3237955	0.2611
	AA	CDS	58	6358	0.5280845	0.5191416	0.3902
	CA	**CNC**	**50**	**7155**	**0.368852**	**0.329751**	**0.01569**
	CA	CDS	57	6160	0.5720702	0.5676958	0.496
Psychological	AA	CNC	153	7388	0.3149144	0.3237955	0.6817
	AA	CDS	112	6358	0.526833	0.5191416	0.3743
	CA	CNC	151	7155	0.3359338	0.329751	0.4872
	CA	CDS	116	6160	0.5834086	0.5676958	0.3154
Renal	AA	CNC	57	7388	0.3331719	0.3237955	0.1028
	AA	CDS	68	6358	0.5224221	0.5191416	0.4384
	CA	CNC	54	7155	0.3232741	0.329751	0.5621
	CA	CDS	66	6160	0.5691076	0.5676958	0.436
Reproduction	AA	CNC	57	7388	0.3228404	0.3237955	0.1809
	AA	CDS	69	6358	0.5317464	0.5191416	0.3314
	CA	CNC	56	7155	0.3540446	0.329751	0.1071

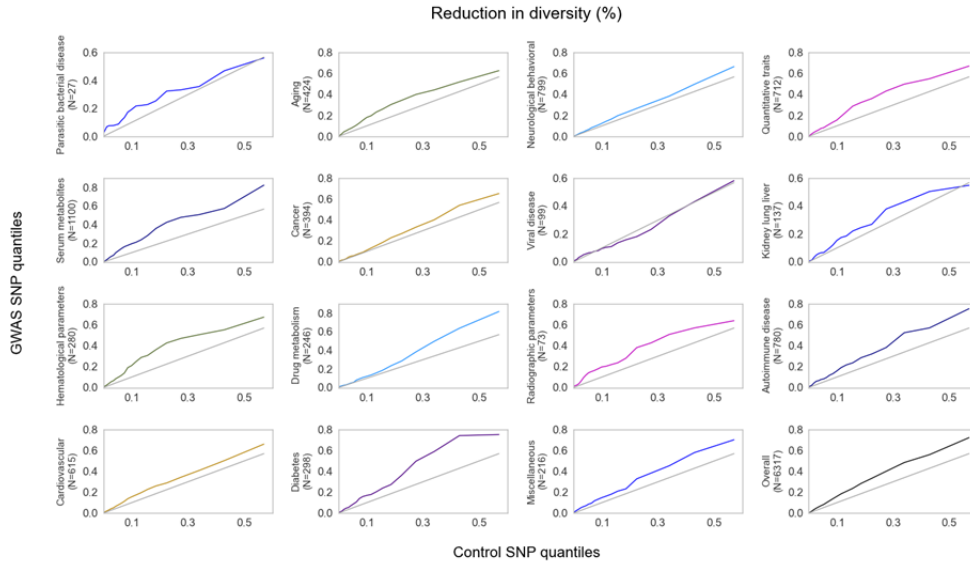|							
	CA	CDS	68	6160	0.5800721	0.5676958	0.3279
Unknown	AA	CNC	47	7388	0.3103128	0.3237955	0.5766
	AA	CDS	46	6358	0.5116196	0.5191416	0.6982
	CA	CNC	43	7155	0.3425163	0.329751	0.1793
	CA	CDS	49	6160	0.5850857	0.5676958	0.3852
Vision	AA	CNC	32	7388	0.3017906	0.3237955	0.6987
	AA	CDS	36	6358	0.4809944	0.5191416	0.8748
	CA	CNC	30	7155	0.33131	0.329751	0.3997
	CA	CDS	37	6160	0.5669081	0.5676958	0.5373

Figure S1. QQ-plots for the effect of background selection in each of 15 complex disease and trait categories (and overall). For each panel, an independent set of 1000 controls sets of SNPs were created to reflect the number of SNPs associated with that particular category as well as the frequency of those alleles and their distance to nearest gene. To provide even smoothness across sample sizes, we have discretized the plot into five percentile intervals (vigintiles).