

Table S1. Pedigree statistics for the real-life data sets fin1, fin2, fin3, fin4, x.linked, FHS, and FinnTwin12.

		fin1	fin2	fin3	fin4	x.linked	FHS	FinnTwin12
Pedigrees		61	84	37	438	482	216	171 ^b
Individuals		935	1099	490	2535	1529	5979	591
Founders		319	366	178	914	982	1935	342
Average pedigree size		15.33 (3-51)	13.08 (4-47)	13.24 (6-34)	5.79 (3-14)	3.17 (3-33)	27.68 (3-639)	3.46 (3-4)
Generations (%)	2	14.8	11.9	-	99.5	98.5	11.1	100
	3	70.5	56.0	59.5	0.5	0.8	51.9	-
	4	13.3	32.1	37.8	-	0.4	31.5	-
	5	1.4	-	2.7	-	-	5.5	-
Phenotyped	All	231 (24.7%)	398 (36.2%)	184 (37.6%)	918 (36.2%)	1307 (85.5%)	1036 (17.3%)	226(38.2%)
	Founders	2 (0.6%)	26 (7.1%)	21 (11.8%)	60 (6.6%)	932 (94.9%)	219 (11.3%)	0
Genotyped	All	676 (72.3%)	810 (73.3%)	351 (71.6%)	1906 (75.2%)	1112 (72.7%)	45-52% ^a	37-41% ^a
	Founders	133 (41.7%)	147 (40.2%)	60 (33.7%)	442 (48.4%)	792 (80.7%)	28.1%	0
Additional singletons	Cases	200	200	100	-	112	0	0
	Controls	200	200	100	199	203	0	0

^aThe proportion of genotyped individuals varied over a set of markers on chromosome 22.

^b Pedigrees consisted of sibships and triads of ungenotyped founders with genotyped children.

Table S2. Pedigree statistics for the artificial data sets 100sibs, 100sibs.c, 100sibs.cc, mixed, and noparents.

		100sibs	100sibs.c	100sibs.cc	mixed	noparents
Pedigrees		100	100	100	180	200
Individuals		400	400	400	940	900
Founders		200	200	200	420	400
Average pedigree size		4	4	4	5.22 (3 to 16)	4.50 (4 to 5)
Generations (%)	2	100	100	100	83.3	100
	3	-	-	-	16.7	-
Phenotyped	All	400 (100%)	400 (100%)	400 (100%)	940 (100%)	900 (100%)
	Founders	400 (100%)	400 (100%)	400 (100%)	420 (100%)	400 (100%)
Genotyped	All	400 (100%)	400 (100%)	400 (100%)	940 (100%)	500 (55.6%)
	Founders	400 (100%)	400 (100%)	400 (100%)	420 (100%)	0 (0%)
Additional singletons	Cases	-	200	200	-	100
	Controls	-	-	200	50	100

Table S3. Markers and number of alleles per marker in each data set.

Test set	Marker names	Number of alleles
fin1	SNP[*]	2
fin2	SNP[*]	2
fin3	STR[1,2,3,4]	4
fin4	SNP[*]	2
fin5	STR[1,2]	4
fin5	STR3	5
fin5	STR4	8
fin6	STR1	18
100sibs	STR10	3
100sibs.c	STR10	3
100sibs.cc	STR10	3
mixed	SNP[1,2,3]	2
mixed	STR[1,2,3]	3
noparents	STR[3,4]	4
x.linked	X-STR	20
FHS	rs[**]	2
FinnTwin12	rs[**]	2

*) Each data set had three SNP markers.

***) FHS had 2181 SNP markers; FinnTwin12 has 8502 SNP markers.