

Genetic Predisposition, Clinical Risk Factor Burden, and Lifetime Risk of Atrial Fibrillation

Weng et al: Lifetime Risk of Atrial Fibrillation

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ABSTRACT

Background: The long-term probability of developing atrial fibrillation (AF) considering genetic predisposition and clinical risk factor burden is unknown.

Methods: We estimated lifetime risk of AF in individuals from the community-based Framingham Heart Study. Polygenic risk for AF was derived using a score of approximately 1,000 AF-associated single nucleotide polymorphisms. Clinical risk factor burden was calculated for each individual using a validated risk score for incident AF comprised of height, weight, systolic and diastolic blood pressure, current smoking status, antihypertensive medication use, diabetes, history of myocardial infarction, and history of heart failure. We estimated the lifetime risk of AF within tertiles of polygenic and clinical risk.

Results: Among 4,606 participants without AF at age 55 years, 580 developed incident AF (median follow-up, 9.4 years; 25th-75th percentile, 4.4-14.3 years). The lifetime risk of AF after age 55 years was 37.1%, and was substantially influenced by both polygenic and clinical risk factor burden. Among individuals free of AF at age 55 years, those in low polygenic and clinical risk tertiles had a lifetime risk of AF of 22.3% (95% confidence interval [CI], 15.4%-29.1%), whereas those in high risk tertiles had a risk of 48.2% (95% CI, 41.3%-55.1%). A lower clinical risk factor burden was associated with later AF onset after adjusting for genetic predisposition (P value <0.001).

Conclusions: In our community-based cohort, the lifetime risk of AF was 37%. Estimation of polygenic AF risk is feasible, and together with clinical risk factor burden explains a substantial gradient in long-term AF risk.

Key Words: atrial fibrillation, lifetime risk, genetics, polygenic risk, risk factor, risk stratification, epidemiology

CLINICAL PERSPECTIVE

What is New?

- The lifetime risk of developing atrial fibrillation is about 37% after age 55 years, which is considerably greater than prior estimates.
- The lifetime risk of atrial fibrillation varies substantially according to genetic predisposition and clinical risk factor burden.
- Atrial fibrillation develops at an older age among individuals with a favorable clinical risk factor profile, regardless of genetic predisposition.
- Nevertheless, the lifetime risk of atrial fibrillation in individuals with high genetic predisposition was substantial, even when the clinical risk factor burden was low.



What Are the Clinical Implications?

- Individualized projections of lifetime atrial fibrillation risk may be refined by accounting for genetic predisposition and clinical risk factor burden.
- Robust estimation of genetic predisposition to atrial fibrillation is feasible with genome-wide single nucleotide polymorphism data.
- Addressing modifiable clinical risk factors might attenuate long-term risk of developing atrial fibrillation or delay the onset of disease.

The probability of developing atrial fibrillation (AF) is influenced by both inherited and acquired risk factors.¹⁻³ Genetic association studies of common genetic variants have confirmed a polygenic basis for AF.^{4,5} Well-validated clinical risk factors such as anthropometrics and cardiovascular disease components can stratify short-term AF risk.³ Although both genetic predisposition and clinical risk factor burden are associated with AF risk, the contribution of these well-established risk factors to the long-term probability of developing AF is unknown.

By accounting for competing causes of death, lifetime risk estimates provide accurate assessments of long-term disease probabilities within populations.⁶ For AF in particular, such estimates can serve as practical risk approximations both for clinicians and patients since the short-term risks of AF are generally small.³ Previous lifetime risk estimates for AF have typically reflected average risks in entire study samples rather than within specific risk factor strata.⁷⁻¹²



Comprehensive genomic assessment is currently feasible and accessible as is evidenced by direct-to-consumer availability of genetic tests, yet remains of uncertain utility partly owing to the lack of valid associations with long-term disease risks.¹³ Simultaneously, increasing emphasis is being placed on addressing modifiable risk factors to potentially prevent AF, given morbidity associated with the disease.^{14,15} Thus, there is a critical need to understand the joint relations between established risk factors and the probability of developing AF.

We therefore sought to characterize the degree to which inherited predisposition and clinical risk factor burden influence the long-term probability of developing AF. With longitudinal follow-up, genome-wide genotyping information, and detailed assessment of clinical risk factors, the community-based Framingham Heart Study is well-suited for the examination of associations between inherited predisposition and clinical risk factor burden in relation to lifetime risk of developing AF.

METHODS

Summary level genetic association results cited in this manuscript are available in the Cardiovascular

Disease Knowledge Portal (<http://broadcvdi.org>).¹⁶ Individual level data from samples described are available through application to the respective repositories.^{17,18}

STUDY SAMPLE

We calculated lifetime risks of AF in the Framingham Heart Study, a community-based observational cohort study designed to investigate cardiovascular disease risk factors.¹⁹⁻²¹ The Original cohort was comprised of 5,209 men and women from Framingham, Massachusetts, aged 30-62 years in 1948 during their first round of standardized examinations. Participants returned for detailed medical histories, physical examinations, and laboratory tests every two years. Beginning in 1971, spouses and children of the Original cohort participants (n=5,124) were recruited in the Offspring cohort with similar examinations every four to eight years. Participants from the Third Generation cohort (i.e., grandchildren of the Original cohort) were enrolled in 2002 and were examined every six to eight years. All participants signed informed consents at each examination cycle, and the Boston University Medical Center Institutional Review Board approved study protocols.

For the present analysis, we derived three samples based on participants who attended a study examination within five years of each of the attained ages of 55 (n=10,239), 65 (n=7,909), and 75 years (n=5,047). We selected age 55 years as the initial age to maximize the sample of participants in whom DNA was ascertained prior to an index attained age. Participants could be included in more than one sample. From these samples, we excluded participants if they lacked follow-up after the attained age, did not participate in DNA collection, had prevalent AF at the study examination or DNA collection, had DNA collected after age 95 years, or lacked complete single nucleotide polymorphism (SNP) or risk factor data (see below for further description and sample selection flowcharts in **Supplemental Figures 1-4**). In sensitivity analyses we also estimated the lifetime risk of AF in individuals without available DNA.

AF ASCERTAINMENT

AF was ascertained in the Framingham Heart Study as previously described.²² Briefly, at each study examination, participants' medical histories, physical examinations, and electrocardiograms were obtained. Records of all interim outpatient appointments and hospitalizations for cardiovascular disease were sought for manual review by mailings and telephone calls via health history updates every 24 months. Participants were classified as having AF if the arrhythmia was present on an electrocardiogram obtained at a study visit or encounter with external clinicians, Holter monitoring, or noted in hospital records. Study investigators reviewed all available records, regardless of symptoms, to determine the dates of AF. Two physicians adjudicated first-detected AF events.

GENOTYPING AND IMPUTATION

Details of genotyping, imputation, and quality control have been previously described²³ and are summarized in the **Supplemental Methods**.



POLYGENIC RISK FOR AF

Full methods of the approach to estimating genetic predisposition to AF are described in the **Supplemental Methods** and are briefly summarized here. Our approach was motivated by the concept that complex genetic trait liability may be explained by the cumulative effects of hundreds or thousands of common genetic variants, many of which are associated with traits at levels that do not exceed the stringent genome-wide significance threshold (i.e., P value $<5 \times 10^{-8}$).²⁴⁻²⁷ We therefore created 30 candidate SNP groups using association results from a prior genome-wide association study of AF (133,073 individuals overall, 17,931 with AF),⁴ by selecting SNPs across a preselected range of six increasingly liberal degrees of association with AF (i.e., from P value $<5 \times 10^{-8}$ to <0.001), and five linkage disequilibrium thresholds (i.e., from $r^2 \geq 0.1$ to ≥ 0.9). The derived groups were comprised of between 58 to 10,751 SNPs.

We then constructed polygenic risk scores from the candidate SNP groups and independently

validated scores by testing each for association with AF in 120,286 individuals of European ancestry in the population-based UK Biobank¹⁷ (described in the **Supplemental Methods**) using multivariable logistic regression. We calculated scores by summing the dosage of each AF risk allele carried by an individual (ranging from zero to two for each SNP) weighted by the natural logarithm of the relative risk for each SNP from the prior analysis,⁴ to yield a single continuous value for each individual. Models were adjusted for age, sex, genotyping array, and one principal component of ancestry. We considered the most informative score the one with the best model fit, as measured by the lowest Akaike's Information Criterion.²⁸

Polygenic risk scores were strongly associated with AF in the UK Biobank, with P values ranging from 3.1×10^{-55} to 1.5×10^{-146} . The best-fitting score (**Figure 1**) was derived from a candidate group of 1,168 SNPs (of which 835 were imputed with high quality in the UK Biobank, **Supplemental Table 1**). Regions tagged by the optimal SNP score accounted for a greater proportion of variance in AF susceptibility in the UK Biobank as measured by SNP-heritability²⁹ (7.4%, 95% CI 6.1%-8.8%) than those tagged by genome-wide significant loci alone (3.0%, 95% CI 2.2%-3.8%) (see **Supplemental Methods** for detail). We therefore calculated polygenic risk scores for AF in Framingham Heart Study participants based on the same candidate SNP group (of which 986 SNPs were genotyped or imputed with high confidence in Framingham) using the same approach defined above. Further description of our approach is provided in the **Supplemental Methods**.

All participants in the UK Biobank provided written informed consent to participate in research as previously described,¹⁷ and the UK Biobank was approved by the UK Biobank Research Ethics Committee (reference number 11/NW/0382). Use of UK Biobank data was approved by the local Partners Healthcare Institutional Review Board.

CLINICAL RISK FOR AF

We estimated clinical risk factor burden in each Framingham Heart Study participant by using a validated composite five-year clinical risk score for AF (Cohorts for Heart and Aging Research in Genomic

Epidemiology AF [CHARGE-AF] Score).^{3,30-33} For each sample at the attained ages of 55, 65, and 75 years, we measured clinical risk factors for each individual within five years of the attained age and calculated the clinical composite score as a weighted sum of clinical risk factors that included height, weight, systolic and diastolic blood pressure, current smoking status, use of antihypertensive medication, diabetes, and history of myocardial infarction and history of heart failure. Weights for each component are provided in the **Supplemental Methods**. Ascertainment of these clinical risk factors has previously been described.²² Since we assessed the residual lifetime risk of AF within strata of attained age, we omitted age from the composite score.

STATISTICAL ANALYSIS

We performed lifetime risk analyses in each of three samples from the Framingham Heart Study based on a person's index or "attained" age free of AF. The three samples were defined at ages of 55 years, 65 years, and 75 years. Participants were followed from the later of the date of their index age free of AF or their date of DNA collection, until their first AF event, death, last available date known to be free of AF based on a Framingham examination or medical records, age 95 years, or December 31, 2014, whichever occurred first. The multiple-decrement life-table approach was applied to calculate the lifetime risk of AF, adjusting for the competing risk of death.⁶ Adjustment for the competing risk of death avoids over-inflation of cumulative incidence estimates that may occur if the competing risk is not taken into account.

We first calculated lifetime risk estimates for each attained age overall. We then performed the same life-table approach stratified by tertiles of the AF polygenic risk score and the clinical risk factor score separately. Tertiles were derived based on the distributions in the overall sample specific to each index age. Tertile 1 was considered "low risk", tertile 2 was considered "intermediate risk", and tertile 3 was considered "high risk." We then assessed the joint contributions of genetic predisposition and clinical risk factor burden by calculating lifetime risks of AF within cross-tabulated tertiles of both the polygenic risk score and clinical risk score, resulting in nine risk strata in total. In secondary analyses, we calculated the cumulative incidences of AF at 10-year, 20-year, and 30-year time horizons. We also performed an

exploratory analysis in which we regressed AF on continuous genetic predisposition and clinical risk factor burden in the age 55 years sample, and introduced a multiplicative interaction term. Models were fit using proportional hazards regression with and without adjustment for the competing risk of death.³⁴

To assess whether a favorable cardiovascular risk profile was associated with a later age of AF onset after accounting for genetic predisposition, we regressed the age of AF onset on the clinical risk factor burden both within tertiles of polygenic risk scores and separately, adjusted for tertiles of polygenic risk, among individuals who developed AF using linear regression. Analyses were performed in the sample of individuals with an attained age of 55 years without AF. Two-sided P values less than 0.05 were considered statistically significant. All statistical analyses were performed using SAS software, version 9.4 (SAS Institute), PLINK v1.9,³⁵ and R version 3.2.2.³⁶



RESULTS

In total, 5,131 unique individuals were included in the analyses for the three samples defined by attained ages of 55 (n=4,606), 65 (n=3,271), and 75 (n=1,887) years without AF (**Table**). Among participants alive and free of AF at 55 years of age, 580 developed AF during the observed follow-up period. The median (25th-75th percentile) follow-up durations for the attained ages of 55, 65, and 75 years samples were 9.4 years (4.4-14.3 years), 7.4 years (3.2-12.7 years), and 5.6 years (2.1-9.1 years), respectively. As expected, the proportions with comorbid medical illnesses were generally greater among older participants. Participants with DNA who were included in the study were generally ascertained in a more contemporary era than those without DNA (**Supplemental Table 2**).

Estimates of lifetime risk of AF are displayed in **Figure 2** and **Supplemental Table 2**. At age 55 years, the overall residual lifetime risk of AF was 37.1% (95% confidence interval [CI], 34.6-39.6), and was similar at older attained ages. The participant characteristics stratified by tertile of AF genetic predisposition and clinical risk factor burden are displayed in **Supplemental Tables 3-4**. The lifetime risk of AF was higher among individuals with greater genetic predisposition to AF. For example, among

individuals free of AF at age 55 years, those in the highest tertile of polygenic risk had an estimated lifetime risk of AF of 46.9% (95% CI, 42.7-51.2), whereas those in the lowest tertile had a risk of 25.8% (95% CI, 21.8-29.9, **Figure 3** and **Supplemental Table 5**). Similar graded patterns of AF risk according to genetic predisposition were observed at different attained ages and with shorter time horizons.

Similar to analyses of polygenic risk factor burden, the lifetime risk of AF was highest among individuals with a greater burden of clinical AF risk factors. For example, individuals within the highest tertile of clinical AF risk factor burden at age 55 had a lifetime risk of developing AF of 43.1% (95% CI, 38.9-47.3), whereas those in the lowest tertile had a risk of 32.6% (95% CI, 28.2-37.0) (**Figure 3** and **Supplemental Table 6**). However, the lifetime risk of AF was similar between those with intermediate and low clinical risk factor profiles. Comparable patterns were observed at different attained ages and with time horizons of 10, 20, and 30 years of follow-up (**Supplemental Table 6**).

To assess the joint contributions of genetic predisposition and clinical risk factor burden to the lifetime risk of developing AF, we estimated AF risks by tertiles of both polygenic and clinical risk. Among individuals free of AF at age 55 years, those in the lowest polygenic and clinical risk strata had a lifetime risk of AF of 22.3% (95% CI, 15.4-29.1%), whereas those in the highest polygenic and clinical risk tertiles had lifetime risks of AF as high as 48.2% (95% CI 41.3-55.1%, **Figure 4**). For individuals with low clinical risk factor burden, but high genetic predisposition to AF, the lifetime risk was 43.6% (95% CI, 35.6-51.6), a value comparable to that in other high clinical risk factor burden strata. Substantial gradients of AF risk were consistently observed within strata of polygenic and clinical risk, regardless of the attained age and follow-up time horizons (**Supplemental Tables 7-9**). We did not observe an interaction between genetic predisposition and clinical risk factor burden in exploratory models in which both were treated as continuous covariates (**Supplemental Table 10**), but our power to detect an interaction was modest. Among individuals who developed AF, we observed that a lower clinical risk factor burden was associated with a later age of AF onset, regardless of genetic predisposition (P value <0.001 within each tertile of polygenic risk) (**Figure 5**). We observed an approximately seven year gradient in the age of AF onset across tertiles of clinical risk factor burden when adjusted for polygenic



predisposition to AF (age \pm standard error; 73.2 ± 0.6 years, 78.6 ± 0.7 years, 80.6 ± 0.7 years, for high, intermediate, and low clinical risk factor burden, respectively).

DISCUSSION

Our findings illustrate the high lifetime risk of AF and contributions of both genetic and clinical factors in determining long-term AF risk. In the community-based Framingham Heart Study sample comprised of 5,131 individuals with contemporary follow-up, we observed that the lifetime risk of AF was 37.1% after age 55 years. Marked variability in the lifetime risk of AF can be accounted for by both polygenic predisposition and clinical risk factor burden. The lifetime risk of AF ranged from about 20% among individuals in the lowest tertiles of both polygenic and clinical risk to almost 50% among individuals in the highest tertiles of both. On average, a favorable clinical risk profile was associated with later onset of AF regardless of polygenic predisposition to AF.

Our findings have three major implications. First, the observed stratification of AF risk by a score comprised of nearly 1,000 SNPs highlights the feasibility of comprehensive polygenic risk profiling for AF and estimation of lifetime risk based on inherited predisposition. In contrast to the traditional method of creating scores comprised only of the top variant at each disease susceptibility locus,^{37,38} we estimated polygenic risk by including many SNPs that did not exceed stringent genome-wide significance thresholds, an approach that likely contributed to the considerable degree of risk stratification observed. Our study provides absolute AF risk estimates associated with comprehensively ascertained polygenic risk, and demonstrates that lifetime risk models can be utilized to incorporate genomic risk profiles. Given the increasing ubiquity of genomic data both in the clinical setting and via direct-to-consumer testing, epidemiologically derived estimates are necessary for generating accurate personalized risk assessments.

Second, our observation that individuals with a lower burden of clinical risk factors had a reduced probability of developing AF within polygenic risk strata underscores the potential importance of risk

factor modification for attenuating AF risk regardless of inherited predisposition, similar to a recent analysis of coronary heart disease.³⁹ Among individuals who developed AF, a more favorable clinical risk profile was associated with postponement of disease onset, indicating that optimal cardiovascular health may compress the period of exposure to AF. Nevertheless, the fact that individuals with few clinical risk factors but high polygenic risk had about a 40% lifetime probability of developing AF underscores the independent contribution of an inherited predisposition to disease risk.

Modifiable AF risk factors include hypertension, obesity, smoking, diabetes, and obstructive sleep apnea,^{3,40} the first four of which were included in our assessment of clinical risk factor burden. Risk factor management through lifestyle modification reduces AF burden and severity.^{41,42} Future analyses are warranted to determine the extent to which dedicated risk factor modification will prevent AF, delay onset, reduce arrhythmia burden, and minimize overall attributable morbidity and mortality across the spectrum of polygenic risk.

Third, the approximately 37% average lifetime risk of AF estimated in our study emphasizes the immense public health impact presented by AF. Prevention of AF is an important goal, particularly when considering the clinical and economic impact of the arrhythmia, limitations of antiarrhythmic and anticoagulant therapy, and increasing prevalence of AF in an era of greater longevity.⁴³⁻⁴⁵ Whereas prior reports have suggested that the lifetime risk of AF is about one in four,⁷⁻¹² the higher lifetime risk estimates in our study may be related to diminished mortality from competing causes of death, greater follow-up during older ages of life when AF risk is greatest, or enhanced surveillance for AF owing to increased awareness of the arrhythmia.⁴⁶ We anticipate that the true lifetime risk of AF and attributable morbidity are currently underestimated since undiagnosed AF is common.^{47,48} Utilization of increasingly available mobile cardiac rhythm monitoring technology and wearable sensors is likely to provide refined estimates of the lifetime risk of AF in the future.^{49,50}

In contrast to prior reports demonstrating that AF genetic risk does not add substantively to short-term AF discrimination beyond clinical risk factors,^{51,52} our current report has several important differences. First, the present paper is focused on residual lifetime probabilities of AF conditional on

survival to specified ages, rather than short-term improvements in discrimination of disease risk in a pooled sample. Second, the comprehensive approach for determining AF genetic predisposition we employed is based on a larger and better-powered discovery sample, and relaxed assumptions about both SNP association with AF and linkage disequilibrium, that resulted in a score comprised of about 1,000 variants. In aggregate, the findings highlight the high lifetime risk of developing AF, and the substantial contributions of genetic predisposition and clinical risk factor burden to variability in long-term AF risk. Nevertheless, the clinical utility and cost-effectiveness of genomic profiling remain unclear.

Our study should be interpreted in the context of the study design. The Framingham Heart Study is principally composed of individuals of European ancestry, consequently limiting the generalizability of our findings to other ethnic/racial groups particularly since AF is more prevalent in such individuals.³ The polygenic risk score utilized in our analysis was based on a linear combination of common and low-frequency variants selected using summary level-data from a prior genome-wide association study. The fact that the optimal score utilized in our analysis included many sub-genome-wide threshold SNPs highlights both the polygenic nature of AF and importance of larger, well-powered, multi-ancestry studies to identify the genetic determinants of AF. Future scores based on larger samples that include rare genetic variants and utilize different methods for variant selection or weighting may improve the specificity of scores used to summarize genetic predisposition to AF. We cannot establish causal relations between the specific SNPs and clinical risk factors included in our score and risk of AF. Further refinement of polygenic risk or clinical risk algorithms, and application to larger samples, may further enhance AF short, intermediate, and lifetime risk estimation. Additional clinical risk factors, such as echocardiographic measurements, may be important determinants of disease risk and were not included.

In conclusion, the contributions of genetic predisposition and clinical risk to the development of AF are substantial. Our findings demonstrate the feasibility of assessing AF risk within genetic and clinical risk factor strata, and provide epidemiologic estimates of long-term AF risk. Future studies are warranted to further refine polygenic and clinical risk estimates in additional races and populations.

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Table. Characteristics of the 5,131 participants according to attained age.

	Attained Age Free of Atrial Fibrillation		
	55 Yr (N=4606)	65 Yr (N=3271)	75 Yr (N=1887)
Framingham Heart Study Cohort			
Original, No. (%)	378 (8.2)	542 (16.6)	638 (33.8)
Offspring, No. (%)	3124 (67.8)	2584 (79.0)	1242 (65.8)
Third Generation, No. (%)	1104 (24.0)	145 (4.4)	7 (0.4)
Years of follow-up, median (25 th -75 th percentile)	9.4 (4.4-14.3)	7.4 (3.2-12.7)	5.6 (2.1-9.1)
Age at covariate measurement, y	55.0±1.9	65.0±1.7	74.9±1.6
Age at DNA collection, y	59.6±11.3	65.9±10.4	73.4±8.6
Women, No. (%)	2492 (54.1)	1869 (57.1)	1120 (59.4)
Current smoker, No. (%)	915 (19.9)	422 (12.9)	124 (6.6)
Systolic blood pressure, mm Hg	125±17	131±18	137±20
Diastolic blood pressure, mm Hg	78±10	76±10	72±10
Hypertension treatment, No. (%)	1031 (22.4)	1299 (39.7)	1015 (53.8)
Height, cm	168±9	166±9	163±10
Weight, kg	78.3±17.5	77.0±16.6	73.6±15.2
Diabetes, No. (%)	270 (5.9)	350 (10.7)	246 (13.0)
History of heart failure, No. (%)	15 (0.3)	20 (0.61)	21 (1.1)
History of myocardial infarction, No. (%)	74 (1.6)	126 (3.9)	101 (5.4)

Participants can appear in more than one attained age group. Plus-minus values are means ± standard deviation.

Figure Legends

Figure 1. Defining polygenic risk for atrial fibrillation (AF). In total, we derived 30 candidate polygenic risk scores from the results of a prior genetic association study of AF.⁴ Each risk score was comprised of candidate single nucleotide polymorphisms (SNPs) selected based on a varying strength of SNP association with AF in the prior analysis (x-axis) and the degree of linkage disequilibrium between each SNP (y-axis). Polygenic risk scores were then created as outlined in the methods section using a linear weighted approach and tested for association with AF in an independent sample from the UK Biobank (N=120,286 individuals of European ancestry total, 2,987 with AF). The most informative, or optimal, polygenic risk score was defined as that with the best model fit as defined by the lowest Akaike's Information Criterion (AIC). Colors correspond to model fit, with yellow indicating a better fit. All scores were highly associated with AF in the optimization sample (P value range 3.1×10^{-55} to 1.5×10^{-146}). The optimal score was comprised of 1,168 SNPs.

Figure 2. Lifetime risk of atrial fibrillation (AF) at selected attained ages, adjusted for the competing risk of death. Lifetime risk of AF in Framingham Heart Study participants for a given attained age is cumulative through age 95 years.

Figure 3. Lifetime risk of atrial fibrillation (AF) stratified by polygenic risk or clinical risk factor burden tertiles adjusted for the competing risk of death. Panels display the lifetime risk of AF in Framingham Heart Study participants stratified by low, intermediate, and high polygenic risk (A-C) or clinical risk factor burden (D-F) at attained ages of 55, 65, and 75 years free of AF.

Figure 4. Lifetime risk of atrial fibrillation (AF) stratified by polygenic risk within clinical risk factor burden tertiles adjusted for the competing risk of death. Panels display the lifetime risk of AF in Framingham Heart Study participants stratified by low, intermediate, and high polygenic risk and

clinical risk factor burden at attained ages of 55 years (A-C), 65 years (D-F), and 75 years (G-I).

Figure 5. Age of atrial fibrillation (AF) onset stratified by clinical and polygenic risk. Gray dots indicate the age of onset of AF in Framingham Heart Study participants free of AF at age 55 years who subsequently developed AF. The white and dark grey lines represent the mean and median age of AF onset, respectively, boxes represent the interquartile range, and whiskers correspond to range of age of onset of AF. The two-side P values were <0.001 for the associations between clinical risk factor burden and age of AF onset within each tertile of polygenic risk score.

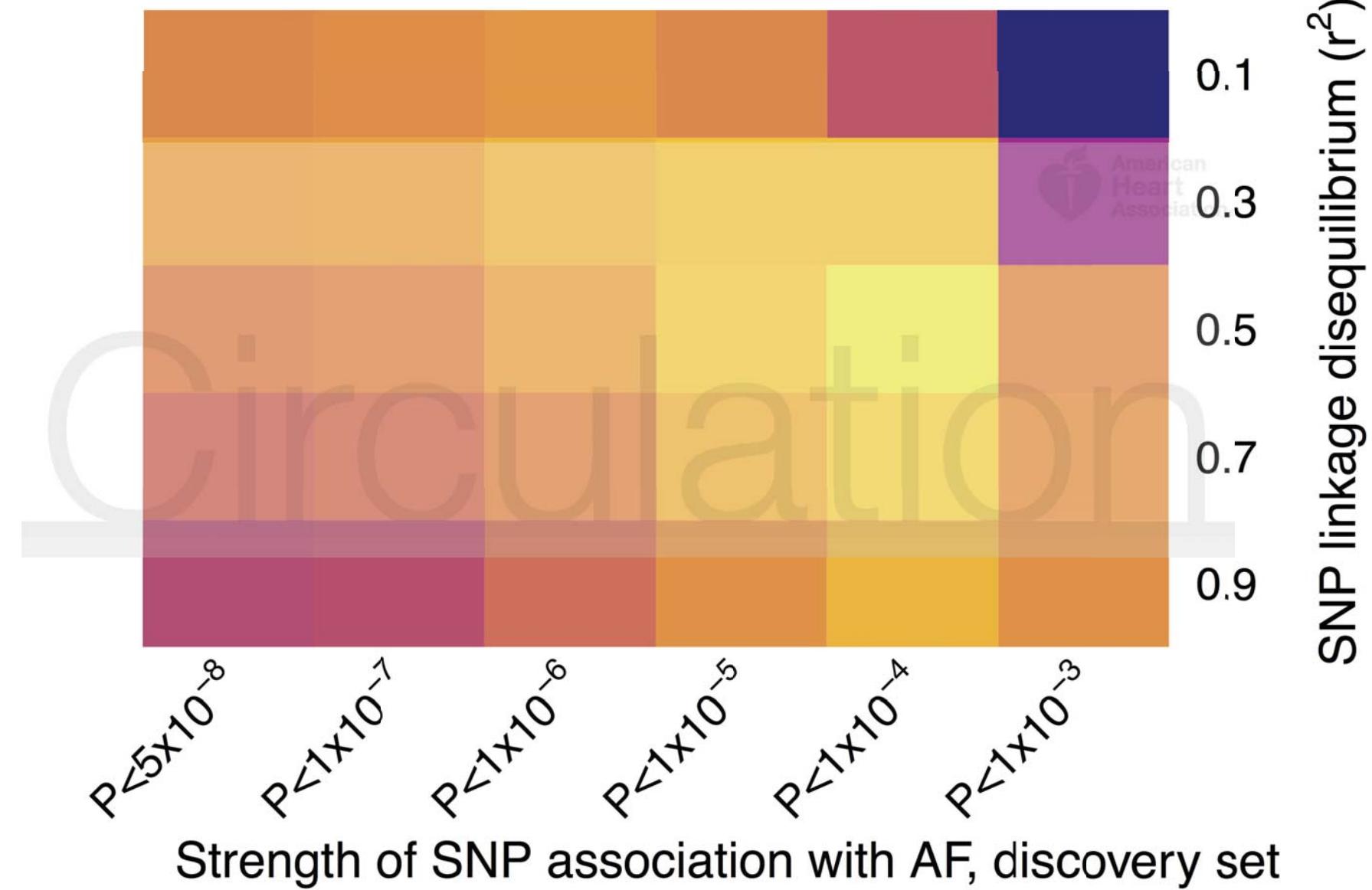


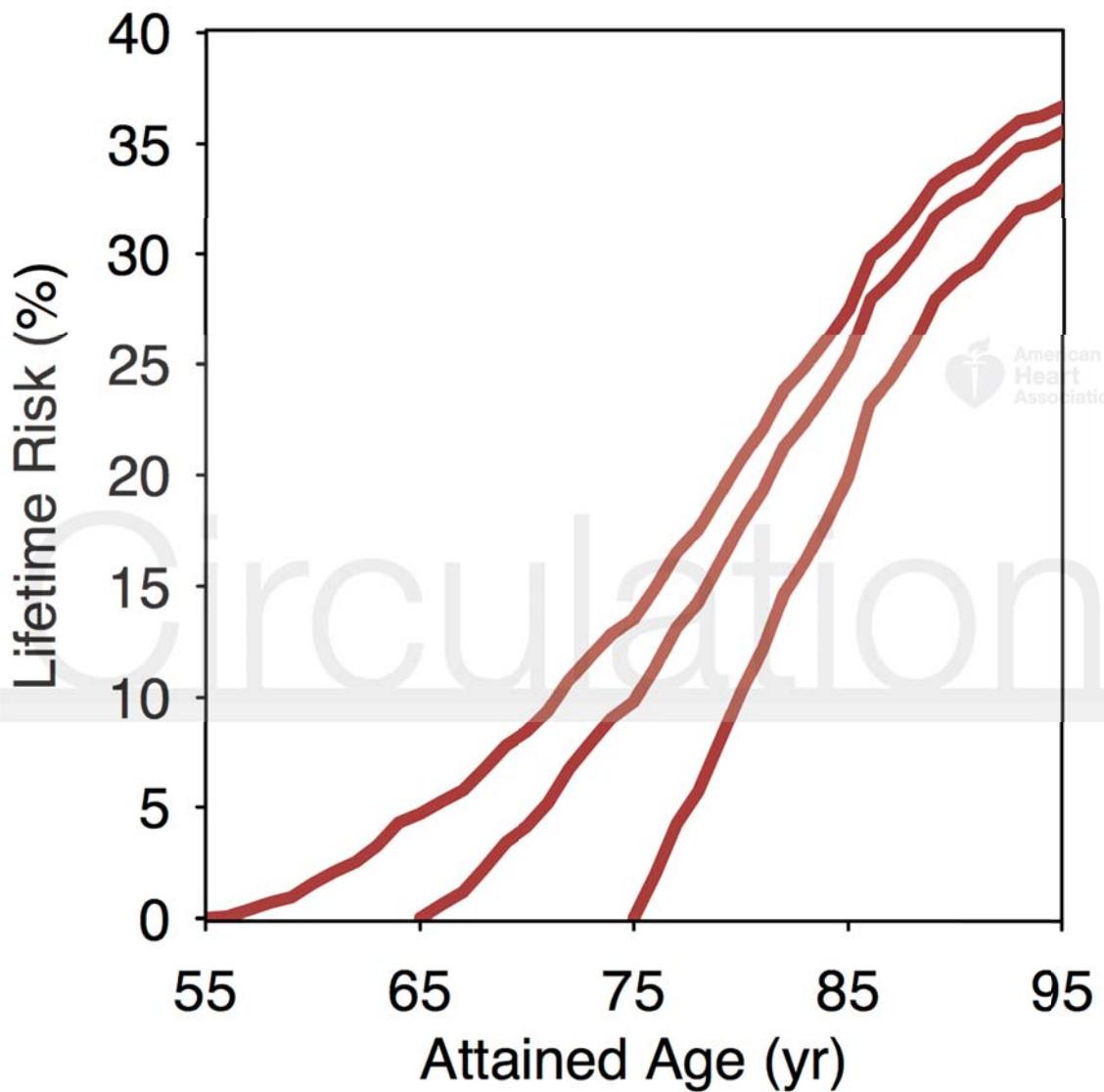
Polygenic score fit (AIC), optimization set

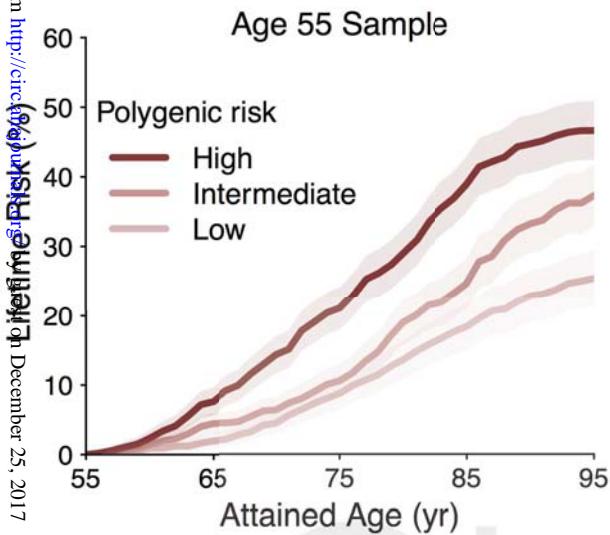
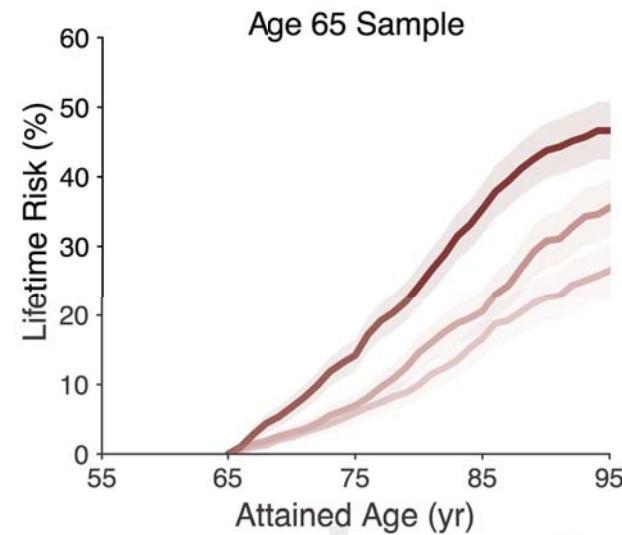
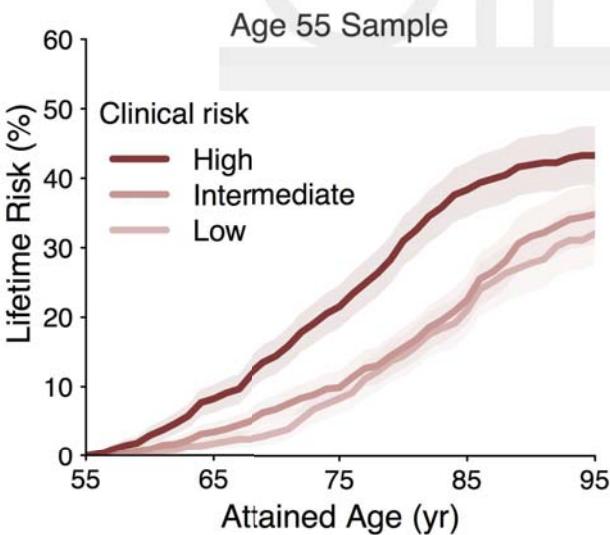
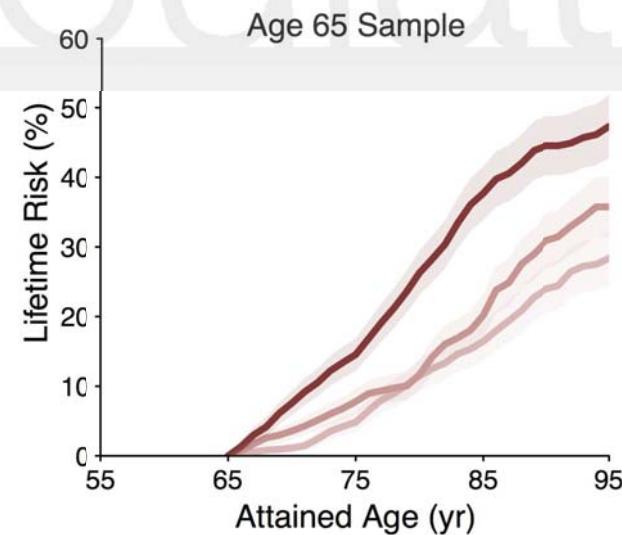


25300 25500

Better fit Worse fit

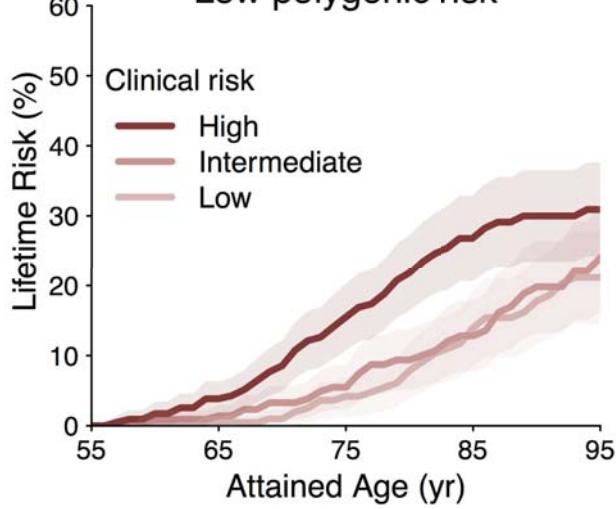




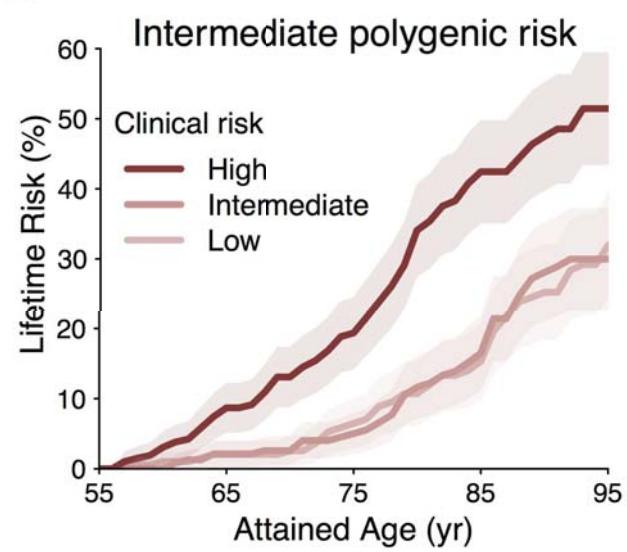
Polygenic Risk Strata**B****C****Clinical Risk Strata****E****F**

A

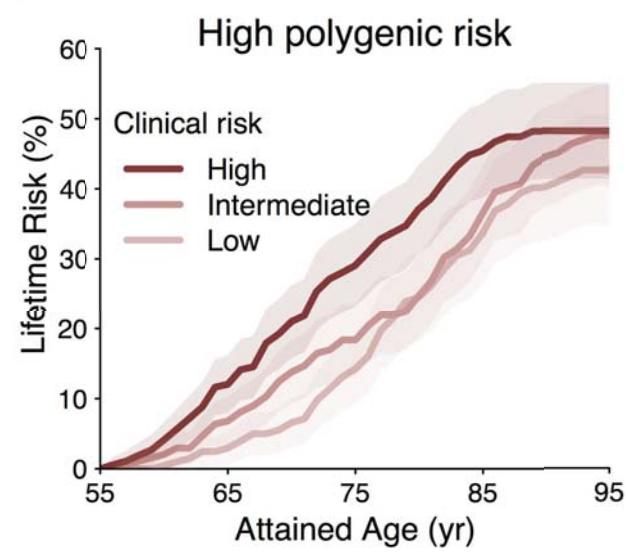
Low polygenic risk

**B**

Intermediate polygenic risk

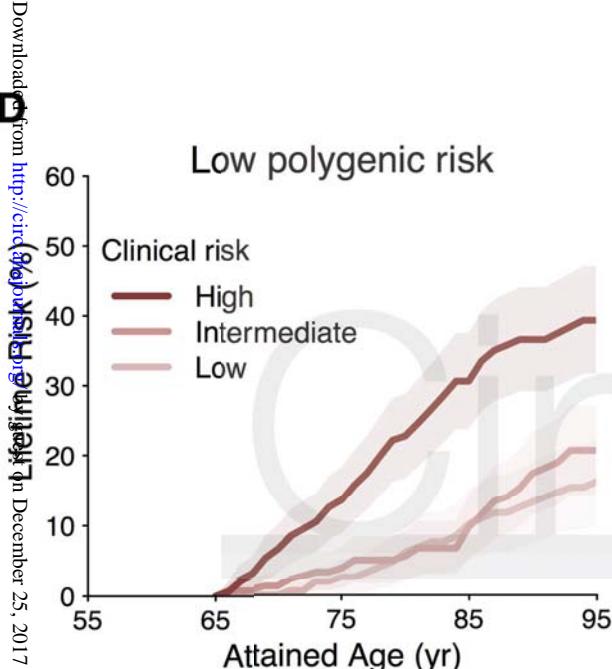
**C**

High polygenic risk

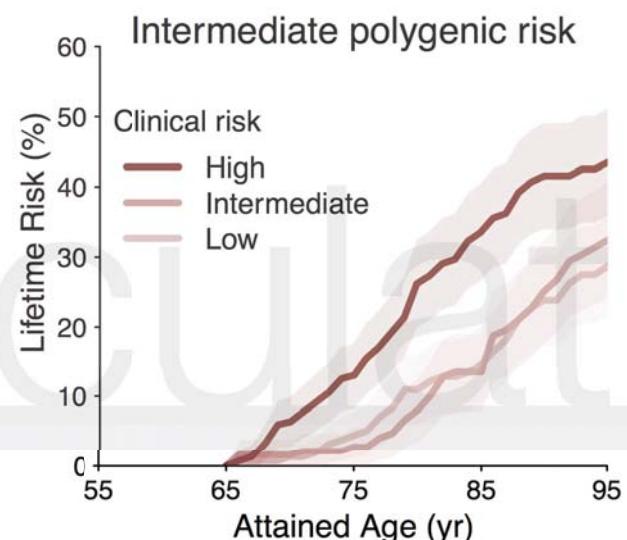
**D**

Age 65 Sample

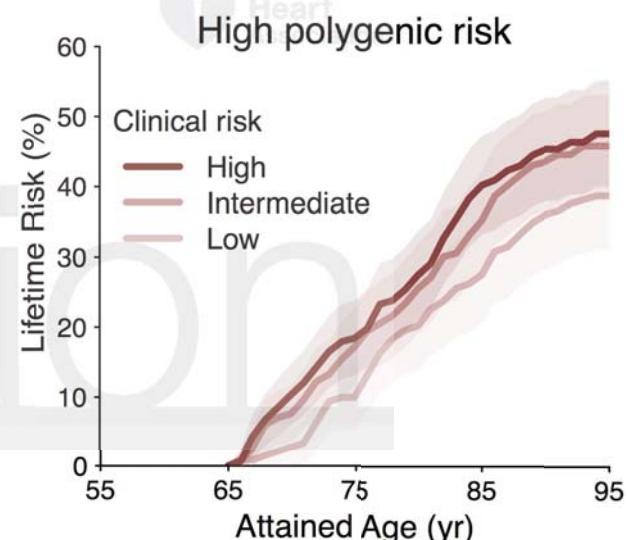
Low polygenic risk

**E**

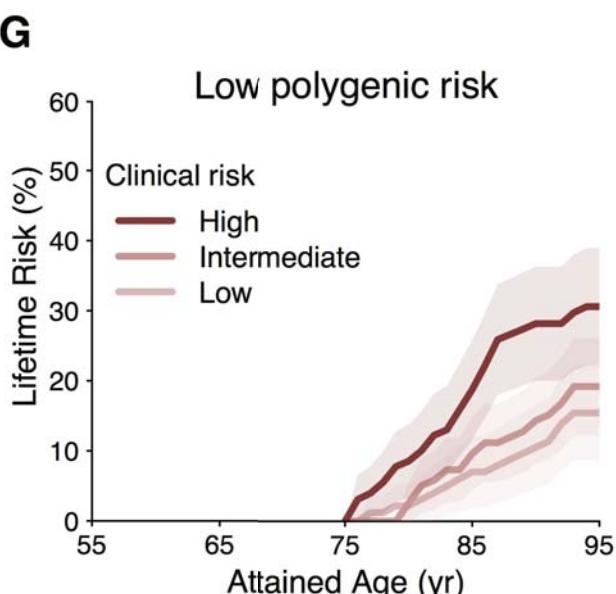
Intermediate polygenic risk

**F**

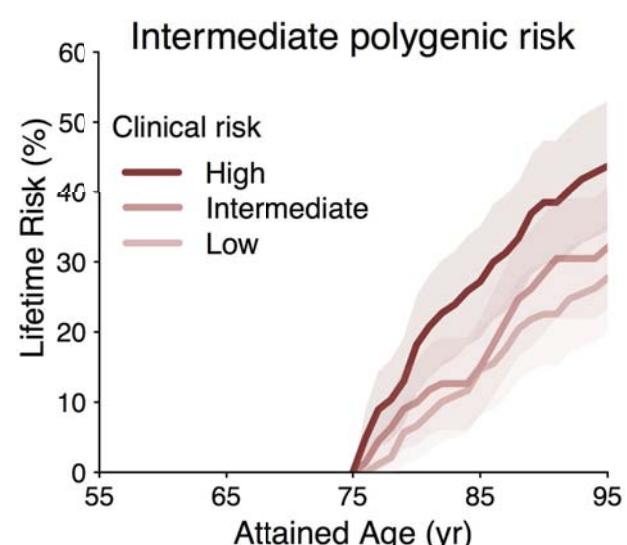
High polygenic risk

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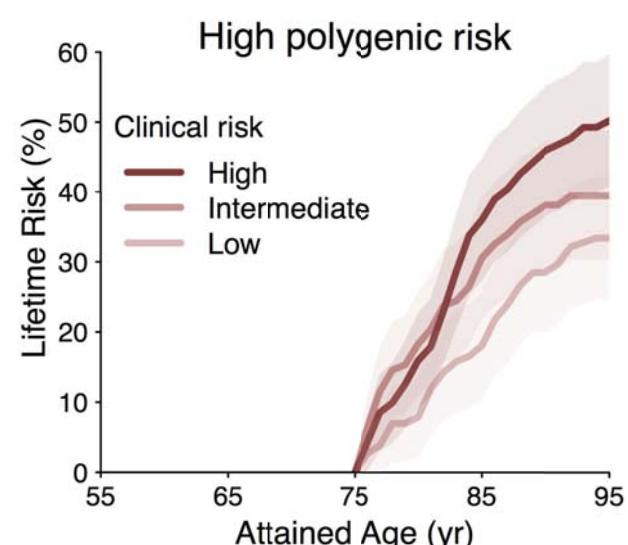
Low polygenic risk

**H**

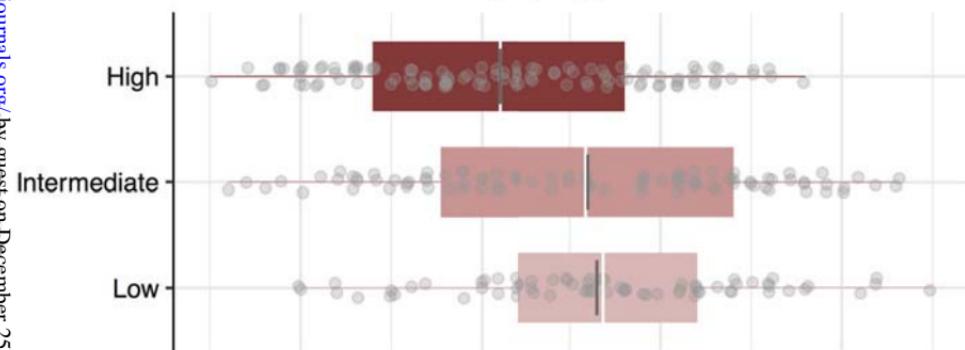
Intermediate polygenic risk

**I**

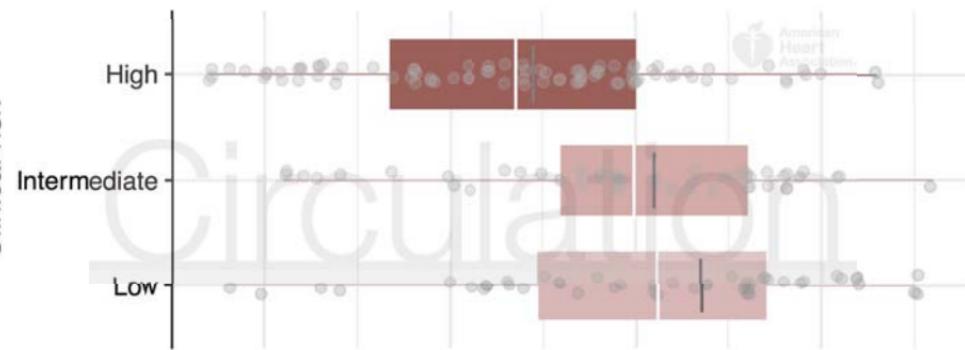
High polygenic risk



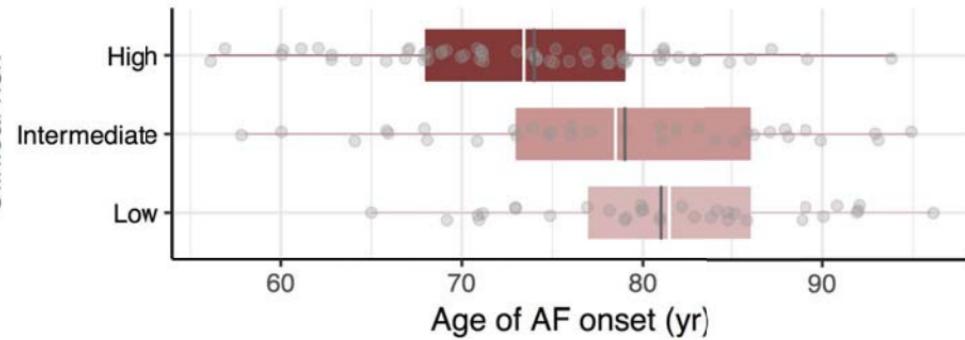
High polygenic risk



Intermediate polygenic risk



Low polygenic risk



Genetic Predisposition, Clinical Risk Factor Burden, and Lifetime Risk of Atrial Fibrillation

Lu-Chen Weng, Sarah R. Preis, Olivia L. Hulme, Martin G. Larson, Seung Hoan Choi, Biqi Wang, Ludovic Trinquart, David D. McManus, Laila Staerk, Honghuang Lin, Kathryn L. Lunetta, Patrick T. Ellinor, Emelia J. Benjamin and Steven A. Lubitz

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SUPPLEMENTAL MATERIAL

Genetic Predisposition, Clinical Risk Factor Burden, and Lifetime Risk of Atrial Fibrillation

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SUPPLEMENTAL METHODS

UK Biobank Description

Study Sample

We used the population-based UK Biobank sample to validate and compare polygenic risk scores for atrial fibrillation (AF, see below). The UK Biobank is comprised of about 500,000 individuals aged 40-69 years recruited between 2006-2010 across the United Kingdom.¹

Phenotypic data includes disease information attained through self-report, verbal interviews, and linkage to national outpatient, inpatient, and other registries. The present analyses were conducted in 120,286 unrelated adults of European ancestry from an interim data release. All participants provided written informed consent to participate in research as previously described,¹ and the UK Biobank was approved by the UK Biobank Research Ethics Committee (reference number 11/NW/0382).

AF Ascertainment

We defined AF in the UK Biobank as a reported history of AF or atrial flutter, or if an individual had undergone a cardioversion, pulmonary vein isolation procedure, atrial flutter ablation, atrioventricular node ablation, or received an International Classification of Diseases (ICD) billing code of 427.3 (ICD-9) or I48 (ICD-10). In total, 2,987 individuals had AF, of which 63,350 (52.7%) were female and the average age at data collection was 56.9 years.

Genotype QC

Individuals from the UK Biobank were genotyped on the UK BiLEVE Axiom array or UK Biobank Axiom arrays and imputed using the 1000 Genomes Phase 3 and UK10K reference panels. Detailed descriptions of the genotyping and imputation procedures can be found on the UK Biobank website (<http://www.ukbiobank.ac.uk>). We performed analyses using imputed data

restricted to variants with high imputation quality ($\text{info} \geq 0.4$), low missingness rates (< 5%), minor allele frequencies (MAF) $\geq 1\%$, and high genotype imputation probabilities (≥ 0.9) across at least 90% of samples. We transformed variants that passed these quality control criteria to hard-called genotypes in PLINK version 1.90b² using a probability threshold ≥ 0.9 . In total, 8,423,233 genetic variants (SNPs and indels) were retained. The first 15 principal components of ancestry estimated by flashPCA³ were provided by the UK Biobank.

SNP Selection

We selected SNPs by pruning 11.8 million common ($\geq 1\%$ minor allele frequency [MAF]) 1000 Genomes variants⁴ included in a prior meta-analysis of genome-wide association studies for AF from the AFGen consortium (133,073 individuals, 17,931 individuals with AF).⁵ As previously performed,⁶ we recursively extracted SNPs within a sliding 250 kilobase window using PLINK v1.90b.² We created 30 prespecified groups of pruned SNPs by varying P value thresholds reflecting the strength of association between each SNP and AF in age and sex-adjusted analyses from the prior meta-analysis (thresholds included P value $<5 \times 10^{-8}$, $<1 \times 10^{-7}$, $<1 \times 10^{-6}$, $<1 \times 10^{-5}$, $<1 \times 10^{-4}$, and $<1 \times 10^{-3}$), and by selecting variants in different degrees of linkage equilibrium (LD) within each 250 kilobase window (thresholds included $r^2 \geq 0.1$, 0.3, 0.5, 0.7, and 0.9). For pruning, LD was estimated using all ethnic groups in the 1000 Genomes Project version 3.⁴

Polygenic Risk Score Calculation

For each individual in an independent sample (see below), we then calculated polygenic risk scores comprised of SNPs from each of the 30 predefined SNP groups. Scores were calculated by summing the dosage of each AF risk allele (ranging from zero to two) weighted by the natural logarithm of the relative risk for each SNP determined from the prior meta-analysis.⁵ Thus, polygenic risk scores for each individual were single linear predictor variables.

Association testing and selection of optimal polygenic risk score

To identify the optimal score associated with AF to carry forward for lifetime risk analyses, we tested each of the 30 scores for association with AF in the UK Biobank sample. We did so by fitting multivariable logistic regression models adjusted for age at data collection, sex, array, and the one AF-related principal component of ancestry. We selected the model with the best goodness-of-fit, as determined by the lowest Akaike's Information Criterion (AIC). The optimal score was subsequently applied to participants in the Framingham Heart Study, where SNPs that were genotyped or imputed with high quality ($r^2 > 0.3$) were utilized for score construction.

Since the UK Biobank sample used was comprised of both prevalent events at baseline enrollment and events accrued through relatively short longitudinal follow-up (median 2.17 years), we combined the samples and performed our primary analyses in the pooled sample (N events 2,987, N overall 120,286) using logistic regression. In sensitivity analyses, the polygenic risk score was significantly associated with prevalent AF ($P < 0.001$, N events 2,025, N overall=119,324) using logistic regression, and with incident AF ($P < 0.001$, N events 962, N overall=44,203) using proportional hazards regression.

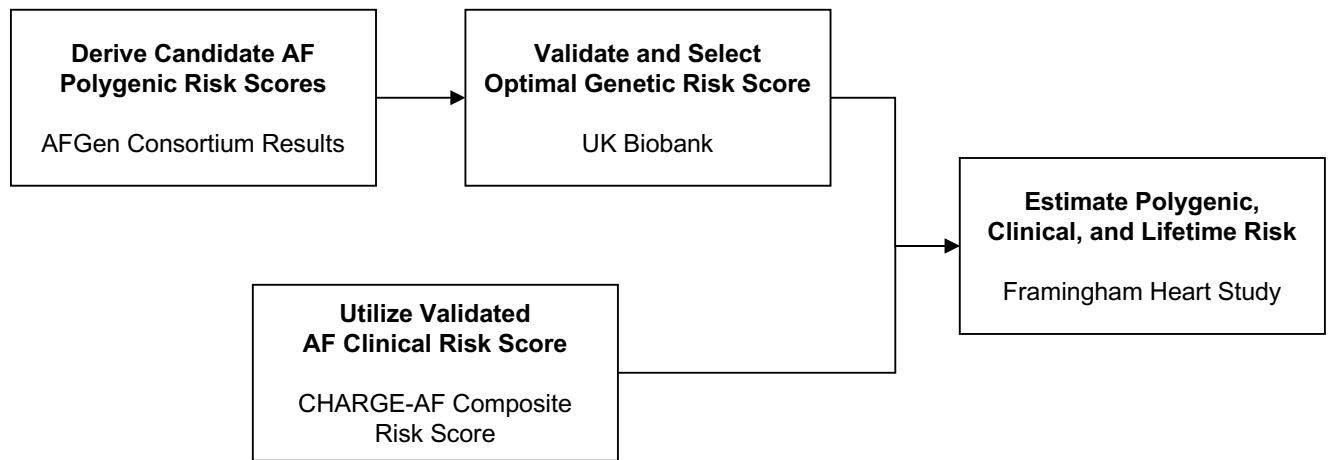
We then estimated SNP heritability (h^2_g) for the optimal set of SNPs in the UK Biobank based on LD pruned markers using BOLT-REML as previously specified.^{7,8} We additionally removed variants with a missingness rate of $\geq 0.5\%$, MAF $< 1\%$, and variants with differential missingness between cases and referents (p -value < 0.05). In order to reduce suspicious LD bias from REML estimation^{7,9-11} and due to computational capacity of the software, we further performed two rounds of LD pruning at $r^2 = 0.9$ (PLINK 1.90b;² i.e., using a --indep-pairwise 50 5 0.9 flag) and decreased the total number of variants to 811,488 (with a small fraction of biallelic indels). We contrasted the 23 SNP score representing the genome-wide significant loci from the discovery sample analysis, and the 1,168 SNP score from the optimal set of SNPs. To account for SNPs that were eliminated after linkage disequilibrium pruning of the data set (a step

necessary for computational efficiency), and to include any variants tagged by the lead SNP, we included regions \pm 25K bases of each selected SNP. We converted the h^2_g estimate from the observed scale to a disease liability scale¹² by setting the disease prevalence as the observed proportion of AF cases in the UK Biobank sample.

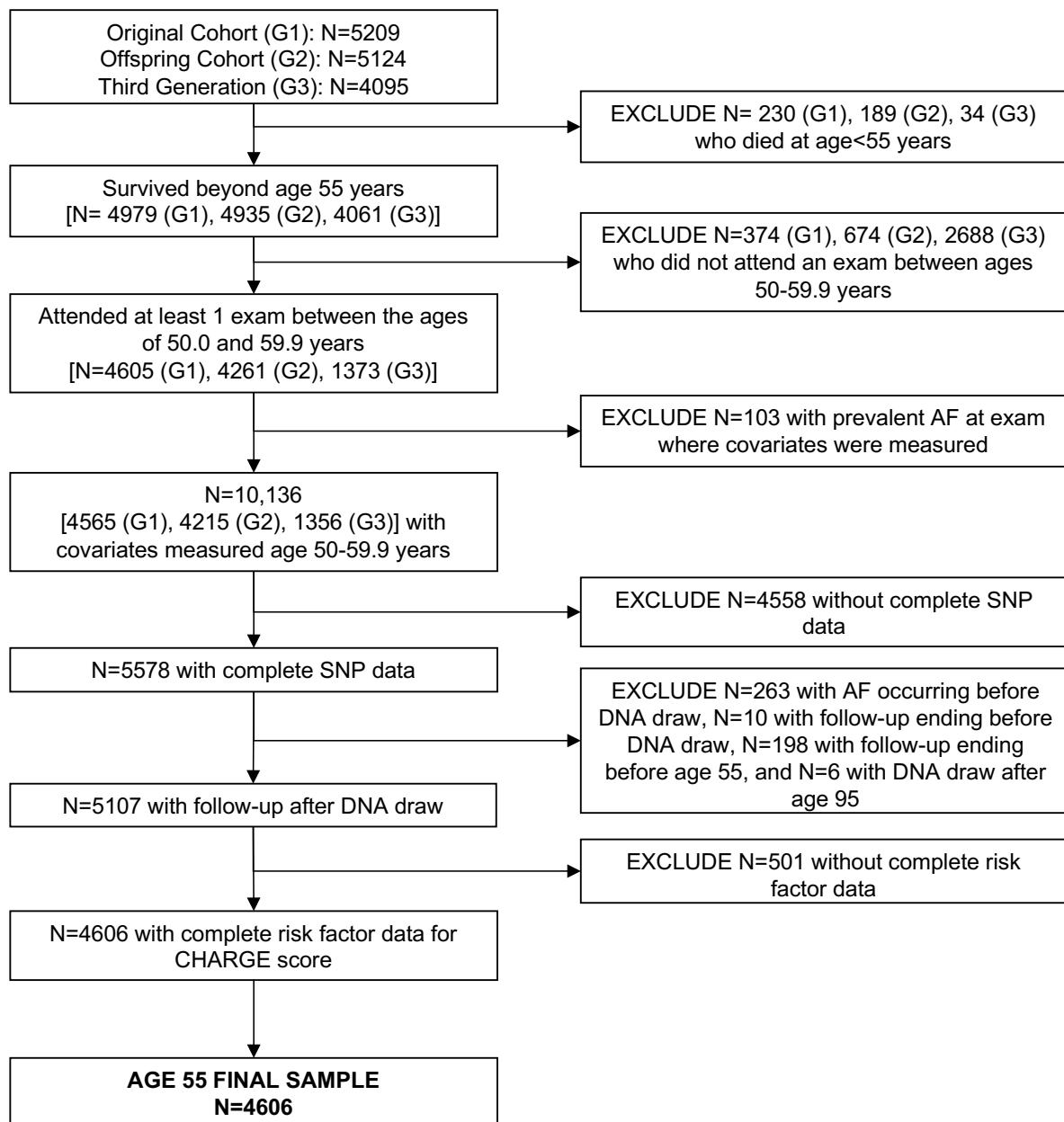
Calculation of Clinical Risk in the Framingham Heart Study

We estimated clinical risk for AF based on a weighted sum of clinical risk factors, as performed in a prior validated analysis.¹³ The following weights were used: height per 10 cm=0.248; weight per 15 kg= 0.115; systolic blood pressure per 20 mmHg= 0.197; diastolic blood pressure per 10 mmHg= -0.101; current smoking (yes)=0.359; antihypertensive medication use (yes)=0.349; diabetes (yes)=0.237; heart failure (yes)=0.701; myocardial infarction (yes)=0.496.

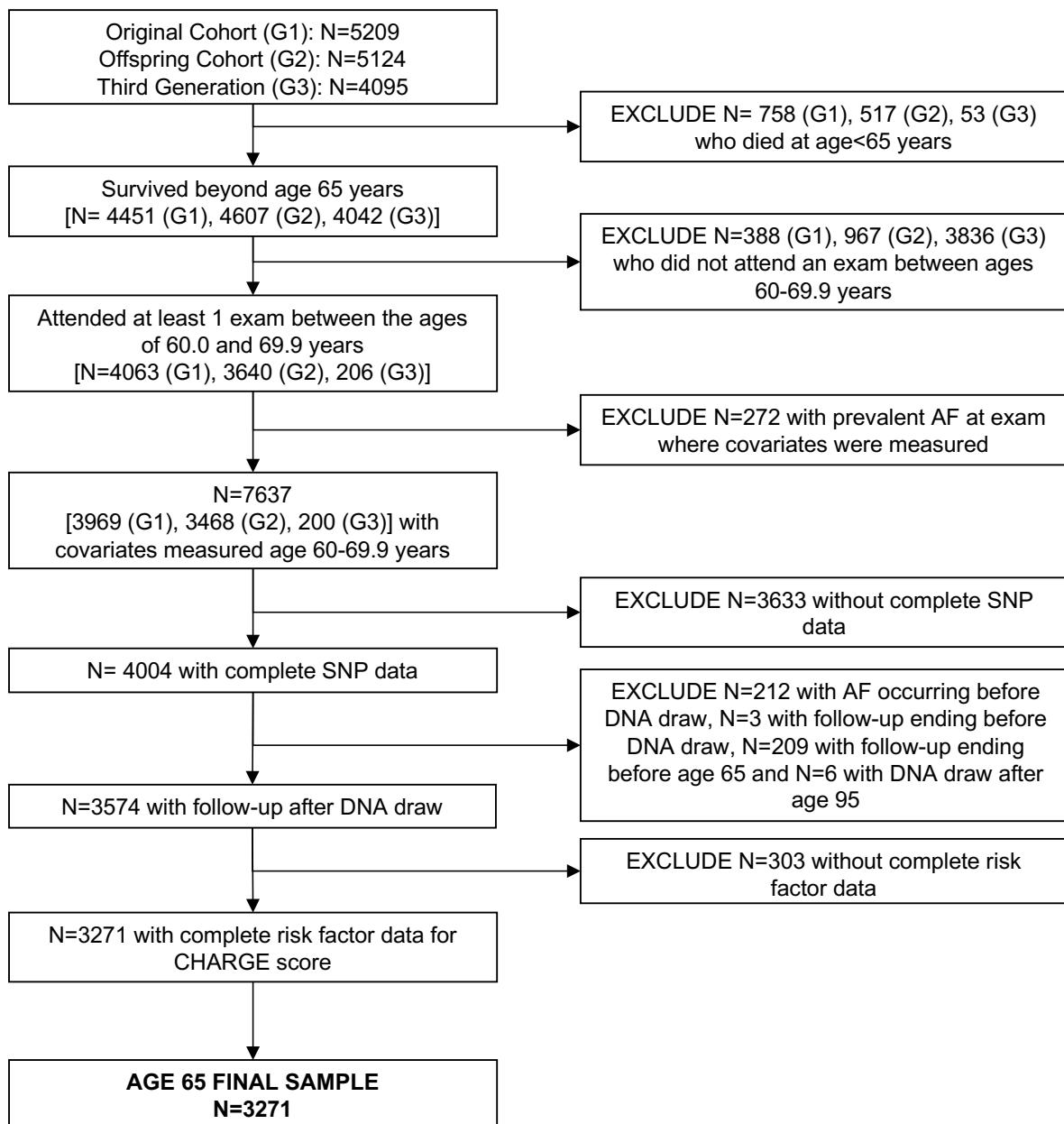
Supplemental Figure 1. Study overview.



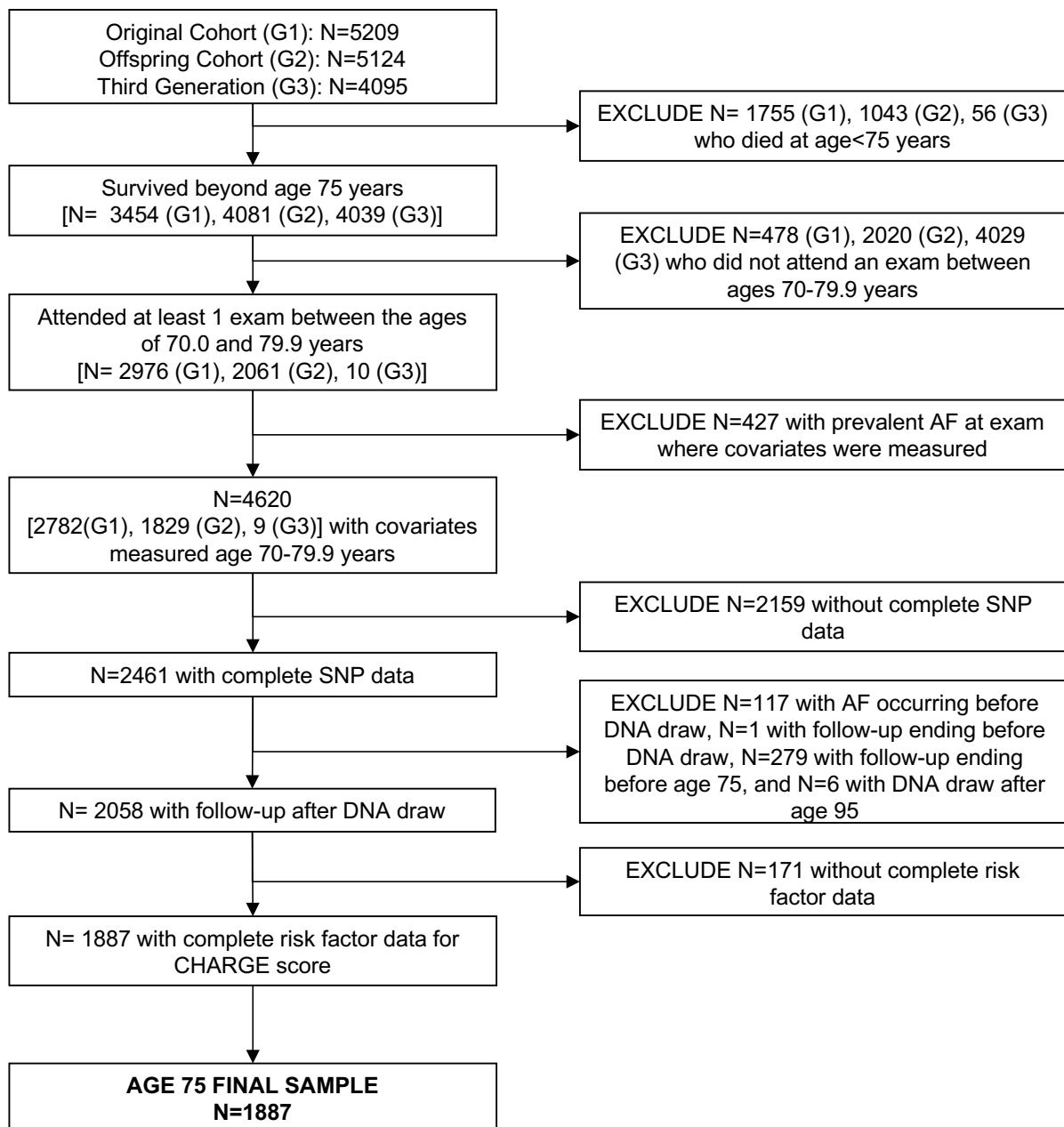
Supplemental Figure 2. Study sample flow chart for the analysis at attained age of 55 years.



Supplemental Figure 3. Study sample flow chart for the analysis at attained age of 65 years.



Supplemental Figure 4. Study sample flow chart for the analysis at attained age of 75 years.



Supplemental Table 1. Characteristics of atrial fibrillation genetic risk variants.

Please refer to the Supplemental_Appendix file at the end of this document.

SNP associations with traits were obtained from published data using the NHGRI-EBI GWAS catalog.¹⁴ Proxies for sentinel SNPs associated with atrial fibrillation included those with an $r^2 \geq 0.6$ based on the European (EUR) population from the 1000 Genomes Project, phase 1.¹⁵

Supplemental Table 2. Difference in lifetime risk of atrial fibrillation (AF) in participants with and without DNA in the Framingham Heart Study.

	Attained age 55		Attained age 65		Attained age 75	
	With DNA	Without DNA	With DNA	Without DNA	With DNA	Without DNA
No. participants	4606	4558	3271	3633	1887	2159
Framingham Heart Study Cohort						
Original, No. (%)	378 (8.2)	3622 (79.5)	542 (16.6)	3045 (83.8)	638 (33.8)	1925 (89.2)
Offspring, No. (%)	3124 (67.8)	856 (18.8)	2584 (79.0)	576 (15.9)	1242 (65.8)	10.8
Third Generation, No. (%)	1104 (24.0)	80 (1.8)	145 (4.4)	12 (0.3)	7 (0.4)	0 (0.0)
Year of exam – median (25 th -75 th percentile)	1997 (1986-2006)	1963 (1954-1972)	1999 (1989-2006)	1970 (1963-1980)	1999 (1992-2006)	1978 (1972, 1987)
Years of follow-up – median (25 th -75 th percentile)	9.4 (4.4-14.3)	19.8 (11.2-27.5)	7.4 (3.2-12.7)	13.1 (6.6-19.6)	5.6 (2.1-9.1)	7.5 (3.2-12.4)
No. incident AF events	580	881	530	751	384	462
Lifetime risk (95% CI)	37.1 (34.6-39.6)	21.0 (19.8-22.3)	35.7 (33.2-38.2)	22.2 (20.7-23.6)	33.9 (31.0-36.8)	22.5 (20.6-24.4)

Supplemental Table 3. Characteristics of individuals stratified by polygenic risk of atrial fibrillation.

Characteristic	Attained age 55			Attained age 65			Attained age 75		
	Low polygenic risk	Intermediate polygenic risk	High polygenic risk	Low polygenic risk	Intermediate polygenic risk	High polygenic risk	Low polygenic risk	Intermediate polygenic risk	High polygenic risk
No. participants	1535	1536	1535	1090	1091	1090	629	629	629
Age at covariate measurement, y	55.0±1.9	55.0±1.9	54.9±1.9	65.0±1.7	65.0±1.7	65.1±1.7	74.9±1.6	74.8±1.7	74.9±1.7
Age at DNA collection, y	59.7±11.4	59.9±11.2	59.2±11.2	65.8±10.5	66.1±10.5	65.6±10.1	73.6±9.0	73.3±8.6	73.3±8.3
Women, No. (%)	827 (53.9)	844 (55.0)	821 (53.5)	612 (56.2)	637 (58.4)	620 (56.9)	377 (59.9)	374 (59.5)	369 (58.7)
Current smoker, No. (%)	311 (20.3)	286 (18.6)	318 (20.7)	144 (13.2)	128 (11.7)	150 (13.8)	49 (7.8)	35 (5.6)	40 (6.4)
Systolic blood pressure – mm Hg	126±17	126±16	125±17	131±18	130±18	132±18	138±19	137±20	137±19
Diastolic blood pressure – mm Hg	78±10	78±9	78±10	76±10	75±10	75±10	73±10	72±10	72±10
Hypertension treatment, No. (%)	352 (22.9)	340 (22.1)	339 (22.1)	436 (40.0)	436 (40.0)	427 (39.2)	348 (55.3)	331 (52.6)	336 (53.4)
Height – cm	167.7±9.1	168.1±9.3	168.5±9.4	165.9±9.3	165.8±9.4	165.9±9.2	163.0±9.5	163.6±9.5	163.4±9.4
Weight – kg	78.3±18.2	77.9±16.9	78.6±17.4	77.1±16.7	76.8±16.8	77.0±16.2	73.2±15.3	73.8±14.9	73.8±15.4
Diabetes, No. (%)	94 (6.1)	81 (5.3)	95 (6.2)	110 (10.1)	122 (11.2)	118 (10.8)	76 (12.1)	86 (13.7)	84 (13.4)
History of heart failure, No. (%)	6 (0.39)	5 (0.33)	4 (0.26)	11 (1.0)	6 (0.55)	3 (0.28)	10 (1.6)	5 (0.8)	6 (1.0)
History of myocardial infarction, No. (%)	26 (1.7)	22 (1.4)	26 (1.7)	44 (4.0)	42 (3.9)	40 (3.7)	33 (5.3)	39 (6.2)	29 (4.6)
Clinical AF composite score	5.85±0.45	5.85±0.43	5.87±0.44	5.93±0.47	5.92±0.48	5.94±0.46	5.98±0.47	5.98±0.48	5.98±0.45
Polygenic risk score	74.9±1.6	78.3±0.8	82.2±2.0	74.9±1.5	78.3±0.8	82.1±2.0	74.8±1.5	78.2±0.8	81.9±1.9

Plus-minus values represent mean ± standard deviation.

Risk groups represent tertiles.

Supplemental Table 4. Characteristics of individuals stratified by clinical risk of atrial fibrillation.

Characteristic	Attained age 55			Attained age 65			Attained age 75		
	Low clinical risk	Intermediate clinical risk	High clinical risk	Low clinical risk	Intermediate clinical risk	High clinical risk	Low clinical risk	Intermediate clinical risk	High clinical risk
No. participants	1535	1536	1535	1090	1091	1090	629	629	629
Age at covariate measurement, y	54.9±1.9	54.9±1.9	55.1±1.9	65.0±1.6	65.0±1.7	65.0±1.8	74.9±1.6	74.9±1.6	74.9±1.7
Age at DNA collection, y	60.9±12.3	60.0±11.3	57.8±9.9	67.6±11.4	66.0±10.3	63.9±8.9	75.1±9.2	73.2±8.7	71.8±7.6
Women, No. (%)	1403 (91.4)	766 (49.9)	323 (21.0)	1001 (91.8)	590 (54.1)	278 (25.5)	559 (88.9)	378 (60.1)	183 (29.1)
Current smoker, No. (%)	121 (7.9)	307 (20.0)	487 (31.7)	73 (6.7)	137 (12.6)	212 (19.5)	30 (4.8)	53 (8.4)	41 (6.5)
Systolic blood pressure – mm Hg	118±15	126±16	132±17	124±15	132±17	137±20	131±16	137±18	144±22
Diastolic blood pressure – mm Hg	75±9	79±9	80±10	74±9	76±9	76±10	72±9	72±10	72±11
Hypertension treatment, No. (%)	51 (3.3)	266 (17.3)	714 (46.5)	115 (10.6)	410 (37.6)	774 (71.0)	126 (20.0)	368 (58.5)	521 (82.8)
Height – cm	160.3±5.7	168.7±7.2	175.3±7.9	158.7±6.0	166.4±7.6	172.5±8.3	156.8±6.5	162.9±8.0	170.4±8.4
Weight – kg	64.8±10.5	77.8±12.4	92.3±16.6	64.6±10.4	76.8±12.0	89.5±16.1	62.9±10.4	73.0±11.3	84.9±14.6
Diabetes, No. (%)	11 (0.72)	34 (2.2)	225 (14.7)	6 (0.6)	64 (5.9)	280 (25.7)	8 (1.3)	51 (8.1)	187 (29.7)
History of heart failure, No. (%)	0 (0.0)	0 (0.0)	15 (1.0)	0 (0.0)	0 (0.0)	20 (1.8)	0 (0.0)	0 (0.0)	21 (3.3)
History of myocardial infarction, No. (%)	0 (0.0)	3 (0.2)	71 (4.6)	1 (0.1)	4 (0.4)	121 (11.1)	2 (0.3)	8 (1.3)	91 (14.5)
Clinical AF composite score	5.39±0.17	5.83±0.11	6.35±0.27	5.44±0.19	5.90±0.12	6.45±0.30	5.49±0.20	5.95±0.11	6.50±0.29
Polygenic risk score	78.3±3.3	78.5±3.3	78.5±3.4	78.4±3.2	78.4±3.4	78.5±3.3	78.3±3.3	78.3±3.2	78.2±3.2

Plus-minus values represent mean ± standard deviation.

Risk groups represent tertiles.

Supplemental Table 5. Cumulative incidence of atrial fibrillation at varying time horizons and attained ages stratified by polygenic risk of atrial fibrillation, adjusted for the competing risk of death.

Time horizon	Age attained (years)	Low polygenic risk		Intermediate polygenic risk		High polygenic risk	
		N events / N total	Cumulative incidence, % (95% CI)	N events / N total	Cumulative Incidence, % (95% CI)	N events / N total	Cumulative Incidence, % (95% CI)
10 years	55	13/1050	1.96 (0.91-3.02)	30/1044	4.48 (2.91-6.05)	51/1066	7.63 (5.61-9.66)
	65	39/849	7.36 (5.11-9.61)	38/840	7.25 (4.99-9.52)	85/848	15.6 (12.5-18.7)
	75	43/542	12.4 (8.85-15.9)	71/560	19.9 (15.5-24.2)	108/559	28.8 (23.9-33.8)
20 years	55	54/1341	8.73 (6.50-11.0)	67/1342	10.6 (8.15-13.0)	137/1351	21.0 (17.9-24.2)
	65	87/1022	17.5 (14.1-20.9)	107/1026	21.3 (17.6-24.9)	188/1037	34.6 (30.5-38.7)
	75	81/627	22.4 (18.0-26.8)	133/629	34.8 (29.8-39.9)	163/629	41.1 (35.7-46.4)
30 years	55	101/1485	18.4 (15.1-21.7)	137/1496	24.6 (21.0-28.3)	233/1493	38.9 (34.9-42.9)
	65	122/1090	26.3 (22.2-30.4)	167/1091	35.1 (30.7-39.5)	237/1090	43.9 (39.6-48.2)
	75	-	-	-	-	-	-
Lifetime risk	55	127/1535	25.8 (21.8-29.9)	185/1536	37.8 (33.3-42.3)	268/1535	46.9 (42.7-51.2)
	65	123/1090	26.3 (22.2-30.4)	168/1091	35.1 (30.7-39.5)	239/1090	44.4 (40.1-48.7)
	75	83/629	23.0(18.6-27.5)	135/629	35.5 (30.4-40.6)	166/629	41.8 (36.5-47.1)

Risk groups represent tertiles.

Supplemental Table 6. Cumulative incidence of atrial fibrillation at varying time horizons and attained ages stratified by clinical risk of atrial fibrillation, adjusted for the competing risk of death.

Time horizon	Age attained (years)	Low clinical risk		Intermediate clinical risk		High clinical risk	
		N events / N total	Cumulative incidence, % (95% CI)	N events / N total	Cumulative Incidence, % (95% CI)	N events / N total	Cumulative Incidence, % (95% CI)
10 years	55	11/979	1.78 (0.74-2.83)	23/1032	3.47 (2.08-4.87)	60/1149	8.27 (6.25-10.3)
	65	27/768	5.82 (3.66-7.98)	42/832	8.13 (5.73-10.5)	93/937	15.0 (12.2-17.9)
	75	44/513	13.6 (9.77-17.4)	67/558	19.3 (15.0-23.7)	111/590	27.5 (22.8-32.1)
20 years	55	47/1279	8.24 (5.98-10.5)	63/1335	9.79 (7.49-12.1)	148/1420	21.4 (18.3-24.5)
	65	81/978	17.7 (14.2-21.3)	102/1037	19.9 (16.4-23.4)	199/1070	35.1 (31.0-39.1)
	75	95/627	26.3 (21.6-30.9)	115/629	31.0 (26.0-36.0)	167/629	41.6 (36.4-46.9)
30 years	55	107/1462	20.9 (17.4-24.5)	126/1491	22.4 (18.9-25.9)	238/1521	38.2 (34.3-42.1)
	65	132/1090	28.7 (24.5-32.9)	162/1091	33.3 (29.0-37.6)	232/1090	43.6 (39.2-48.0)
	75	-	-	-	-	-	-
Lifetime risk	55	151/1535	32.6 (28.2-37.0)	174/1536	35.1 (30.7-39.5)	255/1535	43.1 (38.9-47.3)
	65	136/1090	29.7 (25.5-33.9)	162/1091	33.3 (29.0-37.6)	232/1090	43.6 (39.2-48.0)
	75	100/629	27.7 (23.0-32.4)	117/629	31.6 (26.5-36.6)	167/629	41.6 (36.4-46.9)

Risk groups represent tertiles.

Supplemental Table 7. Cumulative incidence of atrial fibrillation assuming event-free survival to age 55 years stratified by polygenic and clinical risk, adjusted for the competing risk of death.

Time horizon	Polygenic risk	Clinical risk					
		Low		Intermediate		High	
		N events / N total	Cumulative incidence, % (95% CI)	N events / N total	Cumulative incidence, % (95% CI)	N events / N total	Cumulative incidence, % (95% CI)
10 years	Low	1/332	0.48 (0.00-1.41)	3/331	1.40 (0.00-2.98)	9/387	3.86 (1.38-6.33)
	Intermediate	4/320	2.04 (0.06-4.03)	5/355	2.12 (0.28-3.96)	21/369	8.69 (5.13-12.3)
	High	6/327	2.96 (0.63-5.29)	15/346	6.82 (3.48-10.2)	30/393	12.0 (7.95-16.1)
20 years	Low	8/437	4.19 (1.34-7.04)	11/425	5.48 (2.32-8.65)	35/479	15.5 (10.8-20.2)
	Intermediate	12/416	6.47 (2.92-10.0)	11/465	5.01 (2.12-7.91)	44/461	19.4 (14.2-24.5)
	High	27/426	14.3 (9.27-19.3)	41/445	18.4 (13.3-23.5)	69/480	29.0 (23.2-34.9)
30 years	Low	23/499	14.0 (8.60-19.3)	22/473	12.8 (7.73-17.9)	56/513	26.8 (20.7-32.9)
	Intermediate	26/486	15.3 (9.86-20.8)	31/522	16.5 (11.1-21.9)	80/488	42.4 (35.1-49.8)
	High	58/477	33.6 (26.4-40.7)	73/496	36.4 (29.6-43.2)	102/520	45.4 (38.7-52.1)
Lifetime risk	Low	33/528	22.3 (15.4-29.1)	33/488	24.0 (16.3-31.6)	61/519	30.9 (24.2-37.6)
	Intermediate	48/508	32.0 (24.4-39.7)	49/536	31.6 (23.9-39.3)	88/492	51.5 (43.4-59.5)
	High	70/499	43.6 (35.6-51.6)	92/512	47.6 (40.4-54.7)	106/524	48.2 (41.3-55.1)

Risk groups represent tertiles of polygenic or clinical risk.

Supplemental Table 8. Cumulative incidence of atrial fibrillation assuming event-free survival to age 65 years stratified by polygenic and clinical risk, adjusted for the competing risk of death.

Time horizon	Polygenic risk		Clinical risk				
		N events / N total	Low		Intermediate		High
			Cumulative incidence, % (95% CI)	N events / N total	Cumulative incidence, % (95% CI)	N events / N total	
10 years	Low	4/245	2.66 (0.09-5.24)	7/291	3.96 (1.02-6.89)	28/313	13.6 (8.85-18.4)
	Intermediate	7/264	4.49 (1.20-7.78)	4/265	2.81 (0.04-5.57)	27/311	13.0 (8.30-17.6)
	High	16/259	9.98 (5.25-14.7)	31/276	17.2 (11.6-22.8)	38/313	18.4 (13.0-23.8)
20 years	Low	14/304	10.2 (5.09-15.3)	17/362	9.77 (5.28-14.3)	56/356	30.7 (23.8-37.6)
	Intermediate	23/347	14.6 (9.02-20.2)	20/326	13.4 (7.83-19.0)	64/353	33.5 (26.6-40.4)
	High	44/327	27.5 (20.4-34.5)	65/349	35.2 (28.2-42.2)	79/361	40.3 (33.2-47.3)
30 years	Low	22/345	16.3 (10.0-22.5)	33/382	20.8 (14.3-27.3)	67/363	39.4 (31.8-47.1)
	Intermediate	47/385	28.7 (21.7-35.7)	43/344	32.4 (24.2-40.7)	77/362	43.5 (35.8-51.2)
	High	63/360	38.7 (31.0-46.3)	86/365	45.8 (38.5-53.1)	88/365	47.6 (40.0-55.2)
Lifetime risk	Low	23/345	17.1 (10.7-23.6)	33/382	20.8 (14.3-27.3)	67/363	39.4 (31.8-47.1)
	Intermediate	48/385	29.4 (22.3-36.5)	43/344	32.4 (24.2-40.7)	77/362	43.5 (35.8-51.2)
	High	65/360	40.0 (32.3-47.7)	86/365	45.8 (38.5-53.1)	88/365	47.5 (40.0-55.2)

Risk groups represent tertiles of polygenic or clinical risk.

Supplemental Table 9. Cumulative incidence of atrial fibrillation assuming event-free survival to age 75 years stratified by polygenic and clinical risk, adjusted for the competing risk of death.

Time horizon	Polygenic risk	Clinical risk					
		Low		Intermediate		High	
		N events / N total	Cumulative incidence, % (95% CI)	N events / N total	Cumulative incidence, % (95% CI)	N events / N total	Cumulative incidence, % (95% CI)
10 years	Low	7/159	7.04 (1.99-12.1)	12/186	9.65 (4.45-14.8)	24/197	18.8 (11.7-25.9)
	Intermediate	17/178	14.7 (8.22-21.2)	16/183	15.0 (8.04-22.0)	38/199	27.2 (19.2-35.1)
	High	20/176	18.1 (10.6-25.7)	39/189	30.7 (22.0-39.4)	49/194	36.1 (27.4-44.9)
20 years	Low	17/203	15.5 (8.67-22.2)	24/212	19.2 (12.3-26.2)	40/212	30.6 (22.2-39.0)
	Intermediate	35/213	27.7 (19.9-35.6)	38/205	32.1 (23.3-40.8)	60/211	43.7 (34.4-52.9)
	High	43/211	33.5 (24.7-42.3)	53/212	39.6 (30.4-48.8)	67/206	50.3 (40.9-59.7)
Lifetime risk	Low	19/205	17.2 (10.1-24.3)	24/212	19.2 (12.3-26.2)	40/212	30.6 (22.2-39.0)
	Intermediate	36/213	28.7 (20.7-36.7)	39/205	32.9 (24.1-41.7)	60/211	43.7 (34.4-52.9)
	High	45/211	35.0 (26.1-43.9)	54/212	40.2 (30.9-49.4)	67/206	50.3 (40.9-59.7)

Risk groups represent tertiles of polygenic or clinical risk.

Supplemental Table 10. Associations between continuous clinical and polygenic risk scores with atrial fibrillation in models with and without adjustment for the competing risk of death among individuals free of atrial fibrillation at age 55 years.

Model	Variables in Model	Unadjusted for Competing Risk of Death		Adjusted for Competing Risk of Death (Fine-Gray method)	
		HR (95% CI)	P-value	HR (95% CI)	P-value
Main effects only	Clinical risk	3.29 (2.70-4.01)	<0.0001	2.26 (1.85-2.77)	<0.0001
	Polygenic risk	1.14 (1.11-1.16)	<0.0001	1.13 (1.10-1.16)	<0.0001
Main effects and interaction term	Clinical risk	75.0 (1.12-5032.3)	0.04	24.4 (0.21-2893.6)	0.19
	Polygenic risk	1.43 (1.05-1.96)	0.02	1.35 (0.95-1.93)	0.10
	Clinical X Polygenic risk score	0.96 (0.91-1.01)	0.14	0.97 (0.91-1.03)	0.32

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Supplemental Appendix. Characteristics of atrial fibrillation genetic risk variants.

Sentinel SNP associated with atrial fibrillation	Chromosome	Position (HG19)	Closest Gene(s)	Atrial fibrillation risk allele	Non-risk allele	Proxy SNP	r2 with index SNP	Trait associated with SNP	Trait P-value for SNP	Note	Reference (Pubmed ID)
rs2477708	1	2432464	PLCH2	A	C	-	-	-	-	-	-
rs149764880	1	11880731	CLCN6	T	G	rs12561919	0.684824	Schizophrenia	2.00E-07		27922604
						rs7537765	0.712097	QRS complex (12-leadsum)	2.00E-08		27659466
						rs17367504	0.6932	Blood pressure	2.00E-16		21909110
						rs17367504	0.6932	Systolic blood pressure	2.00E-13		19430483
rs117102976	1	12938780	PRAMEF4	T	C	-	-	-	-	-	-
rs10927860	1	16155107	UQCRLH(dist=20913);FLJ37453(dist=5603)	G	C	-	-	-	-	-	-
rs189006529	1	18683959	IGSF21	A	G	-	-	-	-	-	-
rs180803304	1	18683966	IGSF21	A	G	-	-	-	-	-	-
rs10799811	1	19769675	CAPZB	G	C	-	-	-	-	-	-
rs4912099	1	19797740	CAPZB	A	G	-	-	-	-	-	-
rs10917545	1	20128177	TMCO4(dist=1767);RNF186(dist=12345)	G	A	-	-	-	-	-	-
rs320057	1	49178018	AGBL4	C	T	-	-	-	-	-	-
rs72690464	1	50923943	FAF1	G	T	-	-	-	-	-	-
rs72690501	1	51317039	FAF1	A	C	-	-	-	-	-	-
rs116760613	1	51490709	CDKN2C(dist=50400);C1orf185(dist=77197)	A	G	rs17391905	0.63759	QRS duration	5.00E-06		27577874
								QRS duration	9.00E-09	(European)	27577874
								QRS complex (12-leadsum)	2.00E-08		27659466
								QRS duration	1.00E-11		27659466
								QRS duration	3.00E-10		21076409
rs146518726	1	51535039	CDKN2C(dist=94730);C1orf185(dist=32867)	A	G	rs17391905	0.958822	QRS duration	5.00E-06		27577874
								QRS duration	9.00E-09	(European)	27577874
								QRS duration	1.00E-11		27659466
								QRS complex (12-leadsum)	2.00E-08		27659466
								QRS duration	3.00E-10		21076409
rs150982068	1	51590008	C1orf185	T	C	-	-	-	-	-	-
rs55763623	1	51779056	TTC39A	G	C	-	-	-	-	-	-
rs72661386	1	52002010	EPS15(dist=17015);OSBPPL9(dist=80536)	A	G	-	-	-	-	-	-
rs113788776	1	62131209	MGC34796(dist=9409);TM2D1(dist=15510)	A	C	-	-	-	-	-	-
rs77925659	1	74136232	NEGR1(dist=1387955);LRRIQ3(dist=355470)	A	T	-	-	-	-	-	-
rs315047	1	77063677	ST6GAL-C3	T	C	-	-	-	-	-	-
rs1575178	1	87000308	CLCA1(dist=34334);CLCA4(dist=12451)	A	C	-	-	-	-	-	-
rs77514713	1	92620506	BTBD8(dist=7105);KIAA1107(dist=12103)	A	G	-	-	-	-	-	-
rs11185066	1	107707315	NTNG1	T	C	-	-	-	-	-	-
rs12691519	1	116294068	CASQ2	T	A	-	-	-	-	-	-
rs4073778	1	116297758	CASQ2	A	C	-	-	-	-	-	-
rs3810998	1	116311924	CASQ2	G	T	rs4074536	0.993529	QRS duration	7.00E-07		27659466
						rs10923445	0.673451	QRS duration	8.00E-09		27577874
								QRS duration	3.00E-08	(European)	27577874
rs12036387	1	116322516	CASQ2(dist=11090);NHLH2(dist=56483)	A	G	rs4074536	0.669672	QRS duration	7.00E-07		27659466
						rs10923445	0.99272	QRS duration	8.00E-09		27577874
						rs12039739	0.726802	QRS duration	3.00E-08	(European)	27577874
								QRS duration	7.00E-09		27659466
rs114558323	1	119987444	HSD3B2(dist=21782);HSD3B1(dist=62382)	G	A	-	-	-	-	-	-
rs1908628	1	147260568	GJA5(dist=15084);GJA8(dist=114378)	G	A	-	-	-	-	-	-
rs76634001	1	147278229	GJA5(dist=32745);GJA8(dist=96717)	A	G	-	-	-	-	-	-
rs190745908	1	147312355	GJA5(dist=66871);GJA8(dist=62591)	C	T	-	-	-	-	-	-
rs77010535	1	149326686	LOC388692(dist=34944);FCGR1C(dist=42608)	T	A	-	-	-	-	-	-
rs61819522	1	151528844	TUFT1	T	C	-	-	-	-	-	-

rs146600651	1	152267708	HRNR(dist=71036);FLG(dist=6943)	T	C	-	-	-	-	-	-
rs9701912	1	153575656	S100A2(dist=37350);S100A16(dist=3711)	A	G	-	-	-	-	-	-
rs3795396	1	153635425	ILF2	A	G	-	-	-	-	-	-
rs10908848	1	153645880	ILF2(dist=2376);NPR1(dist=5284)	A	T	-	-	-	-	-	-
rs186551975	1	153967271	NUP210L	C	T	-	-	-	-	-	-
rs7525477	1	154394297	IL6R	A	G	-	-	-	-	-	-
rs12730935	1	154419892	IL6R	G	A	rs11265613	0.902019	Blood protein levels	1.00E-239		28240269
							0.921027	Abdominal aortic aneurysm	5.00E-13		27899403
							0.937789	Atopic dermatitis	5.00E-10		26482879
						rs2228145	0.937789	Rheumatoid arthritis	5.00E-06	(EA)	24390342
								Rheumatoid arthritis	4.00E-09		24390342
								Cerebrospinal fluid biomarker levels	7.00E-29		28031287
						rs4129267	0.942497	Pulmonary function	7.00E-06		17903307
								C-reactive protein levels	2.00E-48		21300955
								Protein quantitative trait loci	2.00E-57		18464913
						rs4537545	0.908719	Asthma	2.00E-08		21907864
								Blood protein levels	2.00E-265		28240269
								Fibrinogen	6.00E-27		23969696
						rs61812598	0.942497	C-reactive protein	2.00E-14		19567438
								Fibrinogen levels	3.00E-36		26561523
								Cerebrospinal fluid levels of Alzheimer's disease-related proteins	6.00E-63		25340798
								Fibrinogen levels	2.00E-28		28107422
rs113580743	1	154420333	IL6R	A	G	-	-	-	-	-	-
rs12129500	1	154423764	IL6R	T	C	rs6689306	0.886452	coronary artery disease	3.00E-09		26343387
rs66675472	1	154445503	IL6R(dist=3577);SHE(dist=6451)	T	C		0.836593	Myocardial infarction	1.00E-07		26343387
rs59239860	1	154492107	TDRD10	T	G	rs2229238	0.803227	coronary heart disease	7.00E-07		22319020
rs4999127	1	154714006	KCNN3	A	G		0.963833	coronary heart disease	7.00E-07		22319020
rs10752607	1	154716803	KCNN3	A	G	-	-	-	-	-	-
rs11264272	1	154808959	KCNN3	T	C	-	-	-	-	-	-
rs11264274	1	154811127	KCNN3	T	G	-	-	-	-	-	-
rs34515871	1	154812280	KCNN3	T	C	rs36004974	0.795684	Prevalent atrial fibrillation	4.00E-10		28416818
							0.994174	Atrial fibrillation	2.00E-21		20173747
							0.994174	Atrial fibrillation	2.00E-14		22544366
rs12754189	1	154812630	KCNN3	C	T	rs13376333	0.994174	Atrial fibrillation	2.00E-21		20173747
							0.994174	Atrial fibrillation	2.00E-14		22544366
							0.795684	Prevalent atrial fibrillation	4.00E-10		28416818
rs12740456	1	154814197	KCNN3	A	C	-	-	-	-	-	-
rs6426987	1	154815257	KCNN3	A	C	rs6666258	0.809982	Atrial fibrillation	2.00E-14		22544366
							0.809982	Atrial fibrillation	2.00E-21		20173747
							0.97725	Prevalent atrial fibrillation	4.00E-10		28416818
rs6426988	1	154815320	KCNN3	G	C	rs13376333	0.809982	Atrial fibrillation	2.00E-21		20173747
							0.809982	Atrial fibrillation	2.00E-14		22544366
							0.97725	Prevalent atrial fibrillation	4.00E-10		28416818
rs883905	1	154815366	KCNN3	G	A	-	-	-	-	-	-
rs76102976	1	154816174	KCNN3	G	A	-	-	-	-	-	-
rs4845396	1	154828409	KCNN3	G	A	-	-	-	-	-	-
rs56382016	1	154828683	KCNN3	C	A	-	-	-	-	-	-
rs34245846	1	154831143	KCNN3	G	A	rs11264280	0.677594	Incident atrial fibrillation	4.00E-09		28416818
							0.677594	Atrial fibrillation	4.00E-15	(ALL)	28416818
							0.677594	Atrial fibrillation	3.00E-17	(European)	28416818
rs1218582	1	154834183	KCNN3	A	G	-	-	Prostate cancer	2.00E-08		23535732
							0.762489	Schizophrenia	2.00E-06		26198764

rs71628635	1	154834546	KCNN3	C	A	-	-	-	-	-	-
rs11264280	1	154862952	KCNN3(dist=20198);PMVK(dist=34256)	T	C	-	-	Incident atrial fibrillation	4.00E-09		28416818
						-	-	Atrial fibrillation	3.00E-17	(European)	28416818
						-	-	Atrial fibrillation	4.00E-15	(ALL)	28416818
rs41264253	1	154918352	PBXIP1	A	G	-	-	-	-		-
rs4845401	1	154941593	SHC1	C	G	-	-	-	-		-
rs61811895	1	154976137	ZBTB7B	T	G	-	-	-	-		-
rs6686021	1	154983539	ZBTB7B	C	T	-	-	-	-		-
rs2242195	1	154988957	ZBTB7B	A	G	-	-	-	-		-
rs11264303	1	155030557	ADAM15	C	A	-	-	-	-		-
rs45444697	1	155034632	LOC100505666	G	C	-	-	-	-		-
rs12119678	1	155097562	EF-3(dist=37548);EF-1(dist=2787)	G	C	-	-	-	-		-
rs112270735	1	155198771	GBAP1(dist=1446);GBA(dist=5468)	G	A	-	-	-	-		-
rs116352080	1	155217437	FAM189B	T	G	-	-	-	-		-
rs4492610	1	155328396	ASH1L	A	G	-	-	-	-		-
rs1886905	1	155372672	ASH1L	T	C	-	-	-	-		-
rs71517783	1	155509622	ASH1L	T	C	-	-	-	-		-
rs35698157	1	155780314	GON4L	T	C	rs490608	0.659982	Inflammatory bowel disease	1.00E-06		26192919
						rs2282301	0.66123	Conduct disorder (interaction)	7.00E-06		18846501
rs7521292	1	155941685	ARHGEF2	T	A	rs2282301	0.686315	Conduct disorder (interaction)	7.00E-06		18846501
rs4661217	1	155958404	ARHGEF2(dist=10068);SSR2(dist=20435)	A	G	rs2282301	0.872502	Conduct disorder (interaction)	7.00E-06		18846501
rs59781317	1	156016356	UBQLN4	G	A	rs2282301	0.600875	Amyotrophic lateral sclerosis (age of onset)	1.00E-06		22959728
rs116824501	1	163935767	NUF2(dist=610214);PBX1(dist=592830)	A	G	-		Conduct disorder (interaction)	7.00E-06		18846501
rs3917862	1	169593113	SELP	G	A	-	-	-	-		-
rs3917454	1	169700853	SELE	A	G	-	-	-	-		-
rs1411465	1	170097894	KIFAP3(dist=54015);METTL11B(dist=17294)	C	G	-	-	-	-		-
rs12132575	1	170104841	KIFAP3(dist=60962);METTL11B(dist=10347)	C	T	-	-	-	-		-
rs7523218	1	170149729	METTL11B(dist=12806);LOC284688(dist=90817)	G	A	-	-	-	-		-
rs12126954	1	170155357	METTL11B(dist=18434);LOC284688(dist=85189)	T	A	-	-	-	-		-
rs10919326	1	170171258	METTL11B(dist=34335);LOC284688(dist=69288)	A	G	-	-	-	-		-
rs113116849	1	170176759	METTL11B(dist=39836);LOC284688(dist=63787)	A	G	-	-	-	-		-
rs4414093	1	170185362	METTL11B(dist=48439);LOC284688(dist=55184)	C	A	-	-	-	-		-
rs10800507	1	170185641	METTL11B(dist=48718);LOC284688(dist=54905)	C	G	-	-	Atrial fibrillation	2.00E-11		28416818
rs72700114	1	170193825	METTL11B(dist=56902);LOC284688(dist=46721)	C	G	-	-	-	-		-
rs72700118	1	170194823	METTL11B(dist=57900);LOC284688(dist=45723)	A	C	-	-	Prevalent atrial fibrillation	1.00E-14		28416818
						-	-	Atrial fibrillation	3.00E-07		28416818
						-	-	-	-		-
rs4399218	1	170195231	METTL11B(dist=58308);LOC284688(dist=45315)	G	T	-	-	-	-		-
rs12736684	1	170195301	METTL11B(dist=58378);LOC284688(dist=45245)	C	A	-	-	-	-		-
rs12411144	1	170195723	METTL11B(dist=58800);LOC284688(dist=44823)	G	C	-	-	-	-		-
rs144870427	1	170206419	METTL11B(dist=69496);LOC284688(dist=34127)	C	T	-	-	-	-		-
rs12129877	1	170222552	METTL11B(dist=85629);LOC284688(dist=17994)	G	A	-	-	-	-		-
rs4656753	1	170252728	LOC284688	T	G	-	-	-	-		-
rs35102909	1	170277721	LOC284688(dist=24372);GORAB(dist=223542)	G	A	-	-	-	-		-
rs1333144	1	170364401	LOC284688(dist=111052);GORAB(dist=136862)	C	A	-	-	-	-		-
rs56193825	1	170371152	LOC284688(dist=117803);GORAB(dist=130111)	T	A	-	-	-	-		-
rs12024348	1	170377323	LOC284688(dist=123974);GORAB(dist=123940)	T	C	-	-	-	-		-
rs1333135	1	170472532	LOC284688(dist=219183);GORAB(dist=28731)	G	A	-	-	-	-		-
rs6661527	1	170534655	GORAB(dist=11681);PRRX1(dist=98658)	G	T	-	-	-	-		-
rs1826205	1	170559626	GORAB(dist=36652);PRRX1(dist=73687)	T	G	-	-	-	-		-
rs6680785	1	170560332	GORAB(dist=37358);PRRX1(dist=72981)	T	C	-	-	-	-		-
rs651386	1	170591310	GORAB(dist=68336);PRRX1(dist=42003)	A	T	-	-	Atrial fibrillation	6.00E-15		28416818
						rs3903239	0.64037	Atrial fibrillation	8.00E-14		22544366
						rs639652	0.659206	Atrial fibrillation	4.00E-09		28416822

							rs577676	0.963749	Prevalent atrial fibrillation	3.00E-12		28416818
							rs3903239	0.64037	Early onset atrial fibrillation	1.00E-07		28460022
rs12038255	1	170618461	GORAB(dist=95487);PRRX1(dist=14852)	G	A	rs520525	0.647628	Atrial fibrillation	6.00E-16		28416818	
rs651822	1	170619930	GORAB(dist=96956);PRRX1(dist=13383)	G	T	rs520525	0.898087	Atrial fibrillation	6.00E-16		28416818	
rs56250774	1	170632384	PRRX1	G	A	-	-	-	-	-	-	
rs17838244	1	170633229	PRRX1	C	T	-	-	-	-	-	-	
rs525489	1	170635002	PRRX1	T	G	rs3903239	0.955447	Early onset atrial fibrillation	1.00E-07		28460022	
	1	170635002	PRRX1			rs577676	0.637724	Prevalent atrial fibrillation	3.00E-12		28416818	
	1	170635002	PRRX1			rs651386	0.623105	Atrial fibrillation	6.00E-15		28416818	
	1	170635002	PRRX1			rs639652	0.935786	Atrial fibrillation	4.00E-09		28416822	
	1	170635002	PRRX1			rs3903239	0.955447	Atrial fibrillation	8.00E-14		22544366	
rs520525	1	170638333	PRRX1	A	G			Atrial fibrillation	6.00E-16		28416818	
rs78710246	1	170641733	PRRX1	A	T	-	-	-	-	-	-	
rs4656220	1	170649277	PRRX1	C	T	-	-	-	-	-	-	
rs2187895	1	170684431	PRRX1	G	C	-	-	-	-	-	-	
rs6701640	1	170696474	PRRX1	A	C	-	-	-	-	-	-	
rs12750959	1	170829471	PRRX1(dist=120930);MROH9(dist=75141)	T	G	-	-	-	-	-	-	
rs16836180	1	194045997	CDC73(dist=822055);NONE(dist=NONE)	T	A	-	-	-	-	-	-	
rs34918359	1	198184067	NEK7	G	C	-	-	-	-	-	-	
rs11579069	1	203031369	PPFIA4	G	C	rs3737883	0.943281	Early onset atrial fibrillation	2.00E-09		28460022	
rs78588865	1	229569804	ACTA1	G	A	-	-	-	-	-	-	
rs77496162	1	235006143	IC100506810(dist=138753);TOMM20(dist=26651)	A	G	-	-	-	-	-	-	
rs2654892	1	242673570	PLD5	A	C	-	-	-	-	-	-	
rs4854320	2	543892	FAM150B(dist=255584);TMEM18(dist=124081)	A	G	-	-	-	-	-	-	
rs77188088	2	5465462	LOC727982(dist=761650);SOX11(dist=367337)	C	T	-	-	-	-	-	-	
rs76697877	2	6598574	OC400940(dist=470210);LINC00487(dist=270726)	A	C	-	-	-	-	-	-	
rs76110371	2	15856183	DDX1(dist=84948);MYCNOS(dist=223837)	A	G	-	-	-	-	-	-	
rs13432743	2	25069392	ADCY3	G	A	-	-	-	-	-	-	
rs72799646	2	25974513	ASXL2	G	A	-	-	-	-	-	-	
rs7578393	2	26165528	KIF3C	T	C	-	-	-	-	-	-	
rs79713994	2	30446372	YPEL5(dist=62973);LBH(dist=8025)	T	G	-	-	-	-	-	-	
rs186943263	2	37422050	SULT6B1(dist=6360);LOC100505876(dist=1585)	T	C	-	-	-	-	-	-	
rs7602924	2	37460587	NDUFAF7	T	A	rs2041840	0.93799	Chronic lymphocytic leukemia	9.00E-06		24292274	
rs2372992	2	37554761	PRKD3(dist=10539);QPCT(dist=16992)	A	G	rs2041840	0.784713	Chronic lymphocytic leukemia	9.00E-06		24292274	
rs137983358	2	37918970	CDC42EP3(dist=19292);RMDN2(dist=233492)	T	C	-	-	-	-	-	-	
rs78271848	2	43533214	THADA	G	A	-	-	-	-	-	-	
rs2163228	2	43549246	THADA	T	C	rs11694173	0.789179	Male-pattern baldness	2.00E-08		27182965	
rs59779859	2	43549438	THADA	T	A	rs11694173	0.757322	Male-pattern baldness	2.00E-08		27182965	
rs10182030	2	43750394	THADA	A	G	-	-	-	-	-	-	
rs114113890	2	47281700	TTC7A	A	G	-	-	-	-	-	-	
rs74489835	2	49239897	FSHR	G	A	-	-	-	-	-	-	
rs785300	2	52992459	NRXN1(dist=1732785);ASB3(dist=904658)	C	G	-	-	-	-	-	-	
rs189059249	2	60781040	BCL11A	T	G	-	-	-	-	-	-	
rs62150977	2	61255456	PEX13	C	T	-	-	-	-	-	-	
rs10194230	2	65244049	SLC1A4	T	G	rs2540953	0.832689	Atrial fibrillation	3.00E-17		28416822	
rs2540970	2	65255099	SLC1A4(dist=4099);CEP68(dist=28396)	T	C	-	-	-	-	-	-	
rs1009360	2	65276049	SLC1A4(dist=25049);CEP68(dist=7446)	T	C	rs2540948	0.680235	Triglycerides	7.00E-09		25961943	
						rs74181299	0.683603	Pulse pressure	1.00E-12		28135244	
						rs2723064	0.761015	Atrial fibrillation	2.00E-10		28416818	
						rs2540949	0.753754	Atrial fibrillation	3.00E-10		28416818	
rs2540949	2	65284231	CEP68	A	T	-	-	Atrial fibrillation	3.00E-10		28416818	
						rs2723064	0.989613	Atrial fibrillation	2.00E-10		28416818	
						rs2540948	0.895993	Triglycerides	7.00E-09		25961943	
						rs74181299	0.901374	Pulse pressure	1.00E-12		28135244	

rs2080385	2	65292762	CEP68	G	T	rs2723064	0.601703	Atrial fibrillation	2.00E-10		28416818
rs62140432	2	65350406	RAB1A	G	A	rs2540948	0.681415	Triglycerides	7.00E-09		25961943
rs1894875	2	65363579	RAB1A(dist=6144);ACTR2(dist=91250)	A	G	rs2540949	0.600372	Atrial fibrillation	3.00E-10		28416818
rs11126031	2	65380357	RAB1A(dist=22922);ACTR2(dist=74472)	T	A	-	-	-	-		-
rs76925339	2	67007966	MEIS1(dist=208075);LOC644838(dist=342523)	C	A	-	-	-	-		-
rs12996020	2	68248093	ETAA1(dist=610560);C1D(dist=21239)	G	C	-	-	-	-		-
rs139175321	2	69152640	BMP10(dist=53991);GKN2(dist=19724)	A	G	-	-	-	-		-
rs4852274	2	69780637	AAK1	G	A	-	-	-	-		-
rs6546541	2	69908621	AAK1(dist=37644);ANXA4(dist=60506)	T	C	-	-	-	-		-
rs6704754	2	69918657	AAK1(dist=47680);ANXA4(dist=50470)	G	A	-	-	-	-		-
rs34006125	2	69929296	AAK1(dist=58319);ANXA4(dist=39831)	A	G	-	-	-	-		-
rs5758107	2	69929720	AAK1(dist=58743);ANXA4(dist=39407)	C	T	-	-	-	-		-
rs11126243	2	69931423	AAK1(dist=60446);ANXA4(dist=37704)	G	T	-	-	-	-		-
rs11890955	2	69950308	AAK1(dist=79331);ANXA4(dist=18819)	G	A	-	-	-	-		-
rs62133983	2	69976384	ANXA4	G	T	-	-	Atrial fibrillation	1.00E-10		28416818
						rs7597155	0.931315	Palmitoleic acid (16:1n-7) levels	5.00E-06		23362303
						rs62133983	1	Atrial fibrillation	1.00E-10		28416818
rs11695548	2	69985644	ANXA4	C	T	-	-	-	-		-
rs9309429	2	69995580	ANXA4	A	G	rs6546550	0.664915	Prevalent atrial fibrillation	1.00E-08		28416818
rs7588022	2	70023469	ANXA4	T	C	rs6546550	0.696296	Prevalent atrial fibrillation	1.00E-08		28416818
rs6759603	2	70031010	ANXA4	A	G	-	-	-	-		-
rs3771537	2	70038792	ANXA4	A	C	rs6546550	0.989127	Prevalent atrial fibrillation	1.00E-08		28416818
						rs10205487	0.843655	Carotid plaque burden (smoking interaction)	2.00E-06		24954085
rs58819073	2	70049222	ANXA4	G	A	-	-	-	-		-
rs4853109	2	70102735	GMCL1	C	G	-	-	-	-		-
rs55866046	2	70120078	SNRNP27	G	C	-	-	-	-		-
rs143177050	2	70122705	SNRNP27	T	C	-	-	-	-		-
rs3771530	2	70164805	MXD1	G	C	rs6546550	0.652565	Prevalent atrial fibrillation	1.00E-08		28416818
						rs10205487	0.783126	Carotid plaque burden (smoking interaction)	2.00E-06		24954085
rs897121	2	70171570	MXD1(dist=1494);ASPRV1(dist=15654)	C	T	rs10205487	0.676059	Carotid plaque burden (smoking interaction)	2.00E-06		24954085
rs11686934	2	70172116	MXD1(dist=2040);ASPRV1(dist=15108)	A	G	rs10205487	0.709552	Carotid plaque burden (smoking interaction)	2.00E-06		24954085
rs6756513	2	70172587	MXD1(dist=2511);ASPRV1(dist=14637)	G	A	-	-	-	-		-
rs10209606	2	70175957	MXD1(dist=5881);ASPRV1(dist=11267)	G	C	-	-	-	-		-
rs71414803	2	70176054	MXD1(dist=5978);ASPRV1(dist=11170)	G	A	-	-	-	-		-
rs3796097	2	70188676	ASPRV1	T	C	-	-	-	-		-
rs62151166	2	70312306	PCBP1-AS1	T	C	rs6708331	0.704727	Obesity-related traits	6.00E-06		23251661
rs10496178	2	70342815	PCBP1(dist=26481);LOC100133985(dist=8353)	A	G	rs6708331	0.691891	Obesity-related traits	6.00E-06		23251661
rs10195155	2	70354475	LOC100133985(dist=2027);C2orf42(dist=22542)	G	T	rs6708331	0.985446	Obesity-related traits	6.00E-06		23251661
rs6721306	2	70417145	C2orf42	C	G	rs6708331	0.774858	Obesity-related traits	6.00E-06		23251661
rs1973181	2	70542612	FAM136A(dist=13392);TGFA(dist=131800)	C	T	-	-	-	-		-
rs3979133	2	70555565	FAM136A(dist=26345);TGFA(dist=118847)	A	G	-	-	-	-		-
rs4852604	2	70694437	TGFA	G	A	-	-	-	-		-
rs140988217	2	71842129	DYSF	A	G	-	-	-	-		-
rs115177932	2	75528072	TACR1(dist=101427);EVA1A(dist=191372)	C	T	-	-	-	-		-
rs146828435	2	79740131	CTN-2	T	G	-	-	-	-		-
rs72845604	2	86714970	KDM3A	A	G	-	-	-	-		-
rs56304923	2	86846399	RNF103;RNF103-CHMP3	T	C	rs745109	0.654299	3-hydroxy-1-methylpropylmercapturic acid levels in smokers	8.00E-07		26053186
						rs181394970	0.625971	Glomerular filtration rate in chronic kidney disease	4.00E-06		26420894
rs75528125	2	97059511	NCAPH(dist=18237);NEURL3(dist=103872)	A	G	-	-	-	-		-
rs6742466	2	108352276	ST6GAL2(dist=848713);LOC729121(dist=87244)	T	C	-	-	-	-		-
rs11887934	2	111451816	BUB1(dist=16132);ACOXL(dist=38334)	C	T	-	-	-	-		-

rs11890277	2	129090109	HS6ST1(dist=13938);LOC389033(dist=1590326)	T	C	-	-	-	-	-	-
rs114045048	2	129095707	HS6ST1(dist=19536);LOC389033(dist=1584728)	T	C	-	-	-	-	-	-
rs72843118	2	129125050	HS6ST1(dist=48879);LOC389033(dist=1555385)	T	C	-	-	-	-	-	-
rs10187402	2	135771974	MAP3K19	C	G	rs7570971	0.671677	Body mass index	1.00E-06		25673413
						rs1561277	0.769324	Hip circumference	2.00E-06	(EA, women)	25673412
						rs7570971	0.671677	Hip circumference	6.00E-09	(EA)	25673412
						rs7570971	0.671677	Body mass index	2.00E-06		25673413
						rs7570971	0.671677	Cholesterol, total	1.00E-13		24097068
						rs7570971	0.671677	Cholesterol, total	1.00E-08		20686565
						rs7570971	0.671677	Blood metabolite levels	8.00E-45		24816252
rs935613	2	136022798	ZRANB3	C	T	rs1561277	0.785965	Hip circumference	2.00E-06	(EA, women)	25673412
						rs7570971	0.691025	Hip circumference	6.00E-09	(EA)	25673412
						rs7570971	0.691025	Body mass index	2.00E-06		25673413
						rs7570971	0.691025	Cholesterol, total	1.00E-13		24097068
						rs7570971	0.691025	Body mass index	1.00E-06		25673413
						rs7570971	0.691025	Cholesterol, total	1.00E-08		20686565
						rs7570971	0.691025	Blood metabolite levels	8.00E-45		24816252
rs144311498	2	136920084	CXCR4(dist=44359);THSD7B(dist=828378)	A	G	-	-	-	-	-	-
rs34985138	2	145773702	DKFZp686O1327	T	C	-	-	-	-	-	-
rs6436373	2	157252095	NR4A2(dist=62808);GPD2(dist=39870)	T	C	-	-	-	-	-	-
rs77924200	2	161096599	ITGB6(dist=40009);RBMS1(dist=32063)	C	T	-	-	-	-	-	-
rs61682180	2	161189587	RBMS1	G	C	-	-	-	-	-	-
rs7571867	2	161380361	RBMS1(dist=30043);TANK(dist=613105)	T	A	-	-	-	-	-	-
rs13010247	2	161432066	RBMS1(dist=81748);TANK(dist=561400)	T	C	-	-	-	-	-	-
rs7568273	2	162028885	TANK	G	T	-	-	-	-	-	-
rs147847065	2	164635817	FIGN(dist=43304);GRB14(dist=713506)	T	C	-	-	-	-	-	-
rs74443599	2	173126004	DLX2(dist=158526);ITGA6(dist=1666310)	T	C	-	-	-	-	-	-
rs28439459	2	179215774	OSBPL6	T	A	-	-	-	-	-	-
rs11678632	2	179337644	MIR548N	A	T	-	-	-	-	-	-
rs3769866	2	179361205	MIR548N	A	C	-	-	-	-	-	-
rs967507	2	179367086	MIR548N	G	A	-	-	-	-	-	-
rs957875	2	179384417	MIR548N	C	T	-	-	-	-	-	-
rs2303539	2	179403593	TTN-AS1	A	G	-	-	-	-	-	-
rs2288327	2	179411665	MIR548N;TTN-AS1	G	A	-	-	-	-	-	-
rs2562830	2	179585393	TTN	G	A	-	-	-	-	-	-
rs12693166	2	179587130	TTN	G	C	-	-	-	-	-	-
rs72491008	2	188682163	TFPI(dist=262944);GULP1(dist=474233)	T	C	-	-	-	-	-	-
rs72921783	2	195742553	NONE(dist=NONE);SLC39A10(dist=778979)	T	A	-	-	-	-	-	-
rs4850568	2	195785764	NONE(dist=NONE);SLC39A10(dist=735768)	A	G	-	-	-	-	-	-
rs143851124	2	198476152	RFTN2	A	G	-	-	-	-	-	-
rs7590828	2	198940251	PLCL1	C	T	rs1147169	0.980049	Low high density lipoprotein cholesterol levels	5.00E-09		26879886
						rs1837495	0.993289	Schizophrenia	7.00E-08		26198764
						rs700651	0.811951	Intracranial aneurysm	4.00E-08		18997786
rs55953247	2	198944654	PLCL1	T	C	rs10497813	0.756854	Self-reported allergy	6.00E-10		23817569
						rs11684176	0.77835	Morning vs. evening chronotype	1.00E-09		26835600
						rs1595824	0.715452	Morning vs. evening chronotype	1.00E-10		26835600
						rs2164068	0.827446	Allergy	2.00E-10		27182965
						rs67031482	0.756854	Alcohol consumption	4.00E-06		23743675
						rs6738825	0.736697	Crohn's disease	4.00E-09		21102463
						rs700641	0.660817	Morning vs. evening chronotype	7.00E-08		28067908
						rs7572733	0.759652	Dermatomyositis	6.00E-06		23983088
rs2033570	2	198952637	PLCL1	C	T	rs700651	0.802863	Intracranial aneurysm	4.00E-08		18997786
						rs1147169	0.870802	Low high density lipoprotein cholesterol levels	5.00E-09		26879886

						rs1837495	0.882044	Schizophrenia	7.00E-08		26198764
rs62279263	2	199160814	PLCL1(dist=146206);SATB2(dist=973409)	A	G	-	-	-	-		-
rs57588746	2	200986345	C2orf47(dist=157498);SPATS2L(dist=184259)	A	G	-	-	-	-		-
rs1729413	2	201086663	C2orf47(dist=257816);SPATS2L(dist=83941)	T	G	rs295137	0.771544	Asthma (bronchodilator response)	1.00E-06		22792082
rs1144428	2	201097903	C2orf47(dist=269056);SPATS2L(dist=72701)	G	A	-	-	-	-		-
rs11689664	2	201099961	C2orf47(dist=271114);SPATS2L(dist=70643)	G	A	rs1106399	0.620509	QT interval (sulfonylurea treatment interaction)	3.00E-07		27958378
rs182424	2	201103706	C2orf47(dist=274859);SPATS2L(dist=66898)	A	G	-	-	-	-		-
rs17531061	2	201113452	C2orf47(dist=284605);SPATS2L(dist=57152)	A	C	-	-	-	-		-
rs13022984	2	201116067	C2orf47(dist=287220);SPATS2L(dist=54537)	G	T	-	-	-	-		-
rs10931896	2	201148076	C2orf47(dist=319229);SPATS2L(dist=22528)	T	C	-	-	Systolic blood pressure	7.00E-07		26390057
					rs10931896	1		Systolic blood pressure	7.00E-07		26390057
rs1436161	2	201170582	SPATS2L	T	A	rs10931898	0.612173	Information processing speed	3.00E-08		27046643
					rs295140	0.726997		QT interval	4.00E-13		24952745
rs295114	2	201195602	SPATS2L	C	T	rs295137	0.948485	Asthma (bronchodilator response)	1.00E-06		22792082
					rs295140	0.605204		QT interval	4.00E-13		24952745
rs4673944	2	201198471	SPATS2L	C	T	-	-	-	-		-
rs3754798	2	201239957	SPATS2L	G	T	-	-	-	-		-
rs72958692	2	207557790	DYTN	T	A	-	-	-	-		-
rs5758881	2	207605329	MDH1B	A	G	-	-	-	-		-
rs2270398	2	217904976	TNP1(dist=180194);DIRC3(dist=243770)	T	C	rs12998806	0.924197	Breast cancer (estrogen-receptor positive)	2.00E-08		28171663
rs12997141	2	217936386	TNP1(dist=211604);DIRC3(dist=212360)	T	C	-	-	-	-		-
rs58380455	2	230944033	SLC16A14(dist=10318);SP110(dist=89612)	C	T	-	-	-	-		-
rs13429299	2	235738189	ARL4C(dist=332496);SH3BP4(dist=122439)	T	G	-	-	-	-		-
rs10174053	2	236031944	SH3BP4(dist=67586);AGAP1(dist=370789)	G	A	-	-	-	-		-
rs13430910	2	238524416	RAB17(dist=24647);LRRFIP1(dist=11808)	C	T	-	-	-	-		-
rs12620039	2	239079808	ILKAP	T	C	-	-	-	-		-
rs2953146	2	241515252	RNPEPL1	G	A	rs2953145	0.967944	Bipolar disorder	7.00E-06		17554300
rs2953160	2	241549094	GPR35	T	A	-	-	-	-		-
rs4074086	3	4681650	ITPR1	G	C	-	-	-	-		-
rs181654530	3	4801327	ITPR1	C	T	-	-	-	-		-
rs35840266	3	4819388	ITPR1	C	T	-	-	-	-		-
rs6442906	3	4824012	ITPR1	C	T	-	-	-	-		-
rs3792515	3	4877075	ITPR1	T	C	-	-	-	-		-
rs2255648	3	12598963	MKRN2	G	A	rs1699346	0.607065	Post bronchodilator FEV1/FVC ratio	4.00E-06		26634245
					rs1619599	0.607065		Post bronchodilator FEV1/FVC ratio	4.00E-06		26634245
rs28731356	3	12819789	TMEM40(dist=18981);CAND2(dist=18382)	A	T	-	-	-	-		-
rs11718898	3	12848822	CAND2	C	T	rs4642101	0.910606	QRS complex (12-leadsum)	7.00E-07		27659466
rs3821607	3	12851920	CAND2	C	A	-	-	-	-		-
rs58355710	3	12856144	CAND2	C	G	-	-	-	-		-
rs939899	3	12979173	IQSEC1	A	G	-	-	-	-		-
rs3922844	3	38624253	SCN5A	T	C	rs3922844	1	QRS duration	2.00E-13	(European)	27577874
								QRS duration	4.00E-14	(African American)	27577874
								PR interval	5.00E-43		23139255
								PR interval	3.00E-23		21347284
rs3922843	3	38624343	SCN5A	A	G	rs3922844	0.830944	QRS duration	2.00E-13	(European)	27577874
								QRS duration	4.00E-14	(African American)	27577874
								PR interval	3.00E-23		21347284
								PR interval	5.00E-43		23139255
								PR interval	1.00E-28		21076409
						rs6801957	0.738239	PR interval	9.00E-09		23139255
								PR segment	7.00E-41		24850809
								P wave duration	8.00E-27		24850809
								QT interval	1.00E-10		24952745
								Electrocardiographic traits	3.00E-07		25055868

	rs	Chromosome	Locus ID	Gene	Allele	P-value	Effect	Phenotype	QRS duration		2.00E-30	(European)	27577874
									rs	rs			
rs9874436	3	38775324	SCN10A	G	C	0.727288	rs6795970	Electrocardiographic traits	3.00E-15		20062061		
									QRS duration	1.00E-28	(European)	27577874	
									QRS duration	7.00E-40		27659466	
									Electrocardiographic traits	3.00E-15		20062061	
									Electrocardiographic traits (PR interval)	1.00E-58		20062063	
									Electrocardiographic traits (QRS duration)	4.00E-09		20062063	
									Electrocardiographic conduction measures	5.00E-27		23463857	
									QRS duration	9.00E-39		27659466	
									PR interval	1.00E-14		25035420	
									PR interval	2.00E-74		20062060	
									Atrioventricular conduction	5.00E-07		21041692	
									PR interval	2.00E-12		21347284	
									Resting heart rate	2.00E-10		27798624	
									Brugada syndrome	1.00E-68		23872634	
rs10428132	3	38777554	SCN10A	G	T	0.99482	rs6801957	Brugada syndrome	1.00E-68		23872634		
									QRS duration	1.00E-28		21076409	
									PR interval	9.00E-09		23139255	
									PR segment	7.00E-41		24850809	
									P wave duration	8.00E-27		24850809	
									QT interval	1.00E-10		24952745	
									Electrocardiographic traits	3.00E-07		25055868	
									QRS duration	2.00E-30		27577874	
									QRS duration	1.00E-28	(European)	27577874	
									QRS duration	7.00E-40		27659466	
									Electrocardiographic traits	3.00E-15		20062061	
									Electrocardiographic traits (PR interval)	1.00E-58		20062063	
									Electrocardiographic traits (QRS duration)	4.00E-09		20062063	
									Electrocardiographic conduction measures	5.00E-27		23463857	
									QRS duration	9.00E-39		27659466	
rs332361	3	66395045	SLC25A26	A	G	-	-	-	-	-	-	-	-

rs59394684	3	147406260	ZIC1(dist=271754);AGTR1(dist=1009398)	A	G	-	-	-	-	-	-	-
rs28434644	3	159353144	IQCJ-SCHIP1;SCHIP1	C	T	-	-	-	-	-	-	-
rs114620277	3	163348906	CT64(dist=327817);SI(dist=1347780)	A	T	-	-	-	-	-	-	-
rs9811622	3	170386920	SLC7A14(dist=83057);RPL2L1(dist=195745)	G	A	-	-	-	-	-	-	-
rs4320091	3	181592720	SOX2-OT(dist=132707);FLJ46066(dist=572038)	T	G	-	-	-	-	-	-	-
rs4912532	3	184000619	ECE2	G	T	-	-	-	-	-	-	-
rs112840717	3	184512943	MAGEF1(dist=83107);VPS8(dist=16988)	A	G	-	-	-	-	-	-	-
rs16864142	3	188956822	TPRG1-AS2	G	A	-	-	-	-	-	-	-
rs9856858	3	190311414	IL1RAP	G	C	-	-	-	-	-	-	-
rs2193874	3	190318526	IL1RAP	G	A	-	-	-	-	-	-	-
rs929729	3	190343262	IL1RAP	A	G	-	-	-	-	-	-	-
rs71310877	3	190407918	IL1RAP(dist=32932);GMNC(dist=162608)	A	G	-	-	-	-	-	-	-
rs11732012	4	21116510	KCNIP4	C	T	-	-	-	-	-	-	-
rs115825195	4	28942462	MIR4275(dist=121172);PCDH7(dist=1779568)	C	T	-	-	-	-	-	-	-
rs77758199	4	29899034	MIR4275(dist=1077744);PCDH7(dist=822996)	G	A	-	-	-	-	-	-	-
rs79804475	4	78302986	CCNG2(dist=211773);CXCL13(dist=129921)	T	C	-	-	-	-	-	-	-
rs114853615	4	78304517	CCNG2(dist=213304);CXCL13(dist=128390)	G	A	-	-	-	-	-	-	-
rs10516679	4	83722608	SCD5(dist=2598);SEC31A(dist=17206)	A	G	rs10022260	0.796364	Adult asthma	3.00E-06		27611488	
rs7656058	4	83800428	SEC31A	A	G	-	-	-	-	-	-	-
rs13147041	4	83872675	LIN54	T	C	-	-	-	-	-	-	-
rs28819766	4	83937152	LIN54(dist=3112);COPS4(dist=19087)	C	T	-	-	-	-	-	-	-
rs11732419	4	83981841	COPS4	A	G	-	-	-	-	-	-	-
rs2719176	4	95784645	BMPR1B	G	C	-	-	-	-	-	-	-
rs72688442	4	99414921	TSPANS	A	G	-	-	-	-	-	-	-
rs80285085	4	106965077	NPNT(dist=72249);TBCK(dist=2156)	T	C	-	-	-	-	-	-	-
rs78606958	4	111283206	ELOVL6(dist=163386);ENPEP(dist=114023)	G	A	-	-	-	-	-	-	-
rs4446389	4	111325453	ELOVL6(dist=205633);ENPEP(dist=71776)	A	C	-	-	-	-	-	-	-
rs190234969	4	111327162	ELOVL6(dist=207342);ENPEP(dist=70067)	A	C	-	-	-	-	-	-	-
rs189970593	4	111329074	ELOVL6(dist=209254);ENPEP(dist=68155)	A	C	-	-	-	-	-	-	-
rs3796891	4	111409925	ENPEP	A	G	-	-	-	-	-	-	-
rs192833524	4	111413065	ENPEP	T	C	-	-	-	-	-	-	-
rs3796887	4	111439602	ENPEP	T	C	-	-	-	-	-	-	-
rs17552555	4	111440302	ENPEP	C	T	-	-	-	-	-	-	-
rs2348434	4	111440798	ENPEP	C	T	-	-	-	-	-	-	-
rs9997349	4	111473366	ENPEP	G	A	-	-	-	-	-	-	-
rs77955149	4	111487049	ENPEP(dist=2556);PITX2(dist=51531)	G	C	-	-	-	-	-	-	-
rs10213638	4	111488510	ENPEP(dist=4017);PITX2(dist=50070)	A	T	-	-	-	-	-	-	-
rs114057251	4	111495422	ENPEP(dist=10929);PITX2(dist=43158)	A	G	-	-	-	-	-	-	-
rs1448813	4	111501860	ENPEP(dist=17367);PITX2(dist=36720)	T	C	-	-	-	-	-	-	-
rs1470618	4	111510571	ENPEP(dist=26078);PITX2(dist=28009)	T	C	-	-	-	-	-	-	-
rs13121747	4	111514751	ENPEP(dist=30258);PITX2(dist=23829)	G	A	-	-	-	-	-	-	-
rs3796903	4	111538382	PITX2	C	T	-	-	-	-	-	-	-
rs2595110	4	111545323	PITX2	A	G	-	-	-	-	-	-	-
rs2595107	4	111550515	PITX2	C	T	-	-	-	-	-	-	-
rs74671856	4	111552060	PITX2	G	C	-	-	-	-	-	-	-
rs60452787	4	111580173	PITX2(dist=16894);C4orf32(dist=1486380)	T	G	-	-	-	-	-	-	-
rs17746631	4	111586444	PITX2(dist=23165);C4orf32(dist=1480109)	A	G	-	-	-	-	-	-	-
rs1448797	4	111586468	PITX2(dist=23189);C4orf32(dist=1480085)	A	G	-	-	-	-	-	-	-
rs13120244	4	111604344	PITX2(dist=41065);C4orf32(dist=1462209)	G	A	-	-	-	-	-	-	-
rs10021211	4	111604642	PITX2(dist=41363);C4orf32(dist=1461911)	T	C	-	-	-	-	-	-	-
rs17042011	4	111604727	PITX2(dist=41448);C4orf32(dist=1461826)	T	C	-	-	-	-	-	-	-
rs2723298	4	111608485	PITX2(dist=45206);C4orf32(dist=1458068)	T	C	-	-	-	-	-	-	-
rs13126974	4	111608781	PITX2(dist=45502);C4orf32(dist=1457772)	A	T	-	-	-	-	-	-	-
rs62339025	4	111609795	PITX2(dist=46516);C4orf32(dist=1456758)	A	G	-	-	-	-	-	-	-

rs35369701	4	111609854	PITX2(dist=46575);C4orf32(dist=1456699)	T	G	-	-	-	-	-	-	-
rs13147552	4	111611345	PITX2(dist=48066);C4orf32(dist=1455208)	A	G	-	-	-	-	-	-	-
rs116129713	4	111612793	PITX2(dist=49514);C4orf32(dist=1453760)	G	T	-	-	-	-	-	-	-
rs4304030	4	111612820	PITX2(dist=49541);C4orf32(dist=1453733)	C	T	-	-	-	-	-	-	-
rs138284579	4	111612854	PITX2(dist=49575);C4orf32(dist=1453699)	C	T	-	-	-	-	-	-	-
rs146563929	4	111613638	PITX2(dist=50359);C4orf32(dist=1452915)	C	T	-	-	-	-	-	-	-
rs141303550	4	111613647	PITX2(dist=50368);C4orf32(dist=1452906)	T	C	-	-	-	-	-	-	-
rs72667950	4	111617278	PITX2(dist=53999);C4orf32(dist=1449275)	C	T	-	-	-	-	-	-	-
rs2723312	4	111623352	PITX2(dist=60073);C4orf32(dist=1443201)	A	G	-	-	-	-	-	-	-
rs6838295	4	111624408	PITX2(dist=61129);C4orf32(dist=1442145)	C	T	-	-	-	-	-	-	-
rs6838536	4	111624540	PITX2(dist=61261);C4orf32(dist=1442013)	C	T	-	-	-	-	-	-	-
rs17625509	4	111627394	PITX2(dist=64115);C4orf32(dist=1439159)	A	G	-	-	-	-	-	-	-
rs10222783	4	111634826	PITX2(dist=71547);C4orf32(dist=1431727)	C	T	-	-	-	-	-	-	-
rs2595082	4	111635292	PITX2(dist=72013);C4orf32(dist=1431261)	G	T	-	-	-	-	-	-	-
rs80141833	4	111638482	PITX2(dist=75203);C4orf32(dist=1428071)	G	A	-	-	-	-	-	-	-
rs2723320	4	111639446	PITX2(dist=76167);C4orf32(dist=1427107)	T	C	-	-	-	-	-	-	-
rs116322866	4	111644002	PITX2(dist=80723);C4orf32(dist=1422551)	G	A	-	-	-	-	-	-	-
rs28650220	4	111645013	PITX2(dist=81734);C4orf32(dist=1421540)	T	C	rs12646447	0.836278	Ischemic stroke	3.00E-08	24262325		
						rs17042171	0.836278	Atrial fibrillation	4.00E-63	19597492		
						rs2200733	0.836278	Atrial fibrillation	1.00E-14	19597491		
								Atrial fibrillation/atrial flutter	3.00E-41	17603472		
								Stroke (ischemic)	2.00E-10	18991354		
								Ischemic stroke (cardioembolic)	3.00E-32	26708676		
								Atrial fibrillation	2.00E-134	28416822		
						rs61303432	0.836278	Prevalent atrial fibrillation	7.00E-92	28416818		
						rs6817105	0.836278	Atrial fibrillation	2.00E-74	22544366		
						rs75021220	0.9895	Early onset atrial fibrillation	6.00E-38	28460022		
						Ischemic stroke (cardioembolic)	1.00E-25	27068588				
rs62337205	4	111650325	PITX2(dist=87046);C4orf32(dist=1416228)	A	G	-	-	-	-	-	-	-
rs112599895	4	111656592	PITX2(dist=93313);C4orf32(dist=1409961)	G	A	-	-	-	-	-	-	-
rs78297632	4	111662621	PITX2(dist=99342);C4orf32(dist=1403932)	T	C	-	-	-	-	-	-	-
rs114691030	4	111675514	PITX2(dist=112235);C4orf32(dist=1391039)	C	G	-	-	-	-	-	-	-
rs142641595	4	111681539	PITX2(dist=118260);C4orf32(dist=1385014)	A	G	rs2200733	0.787662	Stroke (ischemic)	2.00E-10	18991354		
						Atrial fibrillation	1.00E-14	19597491				
						Atrial fibrillation/atrial flutter	3.00E-41	17603472				
						rs6817105	0.787662	Early onset atrial fibrillation	6.00E-38	28460022		
						rs61303432	0.787662	Atrial fibrillation	2.00E-74	22544366		
						rs75021220	0.666313	Prevalent atrial fibrillation	7.00E-92	28416818		
						rs2200733	0.787662	Ischemic stroke (cardioembolic)	1.00E-25	27068588		
						rs17042171	0.787662	Ischemic stroke (cardioembolic)	3.00E-32	26708676		
						rs2200427	0.787662	Atrial fibrillation	4.00E-63	19597492		
						rs12646447	0.787662	Atrial fibrillation	2.00E-134	28416822		
rs146931551	4	111682891	PITX2(dist=119612);C4orf32(dist=1383662)	G	A	-	-	-	-	-	-	-
rs137863695	4	111682944	PITX2(dist=119665);C4orf32(dist=1383609)	G	A	-	-	-	-	-	-	-
rs12513264	4	111684362	PITX2(dist=121083);C4orf32(dist=1382191)	T	C	rs10033464	0.84686	Atrial fibrillation/atrial flutter	7.00E-11	17603472		
rs2723336	4	111684654	PITX2(dist=121375);C4orf32(dist=1381899)	A	G	-	-	-	-	-	-	-
rs77668866	4	111687977	PITX2(dist=124698);C4orf32(dist=1378576)	C	T	-	-	-	-	-	-	-
rs1906593	4	111711922	PITX2(dist=148643);C4orf32(dist=1354631)	T	C	rs2200733	1	Stroke (ischemic)	2.00E-10	18991354		
						Atrial fibrillation	1.00E-14	19597491				
						Atrial fibrillation/atrial flutter	3.00E-41	17603472				
						Ischemic stroke (cardioembolic)	3.00E-32	26708676				
						rs6817105	1	Atrial fibrillation	2.00E-74	22544366		
						Early onset atrial fibrillation	6.00E-38	28460022				

							rs17042171	1	Atrial fibrillation	4.00E-63		19597492
							rs61303432	1	Prevalent atrial fibrillation	7.00E-92		28416818
							rs12646447	1	Ischemic stroke	3.00E-08		24262325
							rs75021220	0.846482	Ischemic stroke (cardioembolic)	1.00E-25		27068588
							rs2220427	1	Atrial fibrillation	2.00E-134		28416822
rs1906600	4	111712876	PITX2(dist=149597);C4orf32(dist=1353677)	T	C	-	-	-	-	-		-
rs6843082	4	111718067	PITX2(dist=154788);C4orf32(dist=1348486)	G	A	-	-	Atrial fibrillation	2.00E-62		28416818	
						-	-	Atrial fibrillation	3.00E-155		28416818	
						-	-	Atrial fibrillation	4.00E-08		28416818	
						-	-	Incident atrial fibrillation	8.00E-57		28416818	
						-	-	Stroke (ischemic)	2.00E-07		23041239	
						-	-	Atrial fibrillation	3.00E-28		20173747	
						-	-	Stroke (ischemic)	3.00E-16		23041239	
						-	-	Atrial fibrillation	1.00E-126		28416822	
						rs2129977	0.919359	Atrial fibrillation	7.00E-136		28416818	
						rs2723334	0.905516	Atrial fibrillation	8.00E-46		28416818	
						rs2634074	0.912176	Ischemic stroke	3.00E-14		26708676	
rs13105878	4	111718147	PITX2(dist=154868);C4orf32(dist=1348406)	C	A	-	-	-	-	-		-
rs182812006	4	111718655	PITX2(dist=155376);C4orf32(dist=1347898)	A	G	-	-	-	-	-		-
rs3855819	4	111727163	PITX2(dist=163884);C4orf32(dist=1339390)	C	G	-	-	-	-	-		-
rs62337249	4	111727680	PITX2(dist=164401);C4orf32(dist=1338873)	A	G	-	-	-	-	-		-
rs185317159	4	111728219	PITX2(dist=164940);C4orf32(dist=1338334)	T	C	-	-	-	-	-		-
rs11727566	4	111728330	PITX2(dist=165051);C4orf32(dist=1338223)	A	T	-	-	-	-	-		-
rs13141190	4	111728614	PITX2(dist=165335);C4orf32(dist=1337939)	A	G	rs6533530	0.983278	Age-related diseases, mortality and associated endophenotypes			1.00E-07	
rs7683618	4	111730655	PITX2(dist=167376);C4orf32(dist=1335898)	A	C	rs10033464	0.77988	Atrial fibrillation/atrial flutter			7.00E-11	
rs3853444	4	111734136	PITX2(dist=170857);C4orf32(dist=1332417)	T	C	-	-	coronary heart disease			5.00E-06	
rs113832645	4	111745006	PITX2(dist=181727);C4orf32(dist=1321547)	G	A	-	-	-	-	-		-
rs4124163	4	111745599	PITX2(dist=182320);C4orf32(dist=1320954)	A	G	-	-	-	-	-		-
rs3853445	4	111761487	PITX2(dist=198208);C4orf32(dist=1305066)	T	C	-	-	Atrial fibrillation			2.00E-34	
rs62339085	4	111762468	PITX2(dist=199189);C4orf32(dist=1304085)	A	G	-	-	-	-	-		-
rs6838973	4	111765495	PITX2(dist=202216);C4orf32(dist=1301058)	C	T	-	-	-	-	-		-
rs28681402	4	111772063	PITX2(dist=208784);C4orf32(dist=1294490)	T	G	-	-	-	-	-		-
rs4115275	4	111776641	PITX2(dist=213362);C4orf32(dist=1289912)	T	G	-	-	-	-	-		-
rs149829837	4	111781006	PITX2(dist=217727);C4orf32(dist=1285547)	A	T	-	-	-	-	-		-
rs10034928	4	111786127	PITX2(dist=222848);C4orf32(dist=1280426)	C	T	-	-	-	-	-		-
rs4833470	4	111787455	PITX2(dist=224176);C4orf32(dist=1279098)	A	G	-	-	-	-	-		-
rs486632	4	111791608	PITX2(dist=228329);C4orf32(dist=1274945)	T	C	-	-	-	-	-		-
rs1295432	4	111793129	PITX2(dist=229850);C4orf32(dist=1273424)	A	G	-	-	-	-	-		-
rs1295438	4	111794351	PITX2(dist=231072);C4orf32(dist=1272202)	G	A	-	-	-	-	-		-
rs1295419	4	111795471	PITX2(dist=232192);C4orf32(dist=1271082)	G	T	-	-	-	-	-		-
rs478035	4	111797325	PITX2(dist=234046);C4orf32(dist=1269228)	T	C	-	-	-	-	-		-
rs4590107	4	111803750	PITX2(dist=240471);C4orf32(dist=1262803)	T	C	-	-	-	-	-		-
rs185375930	4	111804924	PITX2(dist=241645);C4orf32(dist=1261629)	T	A	-	-	-	-	-		-
rs2429074	4	111807879	PITX2(dist=244600);C4orf32(dist=1258674)	G	A	-	-	-	-	-		-
rs3853438	4	111810048	PITX2(dist=246769);C4orf32(dist=1256505)	A	G	-	-	-	-	-		-
rs570881	4	111816849	PITX2(dist=253570);C4orf32(dist=1249704)	C	T	-	-	-	-	-		-
rs17513625	4	111848270	PITX2(dist=284991);C4orf32(dist=1218283)	A	G	-	-	-	-	-		-
rs374582	4	111849422	PITX2(dist=286143);C4orf32(dist=1217131)	G	A	-	-	-	-	-		-
rs416532	4	111856631	PITX2(dist=293352);C4orf32(dist=1209922)	T	G	-	-	-	-	-		-
rs13149878	4	111863148	PITX2(dist=299869);C4orf32(dist=1203405)	T	C	-	-	-	-	-		-
rs77081612	4	111918738	PITX2(dist=355459);C4orf32(dist=1147815)	G	A	-	-	-	-	-		-
rs11736138	4	111925578	PITX2(dist=362299);C4orf32(dist=1140975)	T	C	-	-	-	-	-		-
rs6823804	4	111928723	PITX2(dist=365444);C4orf32(dist=1137830)	G	A	-	-	-	-	-		-

rs1015864	4	111933223	PITX2(dist=369944);C4orf32(dist=1133330)	C	T	-	-	-	-	-	-	-
rs13126426	4	111960374	PITX2(dist=397095);C4orf32(dist=1106179)	C	T	-	-	-	-	-	-	-
rs187853634	4	111981364	PITX2(dist=418085);C4orf32(dist=1085189)	A	T	-	-	-	-	-	-	-
rs72672236	4	111992001	PITX2(dist=428722);C4orf32(dist=1074552)	T	A	-	-	-	-	-	-	-
rs213582	4	111994268	PITX2(dist=430989);C4orf32(dist=1072285)	G	A	-	-	-	-	-	-	-
rs80036413	4	112010740	PITX2(dist=447461);C4orf32(dist=1055813)	A	G	-	-	-	-	-	-	-
rs986484	4	112011407	PITX2(dist=448128);C4orf32(dist=1055146)	G	T	-	-	-	-	-	-	-
rs408058	4	112011657	PITX2(dist=448378);C4orf32(dist=1054896)	C	T	-	-	-	-	-	-	-
rs187311	4	112025530	PITX2(dist=462251);C4orf32(dist=1041023)	A	G	-	-	-	-	-	-	-
rs3102236	4	112041371	PITX2(dist=478092);C4orf32(dist=1025182)	G	T	-	-	-	-	-	-	-
rs74511879	4	112043047	PITX2(dist=479768);C4orf32(dist=1023506)	A	G	-	-	-	-	-	-	-
rs4615237	4	112046039	PITX2(dist=482760);C4orf32(dist=1020514)	G	A	-	-	-	-	-	-	-
rs191366562	4	112069698	PITX2(dist=506419);C4orf32(dist=996855)	C	A	-	-	-	-	-	-	-
rs72674110	4	112093543	PITX2(dist=530264);C4orf32(dist=973010)	T	G	-	-	-	-	-	-	-
rs116493655	4	112140669	PITX2(dist=577390);C4orf32(dist=925884)	G	C	-	-	-	-	-	-	-
rs140262107	4	112303867	PITX2(dist=740588);C4orf32(dist=762686)	A	C	-	-	-	-	-	-	-
rs6832824	4	112373805	PITX2(dist=810526);C4orf32(dist=692748)	T	C	-	-	-	-	-	-	-
rs55754224	4	114428714	CAMK2D	T	C	-	-	-	-	-	-	-
rs17046126	4	114432073	CAMK2D	T	C	-	-	-	-	-	-	-
rs35132791	4	114456506	CAMK2D	G	C	-	-	-	-	-	-	-
rs13124730	4	114523729	CAMK2D	G	A	-	-	-	-	-	-	-
rs62324494	4	125492103	LOC285419(dist=640585);ANKRD50(dist=93101)	T	G	-	-	-	-	-	-	-
rs65535824	4	139909714	LINC00499(dist=564216);CCRN4L(dist=27229)	G	A	-	-	-	-	-	-	-
rs140808619	4	148837707	ARHGAP10	C	G	-	-	-	-	-	-	-
rs2070951	4	149358014	NR3C2	G	C	-	-	-	-	-	-	-
rs4691552	4	160187118	MIR3688-1(dist=137072);RAPGEF2(dist=1880)	C	G	-	-	-	-	-	-	-
rs7679333	4	164791399	1-Mar	A	T	-	-	-	-	-	-	-
rs28503456	4	168636939	SPOCK3(dist=481198);ANXA10(dist=376749)	A	G	-	-	-	-	-	-	-
rs115128471	4	169606768	PALLD	T	C	-	-	-	-	-	-	-
rs72972963	4	170929647	MFAP3L	A	G	-	-	-	-	-	-	-
rs4146092	4	177340623	SPCS3(dist=87227);VEGFC(dist=264068)	C	A	-	-	-	-	-	-	-
rs72646286	4	187127537	CYP4V2	A	G	-	-	-	-	-	-	-
rs72646288	4	187128302	CYP4V2	G	C	-	-	-	-	-	-	-
rs71600216	5	6260850	KIAA0947(dist=770503);FLJ33360(dist=49704)	T	C	-	-	-	-	-	-	-
rs114718241	5	21617832	GUSBP1(dist=28351);CDH12(dist=133141)	G	A	-	-	-	-	-	-	-
rs142487219	5	28929436	LSP1P3(dist=2016);NONE(dist=NONE)	G	T	-	-	-	-	-	-	-
rs12332422	5	37657091	WDR70	T	C	-	-	-	-	-	-	-
rs144704670	5	44595624	FGF10(dist=206840);MRPS30(dist=213403)	T	C	-	-	-	-	-	-	-
rs115403394	5	64031625	SREK1IP1	T	C	-	-	-	-	-	-	-
rs252639	5	65061405	NLN	A	G	-	-	-	-	-	-	-
rs16874130	5	71328532	CARTPT(dist=311657);MAP1B(dist=74586)	G	A	-	-	-	-	-	-	-
rs6867487	5	79010868	CMYA5	A	G	-	-	-	-	-	-	-
rs17410422	5	80340972	RASGRF2	T	C	-	-	-	-	-	-	-
rs73142547	5	85800402	NBPF22P(dist=207037);COX7C(dist=113382)	G	A	-	-	-	-	-	-	-
rs184384613	5	95483302	MIR583(dist=68386);PCSK1(dist=242738)	A	G	-	-	-	-	-	-	-
rs144265904	5	98912219	00289230(dist=645506);LOC100133050(dist=802	G	T	-	-	-	-	-	-	-
rs73777377	5	104303362	NUDT12(dist=1404872);RAB9BP1(dist=131813)	A	C	-	-	-	-	-	-	-
rs3337711	5	113748571	KCNN2	T	C			Atrial fibrillation	3.00E-08		28416818	
rs2900084	5	113757039	KCNN2	A	G	rs337711	0.753666	Atrial fibrillation	3.00E-08		28416818	
rs6892329	5	114252886	KCNN2(dist=420689);TRIM36(dist=207573)	A	T	rs55670112	0.658365	Epilepsy	6.00E-08		25087078	
rs4705691	5	114280824	KCNN2(dist=448627);TRIM36(dist=179635)	T	C	rs55670112	0.612606	Epilepsy	6.00E-08		25087078	
rs111408348	5	119426145	FAM170A(dist=454628);PRR16(dist=373874)	T	A	-	-	-	-		-	-
rs62372580	5	124243910	ZNF608(dist=163105);GRAMD3(dist=1451878)	A	G	-	-	-	-		-	-
						-	-	Body mass index	2.00E-07		25673413	

							-	-	Body mass index	3.00E-08	(EA)	28448500
							-	-	Body mass index	7.00E-08	(EA, men)	28448500
							-	-	Body mass index (joint a-lysis main effects and physical activity interaction)	3.00E-08		28448500
							-	-	Body mass index (joint a-lysis main effects and physical activity interaction)	5.00E-08	(EA)	28448500
							-	-	Body mass index (joint a-lysis main effects and physical activity interaction)	2.00E-07	(men)	28448500
							-	-	Body mass index (joint a-lysis main effects and physical activity interaction)	5.00E-06	(EA, men)	28448500
							-	-	Body mass index in physically active individuals	2.00E-08		28448500
							-	-	Body mass index in physically active individuals	3.00E-08	(EA)	28448500
							-	-	Body mass index in physically active individuals	6.00E-08	(men)	28448500
							-	-	Body mass index in physically active individuals	2.00E-06	(EA, men)	28448500
							rs4836133	0.979578	Body mass index	2.00E-09		20935630
rs4835856	5	124332814	ZNF608(dist=252009);GRAMD3(dist=1362974)	A	G	-	-	-	-	-	-	-
									Body mass index	3.00E-08	(EA)	28448500
									Body mass index	7.00E-08	(EA, men)	28448500
									Body mass index (joint a-lysis main effects and physical activity interaction)	2.00E-07	(men)	28448500
									Body mass index (joint a-lysis main effects and physical activity interaction)	5.00E-06	(EA, men)	28448500
									Body mass index (joint a-lysis main effects and physical activity interaction)	5.00E-08	(EA)	28448500
									Body mass index (joint a-lysis main effects and physical activity interaction)	3.00E-08		28448500
									Body mass index in physically active individuals	6.00E-08	(men)	28448500
									Body mass index in physically active individuals	2.00E-08		28448500
									Body mass index in physically active individuals	2.00E-06	(EA, men)	28448500
									Body mass index in physically active individuals	3.00E-08	(EA)	28448500
									Body mass index	2.00E-07		25673413
									Body mass index	4.00E-07		25673413
									Body mass index	2.00E-09		20935630
rs12515742	5	124354969	ZNF608(dist=274164);GRAMD3(dist=1340819)	C	A	-	-	-	-	-	-	-
rs10520002	5	127819132	FBN2	A	G	-	-	-	-	-	-	-
rs17617072	5	128309930	SLC27A6	T	G	-	-	-	-	-	-	-
rs56232813	5	128454108	ISOC1(dist=4389);MIR4460(dist=278647)	A	G	-	-	-	-	-	-	-
rs11747364	5	132400059	HSPA4	G	A	-	-	-	-	-	-	-
rs140767284	5	132426196	HSPA4	T	C	-	-	-	-	-	-	-
rs74536649	5	136202551	TRPC7(dist=501387);SPOCK1(dist=108436)	C	T	-	-	-	-	-	-	-
rs736514	5	136748920	SPOCK1	T	G	-	-	-	-	-	-	-
rs2905582	5	137000719	KLHL3	C	T	-	-	-	-	-	-	-
rs2967791	5	137013106	KLHL3	T	C	-	-	-	-	-	-	-
rs7875	5	137088049	HNRNPA0	T	C	-	-	-	-	-	-	-
rs6889901	5	137169192	NPY6R(dist=22753);MYOT(dist=34353)	T	A	-	-	-	-	-	-	-
rs3756687	5	137201693	NPY6R(dist=55254);MYOT(dist=1852)	G	A	rs7722600	1	Heart rate	3.00E-07		23583979	
						rs2040862	0.864892	Atrial fibrillation	3.00E-07		22544366	
rs79919792	5	137232301	PKD2L2	G	A	-	-	-	-	-	-	-
rs76734697	5	137233469	PKD2L2	T	G	rs2040862	0.895493	Atrial fibrillation	3.00E-07		22544366	
						rs7722600	0.931457	Heart rate	3.00E-07		23583979	
rs700605	5	137241856	PKD2L2	C	T	-	-	-	-	-	-	-
rs700607	5	137242793	PKD2L2	T	C	-	-	-	-	-	-	-
rs6864727	5	137247940	PKD2L2	C	T	rs6864727	1	Atrial fibrillation	1.00E-08		28416818	
rs7705323	5	137400673	FAM13B(dist=31871);WNT8A(dist=19101)	T	C	-	-	-	-	-	-	-

rs184445689	5	137468936	NME5	T	C	-	-	-	-	-	-	-
rs258757	5	142620736	ARHGAP26(dist=12164);NR3C1(dist=36760)	T	C	-	-	-	-	-	-	-
rs72801051	5	142685670	NR3C1	T	A	-	-	-	-	-	-	-
rs9324924	5	142792484	NR3C1	T	G	-	-	-	-	-	-	-
rs6865292	5	142792990	NR3C1	C	T	-	-	-	-	-	-	-
rs72802806	5	142798588	NR3C1	A	G	-	-	-	-	-	-	-
rs12513857	5	142803175	NR3C1	T	C	-	-	-	-	-	-	-
rs13155635	5	142803558	NR3C1	A	G	-	-	-	-	-	-	-
rs10477211	5	142805874	NR3C1	G	A	-	-	-	-	-	-	-
rs6580277	5	142818123	NR3C1(dist=3046);MIR5197(dist=241302)	G	A	-	-	-	-	-	-	-
rs1962496	5	142867334	NR3C1(dist=52257);MIR5197(dist=192091)	A	G	-	-	-	-	-	-	-
rs17341964	5	142893603	NR3C1(dist=78526);MIR5197(dist=165822)	G	A	-	-	-	-	-	-	-
rs12153151	5	142897834	NR3C1(dist=82757);MIR5197(dist=161591)	T	A	rs12153243	0.881404	Migraine	6.00E-06		23793025	
rs11167820	5	142916441	NR3C1(dist=101364);MIR5197(dist=142984)	G	A	-	-	-	-	-	-	-
rs7732768	5	142933619	NR3C1(dist=118542);MIR5197(dist=125806)	T	C	-	-	-	-	-	-	-
rs149506612	5	152706544	NMUR2(dist=921704);GRIA1(dist=163540)	T	C	-	-	-	-	-	-	-
rs1022794	5	157525572	CLINT1(dist=239389);EBF1(dist=597351)	T	C	-	-	-	-	-	-	-
rs12517258	5	157529049	CLINT1(dist=242866);EBF1(dist=593874)	A	G	-	-	-	-	-	-	-
rs78128874	5	158863876	LOC285626(dist=74034);LOC285627(dist=11688)	C	T	-	-	-	-	-	-	-
rs79271801	5	171850134	SH3PXD2B	T	C	-	-	-	-	-	-	-
rs6882776	5	172664163	NKX2-5(dist=1848);STC2(dist=77563)	G	A	rs6882776	1	Heart rate	2.00E-12		23583979	
rs77999046	5	172665106	NKX2-5(dist=2791);STC2(dist=76620)	T	C	-	-	-	-	-	-	-
rs6903578	6	1125881	LOC285768(dist=24314);FOXQ1(dist=186794)	A	C	-	-	-	-	-	-	-
rs4959579	6	1584207	FOXF2(dist=188375);FOXC1(dist=26474)	C	T	-	-	-	-	-	-	-
rs6906234	6	2764726	WRNIP1	T	C	-	-	-	-	-	-	-
rs618997	6	4158024	ECI2(dist=22193);CDYL(dist=618656)	G	T	-	-	-	-	-	-	-
rs685187	6	5106807	PPP1R3G(dist=19352);LYRM4(dist=1846)	T	C	-	-	-	-	-	-	-
rs58774690	6	9013372	DC100506207(dist=227694);TFAP2A(dist=138354)	T	C	-	-	-	-	-	-	-
rs6932755	6	14207187	CD83(dist=70039);ARID2(dist=1039019)	A	G	-	-	-	-	-	-	-
rs73366713	6	16415751	ATXN1	G	A	-	-	-	-	-	-	-
rs17592806	6	16424129	ATXN1	C	T	-	-	-	-	-	-	-
rs34969716	6	18210109	KDM1B	A	G	-	-	-	-	-	-	-
rs4712329	6	18235776	DEK	A	G	-	-	-	-	-	-	-
rs7743778	6	18258085	DEK	G	A	-	-	-	-	-	-	-
rs9367986	6	18315771	DEK(dist=50972);RNF144B(dist=71810)	A	C	-	-	-	-	-	-	-
rs9367991	6	18355889	DEK(dist=91090);RNF144B(dist=31692)	T	A	-	-	-	-	-	-	-
rs12662582	6	18383060	DEK(dist=118261);RNF144B(dist=4521)	T	C	-	-	-	-	-	-	-
rs57487411	6	18410450	RNF144B	C	T	-	-	-	-	-	-	-
rs12194707	6	19344025	MIR548A1(dist=771914);ID4(dist=493576)	C	A	-	-	-	-	-	-	-
rs9366291	6	19381870	MIR548A1(dist=809759);ID4(dist=455731)	C	G	-	-	-	-	-	-	-
rs4078267	6	19400452	MIR548A1(dist=828341);ID4(dist=437149)	G	A	-	-	-	-	-	-	-
rs9465942	6	20943487	CDKL1	G	T	-	-	-	-	-	-	-
rs35097027	6	22356983	PRL(dist=53901);HDGFL1(dist=212695)	T	C	-	-	-	-	-	-	-
rs79999746	6	23968788	HDGFL1(dist=1398038);NRSN1(dist=157626)	G	A	-	-	-	-	-	-	-
rs1419230	6	24111617	HDGFL1(dist=1540867);NRSN1(dist=14797)	C	T	-	-	-	-	-	-	-
rs116437220	6	28752989	SCAND3(dist=197877);LOC401242(dist=74413)	T	A	-	-	-	-	-	-	-
rs116412815	6	29502128	LOC100507362	C	T	-	-	-	-	-	-	-
rs1131212	6	31324526	HLA-B	C	G	-	-	-	-	-	-	-
rs140925959	6	31713565	MSH5-SAPCD1	T	G	-	-	-	-	-	-	-
rs9267659	6	31846234	SLC44A4	A	G	rs589428	0.677965	Waist-to-hip ratio adjusted for BMI (adjusted for smoking behaviour)		1.00E-17	28443625	
						rs142520578	0.677965	Autism spectrum disorder or schizophrenia		5.00E-10		
						rs589428	0.677965	Waist-to-hip ratio adjusted for BMI in non-smokers		2.00E-10		
rs4713992	6	36612205	MIR3925(dist=21916);CDKN1A(dist=32032)	A	G	-	-	-	-	-	-	-

rs11754995	6	36612323	MIR3925(dist=22034);CDKN1A(dist=31914)	A	G	-	-	-	-	-	-	-
rs12207916	6	36617652	MIR3925(dist=27363);CDKN1A(dist=26585)	T	C	rs1321311	0.741149	Electrocardiographic traits	3.00E-10		20062063	
								QRS complex (Cornell)	1.00E-09		27659466	
								QRS duration	1.00E-37		27659466	
								Colorectal cancer	1.00E-10		22634755	
						rs1321313	0.771296	Electrocardiographic conduction measures	5.00E-25		23463857	
						rs7756236	0.742398	QRS duration	6.00E-29		27577874	
								QRS duration	2.00E-26	(European)	27577874	
						rs9470361	0.735189	QRS duration	3.00E-27		21076409	
								QRS duration	2.00E-37		27659466	
						rs9470366	0.706857	QRS complex (Cornell)	2.00E-09		27659466	
								QRS duration	4.00E-07		25035420	
rs762624	6	36645588	CDKN1A	A	C	-	-	-	-	-	-	-
rs2395655	6	36645696	CDKN1A	A	G	-	-	-	-	-	-	-
rs3176323	6	36646849	CDKN1A	T	C	-	-	-	-	-	-	-
rs3176326	6	36647289	CDKN1A	G	A	rs1321311	0.694794	Electrocardiographic traits	3.00E-10		20062063	
								Colorectal cancer	1.00E-10		22634755	
								QRS complex (Cornell)	1.00E-09		27659466	
								QRS duration	1.00E-37		27659466	
						rs1321313	0.718833	Electrocardiographic conduction measures	5.00E-25		23463857	
						rs7756236	0.729875	QRS duration	6.00E-29		27577874	
								QRS duration	2.00E-26	(European)	27577874	
						rs9470361	0.723967	QRS duration	3.00E-27		21076409	
								QRS duration	2.00E-37		27659466	
						rs9470366	0.66825	QRS complex (Cornell)	2.00E-09		27659466	
								QRS duration	4.00E-07		25035420	
rs12211308	6	36649062	CDKN1A	T	C	-	-	-	-	-	-	-
rs3176342	6	36649593	CDKN1A	A	G	-	-	-	-	-	-	-
rs9470945	6	38864382	D-H8	C	A	-	-	-	-	-	-	-
rs126774	6	40504602	LRFN2	T	C	-	-	-	-	-	-	-
rs99394805	6	41475448	NCR2(dist=156823);FOXP4(dist=38716)	G	A	-	-	-	-	-	-	-
rs11572031	6	44396101	CDC5L	A	G	-	-	-	-	-	-	-
rs9454048	6	67827979	SLC25A51P1(dist=128603);BAI3(dist=1517653)	T	C	-	-	-	-	-	-	-
rs149466387	6	70776078	COL19A1	A	C	-	-	-	-	-	-	-
rs189304901	6	74560714	CD109(dist=22673);COL12A1(dist=1233328)	T	C	-	-	-	-	-	-	-
rs71572744	6	87820110	CGA(dist=15245);ZNF292(dist=45159)	G	C	-	-	-	-	-	-	-
rs6907805	6	87856003	CGA(dist=51138);ZNF292(dist=9266)	G	T	-	-	-	-	-	-	-
rs62439540	6	87949190	ZNF292	C	A	-	-	-	-	-	-	-
rs526939	6	96379508	MANEA(dist=322180);FUT9(dist=84337)	T	C	rs608114	0.964819	Response to efavirenz-containing treatment in HIV 1 infection (virologic failure)	3.00E-07		25461247	
								Response to abacavir-containing treatment in HIV-1 infection (virologic failure)	3.00E-07		25461247	
rs73761034	6	98779740	MIR2113(dist=307245);POU3F2(dist=502840)	T	C	-	-	-	-	-	-	-
rs11153725	6	118557958	SLC35F1	C	T	rs3951016	0.612677	Resting heart rate	3.00E-55		27798624	
rs4946333	6	118565665	SLC35F1	G	A	rs281868	1	Resting heart rate	4.00E-10		20639392	
								Atrial fibrillation	1.00E-08		28416818	
						rs89107	0.99449	Cardiac structure and function	1.00E-09		19584346	
rs3901856	6	118570514	SLC35F1	G	A	rs9372498	0.616724	Resting heart rate	3.00E-55		27798624	
rs77433295	6	118634453	SLC35F1	A	G	-	-	Diastolic blood pressure	2.00E-11		28135244	
						r<11153730	0.968107	QRS duration	7.00E-29		27659466	
								QRS duration	1.00E-18		27577874	
								QRS duration	5.00E-19		27577874	
								QRS duration	8.00E-29		27659466	

rs72967533	6	118655020	SLC35F1(dist=16181);CEP85L(dist=126915)	T	C	rs11153730 0.807627	QT interval QT interval Heart rate QRS complex (Sokolow-Lyon)	2.00E-29 2.00E-67 8.00E-21 1.00E-09			19587794 24952745 23583979 27659466	
						rs12661338 0.800895	Bipolar disorder or attention deficit hyperactivity disorder	5.00E-07			27890468	
						rs11756438 0.77347	Bipolar disorder or attention deficit hyperactivity disorder	4.00E-08			27890468	
						rs11752626 0.80838	QT interval QT interval	5.00E-22 2.00E-06			19305408 23166209	
						rs1334489 0.847532	Bipolar disorder or attention deficit hyperactivity disorder	6.00E-08			27890468	
						rs6906287 0.799471	Bipolar disorder (age of onset <21) or attention deficit hyperactivity disorder	7.00E-06			27890468	
						rs11970286 0.82599	Electrocardiographic conduction measures QT interval Electrocardiographic traits	6.00E-16 2.00E-24 8.00E-07			23463857 19305409 20062063	
rs9489385	6	118749511	SLC35F1(dist=110672);CEP85L(dist=32424)	T	C	-	-	-	-	-	-	
rs9481816	6	118812403	CEP85L	C	T	rs25422 0.647546	Re-l cell carcinoma	5.00E-06			22010048	
rs62422235	6	118971913	CEP85L	A	G	rs25422 0.891564	Re-l cell carcinoma	5.00E-06			22010048	
rs11153768	6	118988152	CEP85L	C	T	rs11153730 0.807627	QRS duration QRS duration QRS complex (Sokolow-Lyon) QRS duration QRS duration QT interval Heart rate QT interval	1.00E-18 5.00E-19 1.00E-09 7.00E-29 8.00E-29 2.00E-67 8.00E-21 2.00E-29			27577874 27577874 27659466 27659466 27659466 24952745 23583979 19587794	
						rs11756438 0.812973	Bipolar disorder or attention deficit hyperactivity disorder	4.00E-08			27890468	
						rs11970286 0.915908	QT interval Electrocardiographic traits QT interval	5.00E-22 8.00E-07 2.00E-24			19305408 20062063 19305409	
						rs1334489 0.649511	Bipolar disorder (age of onset <21) or attention deficit hyperactivity disorder Bipolar disorder or attention deficit hyperactivity disorder	7.00E-06 6.00E-08			27890468 27890468	
						rs12661338 0.958497	Bipolar disorder or attention deficit hyperactivity disorder	5.00E-07			27890468	
						rs11752626 0.978868	QT interval	2.00E-06			23166209	
						rs6906287 0.98947	Electrocardiographic conduction measures	6.00E-16			23463857	
rs138405683	6	122025943	GJA1(dist=255070);HSF2(dist=694753)	T	C	-	-	-	-	-	-	
rs9654631	6	122136335	GJA1(dist=365462);HSF2(dist=584361)	A	C	-	-	-	-	-	-	
rs1402538	6	122388851	GJA1(dist=617978);HSF2(dist=331845)	G	A	- - rs2684249 0.667644	Optic cup area Optic cup area Optic cup area Optic cup area	4.00E-09 1.00E-06 2.00E-06 3.00E-08			25631615 25631615 28073927 28073927	
						rs13219206 0.84242	Atrial fibrillation	4.00E-08			28416822	
						rs868153 0.867994	Vertical cup-disc ratio	1.00E-08			25241763	
						rs1402538 1	Optic cup area	1.00E-06			25631615	
rs2606645	6	122433255	GJA1(dist=662382);HSF2(dist=287441)	A	G	-	-	-	-	-	-	
rs2606646	6	122436040	GJA1(dist=665167);HSF2(dist=284656)	T	G	-	-	-	-	-	-	
rs34070579	6	122460099	GJA1(dist=689226);HSF2(dist=260597)	C	T	rs13219206 0.618472	Atrial fibrillation	4.00E-08			28416822	
						rs868153 0.618665	Vertical cup-disc ratio	1.00E-08			25241763	

rs54070573	v	122400000	GJA1(dist=889220);HSF2(dist=200551)	v	v	rs12664873	0.791406	Atrial fibrillation	2.00E-08		28416818
								Atrial fibrillation	1.00E-08		28416818
rs12664873	6	122463191	GJA1(dist=692318);HSF2(dist=257505)	T	G	-	-	Atrial fibrillation	2.00E-08		28416818
						-	-	Atrial fibrillation	1.00E-08		28416818
rs1067294	6	122551357	GJA1(dist=780484);HSF2(dist=169339)	G	T	rs12664873	0.783043	Atrial fibrillation	1.00E-08		28416818
						-	-	Atrial fibrillation	2.00E-08		28416818
rs590433	6	122660969	GJA1(dist=890096);HSF2(dist=59727)	G	A	-	-	-	-		-
rs9490444	6	122712377	GJA1(dist=941504);HSF2(dist=8319)	A	G	-	-	-	-		-
rs115255084	6	125203702	NKAIN2(dist=56916);STL(dist=25690)	A	C	-	-	-	-		-
rs2131826	6	125776025	HDDC2(dist=152743);LOC643623(dist=219474)	C	T	-	-	-	-		-
rs62424063	6	134142606	MGC34034	A	G	-	-	-	-		-
rs12524865	6	134196674	MGC34034(dist=21544);TCF21(dist=13585)	A	C	-	-	coronary heart disease	2.00E-07		22751097
						rs12202017	0.982093	coronary artery disease	2.00E-11		26343387
rs113429532	6	135733974	AHI1	C	T	-	-	-	-		-
rs73560742	6	139596781	TXLNB	A	G	-	-	-	-		-
rs596878	6	140286236	DC100132735(dist=104628);MIR3668(dist=24015)	A	C	-	-	-	-		-
rs11155358	6	144891060	UTRN	C	T	-	-	-	-		-
rs2500517	6	149299981	UST	A	T	-	-	-	-		-
rs9918485	6	149524517	UST(dist=126391);TAB2(dist=114919)	A	G	-	-	-	-		-
rs9384146	6	154107114	RGS17(dist=654725);OPRM1(dist=224517)	T	C	-	-	-	-		-
rs73032777	6	168313550	MLLT4	C	A	-	-	-	-		-
rs75830264	7	105681	NONE(dist=NONE);FAM20C(dist=87288)	G	A	-	-	-	-		-
rs184609990	7	4492813	SDK1(dist=184182);FOXX1(dist=229117)	C	T	-	-	-	-		-
rs1008368	7	12953982	ARL4A(dist=223424);ETV1(dist=976874)	A	G	-	-	-	-		-
rs4543431	7	13846143	ARL4A(dist=1115585);ETV1(dist=84713)	A	G	-	-	-	-		-
rs192892442	7	15412646	AGMO	C	T	-	-	-	-		-
rs10486774	7	15732542	MEOX2(dist=6234);ISPD(dist=394610)	T	G	-	-	-	-		-
rs73071718	7	16797861	TSPAN13	A	T	-	-	-	-		-
rs17136577	7	16820899	TSPAN13	A	G	-	-	-	-		-
rs73073514	7	16821164	TSPAN13	G	A	-	-	-	-		-
rs4722197	7	22933282	SNORD93(dist=36977);FAM126A(dist=47596)	T	A	-	-	-	-		-
rs78074552	7	23472484	IGF2BP3	G	C	-	-	-	-		-
rs10245883	7	28378043	CREB5	A	G	-	-	-	-		-
rs12700883	7	28391463	CREB5	T	A	rs11772815	1	Folding of antihelix	8.00E-07		26105758
rs10254657	7	28408294	CREB5	A	G	-	-	-	-		-
rs6462079	7	28415827	CREB5	A	G	-	-	-	-		-
rs10239810	7	28416417	CREB5	A	G	-	-	-	-		-
rs6963615	7	28419716	CREB5	A	C	-	-	-	-		-
rs329563	7	35100251	DPY19L1(dist=22598);DPY19L2P1(dist=20648)	A	G	-	-	-	-		-
rs2908125	7	35165739	DPY19L2P1	G	A	rs3206736	0.604543	Diastolic blood pressure	6.00E-06		28135244
rs142266902	7	35208929	DPY19L2P1	C	T	-	-	-	-		-
rs76733486	7	35231725	DPY19L2P1(dist=5951);TBX20(dist=10317)	A	G	-	-	-	-		-
rs2429416	7	35276634	TBX20	C	T	-	-	-	-		-
rs76289399	7	35277074	TBX20	A	C	-	-	-	-		-
rs77012155	7	35279195	TBX20	A	G	-	-	-	-		-
rs10273395	7	35299008	TBX20(dist=5297);LOC401324(dist=54458)	T	C	-	-	-	-		-
rs1362208	7	35301753	TBX20(dist=8042);LOC401324(dist=51713)	C	G	rs3206736	0.614359	Diastolic blood pressure	6.00E-06		28135244
						rs58437978	0.68043	Resting heart rate	3.00E-12		27798624
rs4723409	7	35351932	TBX20(dist=58221);LOC401324(dist=1534)	T	C	rs336284	0.690296	Suicide	2.00E-07		26079190
								Suicide behavior	8.00E-06		26079190

rs2075122	7	35354371	LOC401324	A	G	-	-	-	-	-	-	-
rs9986874	7	38029651	EPDR1(dist=38109);STARD3NL(dist=188157)	C	T	-	-	-	-	-	-	-
rs140545627	7	44010922	POLR2J4	A	G	-	-	-	-	-	-	-
rs7808509	7	45550962	RAMP3(dist=327112);ADCY1(dist=63163)	T	A	-	-	-	-	-	-	-
rs143803304	7	48127811	UPP1	T	G	-	-	-	-	-	-	-
rs117762209	7	51522173	COBL(dist=137658);POM121L12(dist=1581176)	G	A	-	-	-	-	-	-	-
rs4947369	7	51551823	COBL(dist=167308);POM121L12(dist=1551526)	T	C	-	-	-	-	-	-	-
rs4319036	7	51614470	COBL(dist=229955);POM121L12(dist=1488879)	G	C	-	-	-	-	-	-	-
rs77181259	7	51663113	COBL(dist=278598);POM121L12(dist=1440236)	A	T	-	-	-	-	-	-	-
rs6967200	7	66902104	STAG3L4(dist=115591);NONE(dist=None)	G	A	-	-	-	-	-	-	-
rs10216304	7	75256039	HIP1	C	T	-	-	-	-	-	-	-
rs62475462	7	75258947	HIP1	A	G	-	-	-	-	-	-	-
rs7777775	7	75260424	HIP1	C	T	-	-	-	-	-	-	-
rs13238507	7	75362387	HIP1	G	A	-	-	-	-	-	-	-
rs10272350	7	77491389	PHTF2	A	G	-	-	-	-	-	-	-
rs10265780	7	80255369	CD36	G	A	rs13236689	0.744678	Mean platelet volume	3.00E-09		22423221	
						rs10499859	0.706404	Left ventricular mass	3.00E-06		19454037	
rs17263943	7	81969946	CAC-2D1	A	T	-	-	-	-	-	-	-
rs12539066	7	82553949	PCLO	T	C	-	-	-	-	-	-	-
rs12533833	7	82554466	PCLO	A	G	-	-	-	-	-	-	-
rs42044	7	92250140	CDK6	T	G	rs42235	0.621389	Hip circumference adjusted for BMI	2.00E-09		25673412	
								Hip circumference adjusted for BMI	8.00E-20		25673412	
								Hip circumference adjusted for BMI	2.00E-13		25673412	
								Height	1.00E-28		23563607	
						rs10269774	0.790931	Waist circumference adjusted for BMI (joint analysis main effects and smoking interaction)	2.00E-09		28443625	
								Waist circumference adjusted for BMI (adjusted for smoking behaviour)	3.00E-10		28443625	
								Waist circumference adjusted for BMI in non-smokers	5.00E-09		28443625	
						rs2282978	0.773195	Height	8.00E-23		18391952	
								Height	1.00E-08		18391951	
								Height	1.00E-08		19343178	
						rs4272	0.628661	Rheumatoid arthritis	1.00E-08		24390342	
						rs42039	0.801279	Height	4.00E-88		25282103	
						rs42235	0.621389	Height	8.00E-47		20881960	
						rs42041	0.815537	Rheumatoid arthritis	4.00E-06		18794853	
rs56201652	7	92278116	CDK6	G	A	rs42235	0.642764	Hip circumference adjusted for BMI	2.00E-13		25673412	
								Hip circumference adjusted for BMI	8.00E-20		25673412	
								Height	1.00E-28		23563607	
								Height	8.00E-47		20881960	
								Hip circumference adjusted for BMI	2.00E-09		25673412	
						rs10269774	0.774681	Waist circumference adjusted for BMI (adjusted for smoking behaviour)	3.00E-10		28443625	
								Waist circumference adjusted for BMI (joint analysis main effects and smoking interaction)	2.00E-09		28443625	
								Waist circumference adjusted for BMI in non-smokers	5.00E-09		28443625	
						rs2282978	0.788026	Height	1.00E-08		18391951	
								Height	8.00E-23		18391952	
								Height	1.00E-08		19343178	
						rs4272	0.623136	Rheumatoid arthritis	5.00E-09		24390342	
						rs42041	0.815537	Rheumatoid arthritis	1.00E-08		24390342	

							rs42039	0.821139	Height	4.00E-88		25282103
							rs42041	0.812952	Rheumatoid arthritis	4.00E-06		18794853
rs2724028	7	96013072	SLC25A13(dist=61613);C7orf76(dist=97866)	A	G	-	-	-	-	-		-
rs56087194	7	100724316	MUC17(dist=22176);TRIM56(dist=4470)	A	G	-	-	-	-	-		-
rs17135804	7	101449071	MYL10(dist=176495);CUX1(dist=10113)	A	G	-	-	-	-	-		-
rs142086771	7	102360373	POLR2J2(dist=48197);FAM185A(dist=29026)	C	G	-	-	-	-	-		-
rs4730281	7	107581936	LAMB1	G	A	rs4380874	0.770767	Ulcerative colitis	6.00E-25		26192919	
								Ulcerative colitis	2.00E-26		23128233	
								Inflammatory bowel disease	8.00E-16		28067908	
								Inflammatory bowel disease	2.00E-15		26192919	
						rs6466198	0.725831	Ulcerative colitis	9.00E-21		28067908	
								Ulcerative colitis	2.00E-25		26192919	
								Ulcerative colitis	1.00E-18		26192919	
								Ulcerative colitis	7.00E-06		19122664	
								Ulcerative colitis	3.00E-08		19915572	
rs75587588	7	109252182	C7orf66(dist=727545);EIF3IP1(dist=347102)	C	T	-	-	-	-	-		-
rs117375957	7	111509363	DOCK4	A	C	-	-	-	-	-		-
rs10230339	7	113287391	LOC401397(dist=528754);PPP1R3A(dist=229491)	G	A	-	-	-	-	-		-
rs13223583	7	115851487	TES	C	T	-	-	-	-	-		-
rs3807957	7	115852846	TES	G	A	-	-	-	-	-		-
rs10235210	7	116003445	TES(dist=104608);CAV2(dist=136210)	T	C	-	-	-	-	-		-
rs7780999	7	116012069	TES(dist=113232);CAV2(dist=127586)	C	T	-	-	-	-	-		-
rs1633714	7	116022538	TES(dist=123701);CAV2(dist=117117)	C	T	-	-	-	-	-		-
rs143153938	7	116049989	TES(dist=151152);CAV2(dist=89666)	G	A	-	-	-	-	-		-
rs4540346	7	116067883	TES(dist=169046);CAV2(dist=71772)	C	T	-	-	-	-	-		-
rs4727833	7	116147908	CAV2	G	C	rs2109514	0.972802	Prevalent atrial fibrillation	7.00E-13		28416818	
rs55701446	7	116150077	CAV2(dist=1482);CAV1(dist=14762)	G	T	-	-	-	-	-		-
rs6466580	7	116154726	CAV2(dist=6131);CAV1(dist=10113)	T	C	rs4236601	0.627746	Glaucoma (primary open-angle)	5.00E-07		25173105	
						rs10281637	0.630211	Intraocular pressure	1.00E-11		28073927	
						rs10258482	0.634618	Intraocular pressure	2.00E-11		25173106	
						rs10281637	0.630211	Intraocular pressure	4.00E-13		28073927	
						rs4236601	0.627746	Glaucoma (primary open-angle)	2.00E-11		20835238	
rs926198	7	116167208	CAV1	T	C	-	-	-	-	-		-
rs7778733	7	116169443	CAV1	C	A	-	-	-	-	-		-
rs73208106	7	116173263	CAV1	G	A	rs1049334	0.956651	Atrial fibrillation	2.00E-14		28416822	
rs4730751	7	116180850	CAV1	C	A	rs10281637	0.828568	Intraocular pressure	1.00E-11		28073927	
						rs4236601	0.843859	Intraocular pressure	4.00E-13		28073927	
						rs10258482	0.836957	Glaucoma (primary open-angle)	2.00E-11		20835238	
						rs10258482	0.836957	Glaucoma (primary open-angle)	5.00E-07		25173105	
						rs10258482	0.836957	Intraocular pressure	2.00E-11		25173106	
rs2052105	7	116187979	CAV1	T	C	rs1049334	1	Atrial fibrillation	2.00E-14		28416822	
rs7804372	7	116194228	CAV1	T	A	-	-	-	-	-		-
rs151070418	7	116195656	CAV1	A	G	rs1049334	0.603788	Atrial fibrillation	2.00E-14		28416822	
rs6466587	7	116198001	CAV1	A	G	rs7802124	0.907108	PR interval in <i>Tripanosoma cruzi</i> seropositivity	2.00E-06		24324551	
rs1997572	7	116198828	CAV1	G	A	-	-	Atrial fibrillation	5.00E-09		28416818	
						-	-	Atrial fibrillation	7.00E-15		28416818	
						rs3807989	0.983278	PR segment	5.00E-12		24850809	
						rs3807989	0.983278	Electrocardiographic traits	2.00E-06		25055868	
						rs3807989	0.983278	PR interval	4.00E-28		20062060	
						rs3807989	0.983278	Electrocardiographic traits	7.00E-13		20062063	
						rs3807989	0.983278	Atrial fibrillation	4.00E-12		22544366	
						rs11773845	0.994446	PR interval	3.00E-14		25035420	
						rs11773845	0.994446	Atrial fibrillation	3.00E-13		28416818	
						rs11773845	0.994446	PR interval	4.00E-12		23139255	

rs55691296	7	116204090	CAV1(dist=2851);MET(dist=108369)	A	G	rs3807989	0.600887	PR interval	4.00E-28		20062060
								PR segment	5.00E-12		24850809
								Electrocardiographic traits	7.00E-13		20062063
								Atrial fibrillation	4.00E-12		22544366
								Electrocardiographic traits	2.00E-06		25055868
						rs11773845	0.605685	PR interval	3.00E-14		25035420
								PR interval	4.00E-12		23139255
								Atrial fibrillation	3.00E-13		28416818
rs2109517	7	116217657	CAV1(dist=16418);MET(dist=94802)	A	G			-	-	-	-
rs114047992	7	119085081	ANKRD7(dist=1202297);KCND2(dist=828641)	T	G			-	-	-	-
rs116452698	7	119356234	ANKRD7(dist=1473450);KCND2(dist=557488)	T	C	-	-	-	-	-	-
rs151107818	7	152730223	ACTR3B(dist=177759);DPP6(dist=854196)	A	C	-	-	-	-	-	-
rs10281149	7	153974446	DPP6	A	C	-	-	-	-	-	-
rs306275	7	154790174	PAXIP1	T	C	-	-	-	-	-	-
rs118032407	7	158109273	PTPRN2	T	C	-	-	-	-	-	-
rs4524816	8	7005617	DEFA5(dist=91358);LOC349196(dist=112524)	G	A	-	-	-	-	-	-
rs75032168	8	7012329	DEFA5(dist=98070);LOC349196(dist=105812)	A	G	-	-	-	-	-	-
rs17153437	8	11400030	BLK	G	A	-	-	-	-	-	-
rs35669118	8	11495837	LINC00208(dist=56987);GATA4(dist=65880)	T	C	-	-	-	-	-	-
rs12680985	8	11498149	LINC00208(dist=59299);GATA4(dist=63568)	C	T	-	-	-	-	-	-
rs2169888	8	11498774	LINC00208(dist=59924);GATA4(dist=62943)	C	G	-	-	-	-	-	-
rs386075	8	17788511	PCM1	T	C	-	-	-	-	-	-
rs417088	8	17791218	PCM1	G	C	rs2299587	0.747737	Economic and political preferences	9.00E-07		22566634
rs7461831	8	17907438	PCM1(dist=19981);ASAH1(dist=6487)	T	C						
rs399485	8	17912752	PCM1(dist=25295);ASAH1(dist=1173)	T	A	rs7508	0.945902	Atrial fibrillation	6.00E-10		28416818
rs7508	8	17913970	ASAH1	A	G						
rs417661	8	17914919	ASAH1	T	A	-	-	-	-	-	-
rs17515291	8	17918986	ASAH1	A	G	rs7508	0.682047	Atrial fibrillation	6.00E-10		28416818
rs13280	8	17921230	ASAH1	A	G						
rs71502542	8	17993764	ASAH1(dist=51257);T1(dist=34207)	C	T	-	-	-	-	-	-
rs13249505	8	18460161	PSD3	A	G	-	-	-	-	-	-
rs73226032	8	20677888	ZTS1-AS1(dist=529919);LOC286114(dist=153609)	A	G	-	-	-	-	-	-
rs2613711	8	21025595	LOC286114(dist=172965);GFRA2(dist=523935)	A	C	-	-	-	-	-	-
rs4872097	8	21774362	DOK2(dist=3157);XPO7(dist=2818)	T	G	-	-	-	-	-	-
rs13439474	8	21810603	XPO7	G	A	-	-	-	-	-	-
rs17057026	8	27189308	PTK2B	T	C	-	-	-	-	-	-
rs58642267	8	27208557	PTK2B	T	C	-	-	-	-	-	-
rs113176200	8	27227442	PTK2B	T	C	-	-	-	-	-	-
rs17057055	8	27228076	PTK2B	G	A	-	-	-	-	-	-
rs145746086	8	28073389	ELP3(dist=24720);PNOC(dist=101260)	C	T	-	-	-	-	-	-
rs180691947	8	53485258	FAM150A(dist=7237);RB1CC1(dist=49760)	T	C	-	-	-	-	-	-
rs144262265	8	54998078	LYPLA1	T	C	-	-	-	-	-	-
rs35313827	8	57982357	MPAD1(dist=75927);LOC100507651(dist=149291)	G	A	-	-	-	-	-	-
rs16921674	8	58051628	MPAD1(dist=145198);LOC100507651(dist=80020)	A	G	-	-	-	-	-	-
rs2719008	8	67383784	ADHFE1(dist=2740);C8orf46(dist=21707)	T	C	-	-	-	-	-	-
rs76532880	8	69573435	C8orf34	A	G	-	-	-	-	-	-
rs768814	8	78168166	PEX2(dist=254886);PKIA(dist=1260170)	G	C	-	-	-	-	-	-
rs80268568	8	90931707	OSGIN2	G	A	-	-	-	-	-	-
rs80174958	8	108375816	ANGPT1	T	A	-	-	-	-	-	-
rs10091187	8	115279849	CSMD3(dist=830607);TRPS1(dist=1140875)	C	A	-	-	-	-	-	-
rs77114030	8	124551122	FBXO32	A	G	-	-	-	-	-	-
rs62521286	8	124551975	FBXO32	G	A	-	-	-	-	-	-
rs79972941	8	124566721	FBXO32(dist=13228);KLHL38(dist=91194)	A	G	-	-	-	-	-	-
rs62520910	8	124612585	FBXO32(dist=59092);KLHL38(dist=45330)	T	C	-	-	-	-	-	-

rs4871397	8	124635197	FBXO32(dist=81704);KLHL38(dist=22718)	G	C	-	-	-	-	-	-	-
rs10105974	8	125854515	MTSS1(dist=113785);LOC157381(dist=99735)	G	T	-	-	-	-	-	-	-
rs35006907	8	125859817	MTSS1(dist=119087);LOC157381(dist=94433)	A	C	-	-	-	-	-	-	-
rs117326996	8	128557603	LOC727677(dist=63219);MYC(dist=190712)	C	T	-	-	-	-	-	-	-
rs73356989	8	133239916	KCNQ3	A	G	-	-	-	-	-	-	-
rs72721678	8	139182896	FAM135B	C	T	-	-	-	-	-	-	-
rs10109670	8	142981307	MROH5(dist=463977);MIR4472-1(dist=276393)	T	C	-	-	-	-	-	-	-
rs12717833	8	143390560	TS-RE1	C	T	-	-	-	-	-	-	-
rs7463612	8	143433672	TS-RE1	G	A	-	-	-	-	-	-	-
rs138860719	8	143439494	TS-RE1	C	G	-	-	-	-	-	-	-
rs142607820	8	145787090	ARHGAP39	G	A	-	-	-	-	-	-	-
rs10809847	9	12809882	LURAP1L	T	C	-	-	-	-	-	-	-
rs145057038	9	23504685	FLJ35282(dist=680473);ELAVL2(dist=185418)	C	T	-	-	-	-	-	-	-
rs113466169	9	33219849	B4GALT1(dist=52493);SPINK4(dist=20347)	C	A	-	-	-	-	-	-	-
rs13296596	9	36464320	RNF38(dist=63125);MELK(dist=108539)	T	C	-	-	-	-	-	-	-
rs75417420	9	76895122	ANXA1(dist=1109815);RORB(dist=217130)	T	G	-	-	-	-	-	-	-
rs7875346	9	77351562	TRPM6	G	A	-	-	-	-	-	-	-
rs17062158	9	78786218	PCSK5	C	A	-	-	-	-	-	-	-
rs72734351	9	82354014	TLE4(dist=12358);TLE1(dist=1844584)	A	G	-	-	-	-	-	-	-
rs71506679	9	87649309	NTRK2(dist=10804);AGTPBP1(dist=512145)	A	G	-	-	-	-	-	-	-
rs4460442	9	97443341	FBP1(dist=40810);C9orf3(dist=45610)	A	C	rs7851726	0.631203	Urinary albumin-to-creatinine ratio	5.00E-06	26631737		
						rs7026071	0.606218	Atrial fibrillation	3.00E-11	28416818		
						rs7026071	0.606218	Atrial fibrillation	2.00E-06	28416818		
rs6479564	9	97448867	FBP1(dist=46336);C9orf3(dist=40084)	T	A	-	-	-	-	-		
rs4744370	9	97477793	FBP1(dist=75262);C9orf3(dist=11158)	C	T	rs7026071	0.716082	Atrial fibrillation	3.00E-11	28416818		
						rs10821415	0.727306	Atrial fibrillation	4.00E-11	22544366		
						rs7851726	0.737666	Urinary albumin-to-creatinine ratio	5.00E-06	26631737		
						rs7026071	0.716082	Atrial fibrillation	2.00E-06	28416818		
rs7026071	9	97492520	C9orf3	T	C	-	-	Atrial fibrillation	2.00E-06	28416818		
						-	-	Atrial fibrillation	3.00E-11	28416818		
						rs7851726	0.951669	Urinary albumin-to-creatinine ratio	5.00E-06	26631737		
						rs10821415	0.843971	Atrial fibrillation	4.00E-11	22544366		
rs62578968	9	97551313	C9orf3	C	T	rs7851726	0.604505	Urinary albumin-to-creatinine ratio	5.00E-06	26631737		
rs10761370	9	97806926	C9orf3	A	T	-	-	-	-	-		
rs10993463	9	97807233	C9orf3	T	C	rs7851726	0.841242	Urinary albumin-to-creatinine ratio	5.00E-06	26631737		
						rs7026071	0.798701	Atrial fibrillation	3.00E-11	28416818		
						rs10821415	0.86326	Atrial fibrillation	4.00E-11	22544366		
						rs7026071	0.798701	Atrial fibrillation	2.00E-06	28416818		
rs56020612	9	97814248	C9orf3	C	G	-	-	-	-	-		
rs10821451	9	97866583	FANCC	G	A	-	-	-	-	-		
rs4647512	9	97888730	FANCC	T	C	-	-	-	-	-		
rs356665	9	98060631	FANCC	C	T	rs10821415	0.612153	Atrial fibrillation	4.00E-11	22544366		
rs817154	9	98513666	PTCH1(dist=234419);LINC00476(dist=54704)	A	G	-	-	-	-	-		
rs75727816	9	102055115	SEC61B(dist=62214);MA(dist=62507)	G	A	-	-	-	-	-		
rs139320968	9	113659621	LPAR1	C	T	-	-	-	-	-		
rs4282641	9	122559981	DBC1(dist=428242);MIR147A(dist=447276)	C	T	-	-	-	-	-		
rs75296122	9	123681919	TRAF1	T	C	-	-	-	-	-		
rs183389149	9	131078540	TRUB2	A	G	-	-	-	-	-		
rs117537850	9	136255929	C9orf96	C	T	-	-	-	-	-		
rs140426982	9	136418488	ADAMTSL2	T	C	-	-	-	-	-		
rs147837389	9	138276190	C9orf62(dist=37786);LOC100506599(dist=78375)	T	C	-	-	-	-	-		
rs6537893	9	138306060	C9orf62(dist=67656);LOC100506599(dist=48505)	A	G	-	-	-	-	-		
rs62583536	9	138993315	-CC2(dist=6184);C9orf69(dist=13112)	A	G	-	-	-	-	-		
								Thyroid hormone levels	2.00E-14	(FT4)	23408906	

rs11103373	9	139085865	C9orf69(dist=75134);LHX3(dist=2231)	T	C	rs7860634	0.696496		Thyroid hormone levels	5.00E-08	(FT4-Females)	23408906
rs4842131	9	139092679	LHX3	C	T	rs7860634	0.815209		Thyroid hormone levels	2.00E-08	(FT4-Males)	23408906
									Thyroid hormone levels	2.00E-14	(FT4)	23408906
									Thyroid hormone levels	5.00E-08	(FT4-Females)	23408906
									Thyroid hormone levels	2.00E-08	(FT4-Males)	23408906
									-	-	-	-
rs11103378	9	139097205	LHX3;QSOX2	C	T	-	-		-	-	-	-
rs57902404	10	11810787	ECHDC3(dist=4722);PROSER2(dist=54610)	T	C	-	-		-	-	-	-
rs12765147	10	20769837	PLXDC2(dist=200722);MIR4675(dist=71062)	T	C	-	-		-	-	-	-
rs74967172	10	20793741	PLXDC2(dist=224626);MIR4675(dist=47158)	C	T	-	-		-	-	-	-
rs151046202	10	34161075	LINC00838(dist=99467);PARD3(dist=237413)	G	C	-	-		-	-	-	-
rs143117404	10	55258671	MBL2(dist=727211);PCDH15(dist=303862)	T	A	-	-		-	-	-	-
rs10762988	10	55270819	MBL2(dist=739359);PCDH15(dist=291714)	G	C	rs583012	0.62972	Select biomarker traits	2.00E-06		17903293	
rs4935078	10	55294187	MBL2(dist=762727);PCDH15(dist=268346)	G	T	-	-		-	-	-	-
rs2790204	10	60070560	CISD1(dist=21541);UBE2D1(dist=24179)	A	G	rs16912145	0.952402	Brain imaging	1.00E-06		20100581	
rs1962010	10	64986629	JMJD1C	T	C	-	-		-	-	-	-
rs9664186	10	75409992	SYNPO2L	C	T	-	-		-	-	-	-
rs12247028	10	75410052	SYNPO2L	A	G	-	-		-	-	-	-
rs7915134	10	75420180	SYNPO2L(dist=4348);AGAP5(dist=13853)	C	T	rs7394190	0.797108	Incident atrial fibrillation	3.00E-08		28416818	
						rs10824026	0.835769	Atrial fibrillation	8.00E-11		28416818	
rs10824026	10	75421208	SYNPO2L(dist=5376);AGAP5(dist=12825)	A	G	-	-	Atrial fibrillation	4.00E-09		22544366	
						-	-	Atrial fibrillation	8.00E-11		28416818	
						rs7394190	0.95344	Incident atrial fibrillation	4.00E-09		22544366	
rs183153921	10	75430725	SYNPO2L(dist=14893);AGAP5(dist=3308)	T	C	-	-	-	-	-	-	-
rs28447450	10	75433076	AGAP5	A	G	-	-	-	-	-	-	-
rs4746150	10	75565935	NDST2	A	G	rs7394190	0.620505	Incident atrial fibrillation	3.00E-08		28416818	
						rs10824026	0.651166	Atrial fibrillation	4.00E-09		22544366	
						-	-	Atrial fibrillation	8.00E-11		28416818	
rs188726810	10	75580226	CAMK2G	A	T	rs10824026	0.73295	Atrial fibrillation	4.00E-09		22544366	
						rs7394190	0.696431	Atrial fibrillation	8.00E-11		28416818	
						-	-	Incident atrial fibrillation	3.00E-08		28416818	
rs4746152	10	75593707	CAMK2G	T	C	-	-	-	-	-	-	-
rs697243	10	80825186	ZMI21-AS1	A	G	-	-	-	-	-	-	-
rs4933966	10	85874401	NRG3(dist=1127466);GHITM(dist=24784)	G	A	-	-	-	-	-	-	-
rs149268744	10	87662657	GRID1	A	C	-	-	-	-	-	-	-
rs999952	10	90036680	RNLS	G	A	-	-	-	-	-	-	-
rs6584356	10	102050242	PKD2L1	A	C	-	-	-	-	-	-	-
rs3730475	10	103340179	POLL	A	G	-	-	-	-	-	-	-
rs3127230	10	103392503	FBXW4	T	C	-	-	-	-	-	-	-
rs10786640	10	103392633	FBXW4	A	T	-	-	-	-	-	-	-
rs772031	10	104021541	GBF1	A	G	-	-	-	-	-	-	-
rs111596223	10	104025716	GBF1	T	C	-	-	-	-	-	-	-
rs2479550	10	104034634	GBF1	G	A	-	-	-	-	-	-	-
rs33781295	10	104140602	GBF1	A	G	rs2485376	0.935896	QT interval	3.00E-08		24952745	
						rs10786662	0.666091	Educational attainment (years of education)	5.00E-14		27225129	
rs41287504	10	105272239	NEURL	C	T	-	-	-	-	-	-	-
rs12252305	10	105279335	NEURL	A	G	rs7071247	0.940158	Platelet aggregation	2.00E-07		20526338	
rs12268602	10	105293517	NEURL	G	T	-	-	-	-	-	-	-
rs186738477	10	105293584	NEURL	T	C	-	-	-	-	-	-	-
rs7894798	10	105303398	NEURL	A	G	rs6584555	1	Early onset atrial fibrillation	3.00E-07		28460022	
						rs7069733	0.987965	Autism spectrum disorder, attention deficit-hyperactivity disorder, bipolar disorder, major depressive disorder, and schizophrenia (combined)	7.00E-06		23453885	
						rs60848348	0.673333	Incident atrial fibrillation	2.00E-08		28416818	

							rs11597473	0.707123	Schizophrenia	1.00E-06		26198764
rs11817727	10	105310388	NEURL	C	T	-	-	-	-	-		-
rs55911544	10	105310498	NEURL	T	G	rs11597473	0.707123	Schizophrenia	1.00E-06		26198764	
						rs60848348	0.673333	Incident atrial fibrillation	2.00E-08		28416818	
						rs7069733	0.964036	Autism spectrum disorder, attention deficit-hyperactivity disorder, bipolar disorder, major depressive disorder, and schizophrenia (combined)	7.00E-06		23453885	
						rs6584555	0.975862	Early onset atrial fibrillation	3.00E-07		28460022	
rs6584558	10	105312597	NEURL	A	G	-	-	-	-		-	
rs113378881	10	105317541	NEURL	A	G	-	-	-	-		-	
rs60848348	10	105321881	NEURL	T	C			Incident atrial fibrillation	2.00E-08		28416818	
						rs7069733	0.68161	Autism spectrum disorder, attention deficit-hyperactivity disorder, bipolar disorder, major depressive disorder, and schizophrenia (combined)	7.00E-06		23453885	
						rs11597473	0.8841	Schizophrenia	1.00E-06		26198764	
						rs6584555	0.673333	Early onset atrial fibrillation	3.00E-07		28460022	
rs10883882	10	105322617	NEURL	G	A	-	-	-	-		-	
rs7068081	10	105332617	NEURL	A	G	-	-	-	-		-	
rs11815073	10	105339048	NEURL	G	T	-	-	-	-		-	
rs11598047	10	105342672	NEURL	G	A	-	-	Atrial fibrillation	2.00E-06		28416818	
						-	-	Prevalent atrial fibrillation	4.00E-16		28416818	
						-	-	Atrial fibrillation	3.00E-21		28416818	
						rs60572254	0.914697	Atrial fibrillation	2.00E-22		28416818	
rs7100958	10	105345327	NEURL	C	T	-	-	-	-		-	
rs11598294	10	105395501	SH3PXD2A	T	C	-	-	-	-		-	
rs6584565	10	105395893	SH3PXD2A	A	G	-	-	-	-		-	
rs7910092	10	105397741	SH3PXD2A	C	T	-	-	-	-		-	
rs77953709	10	105413743	SH3PXD2A	T	C	-	-	-	-		-	
rs3781339	10	105428152	SH3PXD2A	C	T	-	-	-	-		-	
rs12766741	10	105438331	SH3PXD2A	A	G	-	-	-	-		-	
rs3758576	10	105454115	SH3PXD2A	T	C	-	-	-	-		-	
rs17739429	10	105468967	SH3PXD2A	G	A	-	-	-	-		-	
rs11592656	10	105471432	SH3PXD2A	C	G	-	-	-	-		-	
rs11191779	10	105473580	SH3PXD2A	A	G	-	-	-	-		-	
rs34536993	10	105474144	SH3PXD2A	C	A	-	-	-	-		-	
rs35176054	10	105480387	SH3PXD2A	A	T	-	-	Atrial fibrillation	6.00E-09		28416818	
								Atrial fibrillation	2.00E-11		28416818	
rs1389189	10	105486077	SH3PXD2A	G	A	-	-	-	-		-	
rs80056983	10	105509902	SH3PXD2A-AS1	T	C	rs35176054	0.806328	Atrial fibrillation	2.00E-11		28416818	
								Atrial fibrillation	6.00E-09		28416818	
rs10466138	10	105518179	SH3PXD2A	T	C	-	-	-	-		-	
rs12415349	10	105525454	SH3PXD2A	A	G	-	-	-	-		-	
rs7093473	10	105535331	SH3PXD2A	C	T	rs35176054	0.769144	Atrial fibrillation	6.00E-09		28416818	
								Atrial fibrillation	2.00E-11		28416818	
rs4415684	10	105540007	SH3PXD2A	C	T	-	-	-	-		-	
rs958763	10	105549520	SH3PXD2A	T	A	-	-	-	-		-	
rs10883913	10	105562304	SH3PXD2A	C	T	-	-	-	-		-	
rs11594668	10	105580251	SH3PXD2A	T	G	-	-	-	-		-	
rs11594468	10	105585129	SH3PXD2A	A	G	-	-	-	-		-	
rs34547036	10	105637026	ORFC1	T	C	rs7902587	0.894375	Serous borderline ovarian cancer	9.00E-07		28346442	
								Low-grade serous and serous borderline ovarian cancer	4.00E-08		28346442	
								Thyroid cancer	5.00E-11		28195142	

rs544547030	10	105037020	OBFC1				rs9419958	0.644882	Telomere length	9.00E-11		23001564
							rs2995264	0.937996	Cutaneous malignant melanoma	2.00E-09		26237428
									Melanoma	2.00E-09		28212542
							rs9420907	0.644882	Telomere length	7.00E-11		23535734
									Thyroid cancer	5.00E-11		28195142
rs10786775	10	105657316	OBFC1	G	C	rs7902587 0.954317			Serous borderline ovarian cancer	9.00E-07		28346442
									Low-grade serous and serous borderline ovarian cancer	4.00E-08		28346442
							rs2995264	1	Cutaneous malignant melanoma	2.00E-09		26237428
									Melanoma	2.00E-09		28212542
							rs9420907	0.694574	Telomere length	7.00E-11		23535734
							rs9419958	0.694574	Telomere length	9.00E-11		23001564
									Thyroid cancer	5.00E-11		28195142
									Serous borderline ovarian cancer	9.00E-07		28346442
									Low-grade serous and serous borderline ovarian cancer	4.00E-08		28346442
									Melanoma	2.00E-09		28212542
rs11591710	10	105687632	OBFC1(dist=9587);SLK(dist=39838)	C	A	rs7902587 0.720519			Cutaneous malignant melanoma	2.00E-09		26237428
							rs2995264	0.712394	Telomere length	2.00E-11		20421499
							rs4387287	0.805126	Telomere length	9.00E-11		23001564
							rs9419958	0.966066	Telomere length	7.00E-11		23535734
							rs9420907	0.966066	Basal cell carcinoma	5.00E-09		27539887
rs72826474	10	121716468	SEC23IP(dist=12298);MIR4682(dist=1557)	A	C	-	-	-	-	-	-	-
rs12413427	10	126202890	LHPP	T	C	-	-	-	-	-	-	-
rs10751594	10	126258711	LHPP	C	T	-	-	-	-	-	-	-
rs7093871	10	127226920	CTBP2(dist=377296);LOC100169752(dist=36020)	A	G	-	-	-	-	-	-	-
rs1748360	10	130583833	MKI67(dist=659365);MGMT(dist=681621)	C	T	-	-	-	-	-	-	-
rs7925375	11	2191155	TH	T	C	-	-	-	-	-	-	-
rs11042962	11	2193510	MIR4686;TH	C	T	-	-	-	-	-	-	-
rs16910268	11	11991475	DKK3	T	C	-	-	-	-	-	-	-
rs75156773	11	15729729	INSC(dist=460975);SOX6(dist=258266)	T	G	-	-	-	-	-	-	-
rs7106847	11	19987362	-V2	A	G	-	-	-	-	-	-	-
rs2252194	11	19994744	-V2	T	G	-	-	-	-	-	-	-
rs10741807	11	20011445	-V2	T	C	-	-	-	-	-	-	-
rs150956438	11	46033703	PHF21A	A	G	-	-	-	-	-	-	-
rs12285834	11	69645962	FGF3(dist=11770);ANO1(dist=278446)	T	C	-	-	-	-	-	-	-
rs17145701	11	83313356	DLG2	G	A	-	-	-	-	-	-	-
rs3847535	11	92558024	FAT3	T	C	-	-	-	-	-	-	-
rs74902063	11	95348523	SESN3(dist=382818);FAM76B(dist=153583)	G	A	-	-	-	-	-	-	-
rs77946210	11	95930150	MAML2	A	G	-	-	-	-	-	-	-
rs17110672	11	109928038	C11orf87(dist=628145);ZC3H12C(dist=36049)	T	C	-	-	-	-	-	-	-
rs7110842	11	125349641	FEZ1	C	T	-	-	-	-	-	-	-
rs2845853	11	125376063	FEZ1(dist=9857);EI24(dist=63235)	C	T	-	-	-	-	-	-	-
rs595368	11	125406576	FEZ1(dist=40370);EI24(dist=32722)	C	G	-	-	-	-	-	-	-
rs503288	11	125461787	STT3A	A	G	-	-	-	-	-	-	-
rs543389	11	125464841	STT3A	A	G	rs548181 0.962477	Autism spectrum disorder, attention deficit-hyperactivity disorder, bipolar disorder, major depressive disorder, and schizophrenia (combined)			9.00E-07		23453885
							Schizophrenia			1.00E-06		21926974
							Schizophrenia			1.00E-06		21926974
rs569766	11	125532369	CHEK1	G	A	rs548181 0.937667	Autism spectrum disorder, attention deficit-hyperactivity disorder, bipolar disorder, major depressive disorder, and schizophrenia (combined)			9.00E-07		23453885

rs556884	11	125550049	ACRV1	G	A	rs548181	0.913045	Autism spectrum disorder, attention deficit-hyperactivity disorder, bipolar disorder, major depressive disorder, and schizophrenia (combined)	9.00E-07		23453885
								Schizophrenia	1.00E-06		21926974
rs75190942	11	128764571	KCNJ5	A	C	-	-	Atrial fibrillation	3.00E-08		28416818
						-	-	Resting heart rate	1.00E-16		27798624
rs78907918	11	128767957	KCNJ5	C	T	rs75190942	0.78074	Atrial fibrillation	3.00E-08		28416818
								Resting heart rate	1.00E-16		27798624
rs2604192	11	128791802	KCNJ5(dist=3851);TP53AIP1(dist=12825)	A	G	-	-	-	-		-
rs11222402	11	130812968	SNX19(dist=26586);NTM(dist=427403)	A	T	-	-	-	-		-
rs10894506	11	131992827	NTM	G	A	-	-	-	-		-
rs77505000	12	1200580	ERC1	T	G	-	-	-	-		-
rs11837466	12	1213658	ERC1	G	A	-	-	-	-		-
rs138663730	12	1273656	ERC1	T	C	-	-	-	-		-
rs59651269	12	1367297	ERC1	T	C	-	-	-	-		-
rs138265205	12	1414018	ERC1	C	T	-	-	-	-		-
rs11062287	12	2739704	CAC-1C	G	A	-	-	-	-		-
rs10841692	12	8620790	CLEC6A	T	C	-	-	-	-		-
rs181168687	12	9212641	LINC00612	C	T	-	-	-	-		-
rs74067634	12	14354396	GRIN2B(dist=221374);ATF7IP(dist=164215)	A	T	-	-	-	-		-
rs78668162	12	21904394	LDHB(dist=93605);KCNJ8(dist=13495)	A	G	-	-	-	-		-
rs2970419	12	24675222	SOX5	A	C	-	-	-	-		-
rs2291437	12	24715048	SOX5	G	T	-	-	-	-		-
rs10842383	12	24771967	LINC00477(dist=34865);BCAT1(dist=190991)	C	T	rs17287293	1	Heart rate	3.00E-20		23583979
								Resting heart rate	2.00E-10		20639392
						rs4963772	0.989717	Resting heart rate	3.00E-53		27798624
								Pulse pressure	2.00E-06		28135244
						rs11047543	1	PR interval	3.00E-13		20062060
rs7953024	12	24773658	LINC00477(dist=36556);BCAT1(dist=189300)	G	C	-	-	-	-		-
rs7979271	12	24847000	LINC00477(dist=109898);BCAT1(dist=115958)	T	C	-	-	-	-		-
rs6487409	12	24867158	LINC00477(dist=130056);BCAT1(dist=95800)	A	G	-	-	-	-		-
rs16930139	12	26253706	RASSF8(dist=20881);BHLHE41(dist=19253)	C	T	-	-	-	-		-
rs55678992	12	26287771	BHLHE41(dist=9768);SSPN(dist=60498)	A	G	-	-	-	-		-
rs61915724	12	26296394	BHLHE41(dist=18391);SSPN(dist=51875)	C	T	-	-	-	-		-
rs113819537	12	26348429	SSPN	C	G	-	-	-	-		-
rs7314514	12	26605278	ITPR2	C	T	rs2306677	0.64808	Amyotrophic lateral sclerosis	3.00E-06		17827064
rs73288156	12	27034218	ITPR2(dist=48087);ASUN(dist=23894)	G	A	-	-	-	-		-
rs61922540	12	27056876	ITPR2(dist=70745);ASUN(dist=1236)	T	G	-	-	-	-		-
rs1026372	12	32968190	PKP2	T	C	rs1454934	0.605488	Prevalent atrial fibrillation	4.00E-08		28416818
rs12809354	12	32978437	PKP2	C	T	rs1454934	0.841287	Prevalent atrial fibrillation	4.00E-08		28416818
rs76711458	12	33027458	PKP2	A	T	rs1454933	0.760905	Obesity-related traits	9.00E-06		23251661
								Obesity-related traits	3.00E-06		23251661
rs180974809	12	33850567	SYT10(dist=257813);ALG10(dist=324649)	A	C	-	-	-	-		-
rs12819276	12	43320279	PRICKLE1(dist=336707);ADAMTS20(dist=427733)	G	A	-	-	-	-		-
rs10785418	12	43591664	PRICKLE1(dist=608092);ADAMTS20(dist=156348)	A	G	-	-	-	-		-
rs448508	12	50325201	LOC283332(dist=19555);AQP2(dist=19323)	T	C	-	-	-	-		-
rs73103488	12	52575368	KRT80	A	G	-	-	-	-		-
rs17782296	12	67867814	CAND1(dist=159426);DYRK2(dist=174698)	A	G	-	-	-	-		-
rs2870804	12	67933452	CAND1(dist=225064);DYRK2(dist=109060)	G	A	-	-	-	-		-
rs144248556	12	69147894	SLC35E3	C	G	-	-	-	-		-
rs11177752	12	70005534	LRRC10	T	G	-	-	-	-		-
rs34929418	12	70013323	LRRC10(dist=8381);BEST3(dist=34066)	C	G	-	-	-	-		-
rs11177798	12	70097622	BEST3(dist=4426);RAB31P(dist=35009)	C	T	-	-	-	-		-
rs1389484	12	76203505	KRR1(dist=298087);PHLDA1(dist=215722)	G	A	-	-	-	-		-

rs12426679	12	76237987	KRR1(dist=332569);PHLDA1(dist=181240)	C	T	rs12230172	0.872727	Glioma	2.00E-06		26424050
								Non-glioblastoma glioma	8.00E-11		26424050
								Height	1.00E-34		20881960
								Height	6.00E-10		18391952
								Height	6.00E-12		25429064
rs11107120	12	93985482	SOCS2(dist=14961);CRADD(dist=85669)	C	T	rs11107116	0.961459	Height	4.00E-49		25282103
								Height	2.00E-07		18391951
								Height	7.00E-11		23563607
								Pubertal anthropometrics	4.00E-06		23449627
								Height	2.00E-08		28270201
rs79404351	12	96577470	LTA4H(dist=140172);ELK3(dist=10737)	T	C	-	-	-	-		-
rs11109960	12	100030138	ANKS1B	T	C	-	-	-	-		-
rs11067036	12	114746907	RBM19(dist=342731);TBX5(dist=44828)	C	T	-	-	-	-		-
rs10850315	12	114766735	RBM19(dist=362559);TBX5(dist=25000)	T	G	rs883079	0.740967	QRS duration	2.00E-15		27577874
								QRS duration	1.00E-10	(European)	27577874
								QRS duration	2.00E-06	(African American)	27577874
								QRS duration	5.00E-16		27659466
								QRS complex (12-leadsum)	8.00E-06		27659466
								Atrial fibrillation	1.00E-13	(European)	28416818
								Atrial fibrillation	2.00E-15		28416818
								QRS duration	1.00E-10		21076409
								Atrial fibrillation	5.00E-15		28416822
								PR interval	7.00E-09		21347284
								PR interval	7.00E-07		25035420
								PR interval	1.00E-19		23139255
rs1895587	12	114769529	RBM19(dist=365353);TBX5(dist=22206)	C	T	rs3825214	0.65622	QRS duration	3.00E-12		27659466
								Electrocardiographic traits	1.00E-07	(QT interval)	20062063
								Electrocardiographic traits	3.00E-12	(PR interval)	20062063
								Electrocardiographic traits	3.00E-13	(QRS duration)	20062063
rs9669457	12	114776282	RBM19(dist=372106);TBX5(dist=15453)	G	A	-	-	-	-		-
rs883079	12	114793240	TBX5	T	C	rs1895585	0.85245	PR interval	1.00E-19		23139255
								Electrocardiographic traits	1.00E-07	(QT interval)	20062063
								Electrocardiographic traits	3.00E-12	(PR interval)	20062063
								Electrocardiographic traits	3.00E-13	(QRS duration)	20062063
								QRS duration	3.00E-12		27659466
								PR interval	7.00E-07		25035420
								PR interval	7.00E-09		21347284
						rs3825214	0.601901	QRS duration	2.00E-15		27577874
								QRS duration	1.00E-10	(European)	27577874
								QRS duration	2.00E-06	(African American)	27577874
								QRS duration	5.00E-16		27659466
								QRS complex (12-leadsum)	8.00E-06		27659466
								Atrial fibrillation	1.00E-13	(European)	28416818
								Atrial fibrillation	2.00E-15		28416818
rs107444823	12	114798082	TBX5	T	C	rs883079	0.601732	QRS duration	1.00E-10		21076409
								QRS duration	2.00E-15		27577874
								QRS duration	1.00E-10	(European)	27577874
								QRS duration	2.00E-06	(African American)	27577874
								QRS duration	5.00E-16		27659466
								QRS complex (12-leadsum)	8.00E-06		27659466
								Atrial fibrillation	1.00E-13	(European)	28416818
								Atrial fibrillation	2.00E-15		28416818

								Atrial fibrillation	5.00E-15		28416822
						rs3825214	0.974963	Electrocardiographic traits	3.00E-13	(QRS duration)	20062063
								Electrocardiographic traits	3.00E-12	(PR interval)	20062063
								Electrocardiographic traits	1.00E-07	(QT interval)	20062063
								QRS duration	3.00E-12		27659466
rs7310159	12	114801610	TBX5	C	T	-	-	-	-	-	-
rs11067080	12	114803344	TBX5	T	A	-	-	-	-	-	-
rs7304774	12	114805648	TBX5	C	T	-	-	-	-	-	-
rs10744824	12	114808638	TBX5	A	G	rs3825214	0.88565	Electrocardiographic traits	3.00E-13	(QRS duration)	20062063
								Electrocardiographic traits	3.00E-12	(PR interval)	20062063
								Electrocardiographic traits	1.00E-07	(QT interval)	20062063
						rs7312625	0.610305	QRS duration	3.00E-12		27659466
rs7965033	12	114811355	TBX5	C	T	-	-	PR interval	7.00E-09		21347284
rs7964303	12	114814286	TBX5	G	T	rs7135659	0.641173	PR interval	7.00E-07		25035420
						rs7312625	0.61888	PR interval	7.00E-09		21347284
						rs1895585	0.662687	PR interval	1.00E-19		23139255
rs2555030	12	114817332	TBX5	G	A	-	-	-	-	-	-
rs12422933	12	115106688	TBX5-AS1(dist=256051);TBX3(dist=1371)	A	C	-	-	-	-	-	-
rs4769189	13	22647376	LINC00424(dist=195077);BASP1P1(dist=823793)	G	A	-	-	-	-	-	-
rs7999435	13	23374178	LINC00424(dist=921879);BASP1P1(dist=96991)	A	G	-	-	-	-	-	-
rs4771109	13	27940653	RASL11A(dist=92826);GTF3A(dist=58028)	T	C	-	-	-	-	-	-
rs2147674	13	36295038	MIR548F5	C	A	-	-	-	-	-	-
rs114845923	13	39343339	FREM2	G	A	-	-	-	-	-	-
rs77872459	13	40440256	COG6(dist=74454);LINC00332(dist=315690)	G	T	-	-	-	-	-	-
rs73462786	13	40566905	COG6(dist=201103);LINC00332(dist=189041)	T	C	-	-	-	-	-	-
rs11841724	13	40610627	COG6(dist=244825);LINC00332(dist=145319)	G	A	-	-	-	-	-	-
rs75440847	13	45019817	TSC22D1	G	A	-	-	-	-	-	-
rs12323281	13	47657922	HTR2A(dist=186711);SUCLA2(dist=858869)	G	A	-	-	-	-	-	-
rs79956842	13	62422107	PCDH20(dist=432452);OR7E156P(dist=1889461)	T	G	-	-	-	-	-	-
rs113651294	13	70184722	LINC00550(dist=725265);KLHL1(dist=90003)	C	T	-	-	-	-	-	-
rs1886512	13	74520186	KLF12	A	T	-	-	QRS duration	1.00E-08		21076409
						-	-	QRS duration	6.00E-10		27659466
						rs9573330	0.989505	QRS duration	5.00E-08	(European)	27577874
						rs728926	0.989505	QRS duration	4.00E-10		27577874
						rs728926	0.989505	QRS duration	6.00E-11		27659466
						rs728926	0.989505	QT interval	2.00E-08		24952745
rs12430408	13	82343259	SPRY2(dist=1428173);NONE(dist=None)	C	T	-	-	-	-	-	-
rs147131939	13	82507663	SPRY2(dist=1592577);SLITRK1(dist=1943680)	T	A	-	-	-	-	-	-
rs115813394	13	92907665	GPC5	G	A	-	-	-	-	-	-
rs9300793	13	103845172	SLC10A2(dist=125976);MIR548AS(dist=89657)	T	C	-	-	-	-	-	-
rs275943	13	109800041	MYO16	T	G	-	-	-	-	-	-
rs9559865	13	111377161	ING1(dist=3740);LINC00346(dist=139173)	T	C	-	-	-	-	-	-
rs74115751	13	113693891	MCF2L	G	A	-	-	-	-	-	-
rs191337035	14	20674272	OR11G2(dist=7740);OR11H6(dist=17597)	C	T	-	-	-	-	-	-
rs183814570	14	20703728	OR11H6(dist=10867);OR11H4(dist=7223)	G	C	-	-	-	-	-	-
rs227031	14	23031028	OR4E2(dist=896790);DAD1(dist=2779)	C	T	-	-	-	-	-	-
rs5742787	14	23045492	DAD1	T	C	-	-	-	-	-	-
rs3181256	14	24800879	ADCY4	G	A	-	-	-	-	-	-
rs2295300	14	24805117	ADCY4;RIPK3	T	C	-	-	-	-	-	-
rs11851539	14	25328060	STXBP6	C	A	-	-	-	-	-	-
rs1957021	14	32924505	AKAP6	C	T	-	-	-	-	-	-
rs2145587	14	32981484	AKAP6	A	G	-	-	-	-	-	-
rs28439021	14	34709500	EGLN3(dist=289216);SPTSSA(dist=192644)	A	G	-	-	-	-	-	-

rs73241997	14	35173775	SNX6(dist=74409);CFL2(dist=5813)	T	C	-	-	-	-	-	-	-
rs113403493	14	42671729	LRFN5(dist=297977);NONE(dist=NONE)	T	C	-	-	-	-	-	-	-
rs1624897	14	43223961	LRFN5(dist=850209);FSCB(dist=1749393)	G	A	-	-	-	-	-	-	-
rs4500634	14	49754546	LINC00648(dist=1490329);RPS29(dist=288844)	T	C	-	-	-	-	-	-	-
rs73288887	14	51507999	TRIM9	C	T	-	-	-	-	-	-	-
rs72724204	14	56879644	PELI2(dist=111613);TMEM260(dist=166867)	A	T	-	-	-	-	-	-	-
rs11624459	14	56891904	PELI2(dist=123873);TMEM260(dist=154607)	G	A	-	-	-	-	-	-	-
rs72720615	14	57727320	EXOC5	T	C	-	-	-	-	-	-	-
rs59270726	14	58196938	SLC35F4	T	G	-	-	-	-	-	-	-
rs4473098	14	58209843	SLC35F4	G	T	rs1092015	0.719956	Bipolar disorder and schizophrenia	8.00E-06		20889312	
rs3866738	14	64614770	SYNE2	G	C	rs1152591	0.656225	Atrial fibrillation	1.00E-10		28416818	
rs7147022	14	64640068	SYNE2	C	T	-	-	-	-	-	-	-
rs72720363	14	64642367	SYNE2	G	T	-	-	-	-	-	-	-
rs2781381	14	64646048	SYNE2	T	C	-	-	-	-	-	-	-
rs1255979	14	64650119	SYNE2	A	G	-	-	-	-	-	-	-
rs7148637	14	64665060	SYNE2	C	A	-	-	-	-	-	-	-
rs10162323	14	64668144	SYNE2	C	T	-	-	-	-	-	-	-
rs1152591	14	64680848	SYNE2	A	G	-	-	Atrial fibrillation	1.00E-10		28416818	
rs17179404	14	64686543	SYNE2	A	T	-	-	Atrial fibrillation	6.00E-13		22544366	
rs4991135	14	64727957	ESR2	C	T	-	-	-	-	-	-	-
rs10143616	14	64740175	ESR2	G	A	-	-	-	-	-	-	-
rs1256033	14	64745399	ESR2	T	C	-	-	-	-	-	-	-
rs17101765	14	64759869	ESR2	T	C	-	-	-	-	-	-	-
rs1271572	14	64761917	ESR2	A	C	-	-	-	-	-	-	-
rs2978381	14	64766652	ESR2(dist=5524);TEX21P(dist=45539)	T	C	-	-	-	-	-	-	-
rs12589834	14	64771405	ESR2(dist=10277);TEX21P(dist=40786)	G	A	-	-	-	-	-	-	-
rs1256110	14	64816857	TEX21P(dist=2528);MTHFD1(dist=37902)	G	A	-	-	-	-	-	-	-
rs11158538	14	64859191	MTHFD1	C	T	-	-	-	-	-	-	-
rs12587229	14	64862892	MTHFD1	A	G	-	-	-	-	-	-	-
rs147876315	14	71539087	PCNX	A	G	-	-	-	-	-	-	-
rs2242614	14	73722277	PAPLN	A	G	-	-	-	-	-	-	-
rs11844042	14	80059860	NRXN3	G	C	-	-	-	-	-	-	-
rs2543571	14	80067979	NRXN3	G	T	-	-	-	-	-	-	-
rs113099720	14	80077725	NRXN3	A	G	-	-	-	-	-	-	-
rs221503	14	80085449	NRXN3	G	A	-	-	-	-	-	-	-
rs221440	14	80128753	NRXN3	C	A	-	-	-	-	-	-	-
rs11850270	14	88063777	LOC283585(dist=674678);GALC(dist=335581)	G	A	-	-	-	-	-	-	-
rs117060319	14	92986145	RIN3	A	G	-	-	-	-	-	-	-
rs179142	14	95988120	SYNE3(dist=45947);SNHG10(dist=11129)	G	A	-	-	-	-	-	-	-
rs1742350	14	99773406	BCL11B(dist=35584);SETD3(dist=90677)	A	G	-	-	-	-	-	-	-
rs140093750	15	23767555	GOLGA8S(dist=154084);MIR4508(dist=39654)	A	G	-	-	-	-	-	-	-
rs7166552	15	26472365	LOC503519(dist=94181);GABRB3(dist=316329)	T	C	-	-	-	-	-	-	-
rs276857	15	39531658	C15orf53(dist=539419);C15orf54(dist=11227)	G	A	-	-	-	-	-	-	-
rs112904608	15	53603801	ONECUT1(dist=521592);WDR72(dist=202137)	C	A	-	-	-	-	-	-	-
rs79119207	15	58740443	LIPC	A	C	-	-	-	-	-	-	-
rs4774311	15	59071581	FAM63B	C	T	-	-	-	-	-	-	-
rs8036037	15	64078417	HERC1	A	T	-	-	-	-	-	-	-
rs11630024	15	65531840	CILP(dist=28000);PARP16(dist=18597)	A	G	-	-	-	-	-	-	-
rs11630885	15	65574809	PARP16	C	A	-	-	-	-	-	-	-
rs12902966	15	73466374	NEO1	A	G	-	-	-	-	-	-	-
rs146698249	15	73633684	HCN4	T	C	-	-	-	-	-	-	-
rs11631651	15	73646487	HCN4	C	A	-	-	-	-	-	-	-

rs11631816	15	73646594	HCN4	A	G	-	-	-	-	-	-	-
rs56777763	15	73653971	HCN4	C	T	-	-	-	-	-	-	-
rs74022954	15	73657063	HCN4	T	C	-	-	-	-	-	-	-
rs113040230	15	73665427	HCN4(dist=3822);C15orf60(dist=70072)	A	G	-	-	-	-	-	-	-
rs7178084	15	73668046	HCN4(dist=6441);C15orf60(dist=67453)	C	T	-	-	-	-	-	-	-
rs186031019	15	73669649	HCN4(dist=8044);C15orf60(dist=65850)	G	A	-	-	-	-	-	-	-
rs11634550	15	73671315	HCN4(dist=9710);C15orf60(dist=64184)	A	G	-	-	-	-	-	-	-
rs74743553	15	73676535	HCN4(dist=14930);C15orf60(dist=58964)	G	A	-	-	-	-	-	-	-
rs74022964	15	73677264	HCN4(dist=15659);C15orf60(dist=58235)	T	C	rs7164883	0.934341	Atrial fibrillation	3.00E-17	22544366		
						rs4489968	0.952915	Heart rate	4.00E-20	23583979		
						rs7173389	0.952915	Resting heart rate	1.00E-32	27798624		
						rs7183206	0.898183	Atrial fibrillation	8.00E-12	28416818		
rs6495064	15	73682867	HCN4(dist=21262);C15orf60(dist=52632)	C	T	rs7164883	0.65402	Atrial fibrillation	3.00E-17	22544366		
						rs4489968	0.668313	Heart rate	4.00E-20	23583979		
						rs7173389	0.668313	Resting heart rate	1.00E-32	27798624		
						rs7183206	0.631406	Atrial fibrillation	8.00E-12	28416818		
rs8031196	15	80994931	ABHD17C	T	C	rs35199222	0.910259	Systolic blood pressure	5.00E-12	28135244		
rs143537074	15	83995935	BNC1(dist=42467);SH3GL3(dist=120156)	A	G	-	-	-	-	-	-	-
rs184454906	15	84922940	GOLGA6L4(dist=8820);DNM1P41(dist=122866)	T	C	-	-	-	-	-	-	-
rs74031613	15	93104484	C15orf32(dist=60137);LOC100144604(dist=6564)	G	A	-	-	-	-	-	-	-
rs4965428	15	99267568	IGF1R	G	C	rs2018860	0.989074	Fasting plasma glucose	3.00E-08	25187374		
						rs6598541	0.809864	Urate levels	5.00E-15	23263486		
rs907799	15	99272663	IGF1R	G	A	rs2018860	0.648584	Fasting plasma glucose	3.00E-08	25187374		
						rs6598541	0.762246	Urate levels	5.00E-15	23263486		
rs7166287	15	99273075	IGF1R	C	T	rs2018860	0.813654	Fasting plasma glucose	3.00E-08	25187374		
						rs6598541	0.988426	Urate levels	5.00E-15	23263486		
rs12898502	15	99294452	IGF1R	T	C	rs2018860	0.644916	Fasting plasma glucose	3.00E-08	25187374		
						rs6598541	0.760814	Urate levels	5.00E-15	23263486		
rs897076	15	100280920	LYSMD4(dist=7294);DNM1P46(dist=49441)	A	G	-	-	-	-	-	-	-
rs6600181	16	1926642	MEIOB(dist=4463);LINCO0254(dist=1644)	G	A	-	-	-	-	-	-	-
rs2815301	16	2004718	RPL3L	C	T	-	-	-	-	-	-	-
rs8055296	16	3397803	ZNF75A(dist=29227);OR2C1(dist=8086)	T	C	-	-	-	-	-	-	-
rs147031045	16	6733276	RBFOX1	G	T	-	-	-	-	-	-	-
rs78001017	16	6752887	RBFOX1	T	A	-	-	-	-	-	-	-
rs4563029	16	17326042	XYLT1	C	T	-	-	-	-	-	-	-
rs28759075	16	22787817	MIR548AA2;MIR548D2	T	C	-	-	-	-	-	-	-
rs77327220	16	22791069	MIR548AA2;MIR548D2	G	A	-	-	-	-	-	-	-
rs75376137	16	23287950	SCNN1G(dist=59750);SCNN1B(dist=25641)	A	G	-	-	-	-	-	-	-
rs74018931	16	51755027	SALL1(dist=569844);C16orf97(dist=305237)	T	C	-	-	-	-	-	-	-
rs11860919	16	51771217	SALL1(dist=586034);C16orf97(dist=289047)	G	A	-	-	-	-	-	-	-
						rs11075990	0.833529	Body mass index	2.00E-51	23563607		
						rs1121980	0.750904	Body mass index	4.00E-08	18454148		
								HDL cholesterol	7.00E-09	24097068		
								HDL cholesterol levels	2.00E-07	28334899		
								Obesity (early onset extreme)	1.00E-07	18159244		
								Triglycerides	3.00E-08	24097068		
								Waist-hip ratio	1.00E-38	(EA)	25673412	
								Waist-hip ratio	1.00E-23	(EA, men)	25673412	
								Waist-hip ratio	1.00E-17	(EA, women)	25673412	
								Type 2 diabetes	3.00E-08	20581827		
								Body mass index (SNP x SNP interaction)	5.00E-22	22344221		
								Childhood body mass index	5.00E-16	26604143		
								Dietary macronutrient intake	1.00E-09	23636237		
								Obesity	6.00E-39	23563607		

rs1421085	0.78095	Obesity	1.00E-28		19151714
		Obesity	7.00E-18	(children)	19151714
		Obesity	5.00E-13	(adults)	19151714
		Obesity (early onset extreme)	3.00E-28		23563609
		Type 2 diabetes	4.00E-15		26818947
rs1558902	0.78095	Waist circumference	5.00E-19		19557197
		Obesity (early onset extreme)	5.00E-19		20421936
		Body mass index	5.00E-120		20935630
		Obesity	1.00E-07		21544081
		Obesity	2.00E-81		23563607
		Body mass index	7.00E-27		24861553
		Height adjusted BMI	9.00E-10		25044758
		Waist circumference	4.00E-101	(EA)	25673412
		Waist circumference	8.00E-59	(EA, men)	25673412
		Waist circumference	1.00E-57	(EA, women)	25673412
		Body mass index	1.00E-156		25673413
		Body mass index	8.00E-153	(EA)	25673413
		Body mass index	1.00E-93	(EA, men)	25673413
		Body mass index	4.00E-84	(EA, women)	25673413
		Body mass index	1.00E-26	(age 1-17)(all)	25953783
		Body mass index	2.00E-16	(age 8)	25953783
		Body mass index (age interaction)	1.00E-26		25953783
		Childhood body mass index	4.00E-14		26604143
		Body fat percentage	4.00E-27		26833246
rs17817449	0.828315	Body fat percentage	1.00E-25	(European)	26833246
		Body fat percentage	4.00E-15	(men)	26833246
		Body fat percentage	7.00E-14	(women)	26833246
		Body fat percentage	1.00E-13	(European women)	26833246
		Body fat percentage	2.00E-13	(European men)	26833246
		Me-rche (age at onset)	1.00E-12		27182965
		C-reactive protein levels or HDL-cholesterol levels (pleiotropy)	5.00E-09		27286809
		BMI (adjusted for smoking behaviour)	3.00E-110		28443625
		BMI (adjusted for smoking behaviour)	7.00E-65	(men)	28443625
		BMI (adjusted for smoking behaviour)	5.00E-59	(women)	28443625
		Body mass index (joint a-lysis main effects and smoking interaction)	2.00E-115		28443625
		Body mass index (joint a-lysis main effects and smoking interaction)	2.00E-62	(men)	28443625
		Body mass index (joint a-lysis main effects and smoking interaction)	2.00E-63	(women)	28443625
		BMI in smokers	8.00E-39		28443625
		BMI in smokers	9.00E-21	(men)	28443625
		BMI in smokers	4.00E-22	(women)	28443625
		BMI in non-smokers	1.00E-79		28443625
		BMI in non-smokers	4.00E-44	(women)	28443625
		BMI in non-smokers	3.00E-45	(men)	28443625
rs17817064	0.834560	Breast cancer	6.00E-14		23535729
		Breast cancer	5.00E-08		27117709
		Breast cancer	6.00E-07		23535733
		Breast cancer (estrogen-receptor negative)	3.00E-07		27117709
		Obesity	2.00E-12		21552555
rs17817064	0.834560	Body mass index	1.00E-10		23583978
		Body mass index (adult)	1.00E-146		28430825

	rs11649091	16	53845169	FTO	G	T	1317817304	0.834502	Body mass index (adult)	3.00E-11	(AA)	28430825
									Body mass index (adult)	3.00E-08	(AA,Women)	28430825
rs3751812	0.833529								Body mass index	6.00E-108		28448500
									Body mass index in physically active individuals	2.00E-19	(EA, men)	28448500
									Body mass index in physically i-ctive individuals	1.00E-15	(EA, men)	28448500
									Body mass index in physically i-ctive individuals	5.00E-42	(EA)	28448500
									Body mass index in physically i-ctive individuals	7.00E-28	(women)	28448500
									Body mass index in physically i-ctive individuals	5.00E-41		28448500
									Body mass index (joint a-lysis main effects and physical activity interaction)	3.00E-32		28448500
									Body mass index (joint a-lysis main effects and physical activity interaction)	2.00E-108	(EA, men)	28448500
									Body mass index (joint a-lysis main effects and physical activity interaction)	3.00E-109	(EA)	28448500
									Body fat percentage	6.00E-16		28270201
rs55872725	0.78095								Body mass index	6.00E-21		28270201
									Body mass index	2.00E-14		24064335
									Breast size	4.00E-07		27182965
									Obesity	1.00E-79		23563607
									Subcutaneous adipose tissue	1.00E-09		27918534
									Sasang constitutio-l medicine type (So-Eum)	1.00E-07		25888059
									Body mass index	2.00E-10		22982992
									circulating leptin levels	1.00E-09		26833098
									circulating leptin levels	9.00E-08	(men)	26833098
									Obesity	5.00E-110		23563607
rs8050136	0.824069								Type 2 diabetes	1.00E-12		17463248
									Type 2 diabetes	7.00E-14		17463249
									Type 2 diabetes	7.00E-06		18372903
									Type 2 diabetes	2.00E-17		19056611
									Body mass index	1.00E-47		19079260
									Weight	5.00E-36		19079260
									Body mass in chronic obstructive pulmo-ry disease	4.00E-08		21037115
									Adiposity	3.00E-26		21706003
									Type 2 diabetes	6.00E-06		23209189
									Body mass index	1.00E-07		24348519
									Me-rche (age at onset)	2.00E-17		25231870
									Body mass index	2.00E-58	(men)	28448500
									Body mass index	1.00E-52	(EA, men)	28448500
									Body mass index (joint a-lysis main effects and physical activity interaction)	4.00E-54	(men)	28448500
									Body mass index in physically active individuals	4.00E-39	(men)	28448500
									Body mass index in physically i-ctive individuals	2.00E-18	(men)	28448500
rs9922619	0.855088								Subcutaneous adipose tissue	6.00E-08		22589738
									Body mass index	1.00E-103	(EA)	28448500
									Body mass index	2.00E-64	(EA, women)	28448500
									Body mass index	2.00E-64	(women)	28448500
									Body mass index in physically active individuals	2.00E-43	(EA, women)	28448500
									Body mass index in physically active individuals	2.00E-71	(EA)	28448500
									Body mass index in physically active individuals	9.00E-44	(women)	28448500
									Body mass index in physically active individuals	5.00E-72		28448500
									Body mass index (joint a-lysis main effects and physical activity interaction)	1.00E-68	(EA, women)	28448500
									Body mass index (joint a-lysis main effects and physical activity interaction)	2.00E-68	(women)	28448500

								Triglyceride levels	8.00E-08		28334899	
								rs9930506	0.850263	Obesity-related traits	3.00E-08	(hip)
								rs9930506		Obesity-related traits	9.00E-07	(BMI)
								rs9930506		Obesity-related traits	9.00E-07	(weight)
								rs9936385		Type 2 diabetes	1.00E-12	24509480
								rs9939609	0.833529	Age-related disease endophenotypes	2.00E-17	27790247
								rs9939609		Age-related diseases, mortality and associated endophenotypes	1.00E-14	27790247
								rs9939609		Biomedical quantitative traits	2.00E-07	19396169
								rs9939609		Body mass index	4.00E-51	19079261
								rs9939609		Body mass index	3.00E-35	17434869
								rs9939609		Me-rche (age at onset)	3.00E-08	21102462
								rs9939609		Type 2 diabetes	1.00E-20	22693455
								rs9939609		Type 2 diabetes	2.00E-07	17554300
								rs9939973	0.750904	Hip circumference	2.00E-86	(EA)
								rs9939973		Hip circumference	3.00E-52	(EA,women)
								rs9939973		Hip circumference	4.00E-43	(EA, men)
								rs9940128	0.750904	Body mass index	4.00E-23	23669352
								rs9940128		Metabolic syndrome	2.00E-09	22399527
								rs9941349	0.804983	Body mass index in physically inactive individuals	2.00E-29	28448500
								rs9941349		Obesity (extreme)	6.00E-12	19553259
rs13336114	16	54967096	IRX5	A	C	-	-			-	-	-
rs10852536	16	54972264	IRX5(dist=3869);IRX6(dist=386207)	A	T	-	-			-	-	-
rs41352550	16	58064274	MMP15	C	G	-	-			-	-	-
rs8055406	16	72998236	ZFHX3	G	A	-	-			-	-	-
rs9934475	16	73011577	ZFHX3	G	A	-	-			-	-	-
								rs2106261	0.670703	Atrial fibrillation	2.00E-15	19597492
								rs2106261		Atrial fibrillation	3.00E-16	22544366
								rs2106261		Atrial fibrillation	8.00E-32	28416818
								rs2106261		Atrial fibrillation	4.00E-24	(EA)
								rs2106261		Atrial fibrillation	1.00E-14	28416818
								rs2106261		Prevalent atrial fibrillation	1.00E-19	28416818
								rs2106261		Atrial fibrillation	1.00E-35	28416822
								rs2106261		Early onset atrial fibrillation	3.00E-30	28460022
								rs4499262	0.649438	Incident atrial fibrillation	4.00E-08	28416818
								rs4499262		Atrial fibrillation	1.00E-10	19597491
								rs7193343	0.668636	Ischemic stroke (cardioembolic)	2.00E-10	26708676
								rs7193343		Stroke (ischemic)	2.00E-08	23041239
rs9930445	16	73013482	ZFHX3	C	T	-	-			-	-	-
rs4541098	16	73022504	ZFHX3	C	T	-	-			-	-	-
rs2106254	16	73025482	ZFHX3	A	G	-	-			-	-	-
rs62053229	16	73031889	ZFHX3	G	A	-	-			-	-	-
								rs2106261	0.827548	Atrial fibrillation	2.00E-15	19597492
								rs2106261		Atrial fibrillation	3.00E-16	22544366
								rs2106261		Atrial fibrillation	8.00E-32	28416818
								rs2106261		Atrial fibrillation	4.00E-24	(EA)
								rs2106261		Atrial fibrillation	1.00E-14	28416818
								rs2106261		Prevalent atrial fibrillation	1.00E-19	28416818
								rs2106261		Atrial fibrillation	1.00E-35	28416822
								rs2106261		Early onset atrial fibrillation	3.00E-30	28460022
								rs4499262	0.804634	Incident atrial fibrillation	4.00E-08	28416818
								rs4499262		Atrial fibrillation	1.00E-10	19597491
								rs7193343	0.846265	Ischemic stroke (cardioembolic)	2.00E-10	26708676

							rs879324	0.772135		Stroke (ischemic)	2.00E-08		23041239
rs2010055	16	73037418	ZFHX3	G	C	rs2106261	0.676963		Atrial fibrillation	2.00E-15		19597492	
									Atrial fibrillation	3.00E-16		22544366	
									Atrial fibrillation	8.00E-32		28416818	
									Atrial fibrillation	4.00E-24	(EA)	28416818	
									Atrial fibrillation	1.00E-14		28416818	
									Prevalent atrial fibrillation	1.00E-19		28416818	
									Atrial fibrillation	1.00E-35		28416822	
									Early onset atrial fibrillation	3.00E-30		28460022	
									Incident atrial fibrillation	4.00E-08		28416818	
									Atrial fibrillation	1.00E-10		19597491	
									Ischemic stroke (cardioembolic)	2.00E-10		26708676	
									Stroke (ischemic)	2.00E-08		23041239	
rs6499606	16	73045225	ZFHX3	C	T	-	-		-	-	-	-	
rs2106261	16	73051620	ZFHX3	T	C	-	-		Atrial fibrillation	2.00E-15		19597492	
									Atrial fibrillation	3.00E-16		22544366	
									Atrial fibrillation	8.00E-32		28416818	
									Atrial fibrillation	4.00E-24	(EA)	28416818	
									Atrial fibrillation	1.00E-14		28416818	
									Prevalent atrial fibrillation	1.00E-19		28416818	
									Atrial fibrillation	1.00E-35		28416822	
									Early onset atrial fibrillation	3.00E-30		28460022	
									Incident atrial fibrillation	4.00E-08		28416818	
									Atrial fibrillation	1.00E-10		19597491	
									Ischemic stroke (cardioembolic)	2.00E-10		26708676	
									Stroke (ischemic)	2.00E-08		23041239	
rs56274700	16	73063054	ZFHX3	T	G	-	-		-	-	-	-	
rs876727	16	73067761	ZFHX3	T	G	-	-		-	-	-	-	
rs9302644	16	73071588	ZFHX3	C	G	rs879324	0.622525		Stroke (ischemic)	2.00E-08		23041239	
rs9940321	16	73073808	ZFHX3	A	G	-	-		-	-	-	-	
rs61164185	16	73079089	ZFHX3	A	G	-	-		-	-	-	-	
rs4788697	16	73087494	ZFHX3	A	G	-	-		-	-	-	-	
rs9930504	16	73087689	ZFHX3	T	C	-	-		-	-	-	-	
rs78053786	16	73089716	ZFHX3	A	G	-	-		-	-	-	-	
rs62055084	16	73097845	ZFHX3(dist=5311);HTA(dist=28403)	C	T	-	-		-	-	-	-	
rs975376	16	73100503	ZFHX3(dist=7969);HTA(dist=25745)	C	G	-	-		-	-	-	-	
rs148831757	16	73337144	HTA(dist=209472);LOC100506172(dist=83560)	G	C	-	-		-	-	-	-	
rs4477719	16	78306669	WWOX	G	A	-	-		-	-	-	-	
rs4552013	16	83121684	CDH13	C	T	-	-		-	-	-	-	
rs2550415	16	84664927	COTL1(dist=13258);KLHL36(dist=17204)	T	G	-	-		-	-	-	-	
rs144997872	16	85892533	COX4I1(dist=51926);IRF8(dist=40241)	C	T	-	-		-	-	-	-	
rs114848806	16	85922195	COX4I1(dist=81588);IRF8(dist=10579)	T	C	rs11648716	0.826501		Thiazide-induced adverse metabolic effects in hypertensive patients	7.00E-06		23400010	
rs117455677	16	86168682	IRF8(dist=212471);LOC146513(dist=151355)	C	T	-	-		-	-	-	-	
rs28462173	16	86480450	LOC732275(dist=101165);FENDRR(dist=27681)	G	A	-	-		-	-	-	-	
rs7501170	16	86481451	LOC732275(dist=102166);FENDRR(dist=26680)	C	T	-	-		-	-	-	-	
rs16945571	17	1279423	YWHAE	T	A	rs9908552	0.905034		Schizophrenia	3.00E-06		26198764	
rs191915441	17	1350134	CRK	A	G	-	-		-	-	-	-	
rs6502721	17	1362503	CRK(dist=2942);MYO1C(dist=4977)	C	T	-	-		-	-	-	-	
rs59571142	17	1784647	RPA1	C	A	-	-		-	-	-	-	
rs148755181	17	4649058	ZMYND15	G	C	-	-		-	-	-	-	
rs147139769	17	7669395	D-H2	T	C	-	-		-	-	-	-	
rs12939398	17	13468081	HS3ST3A1	T	C	-	-		-	-	-	-	
rs77519873	17	25743162	WSB1(dist=102517);TBC1D3P5(dist=1869)	C	T	-	-		-	-	-	-	

rs71368118	17	27340192	SEZ6(dist=7111);PIPOX(dist=29726)	C	T	-	-	-	-	-	-
rs2637365	17	32077378	ASIC2	T	G	-	-	-	-	-	-
rs7215367	17	35294112	LHX1	G	A	-	-	-	-	-	-
rs2285655	17	35469925	ACACA	T	C	-	-	-	-	-	-
rs9914973	17	38122708	GSDMA	T	C	rs17609240	0.798381	Hematological parameters	9.00E-09		19820697
						rs2302777	0.62976	Multiple myeloma (hyperdiploidy)	8.00E-07		23502783
						rs35272691	0.627431	White blood cell count (neutrophil)	5.00E-11		28158719
rs7222039	17	38165541	PSMD3(dist=11328);CSF3(dist=6073)	C	T	rs2302777	0.681661	Multiple myeloma (hyperdiploidy)	8.00E-07		23502783
						rs35272691	0.685644	White blood cell count (neutrophil)	5.00E-11		28158719
						rs3859192	0.653034	White blood cell count	2.00E-12		22037903
rs12453732	17	38177839	MED24	A	C	-	-	-	-	-	-
rs4072639	17	38189049	MED24	G	A	rs2302777	0.927912	Multiple myeloma (hyperdiploidy)	8.00E-07		23502783
						rs35272691	0.922975	White blood cell count (neutrophil)	5.00E-11		28158719
rs8078692	17	38215117	MED24(dist=4228);THRA(dist=3329)	A	G	rs3859192	0.65673	White blood cell count	2.00E-12		22037903
rs34670005	17	38216933	MED24(dist=6044);THRA(dist=1513)	T	C	rs2302777	0.680579	Multiple myeloma (hyperdiploidy)	8.00E-07		23502783
						rs35272691	0.677459	White blood cell count (neutrophil)	5.00E-11		28158719
rs148335357	17	38762984	CCR7(dist=41248);SMARCE1(dist=20992)	T	C	-	-	-	-	-	-
rs113420964	17	55521937	MSI2	A	G	-	-	-	-	-	-
rs2680700	17	56440542	RNF43	T	G	-	-	-	-	-	-
rs185582368	17	60878765	MIR548W	T	C	-	-	-	-	-	-
rs139213073	17	69839960	KCNJ2(dist=1663777);SOX9(dist=277201)	G	C	-	-	-	-	-	-
rs185048266	17	69902242	KCNJ2(dist=1726059);SOX9(dist=214919)	T	A	-	-	-	-	-	-
rs76019060	18	8442561	PTPRM(dist=35702);RAB12(dist=166882)	G	A	-	-	-	-	-	-
rs9962366	18	13237589	LDLRAD4	G	A	-	-	-	-	-	-
rs185315437	18	14539520	POTEC	G	A	-	-	-	-	-	-
rs8083301	18	21078579	RIOK3(dist=15480);C18orf8(dist=4855)	A	T	-	-	-	-	-	-
rs1790687	18	28697070	DSC2(dist=14682);DSC1(dist=12144)	T	A	-	-	-	-	-	-
rs73414209	18	29042185	DSG3	A	C	-	-	-	-	-	-
rs72928310	18	29397735	SLC25A52(dist=56892);TRAPP8(dist=11401)	C	G	-	-	-	-	-	-
rs76773970	18	35346674	MIR4318(dist=109496);LINC00669(dist=1440214)	A	G	-	-	-	-	-	-
rs118048036	18	36149302	MIR4318(dist=912124);LINC00669(dist=637586)	C	G	-	-	-	-	-	-
rs75383961	18	46894459	DYM	T	C	-	-	-	-	-	-
rs12605684	18	50348565	DCC	A	G	-	-	-	-	-	-
rs114864269	18	51763454	MBD2(dist=12296);POLI(dist=32395)	C	A	-	-	-	-	-	-
rs8099115	18	55217827	FECH	A	G	-	-	-	-	-	-
rs73436914	18	55230918	FECH	C	A	-	-	-	-	-	-
rs3902163	18	55946917	NEDD4L	A	C	-	-	-	-	-	-
rs2288774	18	55983330	NEDD4L	T	C	-	-	-	-	-	-
rs72973941	18	58064934	MC4R(dist=24933);CDH20(dist=1092841)	G	A	-	-	-	-	-	-
rs7234473	18	58122829	MC4R(dist=82828);CDH20(dist=1034946)	T	C	-	-	-	-	-	-
rs75307012	18	59405839	CDH20(dist=183474);RNF152(dist=76465)	G	A	-	-	-	-	-	-
rs141915856	18	65363705	LOC643542	G	A	-	-	-	-	-	-
rs1010237	18	65722477	LOC643542(dist=155621);TMX3(dist=618448)	T	C	-	-	-	-	-	-
rs115152290	18	71514828	OC100505817(dist=497704);FBXO15(dist=225760)	A	G	-	-	-	-	-	-
rs9947417	18	74892839	MBP(dist=48065);GALR1(dist=69169)	T	C	-	-	-	-	-	-
rs12455869	18	75093439	GALR1(dist=111343);SALL3(dist=1646836)	T	G	-	-	-	-	-	-
rs668176	18	77590736	CTDP1(dist=76226);KCNG2(dist=32932)	C	T	-	-	-	-	-	-
rs191501295	19	4122203	MAP2K2	T	C	-	-	-	-	-	-
rs141529746	19	6149947	ACSBG2	A	G	-	-	-	-	-	-
rs141997037	19	6331729	ACER1	T	C	-	-	-	-	-	-
rs7250137	19	6783558	VAV1	G	T	-	-	-	-	-	-
rs111430613	19	12651486	ZNF564	G	A	-	-	-	-	-	-
rs78169597	19	15739730	CYP4F8	C	T	-	-	-	-	-	-
rs182970661	19	18528518	LRRC25(dist=20103);SSBP4(dist=1628)	A	G	-	-	-	-	-	-

rs10420528	19	32092482	THEG5(dist=8537);ZNF507(dist=744032)	C	G	-	-	-	-	-	-	-
rs140622845	19	35946377	FFAR2(dist=3708);KRTDAP(dist=31849)	A	G	-	-	-	-	-	-	-
rs55981709	19	35950458	FFAR2(dist=7789);KRTDAP(dist=27768)	T	C	-	-	-	-	-	-	-
rs112370160	19	36533933	THAP8	C	T	-	-	-	-	-	-	-
rs62111381	19	36609252	TBCB	C	T	-	-	-	-	-	-	-
rs1095490	19	37498066	ZNF568(dist=9232);ZNF420(dist=71316)	C	T	-	-	-	-	-	-	-
rs112696813	19	37595573	ZNF420	C	T	-	-	-	-	-	-	-
rs346062	19	44198577	PLAUR(dist=24079);IRGC(dist=21637)	A	G	-	-	-	-	-	-	-
rs34705853	19	44199905	PLAUR(dist=25407);IRGC(dist=20309)	C	T	-	-	-	-	-	-	-
rs741233	19	46894786	PPP5C	T	C	rs4802307	0.937464	Crohn's disease	2.00E-10	23128233	26192919	26192919
								Crohn's disease	9.00E-12			
								Inflammatory bowel disease	2.00E-08			
								Crohn's disease	4.00E-07			
rs60875307	19	51580479	KLK14	C	G	-	-	-	-	-	-	-
rs148077285	19	52202140	LINC00085	C	T	-	-	-	-	-	-	-
rs34425941	19	52880612	ZNF880	C	T	-	-	-	-	-	-	-
rs112834688	19	53036549	ZNF808	A	G	-	-	-	-	-	-	-
rs118182626	19	55998317	-T14	C	A	-	-	-	-	-	-	-
rs6509951	19	56209633	EPN1(dist=2500);NLRP9(dist=10165)	C	T	-	-	-	-	-	-	-
rs6107835	20	709132	SCRT2(dist=52309);SLC52A3(dist=31592)	G	T	-	-	-	-	-	-	-
rs1135196	20	1592284	SIRPB1	A	G	-	-	-	-	-	-	-
rs6052428	20	4176778	LOC728228	G	A	-	-	-	-	-	-	-
rs2145274	20	6572014	FERMT1(dist=467823);BMP2(dist=176731)	A	C	-	-	-	-	-	-	-
rs191380143	20	13829149	SEL1L2	C	G	-	-	-	-	-	-	-
rs6033994	20	14620954	MACROD2	G	A	-	-	-	-	-	-	-
rs55782362	20	15269173	MACROD2	C	T	-	-	-	-	-	-	-
rs6131667	20	15343412	MACROD2	C	T	-	-	-	-	-	-	-
rs75767557	20	15358864	MACROD2	A	G	-	-	-	-	-	-	-
rs2179905	20	16562296	KIF16B(dist=8217);SNRPB2(dist=148313)	T	C	-	-	-	-	-	-	-
rs6014420	20	36868439	KIAA1755	A	C	-	-	-	-	-	-	-
rs6127573	20	36887454	KIAA1755	G	T	-	-	-	-	-	-	-
rs112693623	20	37844900	LOC339568	A	C	-	-	-	-	-	-	-
rs7362291	20	39327784	MAFB(dist=9908);TOP1(dist=329678)	C	G	-	-	-	-	-	-	-
rs6031763	20	43360494	WISP2(dist=4042);KCNK15(dist=13994)	G	C	-	-	-	-	-	-	-
rs144233246	20	46473319	SULF2(dist=57959);LINC00494(dist=515335)	T	C	-	-	-	-	-	-	-
rs17208200	21	15772971	HSPA13(dist=17462);SAMSN1(dist=84578)	A	T	-	-	-	-	-	-	-
rs71321718	21	20583684	MPRSS15(dist=807714);LINC00320(dist=1531229)	A	T	-	-	-	-	-	-	-
rs56008946	21	27148867	GABPA(dist=4096);APP(dist=103994)	C	T	-	-	-	-	-	-	-
rs114509934	21	27195333	GABPA(dist=50562);APP(dist=57528)	A	G	-	-	-	-	-	-	-
rs76398767	21	27206938	GABPA(dist=62167);APP(dist=45923)	A	G	-	-	-	-	-	-	-
rs2829983	21	27285105	APP	G	T	-	-	-	-	-	-	-
rs2830507	21	28159499	CYYR1(dist=213918);ADAMTS1(dist=49107)	A	G	-	-	-	-	-	-	-
rs113818300	21	34265415	C21orf62(dist=79362);OLIG2(dist=132801)	A	C	-	-	-	-	-	-	-
rs77759316	21	35710023	LINC00310(dist=147803);KCNE2(dist=26300)	G	A	-	-	-	-	-	-	-
rs73357562	21	35771659	SMIM11(dist=10207);KCNE1(dist=47327)	A	G	-	-	-	-	-	-	-
rs2834618	21	36119111	LOC100506385	T	G	-	-	-	-	-	-	-
rs9985030	21	36429268	RUNX1(dist=7673);LOC100506403(dist=315537)	A	G	-	-	-	-	-	-	-
rs66916924	21	45756069	C21orf2	C	T	-	-	-	-	-	-	-
rs116561531	21	46252304	SUMO3(dist=14260);PTTG1IP(dist=17196)	A	G	-	-	-	-	-	-	-
rs17004711	21	46276027	PTTG1IP	C	T	-	-	-	-	-	-	-
rs192852563	21	47825828	PCNT	C	G	-	-	-	-	-	-	-
rs465276	22	18600583	TUBA8	G	A	-	-	-	-	-	-	-
rs9604978	22	19564657	LOC150185(dist=10295);SEPT5(dist=137330)	G	A	-	-	-	-	-	-	-
rs142782624	22	24874167	ADORA2A-AS1	T	C	-	-	-	-	-	-	-

rs148170466	22	24924000	UPB1(dist=1447);GUCD1(dist=12406)	A	T	-	-	-	-	-	-
rs133902	22	26164079	MYO18B	T	C	rs133885	0.895778	Mathematical ability in children with dyslexia	8.00E-10		23423138
rs8141828	22	26243059	MYO18B	G	T	-	-	-	-	-	-
rs5752238	22	26251672	MYO18B	A	G	-	-	-	-	-	-
rs695403	22	26254256	MYO18B	A	G	-	-	-	-	-	-
rs136313	22	31173064	OSBP2	C	T	-	-	-	-	-	-
rs141026901	22	42926054	RRP7A(dist=10225);SERHL2(dist=23871)	T	C	-	-	-	-	-	-
rs9614726	22	46024638	FBLN1(dist=27624);ATXN10(dist=43040)	C	T	-	-	-	-	-	-
rs62225086	22	48163121	FLJ46257(dist=135803);MIR3201(dist=507055)	C	A	-	-	-	-	-	-