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ORIGINAL RESEARCH

Lipidome- and Genome-Wide Study to Understand Sex Differences in Circulatory Lipids

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BACKGROUND: Despite well-recognized differences in the atherosclerotic cardiovascular disease risk between men and women, sex differences in risk factors and sex-specific mechanisms in the pathophysiology of atherosclerotic cardiovascular disease remain poorly understood. Lipid metabolism plays a central role in the development of atherosclerotic cardiovascular disease. Understanding sex differences in lipids and their genetic determinants could provide mechanistic insights into sex differences in atherosclerotic cardiovascular disease and aid in precise risk assessment. Herein, we examined sex differences in plasma lipidome and heterogeneity in genetic influences on lipidome in men and women through sex-stratified genome-wide association analyses.

METHODS AND RESULTS: We used data consisting of 179 lipid species measured by shotgun lipidomics in 7266 individuals from the Finnish GeneRISK cohort and sought for replication using independent data from 2045 participants. Significant sex differences in the levels of 141 lipid species were observed ($P<7.0×10^{-4}$). Interestingly, 121 lipid species showed significant age-sex interactions, with opposite age-related changes in 39 lipid species. In general, most of the cholesteryl esters, ceramides, lysophospholipids, and glycerides were higher in 45- to 50-year-old men compared with women of same age, but the sex differences narrowed down or reversed with age. We did not observe any major differences in genetic effect in the sex-stratified genome-wide association analyses, which suggests that common genetic variants do not have a major role in sex differences in lipidome.

CONCLUSIONS: Our study provides a comprehensive view of sex differences in circulatory lipids pointing to potential sex differences in lipid metabolism and highlights the need for sex- and age-specific prevention strategies.

Key Words: lipidome ■ sex differences ■ sex-stratified genome-wide association study

Although atherosclerotic cardiovascular disease (ASCVD) is the leading cause of death among both men and women worldwide,[1] there are substantial sex differences in the prevalence and burden of its manifestations.[2,3] Despite many efforts, ASCVD remains understudied, underrecognized, underdiagnosed, and undertreated in women.[4] Limited understanding of sex differences in cause and clinical presentations of ASCVD often leads to misdiagnosis in women, resulting in higher disease burden and mortality among women compared with men.[4] This emphasizes an urgent need for unraveling underlying

CLINICAL PERSPECTIVE

What Is New?

- Lipidomes exhibit significant sex differences that tend to narrow down or reverse with age because of distinct or opposite effect of age on lipidomes in men and women.
- The study presents first comprehensive investigation of sexual heterogeneity in genetic influences on plasma lipidome and does not support a major role of common genetic variants in sex differences in lipidome.

What Are the Clinical Implications?

- Sex differences in the lipidome may provide further insights into the mechanism in sex disparity in cardiovascular disease burden, with more studies needed in the future.
- With lipidomic biomarkers entering clinic, it is important to understand age-dependent sex differences in their concentrations for effective prediction and prevention strategies.

Nonstandard Abbreviations and Acronyms

TC   total cholesterol

biological mechanisms that contribute to sex difference in ASCVD pathophysiology to develop sex-specific strategies for early detection and prevention.

Plasma lipids are well-established heritable risk factors for ASCVD[5] and are routinely monitored to assess its clinical risk.[6,7] Sex differences in plasma levels of total cholesterol (TC), triglycerides, high-density lipoprotein cholesterol (HDL-C), and low-density lipoprotein cholesterol (LDL-C) (referred henceforth as traditional lipids) have been recognized.[8,9] However, understanding of sex differences in detailed lipidome profiles is limited and less explored.[10,11] Several studies have demonstrated potential of lipidomics that allow simultaneous measurements of hundreds of lipid species or subspecies in understanding ASCVD and risk prediction beyond traditional lipids.[12–16] Integration of lipidomics with genomics has also provided new insights into genetic regulation of lipid metabolism and ASCVD pathophysiology.[17–24] Strong influence of genetic variants, such as *FADS1-2-3*, *LDLR*, and *PCSK9*, in maintenance of lipid homeostasis, calls for a comprehensive evaluation of potential role of genetic mechanisms in sex differences in lipid metabolism. Thus, stronger consideration should be given to understand sex differences in lipidome and their genetic determinants.

In this study, we examined sex differences in human plasma lipidome in a large data set comprising 179 lipid species measured by shotgun lipidomics from 7266 participants from the GeneRISK cohort. We further performed sex-stratified genome-wide association analyses for all the lipid species to evaluate contribution of genetic factors in sex differences in lipidomes. We sought for replication of the findings in an independent data set comprising 169 lipid species from 2045 participants measured by the same lipidomics platform. Our results show that lipidome exhibits significant age-dependent differences between men and women, pointing to potential sex differences in lipid metabolism, and highlights the need for sex- and age-stratified analyses in lipidome-based studies. The sex-stratified genome-wide association analyses did not suggest a major role of common genetic variants in sex differences in lipidome.

METHODS

The summary-level data supporting the findings of this study are available within the article. Full data are available through the Institute for Molecular Medicine Finland Data Access Committee for authorized researchers who have an institutional review board/ethics approval and an institutionally approved study plan.

Study Participants

The study included participants from the following cohorts.

GeneRISK Cohort

The study included 7292 participants, aged 45 to 66 years, from the ongoing prospective GeneRISK cohort, recruited during 2015 to 2017 from Southern Finland. The recruitment process and sample collection procedures are described in detail in another study.[25] Briefly, participants were instructed to fast overnight for 10 hours before the blood samples were collected for plasma, serum, and DNA extraction. Fasting serum lipids, including HDL-C, LDL-C, triglycerides, TC, apolipoprotein A1, and apolipoprotein B, were measured using standard enzymatic methods. The 10-year ASCVD risk was calculated using the estimates given in Widén et al,[25] including age, sex, smoking status, TC, HDL-C, systolic blood pressure, current use of antihypertensive medication, and family history of early-onset coronary heart disease as risk factors. The 10-year ASCVD estimates show the combined risk for events of coronary artery disease and stroke and were interpreted as outlined in the Finnish National Guidelines (ie, a 10-year risk <2% is considered low, 2%–10% is intermediate, and >10% is considered

high risk). GeneRISK study participants' DNA, blood, serum, and plasma samples, in addition to their demographic information and health data, have been stored in the THL Biobank (https://www.thl.fi/en/web/thlfien/topics/information-packages/thl-biobank).

Replication Cohorts

For the replication of the findings from the lipidome analyses, we included data from 2181 participants from the EUFAM (European Multicenter Study on Familial Dyslipidemias in Patients with Premature Coronary Heart Disease) and FINRISK cohorts with lipidomics and genetic data that we have reported previously.[21] Sample recruitment and study protocols for the EUFAM and FINRISK cohorts have been described previously.[26,27] Briefly, the EUFAM study cohort is composed of the Finnish familial combined hyperlipidemia families and composed of related individuals. The Finnish National FINRISK study is a population-based survey conducted every 5 years since 1972, and thus far samples have been collected in 1992, 1997, 2002, 2007, and 2012, and are stored in the (National Institute for Health and Welfare/THL) Biobank.

To replicate the findings from the analyses of traditional lipids, we used lipid measurements (TC, LDL-C, HDL-C, triglycerides, apolipoprotein A1, and apolipoprotein B) for 24 614 individuals (11 238 women and 13 376 men) from the UK Biobank who had fasted between 7 and 15 hours before blood sample collection. We excluded individuals with reported fasting duration <7 or >15 hours to reduce potential bias that might arise because of difference in fasting duration. Information on participants' age, body mass index, diabetes, smoking status, medications, and hormone replacement therapy was also obtained to be used as covariates. Details on sample handling and assays used for lipid measurements in the UK Biobank cohort have been described previously[28] (https://biobank.ndph.ox.ac.uk/showcase/showcase/docs/serum_biochemistry.pdf).

Ethical Statement

The study was performed according to the principles of the Declaration of Helsinki and the Council of Europe's Convention of Human Rights and Biomedicine. All study participants gave their informed consent to participate in the study. The study protocols were approved by the ethics committees of the participating centers (The Hospital District of Helsinki and Uusimaa Coordinating Ethics committees, approval Nos. 201/13/03/00/14 and 184/13/03/00/12).

Shotgun Lipidomics

Lipidomic measurements were performed using mass spectrometry–based shotgun lipidomic analysis at Lipotype GmbH (Dresden, Germany). Samples were analyzed by direct infusion in a QExactive mass spectrometer (Thermo Scientific) equipped with a TriVersa NanoMate ion source (Advion Biosciences).[29] Data were analyzed using in-house developed lipid identification software and data management system.[30,31] Lipids with signal/noise ratio >5 and amounts >5-fold higher than in corresponding blank samples were considered. Reproducibility was assessed by the inclusion of 8 reference plasma samples per 96-well plate. Using 8 reference samples per 96-well plate batch, lipid amounts were corrected for batch variations and for analytical drift if the P value of the slope was <0.05 with an R^2 >0.75 and the relative drift was >5%. Five samples with low total lipids content and number of lipids detected were removed, and lipid species detected in <70% of the remaining samples were excluded. Furthermore, samples with >30% missingness for the quality control (QC) passed lipid species were also excluded. After QC, lipidomics data in GeneRISK cohort were composed of 179 lipid species from 13 lipid classes for 7266 individuals, including 2624 men and 4642 women. As expected, many lipid species are highly correlated, with 70 principal components explaining >90% of the variation in the data. After the same QC procedures in the replication cohorts, data for 169 lipid species matching with GeneRISK data for 2045 individuals were available.

Genotyping and Imputation

Genotyping for the GeneRISK study participants was performed using the HumanCoreExome BeadChip (Illumina Inc, San Diego, CA). The genotypes were called using GenomeStudio and zCall at the Institute for Molecular Medicine Finland. Genotyping data were lifted over to build version 38 (GRCh38/hg38) (as described in dx.doi.org/10.17504/protocols.io.nqtddwn). Preimputation QC included exclusion of individuals with <95% call rate, discrepancies between biological and reported sex, extreme heterozygosity (±4 SDs), and non-Finnish ancestry, as well as of variants with <98% call rate, deviation from Hardy-Weinberg equilibrium ($P<1\times10^{-6}$), and minor allele frequency <0.05. Prephasing of genotyped data was performed with Eagle 2.3.5 with the number of conditioning haplotypes set to 20 000.[32] Imputation was done with Beagle 4.1[33] (as described in https://doi.org/10.17504/protocols.io.nmndc5e) using population-specific Sequencing Initiative Suomi v3 reference panel that was developed from high-coverage (25×–30×) whole-genome sequences for 3775 Finnish individuals. Postimputation QC included exclusion of variants with imputation information score <0.70 and minor allele frequency <0.01. Genotyping for both the EUFAM and FINRISK cohorts was performed using the HumanCoreExome

BeadChip. Details about the quality control and imputation of the EUFAM and FINRISK cohorts have been described previously.[21]

Statistical Analysis Investigating Sex Differences in Lipidome

All statistical analyses related to age and sex differences and data visualization were done using R 3.6.3. Associations with $P<7.1\times10^{-4}$ ($P<0.05/70$ principal components to adjust for multiple tests) were considered statistically significant. Lipid measurements were $\log_{10}$ transformed before the analyses. Age-related trends in traditional lipids, apolipoprotein A1, and apolipoprotein B were determined by calculating mean levels at each 5-year interval for age ranges of 45 to 50, 51 to 55, 56 to 60, and 61 to 66 years. To visualize changes in lipidome profiles with age in the heatmap, mean levels at each 1-year interval for each lipid species were calculated separately in men and women and were normalized to the respective mean levels of those aged 45 to 50 years (used as reference groups). For normalization, mean value of each lipid species for the reference group was subtracted from each 1-year interval mean level of that lipid and then divided by the SD of the lipid in the reference group for both sexes. Linear regression analyses were performed to statistically determine relationship between $\log_{10}$ lipid levels and age, separately in men and women, adjusted for body mass index, diabetes, cardiac disease, lipid-lowering medication, and smoking; and additionally, for hormone replacement therapy for women. Interaction between age and sex was determined using age, sex, body mass index, diabetes, cardiac disease, lipid-lowering medication, and smoking habits as covariates and interaction term for age and sex. Differences between the lipidome profiles of men and women were evaluated for each 5-year interval by linear regression, adjusting for age, body mass index, diabetes, cardiac disease, lipid-lowering medication, and smoking habits. Differences between the lipidome profiles of men and women in full data set (without age-based stratification) were additionally adjusted for age.[2] Menopause-related analyses were performed in a subgroup of participants aged 45 to 55 years to assess age-independent effect of menopause. Menopause status was assessed through questionnaire filled at the time of recruitment and confirmed by the status reported during the follow-up visit in the GeneRISK study (≈2 years later). Only women with consistent reporting of menopause status (524 premenopausal and 663 postmenopausal women) at 2 visits were included. Heterogeneity in the effect sizes between 2 groups was estimated using the following equation:

$$\text{Hetß} = \left(\text{ß}_a - \text{ß}_b\right)^2 / \left(\text{SE}_a^2 + \text{SE}_b^2\right)$$

P values for heterogeneity (P_{het}) were obtained from Hetß under the null assumption of equal effect sizes in the 2 groups (referred to as a and b in the equation), from the standard χ^2 distribution with 1 degree of freedom. For better visualization and interpretation, the effect sizes are presented as percentage differences (or changes) calculated from β coefficients obtained from linear regression analyses (difference [%]=$100\times[10^\beta-1]$ as $\log_{10}$ lipid levels were used in linear regression models).

Sex-Stratified Genome-Wide Association Analyses

For sex-stratified genome-wide association study (GWAS) in the GeneRISK cohort, residuals obtained after regressing for age, age^2, collection site, lipid medication, and first 10 genetic principal components, and additionally for menopause status and hormone replacement therapy in women, were inverse-normal transformed separately in men and women and were used as outcome variables. Genetic relatedness between the participants was estimated using KING algorithm implemented in PLINK2.0 (http://pngu.mgh. harvard.edu/purcell/plink/[34]), and 585 pairs of individuals with second-degree or closer relatedness in the GeneRISK cohort were found. GWASs were performed using linear regression model implemented in PLINK2.0. The effect estimates for genetic variants are presented as the change in lipid levels in standardized units per allele of a variant. Heterogeneity in the effect sizes between men and women was assessed using the equation provided above for Hetß. In the genome-wide scans, associations with $P<7.1\times10^{-10}$ ($5.0\times10^{-8}/70$ principal components explaining >90% variance) were considered statistically significant. For the replication of the identified associations, association analyses in the replication cohort were performed using sex-specific inverse-normal transformed lipid levels adjusted for age, age^2, cohort, lipid medication, familial hyperlipidemia, first 10 genetic principal components, and additionally for hormone replacement therapy in women using linear mixed model implemented in MMM.[35]

RESULTS

After quality control, lipidomics data in GeneRISK cohort were composed of 179 lipid species from 13 lipid classes from 7266 individuals, including 2624 men and 4642 women. The basic clinical characteristics of the study population are provided in Table S1. The details of the lipid species included in the study and their mean plasma levels are provided in Figure S1 and Table S2. Men and women participants had similar age distributions, ranging from 45 to 66 years, with mean age of 55.9 (±5.9) and 55.7 (±5.7) years, respectively. Consistent

with the known sex differences in ASCVD risk, women participants had relatively lower estimated 10-year ASCVD risk and higher levels of HDL-C and apolipoprotein A1 compared with men (Figure 1A and 1B). Men had significantly higher levels of LDL-C, triglycerides, and apolipoprotein B compared with those of women (Table S3). However, levels of TC, LDL-C, and triglycerides showed age-dependent sex differences (age-sex interaction term $P<7.0\times10^{-4}$) (Table S4), resulting in either reversed or abrogated differences in older age groups (Figure 1B). Similar age-dependent sex differences in traditional lipids were observed in the UK Biobank data set (Figure S2 and Table S3).

Age and Sex Interactions in Lipid Species Levels

Of 179 lipid species, significant differences in plasma levels of 141 lipid species between men and women were observed (Figure 2A). However, as descriptive analysis of traditional lipids suggested significant effect of age and sex interaction in circulating lipid levels, we further evaluated for age-sex interactions in individual lipid species. Significant age-sex interactions for 121 lipid species (interaction term $P<7.0\times10^{-4}$) were found

in models including covariates and age-sex interaction term (Table S4). A total of 116 of these 121 lipid species also showed significant sex heterogeneity in their effect sizes for association with age ($P_{het}<7.0\times10^{-4}$) (Figure 2B and Table S5). Effect of age-sex interactions on lipidome is also evident from the heatmaps depicting 1-year change (in SD units adjusted for covariates) in plasma levels of each lipid species in men and women relative to 45- to 50-year-old men and women, respectively (Figure S3, Data Set 1). Among men, age was associated with decrease in levels of 72 lipid species and increase in levels of 10 lipid species (Table S5 and Figure S4). On the contrary, age was positively associated with 108 lipids and negatively associated only with 3 lipid species in women. Interestingly, of the 51 lipid species that were significantly associated with age in both men and women, 39 lipid species showed opposite age-related trends in men and women. Sensitivity analyses after excluding individuals with lipid-lowering medications provided similar results (Table S5).

Consistent age-sex interactions were also observed in replication analysis that included 169 lipid species that matched with the GeneRISK lipidomics data set (Table S6). From 121 lipid species with significant age-sex interactions in the GeneRISK cohort, 113 lipid
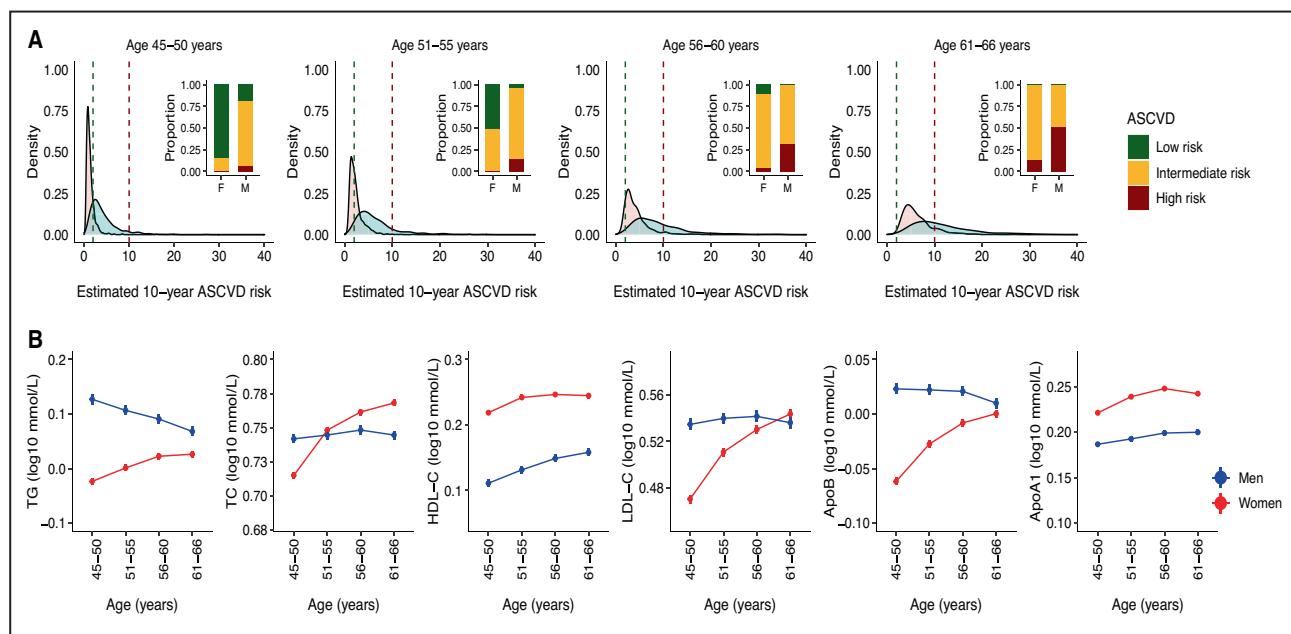
Figure 1. Sex differences in atherosclerotic cardiovascular disease (ASCVD) risk and traditional plasma lipids.
A, Distributions of 10-year ASCVD risk estimated on the basis of classic risk factors in men (blue) and women (pink) at 5-year interval. The vertical green and red lines on density plots mark the low (<2%) and high (>10%) 10-year estimated risk for ASCVD, respectively. The bar plot inserts in each density plot show the proportion of men and women with low risk (<2%), intermediate risk (2%–10%), and high risk (>10%) for ASCVD in the respective age group. Individuals with preexisting medical conditions (N=795) were not included in data used for these plots. **B**, Age-related trends for traditional lipids in the GeneRISK cohort. Mean levels after $\log_{10}$ transformation and SEs of total cholesterol (TC), triglycerides (TG), high-density lipoprotein cholesterol (HDL-C), low-density lipoprotein cholesterol (LDL-C), apolipoprotein B (ApoB), and apolipoprotein A1 (ApoA1) at 5-year intervals are plotted for men (blue) and women (red). Individuals with lipid-lowering medications were excluded before calculating the mean levels of lipids for this analysis.
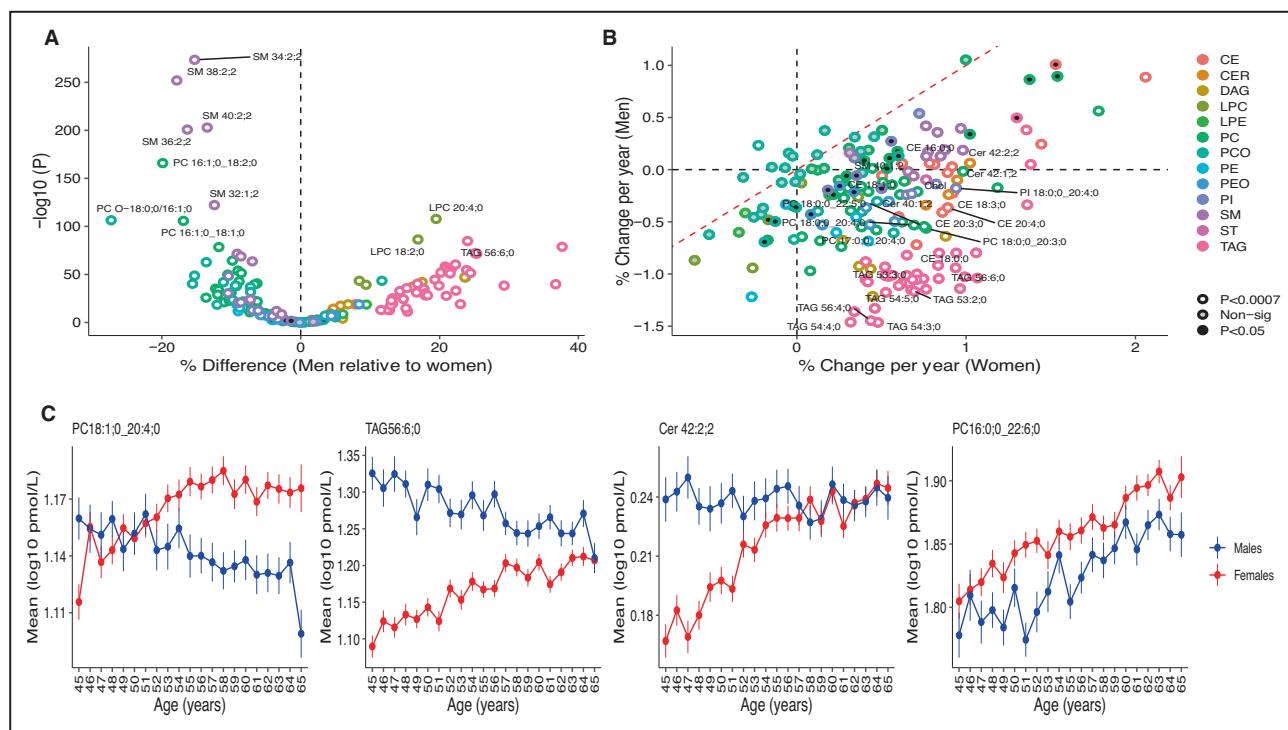
Figure 2. **Age and sex interactions in the levels of circulatory lipids.**
A, Association of 179 lipid species with sex. The plot shows percentage differences in lipid levels between men and women in full data set on the x axis and the corresponding P values on the y axis. Positive difference means higher level in men, and negative difference means higher level in women. The effect sizes and P values were obtained using linear regression models, including $\log_{10}$ lipid levels as outcomes, sex as independent variable, with age, age^2, body mass index (BMI), diabetes, cardiac disease, lipid-lowering medication, and smoking as covariates. **B**, Heterogeneity in association of lipid species with age between men and women. Scatterplot shows percentage change in lipid levels per year in women on the x axis and percentage change in lipid levels per year in men on the y axis. The models estimating relationship between $\log_{10}$ lipid levels and age measured in years were adjusted for BMI, diabetes, cardiac disease, lipid-lowering medication, and smoking (and additionally for hormone replacement therapy for women). Lipid species with significant heterogeneity ($P_{het} < 7.0 \times 10^{-4}$) are filled with white color and colored by lipid class. **C**, Age-related trends for representative lipid species in men and women, illustrating effect of age on sex differences. Mean plasma levels with SE for 1-year interval are plotted for men (blue) and women (red). Phosphatidylcholine (PC) 18:1;0_20:4;0: opposite trends in men and women leading to increased sex difference with age; triacylglyceride (TAG) 56:6;0: opposite trends in men and women resulting in narrowing of sex difference; ceramide (CER) 42:2;2: association with age only in women, resulting in narrowing of sex difference; PC 16:0;0_22:6;0: similar age-related trends in men and women with no effect heterogeneity. CE indicates cholesteryl ester; DAG, diacylglyceride; LPC, lysophosphatidylcholine; LPE, lysophosphatidylamine; PCO, phosphatidylcholine-ether; PE, phosphatidylamine; PEO, phosphatidylamine-ether; PI, phosphatidylinositol; SM, sphingomyelin; ST, free cholesterol; and TAG, triacylglyceride.

species were available in replication cohort, of which 88 lipid species had significant age-sex interactions ($P<0.05$) (Table S4). Moreover, of the 82 and 111 lipid species that were associated with age in men and women, respectively, in the GeneRISK, 67 and 52 lipid species, respectively (of 79 and 104, respectively, available in replication cohort), were validated in replication cohort ($P<0.05$) (Table S7 and Figure S5). Overall, most of the age-associated lipid species in the GeneRISK cohort had similar effect sizes in the replication cohort (r^2 in men=0.84; r^2 in women=0.63) (Figure S6).

Age-Dependent Sex Differences in Lipid Species Levels

As we observed significant age-sex interactions in lipidome, we present sex differences in lipid species

at 5-year intervals (Table S8). Although levels of 81 lipid species, including triacylglycerides, diacylglycerides, cholesteryl esters, ceramides, and lysophospholipids, were higher among men aged 45 to 50 years, decline in their levels with age resulted in significantly lower levels of most lipid species (N=85) in 61- to 66-year-old men compared with the women of same age range. Effect of distinct age-related changes on sex differences in lipid levels are depicted for representative lipid species in Figure 2C and for all lipids in Figure S7. Sex differences in triacylglycerides and diacylglycerides narrowed down with age, and finally resulted in similar triacylglyceride and diacylglyceride profiles in men and women in older age (Figure 3). On the other hand, sex differences in sphingomyelins continued to increase with age, whereas sex differences in most of the phospholipids and cholesteryl esters either
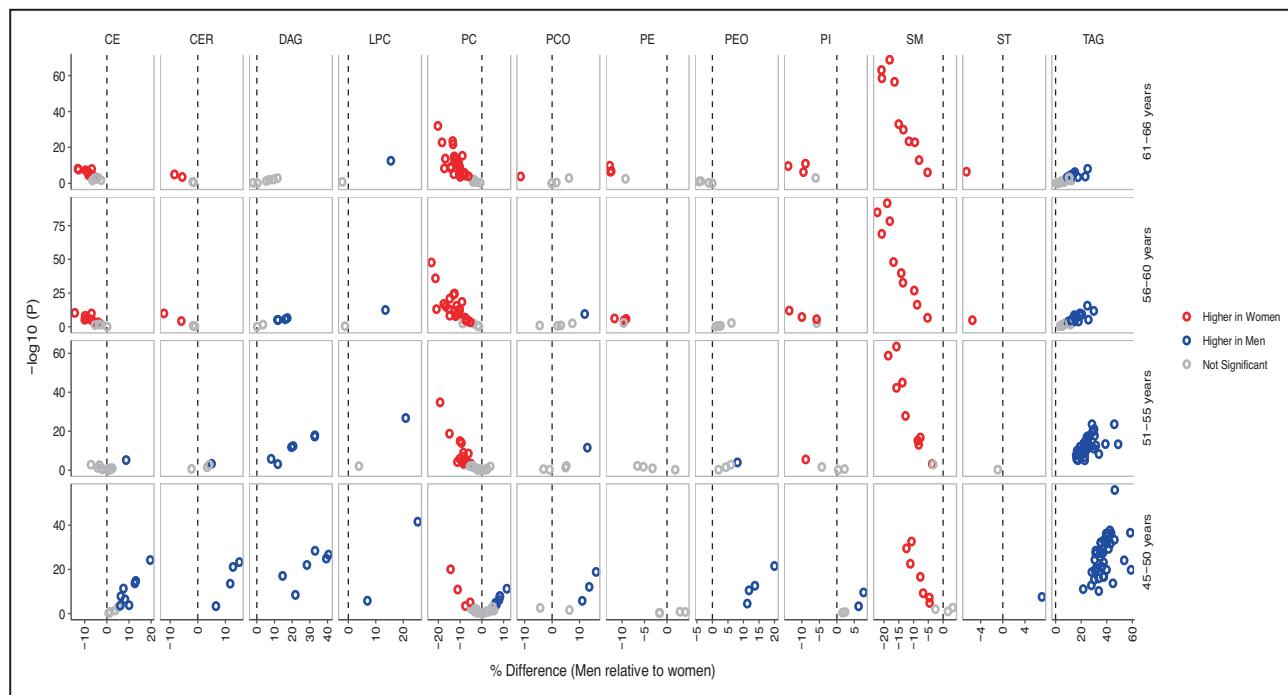
Figure 3. Age-dependent sex differences in plasma lipidome.
Association of lipid species with sex in different age groups is shown with lipid species being grouped by lipid classes. The *x* axes show percentage differences in men relative to women, and the corresponding *P* values are plotted on *y* axes as obtained by linear regression models, including $\log_{10}$ lipid levels as outcomes, sex as independent variable, and age, body mass index, diabetes, cardiac disease, lipid-lowering medication, and smoking as covariates. Positive difference represents higher lipid level in men (blue), and negative difference represents higher lipid level in women (red), after multiple testing correction ($P<7.0\times10^{-4}$). Only the lipid species with significant age and sex interactions are plotted herein for clarity. CE indicates cholesteryl ester; CER, ceramide; DAG, diacylglyceride; LPC, lysophosphatidylcholine; LPE, lysophosphatidylamine; PC, phosphatidylcholine; PCO, phosphatidylcholine-ether; PE, phosphatidylamine, PEO, phosphatidylamine-ether; PI, phosphatidylinositol; SM, sphingomyelin; ST, free cholesterol; and TAG, triacylglyceride.

abrogated or reversed in direction with age, resulting in lower phospholipids and cholesteryl esters in older men compared with women of the same age group. Altogether, from the 109 lipid species that had significant sex differences in 45- to 50-year-old participants, 55 lipid species, including triacylglycerides, diacylglycerides, and phospholipids with polyunsaturated fatty acids, did not remain significant in older participants, whereas 11 lipid species reversed the gaps. Analysis in the replication cohort provided similar trends in age-dependent sex differences in most of the lipid species (Table S9 and Figure S8). Strong correlation between effect sizes for association with sex in the GeneRISK and replication cohort at different age groups was found ($r^2_{45-50y}=0.94$, $r^2_{51-55y}=0.85$, $r^2_{56-60y}=0.85$, and $r^2_{61-66y}=0.75$) (Figure S9).

As menopause has previously been suggested to have effect on lipid levels, we performed exploratory analyses to investigate effect of menopause status on the observed age-dependent sex differences in lipidome. Only 2 lipid species (ceramide 42:2;2 and sphingomyelin 38:2;2) showed significant association with menopause status ($P<7.0\times10^{-4}$) (Figure S10 and Table S10). No significant interaction between age

and menopause was found for any of the lipid species (Table S11). Moreover, comparison of differences in lipid levels between men compared with premenopausal women and men compared with postmenopausal women revealed effect heterogeneity only in 17 lipid species ($P_{het}<7.0\times10^{-4}$) (Table S12 and Figure S10). Overall, our results do not support a major effect of menopause on the plasma levels of lipid species analyzed herein and their sex differences.

Effect of Genetic Factors on Sex Differences in Lipidome

To evaluate if the observed sex differences in lipidome are attributable to differential effect of genetic variants in men and women, we conducted 2 types of genome-wide searches: (1) genome-wide heterogeneity scan and (2) sex-specific GWAS scans. In the genome-wide heterogeneity scan, variants with $P_{het}<7.0\times10^{-10}$ ($5.0\times10^{-8}/70$ principal components explaining >90% variance in lipidomes) were defined as sex-dimorphic variants. On the basis of this criterion, sex heterogeneity was found at rs7760319 in the intron of *SASH1* for PC 17:0;0_20:4;0 ($P_{het}=1.9\times10^{-10}$) (Figure 4A), which
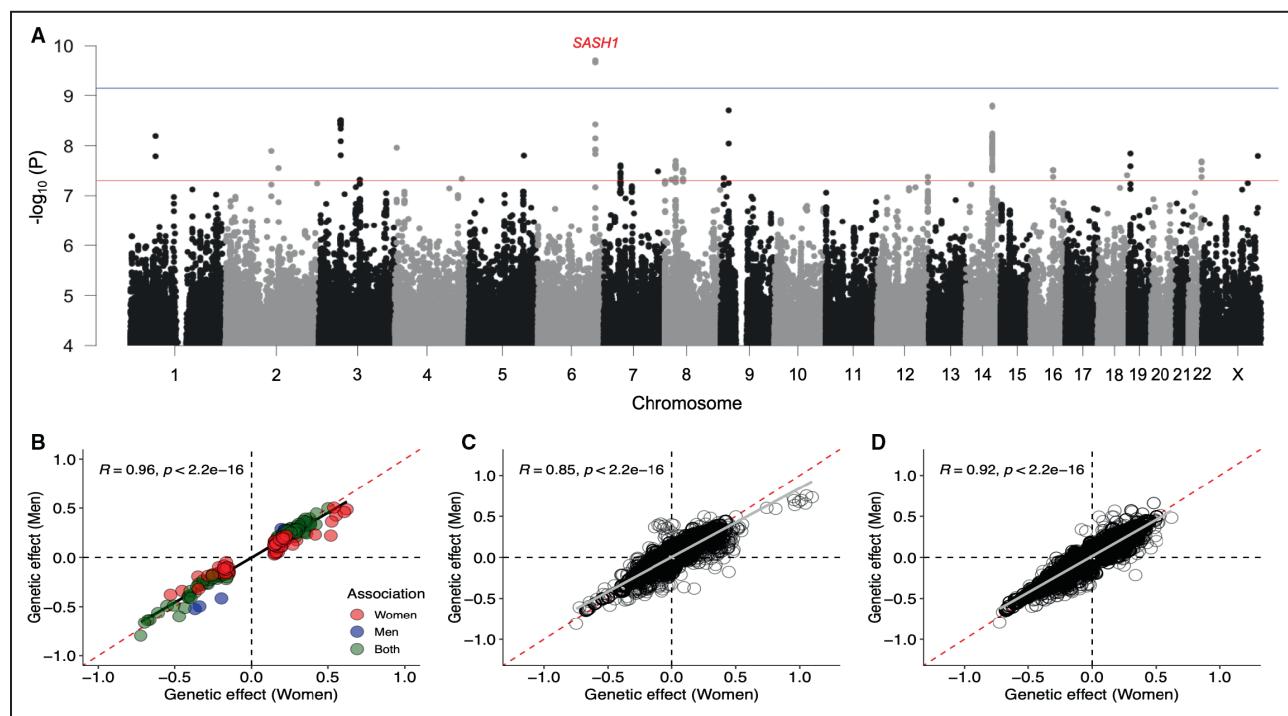
Figure 4. Effect of genetic heterogeneity on sex differences in lipidome.
A, Genome-wide heterogeneity in genetic effect on lipidome. Manhattan plot shows $-\log_{10} P_{het}$ on the y axis for all the lipid species and genetic variants on the x axis arranged by chromosome position on different chromosomes. Red and blue horizontal lines represent P value threshold for genome-wide significance ($P<5.0\times10^{-8}$) and after multiple testing correction ($P<7.0\times10^{-10}$). **B**, Heterogeneity in effect of variants identified in sex-stratified genome-wide association study (GWAS). Scatterplot shows comparison of β estimates in standardized units for 193 unique locus-lipid associations with $P<7.0\times10^{-10}$ identified in sex-stratified GWAS. Blue and red colored points represent associations reaching threshold for multiple testing correction ($P<7.0\times10^{-10}$) in GWASs for men and women, respectively, whereas green colored points represent associations reaching threshold for multiple testing correction in GWASs for both men and women. **C**, Heterogeneity in effect of variants identified in previous GWAS for traditional lipids. **D**, Heterogeneity in effect of variants identified in previous GWAS for lipidome. The scatterplots (**C** and **D**) show genetic effect of known lipid loci in men (y axis) and women (x axis) on lipidome, and only the associations with $P<7.0\times10^{-4}$ are plotted.

was nominally associated with the lipid with opposite effects in men (βmen=−0.13±0.03, Pmen=3.7×10⁻⁶) and women (βwomen=0.10±0.02, Pwomen=1.2×10⁻⁵) in the sex-stratified GWAS. However, the signal was not validated in the replication cohort (βmen=−0.015±0.047, Pmen=0.75; βwomen=0.01±0.045, Pwomen=0.84). List of all the associations with $P_{het}<5.0\times10^{-8}$ is provided in Table S13.

In the sex-specific GWAS, variants with significant associations ($P<7.0\times10^{-10}$) in either men or women were selected and tested for heterogeneity in their effects between men and women. In male-specific GWAS, 5828 variant-lipid pair associations were found, whereas female-specific GWAS identified 13 392 variant-lipid pair associations (Data Sets 2 and 3). In total, 193 unique locus-lipid associations involving 26 independent genomic loci and 127 lipid species in either men or women were identified and tested for differences in their effect estimates between men and women. Using $P_{het}<2.5\times10^{-4}$ (0.05/193) as the threshold, none of the tested variants showed significant heterogeneity (Table S14); rather, the effect sizes for

these associations were similar and highly correlated in men and women (Figure 4B). We further tested for heterogeneity in effects of the genetic variants identified in previous GWASs for traditional lipids and lipidome (Data Sets 4 and 5), which also suggested that effect estimates of the known lipid variants are similar in men and women, as shown in Figure 4C and 4D.

We further explored for the heterogeneity in the genomic regions with genes encoding enzymes with desaturase and elongase activities: *FADS1-2-3*, *SCD1*, *ELOVL5*, and *ELOVL6* for association with lipid indexes representing efficiency of respective enzymes. The lipid indexes used in the analysis and their calculations are provided in Table S15. Such indexes and ratios have been applied previously to free fatty acids, but their validity for complex lipids is not known. Although no strong evidence for heterogeneity at these regions was found, nominal heterogeneity at *FADS1-2-3* and *SCD1* regions was observed and listed in Table S16. Notably, at *FADS1-2-3* region, a nonsynonymous variant rs35723406 in *TKFC* gene showed effect heterogeneity between men and women for Δ6 desaturase in

triacylglyceride (D6D in triacylglyceride) (P_{het}=6.2×10^{-6}) (Figure S11), which might be of interest for further investigation.

DISCUSSION

This study presents a comprehensive characterization of sex differences in circulatory lipids using high coverage lipidomics and effect of age and genetic factors on differences between lipidome profiles of men and women. The results show significant sex differences in the lipidome; and demonstrate that age has distinct effect on lipidome in men and women. In general, most of the cholesteryl esters, ceramides, lysophospholipids, triacylglycerides, and diacylglycerides were higher in men at 45 to 50 years of age, but these sex differences tend to narrow down or reverse with age. Our results did not provide support for major roles of menopause and common genetic factors in sex differences in plasma lipidome.

Age-specific sex differences in circulatory lipids could have important implications in risk assessment and precision medicine for cardiometabolic diseases. Sphingolipids, including ceramides and sphingomyelins, have emerged as promising new diagnostic or prognostic markers for cardiovascular disease (CVD) with potential clinical utility. CERT score, based on ceramide(d18:1/16:0), ceramide(d18:1/18:0), and ceramide(d18:1/24:1) and their ratios with ceramide(d18:1/24:0), is shown to predict cardiovascular death in patients with stable coronary artery disease and acute coronary syndromes beyond LDL-C.[14] Another risk score termed as sphingolipid-inclusive coronary artery disease risk score that includes sphingomyelins in addition to ceramides has been proposed as a strong predictor of CVD.[15] In this study, we found that ceramide(d18:1/24:0) (measured as ceramide 42:1;2) and ceramide(d18:1/24:1) (measured as ceramide 42:2;2) are significantly higher in 45- to 50-year-old men compared with women, but their plasma levels become similar in men and women in older age groups (>55 years) because of increase in their levels with age among women. A previous study also reported higher levels of ceramides in women aged >45 years compared with men.[36] However, we did not find significant increase in ceramide levels in men with age, as reported earlier.[10,36] Similarly, sphingomyelin levels were higher among women compared with men, and their levels increased with age in women, as also reported previously.[10,37] These observations of increased levels of ceramides and sphingomyelins in older women are consistent with the known increase in CVD risk with age in women. Our results also point out that sex differences in sphingolipids need to be considered in ceramide- and sphingomyelin-based prediction scores.

In addition to sphingolipids, many lipid species, including phosphatidylcholines and triacylglycerides, have been identified as risk factors for CVD. We found significant differences in the levels of most of the phosphatidylcholines and triacylglycerides between men and women, which is consistent with the previous report.[10] It has been consistently demonstrated that phospholipids with saturated and monounsaturated fatty acyl chains are positively associated with CVD risk, whereas polyunsaturated phospholipids are inversely associated with CVD risk.[16] On similar lines, we found that although most of the phosphatidylcholines increase with age in women, among men, mainly phosphatidylcholines with polyunsaturated fatty acids change with age and those with saturated and monounsaturated fatty acids were not associated with age (P>0.05 for 10 of 14 principal components with saturated and monounsaturated fatty acids analyzed in the study). However, there have been inconsistent reports on association of phosphatidylcholines with age in men and women in longitudinal studies.[38] The KORA (Cooperative Health Research in the Augsburg Region) study by Chak et al showed decrease in phosphatidylcholine levels with age in women,[39] whereas Darst et al (2019) reported increase in several phosphatidylcholines with age in women.[40] Similarly, triacylglycerides have opposite age-related trends in men and women, with significantly higher levels of most of triacylglycerides in men until 60 years of age. All these observations further emphasize the importance of considering sex differences in lipids in ASCVD risk assessment and sex-specific prevention strategies.

Our findings also suggest potential sex differences in phospholipid and glycerolipid metabolism. Opposite age-related trends for triacylglycerides in men and women point to sex-specific regulation of triglyceride metabolism with age. Our study also suggests sex dimorphism in polyunsaturated fatty acid metabolic pathway. We found that cholesteryl esters and phosphatidylcholines with C20:3 and C20:4 fatty acids have opposite age-related trends in men and women (increase in women and decrease in men), but those with C20:5 and C22:6 had similar age-related trend (ie, they increase with age in both sexes). Our results also suggest that age and sex do not have substantial effect on lipid species with less unsaturated fatty acids and may have stronger regulation by other endogenous factors. These findings call for further studies to understand the underlying mechanisms.

Menopause has been reported to contribute to the increase in CVD risk with age in women and is accompanied by unfavorable changes in CVD risk factors, including lipid profiles.[41–43] However, the impact of menopause and depleted endogenous estrogen levels distinct from that of advancing age remains controversial.[44,45] An alternate hypothesis has emerged that proposes that increased premenopausal cardiovascular

risk promotes early menopause and is supported by a few studies.[46–48] This implies that the direction of causality in the relationship between menopause and CVD is unclear. There have been inconsistencies in the association of lipids with menopause status also. Higher levels of TC, LDL-C, triglycerides, and apolipoprotein B and subfraction of lipoproteins and their lipid contents have been associated with menopause.[49] Beyene et al also reported higher levels of phosphatidylcholines, phosphatidylinositols, sphingomyelins, phosphatidylamines, ceramides, and triacylglycerides in postmenopausal women.[10] Contrary to these observations, a recent study does not support a major role of menopause in lipid-level changes.[50] Our study also did not find substantial effect of menopause status on sex differences in lipidome, although the reduced sample size in the menopause-related analyses limits statistical power. Moreover, as age and menopause status are highly collinear variables, it is difficult to tease out the independent effect of age and menopause on outcome variables. Further investigation in this regard is important to understand the role of menopause in modulating lipid levels.

Contribution of genetic factors in endogenous regulation of lipid metabolism is well recognized. Despite the known and expected differences in the lipid levels, men and women are typically analyzed together using sex as a covariate to account for potential sex differences in the lipid levels. Sex-combined analyses are underpowered to detect significant associations if the effects are in opposite directions. Although sex heterogeneity in effect of a few lipid loci, such as *LPL*, *APOE*, and *KLF*, on traditional lipids has been reported,[51,52] there has been no effort to systematically evaluate differential effects of genetic variants on plasma lipidome in men and women. To our knowledge, our study presents the first comprehensive investigation of sexual heterogeneity in genetic influences on plasma lipidome.

Our observation that genetic factors have no major impact on sex differences in plasma levels of lipid species is in accordance with the findings from metabolomics-based study.[11,53] In a sex-specific GWAS study by Mittelstrass et al that included many lipid species from phosphatidylcholines, lysophospholipids, and sphingomyelins, no genome-wide significant difference in effect estimates for genetic variants for any of the lipid species was found.[11] Although we acknowledge the challenge of limited statistical power for sex-stratified analyses, our finding of distinct age-related changes in lipid levels for men and women underlines that these differential profiles need to be accounted for to detect sex-dimorphic genetic influence. Given the sample size of the present study, we did not have sufficient statistical power to perform age-stratified GWAS, but a recent study highlighted difference in the influence of polygenic risk score for coronary heart disease on apolipoprotein

in different age tertiles, emphasizing the importance of age-stratified analysis.[54] Our study is the first effort toward understanding genetic mechanisms in sex differences in lipidome, and we believe that it would pave the way for further studies in the direction.

The mass spectrometry–based shotgun lipidomics platform used in the study detected 179 lipid species across 13 lipid classes with acyl chain resolution for all lipid classes, except triacylglycerides. Comparison of the platform with other comparable commercial platforms used in large cohorts (Metabolon and Biocrates) was provided in our previous study.[21] Although Nightingale platform detects a wide range of metabolites, including total lipid contents in various lipoprotein subclasses, it does not provide resolution to lipid species. The more recent Lipidyzer platform provides expanded coverage, but larger studies/cohorts using the platform have not yet been reported.

Although the study is based on a large population-based cohort with a broad lipidome coverage, it is not without limitations. This is a cross-sectional study, and the findings of effect of age on lipidome need to be replicated in longitudinal studies with long follow-up durations. Our study included participants aged 45 to 66 years. A wider range of age would be needed to provide more insights to the changes in lipidome profile in early adulthood and to get better picture of effect of menopause on lipidome. As suggested in our study, demographic and other cohort characteristics could affect lipidome profiles; it is not clear if findings of this study could be generalized to other populations. However, most of our findings are consistent or in accordance with the current understanding in the field. Furthermore, lipidome profiles were measured in whole plasma, which does not provide information at the level of individual lipoprotein subclasses and limits our ability to gain detailed mechanistic insights. Further advances in lipidomics platforms might help to capture more comprehensive and complete lipidome profiles, including the position of fatty acyl chains in the glycerol backbone of triacylglycerides and glycerophospholipids and detection of sphingosine-1-P species and several other species, which would allow us to overcome these limitations.

In conclusion, our study reports considerable insights into the sex differences and age-related trends in circulatory lipids at molecular lipid species level. We show that men and women have distinct age-related changes in lipidome profiles that result in variable sex differences in plasma lipid levels at different age. Our findings emphasize the importance of sex- and age-stratified analyses in lipidome studies. The study paves the way for further evaluation in a sex-specific manner toward precision medicine and sex-specific genetic and lipid biomarker discovery and further highlights the need for sex-specific prevention and management of ASCVD risk.

ARTICLE INFORMATION

Supplemental Material

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SUPPLEMENTAL MATERIAL

Table S1: Basic characteristics of the study cohort.

Characteristics	GeneRISK		UKBB (fasting 7-15 hours)		Replication Cohort	
	Women	Men	Women	Men	Women	Men
N	4,642	2,624	11238	13376	1123	993
Age (years)	55.7 (5.7)	55.9 (5.9)	54.6 (8.1)	54.8 (8.3)	45.7 (15.7)	46.5 (14.9)
BMI (kg/m²)	27.2 (5.3)	27.6 (4.4)	27.9 (5.9)	28.4 (4.6)	25.9 (5.0)	26.7 (4.1)
BMI <25 kg/m2 (N (%))	1771 (38.2)	731 (27.9)	3973 (35.6)	2898 (21.8)	534 (49.8)	347 (36.1)
BMI 25-30 kg/m2 (N (%))	1730 (37.3)	1253 (47.8)	3953 (35.4)	6247 (47.1)	333 (31.1)	445 (46.2)
BMI ≥30 kg/m2 (N (%))	1133 (24.5)	636 (24.3)	3240 (29.0)	4131 (31.1)	204 (19.1)	170 (17.7)
Post menopause (N (%))	2987 (64.3)	-	6059 (65.1)	-	-	-
Hormonal replacement therapy (N (%))	1634 (35.2)	-	3655 (32.9)	-	-	-
Diabetes (N (%))	268 (5.8)	242 (9.2)	441 (3.9)	936 (7.1)	62 (5.5)	85 (8.6)
Current smokers (N (%))	701 (15.1)	555 (21.2)	1692 (15.1)	2533 (19.0)	-	-
Lipid lowering medication (N (%))	432 (9.3)	373 (14.2)	1315 (11.7)	2801 (20.9)	102 (9.1)	142 (14.3)
LDL-C (mmol/l)	3.31 (0.94)	3.44 (0.92)	3.64 (0.88)	3.56 (0.89)	3.29 (0.94)	3.32 (0.99)
HDL-C (mmol/l	1.79 (0.50)	1.43 (0.45)	1.59 (0.39)	1.29 (0.33)	1.55 (0.38)	1.27 (0.33)
TG (mmol/l)	1.15 (0.65)	1.49 (1.18)	1.33 (0.75)	1.72 (1.084)	1.27 (0.93)	1.67 (1.27)
TC (mmol/l)	5.61 (1.04)	5.52 (1.02)	5.85 (1.13)	5.55 (1.15)	5.34 (1.24)	5.28 (1.27)

Data are presented as mean (standard deviation) or number (%).

Table S2: Lipid species detected in the GeneRISK cohort and their mean levels with standard deviation in sex-combined dataset, women and men.

Lipid Species	Lipid Class	Lipid Category	Total Length	Swiss Lipids Name	Swiss Lipids Id	Mean Plasma Level (pmol)	Standard Deviation	Mean Plasma Level in Women (pmol)	Standard Deviation (Women)	Mean Plasma Level in Men (pmol)	Standard Deviation (Men)
CE 14:0;0	CE	ST	14	Sterol ester (27:1/14:0)	SLM:000500342	33.006	11.663	33.535	11.696	32.071	11.547
CE 15:0;0	CE	ST	15	Sterol ester (27:1/15:0)	SLM:000500343	10.517	5.408	10.698	5.164	10.186	5.817
CE 16:0;0	CE	ST	16	Sterol ester (27:1/16:0)	SLM:000500346	437.295	88.558	435.497	86.149	440.475	92.599
CE 16:1;0	CE	ST	16	Sterol ester (27:1/16:1)	SLM:000500345	187.534	92.856	191.576	90.177	180.380	97.023
CE 17:0;0	CE	ST	17	Sterol ester (27:1/17:0)	SLM:000500347	8.230	2.634	8.258	2.574	8.182	2.739
CE 17:1;0	CE	ST	17	Sterol ester (27:1/17:1)		13.771	4.211	13.913	4.227	13.519	4.170
CE 18:0;0	CE	ST	18	Sterol ester (27:1/18:0)	SLM:000500352	16.653	6.175	16.204	5.748	17.446	6.793
CE 18:1;0	CE	ST	18	Sterol ester (27:1/18:1)	SLM:000500351	922.914	198.000	922.269	194.779	924.055	203.606
CE 18:2;0	CE	ST	18	Sterol ester (27:1/18:2)	SLM:000500350	2694.302	581.408	2737.260	584.073	2618.306	568.882
CE 18:3;0	CE	ST	18	Sterol ester (27:1/18:3)	SLM:000500349	111.167	36.556	112.874	37.497	108.146	34.632
CE 20:2;0	CE	ST	20	Sterol ester (27:1/20:2)	SLM:000500357	6.314	2.078	6.348	2.063	6.251	2.105
CE 20:3;0	CE	ST	20	Sterol ester (27:1/20:3)	SLM:000500356	37.595	11.509	37.511	11.779	37.745	11.015
CE 20:4;0	CE	ST	20	Sterol ester (27:1/20:4)	SLM:000500355	362.205	107.903	359.081	106.899	367.732	109.459
CE 20:5;0	CE	ST	20	Sterol ester (27:1/20:5)	SLM:000500354	117.192	65.321	117.142	64.562	117.281	66.656
CE 22:6;0	CE	ST	22	Sterol ester (27:1/22:6)	SLM:000500361	45.112	17.215	45.797	17.062	43.900	17.420
Cer 40:1;2	Cer	SP	40	Ceramide (d40:1)	SLM:000391319	0.959	0.345	0.950	0.369	0.975	0.296
Cer 40:2;2	Cer	SP	40	Ceramide (d40:2)	SLM:000391317	0.272	0.087	0.275	0.088	0.268	0.084
Cer 42:1;2	Cer	SP	42	Ceramide (d42:1)	SLM:000391346	2.685	0.802	2.631	0.822	2.780	0.756
Cer 42:2;2	Cer	SP	42	Ceramide (d42:2)	SLM:000391345	1.728	0.425	1.697	0.406	1.785	0.450
Chol	Chol	ST	27	Cholesterol	SLM:000000287	1390.191	377.608	1396.481	391.775	1379.049	350.911
DAG 16:0;0_18:1;0	DAG	GL	34	Diacylglycerol (16:0_18:1)	SLM:000308862	4.938	5.041	4.394	3.644	5.875	6.704
DAG 16:0;0_18:2;0	DAG	GL	34	Diacylglycerol (16:0_18:2)	SLM:000308863	1.636	1.529	1.473	1.255	1.914	1.878
DAG 16:1;0_18:1;0	DAG	GL	34	Diacylglycerol (16:1_18:1)	SLM:000308894	1.935	1.603	1.829	1.285	2.118	2.029
DAG 18:1;0_18:1;0	DAG	GL	36	Diacylglycerol (18:1_18:1)	SLM:000309012	7.381	6.652	6.694	3.883	8.590	9.661
DAG 18:1;0_18:2;0	DAG	GL	36	Diacylglycerol (18:1_18:2)	SLM:000309013	5.686	3.548	5.259	2.821	6.436	4.454
DAG 18:1;0_18:3;0	DAG	GL	36	Diacylglycerol (18:1_18:3)	SLM:000309014	2.883	1.043	2.793	0.919	3.039	1.214
LPC 16:0;0	LPC	GP	16	Phosphatidylcholine (16:0_0:0)	SLM:000063723	53.570	12.649	52.140	12.212	56.101	13.011

LPC 18:0;0	LPC	GP	18	Phosphatidylcholine (18:0_0:0)	SLM:000063933	12.952	3.461	12.837	3.478	13.155	3.423
LPC 18:1;0	LPC	GP	18	Phosphatidylcholine (18:1_0:0)	SLM:000063983	11.594	3.565	11.251	3.354	12.201	3.836
LPC 18:2;0	LPC	GP	18	Phosphatidylcholine (18:2_0:0)	SLM:000064032	15.586	5.930	14.811	5.452	16.957	6.471
LPC 20:4;0	LPC	GP	20	Phosphatidylcholine (20:4_0:0)	SLM:000064388	2.885	0.953	2.684	0.820	3.234	1.061
LPE 18:0;0	LPE	GP	18	Phosphatidylethanolamine (18:0_0:0)	SLM:000067897	0.937	0.278	0.931	0.275	0.949	0.283
LPE 18:1;0	LPE	GP	18	Phosphatidylethanolamine (18:1_0:0)	SLM:000067947	0.674	0.276	0.649	0.258	0.716	0.297
LPE 18:2;0	LPE	GP	18	Phosphatidylethanolamine (18:2_0:0)	SLM:000067996	1.228	0.539	1.204	0.521	1.268	0.568
PC 14:0;0_16:0;0	PC	GP	30	Phosphatidylcholine (14:0_16:0)	SLM:000063559	3.280	1.393	3.363	1.397	3.118	1.373
PC 14:0;0_18:1;0	PC	GP	32	Phosphatidylcholine (14:0_18:1)	SLM:000063564	4.166	2.107	4.350	2.148	3.838	1.992
PC 14:0;0_18:2;0	PC	GP	32	Phosphatidylcholine (14:0_18:2)	SLM:000063565	5.342	1.966	5.504	2.007	5.048	1.854
PC 15:0;0_18:1;0	PC	GP	33	Phosphatidylcholine (15:0_18:1)	SLM:000063675	5.211	1.637	5.315	1.634	5.014	1.625
PC 15:0;0_18:2;0	PC	GP	33	Phosphatidylcholine (15:0_18:2)	SLM:000063676	13.222	3.276	13.688	3.311	12.347	3.021
PC 16:0;0_16:0;0	PC	GP	32	Phosphatidylcholine (16:0_16:0)	SLM:000063724	9.716	2.156	9.831	2.150	9.512	2.153
PC 16:0;0_16:1;0	PC	GP	32	Phosphatidylcholine (16:0_16:1)	SLM:000063725	13.124	7.908	13.438	7.533	12.569	8.505
PC 16:0;0_17:1;0	PC	GP	33	Phosphatidylcholine (16:0_17:1)		4.241	1.896	4.211	1.756	4.294	2.119
PC 16:0;0_18:0;0	PC	GP	34	Phosphatidylcholine (16:0_18:0)	SLM:000063728	28.170	5.638	28.848	5.675	26.969	5.365
PC 16:0;0_18:1;0	PC	GP	34	Phosphatidylcholine (16:0_18:1)	SLM:000063729	225.844	68.635	228.133	66.777	221.793	71.638
PC 16:0;0_18:2;0	PC	GP	34	Phosphatidylcholine (16:0_18:2)	SLM:000063730	446.838	98.935	458.855	98.304	425.580	96.458
PC 16:0;0_18:3;0	PC	GP	34	Phosphatidylcholine (16:0_18:3)	SLM:000063731	9.265	3.665	9.604	3.721	8.666	3.485
PC 16:0;0_20:1;0	PC	GP	36	Phosphatidylcholine (16:0_20:1)	SLM:000063735	1.297	0.478	1.294	0.486	1.303	0.463
PC 16:0;0_20:2;0	PC	GP	36	Phosphatidylcholine (16:0_20:2)	SLM:000063736	8.626	2.245	8.735	2.279	8.433	2.172
PC 16:0;0_20:3;0	PC	GP	36	Phosphatidylcholine (16:0_20:3)	SLM:000063737	56.666	19.190	57.209	19.606	55.706	18.394
PC 16:0;0_20:4;0	PC	GP	36	Phosphatidylcholine (16:0_20:4)	SLM:000063738	133.918	43.469	133.171	43.145	135.239	44.011
PC 16:0;0_20:5;0	PC	GP	36	Phosphatidylcholine (16:0_20:5)	SLM:000063739	32.323	17.770	32.338	17.656	32.297	17.972
PC 16:0;0_22:4;0	PC	GP	38	Phosphatidylcholine (16:0_22:4)	SLM:000063745	5.568	1.612	5.502	1.558	5.685	1.697
PC 16:0;0_22:5;0	PC	GP	38	Phosphatidylcholine (16:0_22:5)	SLM:000063746	19.299	5.513	19.367	5.518	19.180	5.503
PC 16:0;0_22:6;0	PC	GP	38	Phosphatidylcholine (16:0_22:6)	SLM:000063747	75.225	26.880	77.171	26.959	71.786	26.397
PC 16:1;0_18:0;0	PC	GP	34	Phosphatidylcholine (16:1_18:0)	SLM:000063781	1.886	1.283	1.944	1.227	1.780	1.373
PC 16:1;0_18:1;0	PC	GP	34	Phosphatidylcholine (16:1_18:1)	SLM:000063782	8.179	3.268	8.660	3.126	7.328	3.340
PC 16:1;0_18:2;0	PC	GP	34	Phosphatidylcholine (16:1_18:2)	SLM:000063783	5.513	1.884	5.946	1.871	4.746	1.648
PC 16:1;0_20:4;0	PC	GP	36	Phosphatidylcholine (16:1_20:4)	SLM:000063791	2.854	1.112	2.952	1.132	2.664	1.047
PC 17:0;0_18:1;0	PC	GP	35	Phosphatidylcholine (17:0_18:1)	SLM:000063885	4.137	1.137	4.274	1.156	3.894	1.059

PC 17:0;0_18:2;0	PC	GP	35	Phosphatidylcholine (17:0_18:2)	SLM:000063886	12.992	3.343	13.522	3.368	12.056	3.083
PC 17:0;0_20:4;0	PC	GP	37	Phosphatidylcholine (17:0_20:4)	SLM:000063894	5.321	1.530	5.434	1.536	5.121	1.499
PC 18:0;0_18:1;0	PC	GP	36	Phosphatidylcholine (18:0_18:1)	SLM:000063935	28.896	10.297	29.505	10.275	27.820	10.249
PC 18:0;0_18:2;0	PC	GP	36	Phosphatidylcholine (18:0_18:2)	SLM:000063936	193.185	48.257	199.861	48.459	181.374	45.570
PC 18:0;0_18:3;0	PC	GP	36	Phosphatidylcholine (18:0_18:3)	SLM:000063937	4.196	1.785	4.376	1.815	3.875	1.683
PC 18:0;0_20:2;0	PC	GP	38	Phosphatidylcholine (18:0_20:2)	SLM:000063942	2.306	0.764	2.352	0.764	2.223	0.757
PC 18:0;0_20:3;0	PC	GP	38	Phosphatidylcholine (18:0_20:3)	SLM:000063943	25.232	9.037	25.574	9.250	24.627	8.615
PC 18:0;0_20:4;0	PC	GP	38	Phosphatidylcholine (18:0_20:4)	SLM:000063944	62.637	19.216	62.794	19.115	62.361	19.393
PC 18:0;0_20:5;0	PC	GP	38	Phosphatidylcholine (18:0_20:5)	SLM:000063945	11.773	6.747	11.929	6.848	11.496	6.556
PC 18:0;0_22:5;0	PC	GP	40	Phosphatidylcholine (18:0_22:5)	SLM:000063952	6.667	2.156	6.633	2.146	6.726	2.172
PC 18:0;0_22:6;0	PC	GP	40	Phosphatidylcholine (18:0_22:6)	SLM:000063953	25.544	8.922	25.975	8.878	24.775	8.952
PC 18:1;0_18:1;0	PC	GP	36	Phosphatidylcholine (18:1_18:1)	SLM:000063984	23.921	8.428	24.881	8.372	22.222	8.260
PC 18:1;0_18:2;0	PC	GP	36	Phosphatidylcholine (18:1_18:2)	SLM:000063985	53.448	15.815	56.098	16.070	48.760	14.192
PC 18:1;0_18:3;0	PC	GP	36	Phosphatidylcholine (18:1_18:3)	SLM:000063986	3.169	1.429	3.314	1.463	2.899	1.322
PC 18:1;0_20:2;0	PC	GP	38	Phosphatidylcholine (18:1_20:2)	SLM:000063991	1.231	0.495	1.275	0.502	1.148	0.470
PC 18:1;0_20:3;0	PC	GP	38	Phosphatidylcholine (18:1_20:3)	SLM:000063992	9.643	2.969	9.935	2.992	9.127	2.858
PC 18:1;0_20:4;0	PC	GP	38	Phosphatidylcholine (18:1_20:4)	SLM:000063993	14.903	4.131	15.193	4.105	14.391	4.128
PC 18:2;0_18:2;0	PC	GP	36	Phosphatidylcholine (18:2_18:2)	SLM:000064033	23.817	8.577	24.694	8.717	22.266	8.095
PC 18:2;0_20:1;0	PC	GP	38	Phosphatidylcholine (18:2_20:1)	SLM:000064038	1.688	0.698	1.748	0.710	1.575	0.660
PC 18:2;0_20:3;0	PC	GP	38	Phosphatidylcholine (18:2_20:3)	SLM:000064040	3.095	1.211	3.184	1.239	2.936	1.140
PC 18:2;0_20:4;0	PC	GP	38	Phosphatidylcholine (18:2_20:4)	SLM:000064041	8.897	2.522	9.046	2.516	8.634	2.511
PC O-16:0;0/16:0;0	PCO	GP	32	Phosphatidylcholine (O-16:0_16:0)	SLM:000065919	2.501	0.875	2.478	0.855	2.541	0.907
PC O-16:0;0/16:1;0	PCO	GP	32	Phosphatidylcholine (O-16:0_16:1)	SLM:000065920	0.517	0.240	0.543	0.236	0.469	0.242
PC O-16:0;0/18:1;0	PCO	GP	34	Phosphatidylcholine (O-16:0_18:1)	SLM:000065924	1.878	0.477	1.939	0.485	1.768	0.442
PC O-16:0;0/18:2;0	PCO	GP	34	Phosphatidylcholine (O-16:0_18:2)	SLM:000065925	3.896	1.274	3.980	1.267	3.746	1.272
PC O-16:0;0/20:3;0	PCO	GP	36	Phosphatidylcholine (O-16:0_20:3)	SLM:000065932	0.863	0.305	0.857	0.296	0.874	0.319
PC O-16:0;0/20:4;0	PCO	GP	36	Phosphatidylcholine (O-16:0_20:4)	SLM:000065933	6.086	2.059	5.833	1.907	6.533	2.234
PC O-16:0;0/22:5;0	PCO	GP	38	Phosphatidylcholine (O-16:0_22:5)	SLM:000065941	1.130	0.458	1.122	0.454	1.143	0.466
PC O-16:1;0/16:0;0	PCO	GP	32	Phosphatidylcholine (O-16:1_16:0)	SLM:000065984	2.552	0.669	2.562	0.661	2.534	0.683
PC O-16:1;0/18:0;0	PCO	GP	34	Phosphatidylcholine (O-16:1_18:0)	SLM:000065988	0.225	0.089	0.228	0.090	0.219	0.087
PC O-16:1;0/18:1;0	PCO	GP	34	Phosphatidylcholine (O-16:1_18:1)	SLM:000065989	0.854	0.329	0.905	0.337	0.764	0.294
PC O-16:1;0/18:2;0	PCO	GP	34	Phosphatidylcholine (O-16:1_18:2)	SLM:000065990	5.200	1.748	5.430	1.784	4.792	1.604

PC O-16:1;0/20:3;0	PCO	GP	36	Phosphatidylcholine (O-16:1_20:3)	SLM:000065997	1.134	0.484	1.116	0.471	1.165	0.505
PC O-16:1;0/20:4;0	PCO	GP	36	Phosphatidylcholine (O-16:1_20:4)	SLM:000065998	6.292	2.069	6.196	2.014	6.451	2.149
PC O-16:2;0/18:0;0	PCO	GP	34	Phosphatidylcholine (O-16:2_18:0)		0.220	0.095	0.217	0.092	0.224	0.101
PC O-17:0;0/15:0;0	PCO	GP	32	Phosphatidylcholine (O-17:0_15:0)	SLM:000066048	0.261	0.147	0.273	0.151	0.240	0.136
PC O-17:0;0/17:1;0	PCO	GP	34	Phosphatidylcholine (O-17:0_17:1)		0.266	0.100	0.275	0.101	0.248	0.096
PC O-18:0;0/14:0;0	PCO	GP	32	Phosphatidylcholine (O-18:0_14:0)	SLM:000066176	1.521	0.430	1.521	0.429	1.520	0.433
PC O-18:0;0/16:1;0	PCO	GP	34	Phosphatidylcholine (O-18:0_16:1)	SLM:000066180	0.130	0.075	0.142	0.078	0.104	0.061
PC O-18:0;0/20:4;0	PCO	GP	38	Phosphatidylcholine (O-18:0_20:4)	SLM:000066193	2.923	0.850	2.911	0.844	2.944	0.860
PC O-18:1;0/16:0;0	PCO	GP	34	Phosphatidylcholine (O-18:1_16:0)	SLM:000066244	1.111	0.307	1.148	0.314	1.044	0.281
PC O-18:1;0/18:2;0	PCO	GP	36	Phosphatidylcholine (O-18:1_18:2)	SLM:000066250	2.232	0.779	2.310	0.785	2.090	0.746
PC O-18:1;0/20:3;0	PCO	GP	38	Phosphatidylcholine (O-18:1_20:3)	SLM:000066257	1.033	0.400	1.031	0.393	1.037	0.411
PC O-18:1;0/20:4;0	PCO	GP	38	Phosphatidylcholine (O-18:1_20:4)	SLM:000066258	7.984	2.126	7.903	2.076	8.129	2.203
PC O-18:2;0/16:0;0	PCO	GP	34	Phosphatidylcholine (O-18:2_16:0)	SLM:000066309	1.155	0.338	1.178	0.337	1.116	0.335
PC O-18:2;0/18:1;0	PCO	GP	36	Phosphatidylcholine (O-18:2_18:1)	SLM:000066314	0.445	0.217	0.473	0.223	0.395	0.195
PC O-18:2;0/18:2;0	PCO	GP	36	Phosphatidylcholine (O-18:2_18:2)	SLM:000066315	2.121	0.787	2.224	0.793	1.937	0.743
PC O-18:2;0/20:4;0	PCO	GP	38	Phosphatidylcholine (O-18:2_20:4)	SLM:000066323	3.137	1.598	3.180	1.625	3.060	1.547
PE 16:0;0_18:2;0	PE	GP	34	Phosphatidylethanolamine (16:0_18:2)	SLM:000067694	1.878	1.071	1.923	1.083	1.787	1.041
PE 16:0;0_20:4;0	PE	GP	36	Phosphatidylethanolamine (16:0_20:4)	SLM:000067702	2.664	1.310	2.722	1.329	2.559	1.268
PE 18:0;0_18:2;0	PE	GP	36	Phosphatidylethanolamine (18:0_18:2)	SLM:000067900	4.133	2.267	4.217	2.197	3.984	2.378
PE 18:0;0_20:4;0	PE	GP	38	Phosphatidylethanolamine (18:0_20:4)	SLM:000067908	6.715	2.873	6.749	2.744	6.654	3.087
PE 18:1;0_18:1;0	PE	GP	36	Phosphatidylethanolamine (18:1_18:1)	SLM:000067948	0.690	0.537	0.692	0.528	0.686	0.553
PE O-16:1;0/18:2;0	PEO	GP	34	Phosphatidylethanolamine (O-16:1_18:2)	SLM:000069954	1.621	0.603	1.625	0.599	1.614	0.610
PE O-16:1;0/20:4;0	PEO	GP	36	Phosphatidylethanolamine (O-16:1_20:4)	SLM:000069962	5.379	2.032	5.217	1.961	5.665	2.122
PE O-16:1;0/22:5;0	PEO	GP	38	Phosphatidylethanolamine (O-16:1_22:5)	SLM:000069970	1.489	0.674	1.473	0.654	1.517	0.707
PE O-18:1;0/18:2;0	PEO	GP	36	Phosphatidylethanolamine (O-18:1_18:2)	SLM:000070214	2.242	0.883	2.289	0.885	2.158	0.874
PE O-18:1;0/20:4;0	PEO	GP	38	Phosphatidylethanolamine (O-18:1_20:4)	SLM:000070222	8.189	2.940	8.047	2.866	8.440	3.052
PE O-18:2;0/18:1;0	PEO	GP	36	Phosphatidylethanolamine (O-18:2_18:1)	SLM:000070278	0.552	0.241	0.564	0.243	0.530	0.235
PE O-18:2;0/18:2;0	PEO	GP	36	Phosphatidylethanolamine (O-18:2_18:2)	SLM:000070279	1.485	0.554	1.505	0.546	1.449	0.567
PE O-18:2;0/20:4;0	PEO	GP	38	Phosphatidylethanolamine (O-18:2_20:4)	SLM:000070287	6.716	2.252	6.613	2.191	6.897	2.344
PI 16:0;0_18:1;0	PI	GP	34	Phosphatidylinositol (16:0_18:1)	SLM:000073801	1.302	0.750	1.289	0.725	1.325	0.793
PI 16:0;0_18:2;0	PI	GP	34	Phosphatidylinositol (16:0_18:2)	SLM:000073802	1.266	0.521	1.300	0.529	1.205	0.501
PI 16:0;0_20:4;0	PI	GP	36	Phosphatidylinositol (16:0_20:4)	SLM:000073810	2.220	0.724	2.232	0.732	2.198	0.710

PI 18:0;0_18:1;0	PI	GP	36	Phosphatidylinositol (18:0_18:1)	SLM:000074007	2.342	0.831	2.378	0.808	2.279	0.866
PI 18:0;0_18:2;0	PI	GP	36	Phosphatidylinositol (18:0_18:2)	SLM:000074008	4.042	1.325	4.211	1.326	3.743	1.269
PI 18:0;0_20:3;0	PI	GP	38	Phosphatidylinositol (18:0_20:3)	SLM:000074015	2.656	0.936	2.710	0.949	2.561	0.903
PI 18:0;0_20:4;0	PI	GP	38	Phosphatidylinositol (18:0_20:4)	SLM:000074016	19.802	4.819	19.844	4.739	19.728	4.958
PI 18:1;0_18:1;0	PI	GP	36	Phosphatidylinositol (18:1_18:1)	SLM:000074056	0.916	0.407	0.952	0.418	0.851	0.379
PI 18:1;0_18:2;0	PI	GP	36	Phosphatidylinositol (18:1_18:2)	SLM:000074057	0.862	0.344	0.900	0.353	0.791	0.315
PI 18:1;0_20:4;0	PI	GP	38	Phosphatidylinositol (18:1_20:4)	SLM:000074065	1.084	0.364	1.119	0.368	1.018	0.346
SM 32:1;2	SM	SP	32	Sphingomyelin (d32:1)	SLM:000390695	7.613	1.816	7.988	1.799	6.950	1.649
SM 34:0;2	SM	SP	34	Sphingomyelin (d34:0)	SLM:000390716	1.814	0.528	1.866	0.539	1.717	0.494
SM 34:1;2	SM	SP	34	Sphingomyelin (d34:1)	SLM:000390714	68.898	13.056	70.899	13.000	65.357	12.389
SM 34:2;2	SM	SP	34	Sphingomyelin (d34:2)	SLM:000390712	9.525	1.982	10.106	1.951	8.498	1.577
SM 36:1;2	SM	SP	36	Sphingomyelin (d36:1)	SLM:000390739	12.778	2.874	13.203	2.889	12.028	2.689
SM 36:2;2	SM	SP	36	Sphingomyelin (d36:2)	SLM:000390737	6.034	1.548	6.414	1.571	5.361	1.249
SM 38:1;2	SM	SP	38	Sphingomyelin (d38:1)	SLM:000390767	9.663	2.038	9.987	2.033	9.090	1.918
SM 38:2;2	SM	SP	38	Sphingomyelin (d38:2)	SLM:000390765	3.547	0.867	3.796	0.854	3.106	0.698
SM 40:1;2	SM	SP	40	Sphingomyelin (d40:1)	SLM:000390797	16.429	3.369	16.670	3.344	16.002	3.370
SM 40:2;2	SM	SP	40	Sphingomyelin (d40:2)	SLM:000390795	14.565	2.988	15.354	2.929	13.169	2.550
SM 42:2;2	SM	SP	42	Sphingomyelin (d42:2)	SLM:000390823	36.717	7.316	37.154	7.265	35.944	7.344
TAG 46:1;0	TAG	GL	46	Triacylglycerol (46:1)	SLM:000308244	10.456	14.380	9.339	11.084	12.355	18.544
TAG 46:2;0	TAG	GL	46	Triacylglycerol (46:2)	SLM:000308245	5.814	7.089	5.356	5.413	6.579	9.182
TAG 48:0;0	TAG	GL	48	Triacylglycerol (48:0)	SLM:000308257	9.014	14.132	7.533	10.921	11.350	17.827
TAG 48:1;0	TAG	GL	48	Triacylglycerol (48:1)	SLM:000308258	33.498	43.973	28.971	33.187	41.478	57.463
TAG 48:2;0	TAG	GL	48	Triacylglycerol (48:2)	SLM:000308259	25.866	28.245	23.643	21.592	29.797	36.881
TAG 48:3;0	TAG	GL	48	Triacylglycerol (48:3)	SLM:000308260	8.672	7.934	8.070	6.390	9.733	10.010
TAG 49:1;0	TAG	GL	49	Triacylglycerol (49:1)	SLM:000308267	5.802	5.530	5.222	4.580	6.775	6.722
TAG 49:2;0	TAG	GL	49	Triacylglycerol (49:2)	SLM:000308268	4.714	3.968	4.394	3.476	5.262	4.641
TAG 50:1;0	TAG	GL	50	Triacylglycerol (50:1)	SLM:000308276	79.561	100.823	66.620	72.771	102.397	133.964
TAG 50:2;0	TAG	GL	50	Triacylglycerol (50:2)	SLM:000308277	117.027	110.356	105.458	83.783	137.485	143.707
TAG 50:3;0	TAG	GL	50	Triacylglycerol (50:3)	SLM:000308278	50.377	39.146	46.593	30.640	57.076	50.137
TAG 50:4;0	TAG	GL	50	Triacylglycerol (50:4)	SLM:000308279	14.225	10.540	13.228	8.528	15.991	13.197
TAG 50:5;0	TAG	GL	50	Triacylglycerol (50:5)	SLM:000308280	3.819	2.674	3.579	2.210	4.211	3.259
TAG 51:1;0	TAG	GL	51	Triacylglycerol (51:1)	SLM:000308286	4.306	4.224	3.810	3.143	5.110	5.450

TAG 51:2;0	TAG	GL	51	Triacylglycerol (51:2)	SLM:000308287	10.478	7.925	9.562	6.281	12.096	9.999
TAG 51:3;0	TAG	GL	51	Triacylglycerol (51:3)	SLM:000308288	6.190	3.787	5.768	3.124	6.937	4.645
TAG 51:4;0	TAG	GL	51	Triacylglycerol (51:4)	SLM:000308289	2.602	1.372	2.443	1.159	2.868	1.637
TAG 52:2;0	TAG	GL	52	Triacylglycerol (52:2)	SLM:000308298	291.483	247.673	256.022	173.849	354.211	332.050
TAG 52:3;0	TAG	GL	52	Triacylglycerol (52:3)	SLM:000308299	240.114	162.094	216.811	121.562	281.331	209.671
TAG 52:4;0	TAG	GL	52	Triacylglycerol (52:4)	SLM:000308300	96.998	69.614	88.561	57.734	111.924	84.711
TAG 52:5;0	TAG	GL	52	Triacylglycerol (52:5)	SLM:000308301	25.763	18.820	23.684	16.152	29.443	22.322
TAG 52:6;0	TAG	GL	52	Triacylglycerol (52:6)	SLM:000308302	6.542	4.473	6.007	3.808	7.478	5.318
TAG 53:2;0	TAG	GL	53	Triacylglycerol (53:2)	SLM:000308309	5.924	4.210	5.394	3.070	6.854	5.562
TAG 53:3;0	TAG	GL	53	Triacylglycerol (53:3)	SLM:000308310	6.328	3.948	5.846	2.947	7.178	5.161
TAG 53:4;0	TAG	GL	53	Triacylglycerol (53:4)	SLM:000308311	3.653	2.042	3.391	1.634	4.109	2.540
TAG 54:3;0	TAG	GL	54	Triacylglycerol (54:3)	SLM:000308323	75.033	66.628	66.912	42.284	89.389	93.837
TAG 54:4;0	TAG	GL	54	Triacylglycerol (54:4)	SLM:000308324	65.231	51.508	59.144	40.878	76.006	64.891
TAG 54:5;0	TAG	GL	54	Triacylglycerol (54:5)	SLM:000308325	47.565	48.516	43.257	47.735	55.190	48.956
TAG 54:6;0	TAG	GL	54	Triacylglycerol (54:6)	SLM:000308326	29.950	56.126	27.129	57.247	34.931	53.739
TAG 54:7;0	TAG	GL	54	Triacylglycerol (54:7)	SLM:000308327	12.429	21.554	11.475	22.801	14.087	19.083
TAG 56:3;0	TAG	GL	56	Triacylglycerol (56:3)	SLM:000308349	2.966	3.331	2.597	1.809	3.572	4.833
TAG 56:4;0	TAG	GL	56	Triacylglycerol (56:4)	SLM:000308350	3.453	3.131	3.081	1.963	4.101	4.417
TAG 56:5;0	TAG	GL	56	Triacylglycerol (56:5)	SLM:000308351	9.979	7.220	8.906	4.819	11.794	9.788
TAG 56:6;0	TAG	GL	56	Triacylglycerol (56:6)	SLM:000308352	18.193	11.461	16.264	8.165	21.601	15.086
TAG 56:7;0	TAG	GL	56	Triacylglycerol (56:7)	SLM:000308353	25.900	16.615	23.158	12.662	30.747	21.070
TAG 56:8;0	TAG	GL	56	Triacylglycerol (56:8)	SLM:000308354	12.572	8.270	11.483	6.761	14.455	10.103
TAG 58:7;0	TAG	GL	58	Triacylglycerol (58:7)	SLM:000308381	3.734	2.427	3.343	1.723	4.373	3.164
TAG 58:8;0	TAG	GL	58	Triacylglycerol (58:8)	SLM:000308382	6.275	3.873	5.831	3.152	7.033	4.768

Table S3: Difference in traditional lipid levels between men and women at different age.

Lipid	Age Group	GeneRISK					UKBB				
		Mean (Women)	SE (Women)	Mean (Men)	SE (Men)	P	Mean (Women)	SE (Women)	Mean (Men)	SE (Men)	P
ApoA1 (log10 (mmol/L))	All	0.2373	0.0011	0.1943	0.0015	6.1E-118	0.2053	0.0008	0.1516	0.0008	0.0E+00
ApoA1 (log10 (mmol/L))	45-50y	0.2213	0.0022	0.1867	0.0027	8.7E-18	0.1932	0.0017	0.1465	0.0016	9.6E-78
ApoA1 (log10 (mmol/L))	51-55y	0.2390	0.0022	0.1926	0.0030	9.9E-25	0.2094	0.0019	0.1533	0.0017	1.4E-104
ApoA1 (log10 (mmol/L))	56-60y	0.2479	0.0022	0.1991	0.0031	3.6E-27	0.2162	0.0018	0.1591	0.0018	2.4E-96
ApoA1 (log10 (mmol/L))	61-66y	0.2423	0.0025	0.1999	0.0031	2.4E-15	0.2184	0.0019	0.1605	0.0019	7.7E-90
ApoB (log10 (mmol/L))	All	-0.0259	0.0017	0.0191	0.0023	1.4E-49	0.0159	0.0011	0.0305	0.0010	3.0E-23
ApoB (log10 (mmol/L))	45-50y	-0.0618	0.0036	0.0230	0.0047	9.3E-39	-0.0075	0.0022	0.0318	0.0022	1.4E-33
ApoB (log10 (mmol/L))	51-55y	-0.0274	0.0034	0.0221	0.0046	3.2E-13	0.0239	0.0023	0.0379	0.0023	2.5E-05
ApoB (log10 (mmol/L))	56-60y	-0.0082	0.0032	0.0207	0.0045	2.9E-03	0.0367	0.0023	0.0323	0.0022	7.4E-02
ApoB (log10 (mmol/L))	61-66y	0.0003	0.0034	0.0100	0.0046	9.7E-01	0.0451	0.0024	0.0298	0.0026	6.5E-05
HDL-C (log10 (mmol/L))	All	0.2375	0.0019	0.1363	0.0028	3.9E-210	0.1936	0.0011	0.1054	0.0011	0.0E+00
HDL-C (log10 (mmol/L))	45-50y	0.2187	0.0036	0.1110	0.0054	2.2E-55	0.1802	0.0024	0.0986	0.0023	5.3E-116
HDL-C (log10 (mmol/L))	51-55y	0.2419	0.0039	0.1314	0.0056	7.0E-47	0.1984	0.0027	0.1073	0.0025	2.5E-134
HDL-C (log10 (mmol/L))	56-60y	0.2465	0.0037	0.1488	0.0058	1.3E-40	0.2075	0.0026	0.1138	0.0026	1.1E-126
HDL-C (log10 (mmol/L))	61-66y	0.2447	0.0041	0.1582	0.0056	5.6E-24	0.2098	0.0027	0.1166	0.0028	5.1E-111
LDL-C (log10 (mmol/L))	All	0.5119	0.0019	0.5377	0.0024	1.0E-14	0.5589	0.0011	0.5625	0.0010	3.8E-03
LDL-C (log10 (mmol/L))	45-50y	0.4706	0.0038	0.5345	0.0049	9.8E-20	0.5330	0.0022	0.5653	0.0021	4.0E-24
LDL-C (log10 (mmol/L))	51-55y	0.5108	0.0037	0.5396	0.0046	2.9E-05	0.5690	0.0023	0.5697	0.0024	7.8E-01
LDL-C (log10 (mmol/L))	56-60y	0.5301	0.0035	0.5413	0.0048	6.9E-01	0.5832	0.0024	0.5635	0.0023	2.3E-09
LDL-C (log10 (mmol/L))	61-66y	0.5434	0.0038	0.5359	0.0048	1.3E-02	0.5906	0.0024	0.5607	0.0027	4.0E-14
Total cholesterol (log10 (mmol/L))	All	0.7469	0.0012	0.7447	0.0016	7.0E-02	0.7672	0.0009	0.7546	0.0008	7.0E-21
Total cholesterol (log10 (mmol/L))	45-50y	0.7150	0.0024	0.7418	0.0032	6.2E-10	0.7437	0.0017	0.7565	0.0018	1.0E-07
Total cholesterol (log10 (mmol/L))	51-55y	0.7482	0.0024	0.7446	0.0032	5.3E-01	0.7765	0.0018	0.7609	0.0019	1.1E-08
Total cholesterol (log10 (mmol/L))	56-60y	0.7615	0.0023	0.7482	0.0034	2.4E-06	0.7893	0.0019	0.7575	0.0019	1.6E-30
Total cholesterol (log10 (mmol/L))	61-66y	0.7681	0.0025	0.7446	0.0033	4.4E-09	0.7957	0.0019	0.7546	0.0022	7.2E-39
Triglycerides (log10 (mmol/L))	All	0.0053	0.0029	0.0992	0.0046	7.6E-67	0.0615	0.0021	0.1594	0.0024	1.1E-184
Triglycerides (log10 (mmol/L))	45-50y	-0.0236	0.0059	0.1270	0.0096	5.2E-40	0.0219	0.0044	0.1721	0.0052	4.8E-94

Triglycerides (log10 (mmol/L))	51-55y	0.0012	0.0058	0.1067	0.0091	3.3E-18	0.0719	0.0049	0.1634	0.0056	2.6E-32
Triglycerides (log10 (mmol/L))	56-60y	0.0225	0.0056	0.0908	0.0089	3.6E-09	0.0889	0.0049	0.1582	0.0054	2.9E-16
Triglycerides (log10 (mmol/L))	61-66y	0.0263	0.0059	0.0680	0.0087	3.4E-03	0.1039	0.0052	0.1543	0.0057	3.9E-08

P values were obtained from linear regression models adjusted for BMI, diabetes, cardiac disease, and smoking habits. Individuals with lipid lowering medications were excluded.

Table S4: Age and sex interactions in the levels of lipid species.

Lipid species	Lipid class	GeneRISK			Replication		
		Beta	SE	Age-sex interaction P	Beta	SE	Age-sex interaction P
HDL-C	Trad	0.0011	0.0005	2.7E-02	0.0006	0.0011	5.5E-01
LDL-C	Trad	-0.0046	0.0005	1.2E-19	-0.0055	0.0012	3.8E-06
TC	Trad	-0.0034	0.0003	3.1E-25	-0.0043	0.0008	4.3E-07
TG	Trad	-0.0073	0.0008	8.4E-21	-0.0070	0.0021	7.2E-04
ApoA1	Trad	-0.0008	0.0003	6.3E-03	NA	NA	NA
ApoB	Trad	-0.0049	0.0005	1.9E-27	NA	NA	NA
CE 14:0;0	CE	-0.0039	0.0007	1.5E-09	-0.0036	0.0018	4.8E-02
CE 15:0;0	CE	-0.0034	0.0008	6.6E-06	-0.0018	0.0018	3.2E-01
CE 16:0;0	CE	-0.0030	0.0004	2.0E-16	-0.0034	0.0012	3.0E-03
CE 16:1;0	CE	-0.0051	0.0008	5.6E-11	-0.0073	0.0021	4.4E-04
CE 17:0;0	CE	-0.0044	0.0006	3.1E-15	-0.0042	0.0016	1.0E-02
CE 17:1;0	CE	-0.0038	0.0006	3.2E-12	-0.0050	0.0016	1.6E-03
CE 18:0;0	CE	-0.0058	0.0006	8.5E-21	-0.0067	0.0018	1.4E-04
CE 18:1;0	CE	-0.0030	0.0004	1.4E-14	-0.0053	0.0012	2.0E-05
CE 18:2;0	CE	-0.0022	0.0004	1.5E-08	-0.0023	0.0012	5.3E-02
CE 18:3;0	CE	-0.0048	0.0006	3.6E-16	-0.0058	0.0017	6.8E-04
CE 20:2;0	CE	-0.0020	0.0006	9.1E-04	-0.0008	0.0017	6.5E-01
CE 20:3;0	CE	-0.0054	0.0005	6.8E-24	-0.0053	0.0015	3.9E-04
CE 20:4;0	CE	-0.0052	0.0005	5.9E-22	-0.0039	0.0014	5.7E-03
CE 20:5;0	CE	-0.0049	0.0009	1.5E-07	-0.0049	0.0024	4.1E-02
CE 22:6;0	CE	-0.0021	0.0007	2.2E-03	-0.0012	0.0019	5.3E-01
Cer 40:1;2	CER	-0.0045	0.0005	3.4E-18	-0.0042	0.0015	4.7E-03
Cer 40:2;2	CER	-0.0042	0.0006	1.5E-10	-0.0043	0.0022	4.7E-02
Cer 42:1;2	CER	-0.0041	0.0005	1.5E-17	-0.0039	0.0014	7.7E-03
Cer 42:2;2	CER	-0.0037	0.0004	1.3E-17	-0.0034	0.0015	2.2E-02
Chol	ST	-0.0035	0.0004	8.5E-16	-0.0031	0.0011	4.4E-03
DAG 16:0;0_18:1;0	DAG	-0.0077	0.0011	1.0E-12	-0.0060	0.0028	3.6E-02
DAG 16:0;0_18:2;0	DAG	-0.0068	0.0011	3.2E-10	-0.0084	0.0032	7.8E-03
DAG 16:1;0_18:1;0	DAG	-0.0070	0.0011	4.0E-10	-0.0058	0.0031	6.1E-02
DAG 18:1;0_18:1;0	DAG	-0.0069	0.0009	1.4E-15	-0.0069	0.0025	6.8E-03
DAG 18:1;0_18:2;0	DAG	-0.0056	0.0009	4.5E-11	-0.0051	0.0023	2.7E-02
DAG 18:1;0_18:3;0	DAG	-0.0040	0.0005	1.5E-13	-0.0035	0.0023	1.3E-01
LPC 16:0;0	LPC	-0.0005	0.0004	2.8E-01	-0.0008	0.0012	5.0E-01
LPC 18:0;0	LPC	-0.0020	0.0005	5.5E-05	-0.0026	0.0015	7.7E-02
LPC 18:1;0	LPC	-0.0007	0.0005	1.7E-01	-0.0021	0.0015	1.6E-01
LPC 18:2;0	LPC	-0.0006	0.0006	2.7E-01	-0.0009	0.0019	6.3E-01
LPC 20:4;0	LPC	-0.0027	0.0006	6.6E-06	-0.0015	0.0016	3.5E-01
LPE 18:0;0	LPE	-0.0015	0.0006	6.4E-03	NA	NA	NA
LPE 18:1;0	LPE	-0.0009	0.0007	2.3E-01	-0.0025	0.0020	2.2E-01
LPE 18:2;0	LPE	-0.0001	0.0007	8.4E-01	-0.0017	0.0019	3.8E-01
PC 14:0;0_16:0;0	PC	-0.0009	0.0008	3.0E-01	-0.0022	0.0022	3.1E-01
PC 14:0;0_18:1;0	PC	-0.0030	0.0008	1.1E-04	-0.0044	0.0021	4.0E-02
PC 14:0;0_18:2;0	PC	-0.0019	0.0007	3.5E-03	-0.0017	0.0018	3.6E-01
PC 15:0;0_18:1;0	PC	-0.0024	0.0006	5.5E-05	-0.0028	0.0017	1.0E-01
PC 15:0;0_18:2;0	PC	-0.0007	0.0004	1.5E-01	-0.0002	0.0014	8.9E-01
PC 16:0;0_16:0;0	PC	-0.0007	0.0004	6.0E-02	-0.0015	0.0013	2.5E-01
PC 16:0;0_16:1;0	PC	-0.0033	0.0009	2.4E-04	-0.0063	0.0026	1.6E-02

PC 16:0;0_17:1;0	PC	-0.0023	0.0007	7.7E-04	-0.0045	0.0023	4.9E-02
PC 16:0;0_18:0;0	PC	-0.0018	0.0004	4.9E-07	-0.0018	0.0016	2.7E-01
PC 16:0;0_18:1;0	PC	-0.0019	0.0005	1.6E-04	-0.0038	0.0015	1.0E-02
PC 16:0;0_18:2;0	PC	-0.0008	0.0004	3.5E-02	-0.0016	0.0012	1.9E-01
PC 16:0;0_18:3;0	PC	-0.0023	0.0007	5.2E-04	-0.0047	0.0019	1.1E-02
PC 16:0;0_20:1;0	PC	-0.0013	0.0006	4.5E-02	-0.0025	0.0019	1.9E-01
PC 16:0;0_20:2;0	PC	-0.0018	0.0005	8.2E-05	-0.0030	0.0014	3.1E-02
PC 16:0;0_20:3;0	PC	-0.0035	0.0006	6.8E-10	-0.0050	0.0016	2.3E-03
PC 16:0;0_20:4;0	PC	-0.0038	0.0006	1.5E-11	-0.0025	0.0015	1.0E-01
PC 16:0;0_20:5;0	PC	-0.0033	0.0009	4.2E-04	-0.0036	0.0024	1.4E-01
PC 16:0;0_22:4;0	PC	-0.0031	0.0005	2.0E-09	-0.0043	0.0016	6.4E-03
PC 16:0;0_22:5;0	PC	-0.0039	0.0005	1.6E-14	-0.0052	0.0016	9.0E-04
PC 16:0;0_22:6;0	PC	-0.0001	0.0007	9.3E-01	0.0001	0.0018	9.5E-01
PC 16:1;0_18:0;0	PC	-0.0057	0.0010	2.7E-08	-0.0119	0.0030	8.9E-05
PC 16:1;0_18:1;0	PC	-0.0030	0.0006	1.3E-06	-0.0064	0.0018	2.8E-04
PC 16:1;0_18:2;0	PC	-0.0023	0.0006	5.5E-05	-0.0046	0.0017	8.0E-03
PC 16:1;0_20:4;0	PC	-0.0051	0.0008	2.2E-10	NA	NA	NA
PC 17:0;0_18:1;0	PC	-0.0025	0.0005	3.2E-07	NA	NA	NA
PC 17:0;0_18:2;0	PC	-0.0019	0.0004	3.0E-05	-0.0037	0.0018	4.1E-02
PC 17:0;0_20:4;0	PC	-0.0046	0.0005	1.3E-18	-0.0037	0.0016	2.0E-02
PC 18:0;0_18:1;0	PC	-0.0033	0.0006	1.8E-08	-0.0055	0.0017	1.6E-03
PC 18:0;0_18:2;0	PC	-0.0024	0.0004	2.6E-08	-0.0030	0.0013	2.7E-02
PC 18:0;0_18:3;0	PC	-0.0044	0.0008	7.0E-09	-0.0060	0.0022	7.3E-03
PC 18:0;0_20:2;0	PC	-0.0017	0.0007	1.0E-02	-0.0014	0.0016	3.7E-01
PC 18:0;0_20:3;0	PC	-0.0056	0.0006	1.8E-20	-0.0071	0.0017	5.0E-05
PC 18:0;0_20:4;0	PC	-0.0050	0.0005	9.5E-22	-0.0036	0.0015	1.6E-02
PC 18:0;0_20:5;0	PC	-0.0052	0.0010	1.4E-07	-0.0047	0.0028	9.3E-02
PC 18:0;0_22:5;0	PC	-0.0053	0.0006	9.3E-20	-0.0079	0.0017	2.4E-06
PC 18:0;0_22:6;0	PC	-0.0021	0.0006	9.5E-04	-0.0040	0.0017	2.0E-02
PC 18:1;0_18:1;0	PC	-0.0014	0.0005	8.5E-03	-0.0041	0.0015	5.9E-03
PC 18:1;0_18:2;0	PC	-0.0012	0.0005	1.4E-02	-0.0027	0.0015	7.9E-02
PC 18:1;0_18:3;0	PC	-0.0023	0.0008	6.8E-03	-0.0043	0.0023	5.9E-02
PC 18:1;0_20:2;0	PC	-0.0018	0.0008	2.0E-02	-0.0103	0.0023	1.2E-05
PC 18:1;0_20:3;0	PC	-0.0043	0.0005	6.8E-15	-0.0061	0.0017	3.1E-04
PC 18:1;0_20:4;0	PC	-0.0039	0.0005	1.2E-15	-0.0038	0.0014	5.0E-03
PC 18:2;0_18:2;0	PC	-0.0019	0.0006	2.7E-03	-0.0032	0.0018	8.1E-02
PC 18:2;0_20:1;0	PC	-0.0004	0.0008	6.2E-01	NA	NA	NA
PC 18:2;0_20:3;0	PC	-0.0044	0.0007	1.6E-09	-0.0073	0.0024	2.7E-03
PC 18:2;0_20:4;0	PC	-0.0035	0.0005	2.3E-11	-0.0046	0.0015	2.6E-03
PC O-16:0;0/16:0;0	PCO	0.0000	0.0006	9.5E-01	-0.0015	0.0021	4.6E-01
PC O-16:0;0/16:1;0	PCO	0.0001	0.0009	8.8E-01	-0.0030	0.0026	2.5E-01
PC O-16:0;0/18:1;0	PCO	0.0011	0.0004	8.1E-03	0.0002	0.0012	8.5E-01
PC O-16:0;0/18:2;0	PCO	0.0004	0.0005	4.2E-01	-0.0011	0.0014	4.6E-01
PC O-16:0;0/20:3;0	PCO	-0.0017	0.0007	1.3E-02	-0.0050	0.0019	8.3E-03
PC O-16:0;0/20:4;0	PCO	-0.0023	0.0006	1.1E-04	-0.0046	0.0015	2.6E-03
PC O-16:0;0/22:5;0	PCO	-0.0020	0.0008	1.4E-02	-0.0038	0.0022	9.5E-02
PC O-16:1;0/16:0;0	PCO	0.0003	0.0005	5.0E-01	0.0009	0.0016	5.6E-01
PC O-16:1;0/18:0;0	PCO	-0.0001	0.0007	8.7E-01	-0.0005	0.0022	8.2E-01
PC O-16:1;0/18:1;0	PCO	0.0010	0.0006	1.0E-01	-0.0012	0.0020	5.5E-01
PC O-16:1;0/18:2;0	PCO	-0.0003	0.0006	6.3E-01	-0.0003	0.0016	8.3E-01
PC O-16:1;0/20:3;0	PCO	-0.0030	0.0008	1.6E-04	-0.0092	0.0021	1.8E-05

PC O-16:1;0/20:4;0	PCO	-0.0034	0.0006	9.0E-08	-0.0034	0.0017	3.9E-02
PC O-16:2;0/18:0;0	PCO	-0.0014	0.0008	7.5E-02	0.0001	0.0025	9.7E-01
PC O-17:0;0/15:0;0	PCO	-0.0020	0.0011	5.6E-02	-0.0025	0.0031	4.1E-01
PC O-17:0;0/17:1;0	PCO	-0.0009	0.0007	2.2E-01	-0.0027	0.0021	2.0E-01
PC O-18:0;0/14:0;0	PCO	0.0022	0.0005	7.5E-05	0.0020	0.0011	5.5E-02
PC O-18:0;0/16:1;0	PCO	0.0002	0.0011	8.5E-01	0.0020	0.0026	4.5E-01
PC O-18:0;0/20:4;0	PCO	-0.0008	0.0005	1.5E-01	-0.0006	0.0016	6.9E-01
PC O-18:1;0/16:0;0	PCO	0.0014	0.0005	3.6E-03	0.0005	0.0012	7.1E-01
PC O-18:1;0/18:2;0	PCO	0.0013	0.0006	2.9E-02	-0.0004	0.0016	8.0E-01
PC O-18:1;0/20:3;0	PCO	-0.0005	0.0007	4.6E-01	-0.0045	0.0020	2.5E-02
PC O-18:1;0/20:4;0	PCO	-0.0015	0.0005	2.3E-03	-0.0023	0.0012	6.1E-02
PC O-18:2;0/16:0;0	PCO	0.0008	0.0005	1.2E-01	-0.0002	0.0014	8.6E-01
PC O-18:2;0/18:1;0	PCO	0.0002	0.0008	8.4E-01	-0.0019	0.0021	3.7E-01
PC O-18:2;0/18:2;0	PCO	-0.0003	0.0006	6.5E-01	-0.0029	0.0022	1.8E-01
PC O-18:2;0/20:4;0	PCO	-0.0047	0.0010	1.8E-06	NA	NA	NA
PE 16:0;0_18:2;0	PE	-0.0015	0.0010	1.3E-01	-0.0029	0.0028	2.9E-01
PE 16:0;0_20:4;0	PE	-0.0038	0.0008	1.4E-06	-0.0026	0.0025	3.0E-01
PE 18:0;0_18:2;0	PE	-0.0036	0.0008	1.5E-05	-0.0037	0.0024	1.2E-01
PE 18:0;0_20:4;0	PE	-0.0047	0.0007	2.8E-12	-0.0032	0.0021	1.3E-01
PE 18:1;0_18:1;0	PE	-0.0043	0.0010	3.7E-05	-0.0022	0.0036	5.4E-01
PE O-16:1;0/18:2;0	PEO	-0.0016	0.0007	3.7E-02	-0.0033	0.0019	9.1E-02
PE O-16:1;0/20:4;0	PEO	-0.0046	0.0007	1.5E-12	-0.0056	0.0019	3.9E-03
PE O-16:1;0/22:5;0	PEO	-0.0037	0.0009	4.8E-05	NA	NA	NA
PE O-18:1;0/18:2;0	PEO	-0.0022	0.0007	2.1E-03	-0.0032	0.0020	1.2E-01
PE O-18:1;0/20:4;0	PEO	-0.0040	0.0006	1.4E-10	NA	NA	NA
PE O-18:2;0/18:1;0	PEO	-0.0026	0.0008	9.2E-04	-0.0045	0.0025	7.4E-02
PE O-18:2;0/18:2;0	PEO	-0.0019	0.0007	5.9E-03	-0.0067	0.0018	2.5E-04
PE O-18:2;0/20:4;0	PEO	-0.0034	0.0006	2.1E-08	-0.0051	0.0017	2.9E-03
PI 16:0;0_18:1;0	PI	-0.0034	0.0010	1.1E-03	-0.0045	0.0023	5.3E-02
PI 16:0;0_18:2;0	PI	-0.0012	0.0007	1.0E-01	-0.0059	0.0018	9.5E-04
PI 16:0;0_20:4;0	PI	-0.0042	0.0006	4.5E-11	-0.0051	0.0018	5.6E-03
PI 18:0;0_18:1;0	PI	-0.0014	0.0006	1.9E-02	-0.0049	0.0017	4.1E-03
PI 18:0;0_18:2;0	PI	-0.0016	0.0005	3.4E-03	-0.0038	0.0016	1.8E-02
PI 18:0;0_20:3;0	PI	-0.0039	0.0006	1.5E-09	-0.0067	0.0017	9.1E-05
PI 18:0;0_20:4;0	PI	-0.0046	0.0004	1.3E-26	-0.0060	0.0013	4.8E-06
PI 18:1;0_18:1;0	PI	-0.0017	0.0007	2.3E-02	-0.0058	0.0021	5.7E-03
PI 18:1;0_18:2;0	PI	-0.0017	0.0007	1.5E-02	-0.0020	0.0018	2.7E-01
PI 18:1;0_20:4;0	PI	-0.0041	0.0007	5.9E-09	NA	NA	NA
SM 32:1;2	SM	-0.0025	0.0004	9.9E-10	-0.0025	0.0012	3.7E-02
SM 34:0;2	SM	-0.0003	0.0005	5.6E-01	0.0015	0.0015	3.3E-01
SM 34:1;2	SM	-0.0012	0.0003	1.4E-04	-0.0020	0.0010	5.4E-02
SM 34:2;2	SM	-0.0022	0.0003	3.5E-11	-0.0019	0.0010	6.1E-02
SM 36:1;2	SM	-0.0027	0.0004	3.0E-12	-0.0013	0.0011	2.5E-01
SM 36:2;2	SM	-0.0030	0.0004	9.0E-13	-0.0015	0.0012	2.1E-01
SM 38:1;2	SM	-0.0027	0.0004	4.2E-13	-0.0022	0.0011	4.6E-02
SM 38:2;2	SM	-0.0026	0.0004	2.3E-10	-0.0011	0.0011	3.3E-01
SM 40:1;2	SM	-0.0031	0.0004	2.7E-17	-0.0028	0.0012	1.6E-02
SM 40:2;2	SM	-0.0026	0.0003	1.6E-14	-0.0024	0.0011	2.5E-02
SM 42:2;2	SM	-0.0020	0.0003	1.5E-08	-0.0023	0.0011	3.5E-02
TAG 46:1;0	TAG	-0.0084	0.0017	4.9E-07	-0.0119	0.0047	1.1E-02
TAG 46:2;0	TAG	-0.0076	0.0015	8.3E-07	-0.0110	0.0044	1.3E-02

TAG 48:0;0	TAG	-0.0082	0.0017	2.1E-06	-0.0091	0.0043	3.5E-02
TAG 48:1;0	TAG	-0.0093	0.0014	1.6E-10	-0.0102	0.0039	8.4E-03
TAG 48:2;0	TAG	-0.0094	0.0013	7.8E-13	-0.0094	0.0036	9.7E-03
TAG 48:3;0	TAG	-0.0085	0.0012	1.4E-12	-0.0097	0.0034	4.7E-03
TAG 49:1;0	TAG	-0.0070	0.0013	2.8E-08	-0.0114	0.0035	1.4E-03
TAG 49:2;0	TAG	-0.0072	0.0011	4.5E-10	-0.0090	0.0032	5.2E-03
TAG 50:1;0	TAG	-0.0081	0.0012	5.7E-11	-0.0078	0.0033	2.0E-02
TAG 50:2;0	TAG	-0.0083	0.0011	3.2E-14	-0.0088	0.0030	3.0E-03
TAG 50:3;0	TAG	-0.0078	0.0010	3.9E-15	-0.0080	0.0028	4.1E-03
TAG 50:4;0	TAG	-0.0084	0.0010	1.6E-16	-0.0088	0.0029	2.5E-03
TAG 50:5;0	TAG	-0.0078	0.0011	6.1E-13	NA	NA	NA
TAG 51:1;0	TAG	-0.0073	0.0012	2.4E-09	-0.0079	0.0034	1.9E-02
TAG 51:2;0	TAG	-0.0077	0.0010	1.3E-15	-0.0091	0.0028	9.3E-04
TAG 51:3;0	TAG	-0.0073	0.0009	3.4E-17	-0.0068	0.0026	8.0E-03
TAG 51:4;0	TAG	-0.0059	0.0009	1.0E-10	NA	NA	NA
TAG 52:2;0	TAG	-0.0072	0.0009	7.4E-15	-0.0073	0.0026	5.8E-03
TAG 52:3;0	TAG	-0.0063	0.0009	2.2E-13	-0.0058	0.0024	1.5E-02
TAG 52:4;0	TAG	-0.0066	0.0009	4.9E-13	-0.0056	0.0025	2.5E-02
TAG 52:5;0	TAG	-0.0078	0.0010	5.1E-16	-0.0068	0.0026	1.0E-02
TAG 52:6;0	TAG	-0.0085	0.0010	6.8E-16	-0.0095	0.0030	1.9E-03
TAG 53:2;0	TAG	-0.0077	0.0008	1.1E-19	-0.0063	0.0027	2.1E-02
TAG 53:3;0	TAG	-0.0072	0.0008	7.9E-19	-0.0067	0.0024	5.7E-03
TAG 53:4;0	TAG	-0.0069	0.0008	9.5E-17	-0.0067	0.0024	5.1E-03
TAG 54:3;0	TAG	-0.0078	0.0009	9.7E-19	-0.0073	0.0025	3.0E-03
TAG 54:4;0	TAG	-0.0074	0.0009	7.1E-17	-0.0062	0.0025	1.3E-02
TAG 54:5;0	TAG	-0.0078	0.0009	6.5E-18	-0.0069	0.0025	5.9E-03
TAG 54:6;0	TAG	-0.0079	0.0010	2.7E-15	-0.0070	0.0025	5.7E-03
TAG 54:7;0	TAG	-0.0079	0.0011	7.9E-13	-0.0070	0.0028	1.5E-02
TAG 56:3;0	TAG	-0.0073	0.0009	2.9E-16	-0.0076	0.0027	4.8E-03
TAG 56:4;0	TAG	-0.0082	0.0009	2.8E-19	-0.0064	0.0025	1.2E-02
TAG 56:5;0	TAG	-0.0079	0.0010	4.9E-14	-0.0059	0.0023	8.6E-03
TAG 56:6;0	TAG	-0.0089	0.0008	8.7E-29	-0.0076	0.0022	5.2E-04
TAG 56:7;0	TAG	-0.0062	0.0009	1.0E-11	-0.0043	0.0026	9.7E-02
TAG 56:8;0	TAG	-0.0048	0.0010	2.3E-06	-0.0030	0.0029	3.0E-01
TAG 58:7;0	TAG	-0.0074	0.0009	2.7E-15	-0.0044	0.0031	1.6E-01
TAG 58:8;0	TAG	-0.0039	0.0010	6.0E-05	-0.0020	0.0027	4.7E-01

Interaction between age and sex was determined using age, sex, BMI, diabetes, cardiac disease, lipid lowering medication, and smoking habits additionally for the GeneRISK cohort as covariates and interaction term for age and sex.

Table S5: Association of age with lipids in men and women in the GeneRISK cohort.

Lipid Species	Lipid medication adjusted model							Lipid medication excluded model						
	Beta (Women)	SE (Women)	P (Women)	Beta (Men)	SE (Men)	P (Men)	P_{het}	Beta (Women)	SE (Women)	P (Women)	Beta (Men)	SE (Men)	P (Men)	P_{het}
CE 14:0;0	0.0040	0.0004	5.6E-21	0.0001	0.0005	8.2E-01	1.9E-08	0.0039	0.0004	1.1E-19	0.0004	0.0006	4.9E-01	5.35E-07
CE 15:0;0	0.0035	0.0005	7.9E-14	0.0002	0.0007	7.5E-01	4.1E-05	0.0033	0.0005	5.9E-12	0.0005	0.0007	4.5E-01	9.23E-04
CE 16:0;0	0.0034	0.0002	8.9E-48	0.0003	0.0003	3.7E-01	2.8E-16	0.0034	0.0002	6.7E-46	0.0003	0.0003	3.1E-01	8.13E-15
CE 16:1;0	0.0062	0.0005	1.7E-37	0.0011	0.0007	1.1E-01	2.8E-10	0.0063	0.0005	7.3E-36	0.0017	0.0007	1.7E-02	7.03E-08
CE 17:0;0	0.0026	0.0004	2.4E-13	-0.0020	0.0005	3.5E-05	1.1E-14	0.0024	0.0004	3.5E-11	-0.0018	0.0005	2.5E-04	6.10E-12
CE 17:1;0	0.0038	0.0004	1.0E-26	-0.0001	0.0004	7.8E-01	4.6E-12	0.0038	0.0004	1.4E-24	0.0001	0.0005	7.7E-01	1.13E-09
CE 18:0;0	0.0031	0.0004	3.2E-14	-0.0031	0.0005	2.6E-10	2.3E-22	0.0030	0.0004	7.5E-13	-0.0030	0.0005	1.8E-08	5.43E-19
CE 18:1;0	0.0028	0.0002	4.4E-29	-0.0005	0.0003	1.5E-01	6.6E-16	0.0029	0.0003	1.4E-28	-0.0003	0.0003	3.3E-01	3.97E-14
CE 18:2;0	0.0027	0.0002	1.8E-27	0.0003	0.0003	4.0E-01	8.2E-10	0.0028	0.0003	3.7E-28	0.0003	0.0003	3.7E-01	1.56E-09
CE 18:3;0	0.0040	0.0004	1.7E-24	-0.0010	0.0005	3.6E-02	3.1E-16	0.0041	0.0004	1.9E-24	-0.0008	0.0005	1.2E-01	1.58E-14
CE 20:2;0	0.0022	0.0004	3.2E-08	-0.0002	0.0005	6.2E-01	1.6E-04	0.0022	0.0004	4.1E-08	0.0002	0.0005	6.7E-01	2.78E-03
CE 20:3;0	0.0037	0.0004	4.5E-25	-0.0018	0.0004	2.1E-05	1.6E-23	0.0039	0.0004	1.3E-25	-0.0017	0.0004	9.9E-05	1.76E-22
CE 20:4;0	0.0039	0.0004	1.7E-27	-0.0016	0.0004	3.1E-04	4.3E-22	0.0040	0.0004	4.3E-27	-0.0018	0.0005	1.0E-04	1.60E-22
CE 20:5;0	0.0089	0.0006	5.2E-47	0.0038	0.0008	8.5E-07	3.6E-07	0.0089	0.0006	1.6E-43	0.0038	0.0008	6.9E-06	9.71E-07
CE 22:6;0	0.0066	0.0004	1.7E-48	0.0044	0.0006	4.1E-14	2.1E-03	0.0066	0.0005	1.2E-44	0.0041	0.0006	2.6E-11	1.41E-03
Cer 40:1;2	0.0039	0.0003	4.7E-31	-0.0010	0.0004	1.4E-02	5.2E-20	0.0040	0.0003	1.4E-30	-0.0006	0.0004	1.5E-01	1.74E-16
Cer 40:2;2	0.0033	0.0004	4.6E-15	-0.0015	0.0005	5.5E-03	1.7E-12	0.0033	0.0004	2.4E-14	-0.0012	0.0006	3.6E-02	2.33E-10
Cer 42:1;2	0.0041	0.0003	1.2E-39	-0.0004	0.0004	2.7E-01	5.2E-20	0.0043	0.0003	6.9E-40	0.0000	0.0004	9.2E-01	5.52E-17
Cer 42:2;2	0.0044	0.0003	3.3E-56	0.0003	0.0004	4.4E-01	4.8E-20	0.0045	0.0003	1.4E-54	0.0005	0.0004	1.7E-01	2.12E-17
Chol	0.0033	0.0003	6.3E-31	-0.0004	0.0003	2.2E-01	7.2E-17	0.0033	0.0003	2.8E-28	-0.0002	0.0004	6.6E-01	1.93E-13
DAG 16:0;0_18:1;0	0.0027	0.0007	8.1E-05	-0.0047	0.0009	2.0E-07	6.3E-11	0.0027	0.0007	1.9E-04	-0.0041	0.0010	2.2E-05	1.73E-08
DAG 16:0;0_18:2;0	0.0019	0.0007	6.2E-03	-0.0042	0.0009	3.7E-06	8.9E-08	0.0018	0.0007	1.4E-02	-0.0036	0.0010	1.4E-04	5.76E-06
DAG 16:1;0_18:1;0	0.0038	0.0007	7.5E-08	-0.0028	0.0010	3.6E-03	3.0E-08	0.0037	0.0007	3.8E-07	-0.0023	0.0010	2.2E-02	1.25E-06
DAG 18:1;0_18:1;0	0.0019	0.0005	2.5E-04	-0.0053	0.0008	5.2E-12	6.7E-15	0.0020	0.0005	3.7E-04	-0.0049	0.0008	1.7E-09	2.38E-12
DAG 18:1;0_18:2;0	0.0016	0.0005	2.7E-03	-0.0040	0.0007	5.4E-08	6.3E-10	0.0015	0.0006	6.2E-03	-0.0038	0.0008	1.4E-06	3.20E-08
DAG 18:1;0_18:3;0	0.0012	0.0003	7.2E-04	-0.0029	0.0004	6.9E-11	3.9E-13	0.0011	0.0004	1.5E-03	-0.0027	0.0005	2.5E-08	1.73E-10
LPC 16:0;0	0.0001	0.0003	6.9E-01	-0.0006	0.0003	1.0E-01	1.3E-01	0.0002	0.0003	5.5E-01	-0.0007	0.0004	3.6E-02	4.63E-02
LPC 18:0;0	0.0016	0.0003	2.1E-06	-0.0011	0.0004	2.0E-03	4.4E-08	0.0017	0.0003	8.7E-07	-0.0014	0.0004	3.4E-04	2.65E-09
LPC 18:1;0	-0.0007	0.0003	2.5E-02	-0.0021	0.0004	2.1E-07	8.5E-03	-0.0007	0.0003	4.8E-02	-0.0023	0.0004	7.2E-08	3.03E-03

LPC 18:2;0	-0.0026	0.0004	3.2E-12	-0.0038	0.0005	3.9E-16	5.3E-02	-0.0025	0.0004	1.5E-10	-0.0041	0.0005	5.2E-17	1.03E-02
LPC 20:4;0	-0.0011	0.0004	3.1E-03	-0.0041	0.0005	1.8E-17	1.3E-06	-0.0010	0.0004	9.9E-03	-0.0045	0.0005	2.1E-18	1.08E-07
LPE 18:0;0	0.0008	0.0004	2.4E-02	-0.0011	0.0005	2.0E-02	1.2E-03	0.0009	0.0004	1.7E-02	-0.0011	0.0005	2.7E-02	1.31E-03
LPE 18:1;0	-0.0015	0.0005	2.3E-03	-0.0026	0.0006	1.7E-05	1.5E-01	-0.0014	0.0005	6.5E-03	-0.0028	0.0006	1.7E-05	9.49E-02
LPE 18:2;0	-0.0013	0.0005	5.9E-03	-0.0018	0.0006	2.2E-03	5.3E-01	-0.0013	0.0005	1.1E-02	-0.0018	0.0006	4.7E-03	5.23E-01
PC 14:0;0_16:0;0	0.0013	0.0005	1.3E-02	0.0009	0.0007	1.9E-01	6.1E-01	0.0014	0.0006	9.4E-03	0.0009	0.0007	2.2E-01	5.45E-01
PC 14:0;0_18:1;0	0.0024	0.0005	1.4E-06	-0.0006	0.0006	3.1E-01	1.4E-04	0.0022	0.0005	2.0E-05	0.0000	0.0007	9.5E-01	6.87E-03
PC 14:0;0_18:2;0	0.0013	0.0004	2.8E-03	-0.0003	0.0005	6.3E-01	2.5E-02	0.0014	0.0004	1.5E-03	0.0001	0.0006	8.0E-01	7.37E-02
PC 15:0;0_18:1;0	0.0016	0.0004	1.6E-05	-0.0007	0.0005	1.5E-01	1.5E-04	0.0016	0.0004	4.5E-05	-0.0004	0.0005	4.1E-01	1.58E-03
PC 15:0;0_18:2;0	0.0005	0.0003	6.5E-02	0.0000	0.0004	9.6E-01	2.4E-01	0.0005	0.0003	6.7E-02	0.0003	0.0004	4.5E-01	5.86E-01
PC 16:0;0_16:0;0	0.0022	0.0002	2.4E-19	0.0016	0.0003	1.2E-07	1.7E-01	0.0022	0.0002	2.8E-18	0.0019	0.0003	2.9E-09	4.83E-01
PC 16:0;0_16:1;0	0.0044	0.0006	1.2E-14	0.0015	0.0008	5.4E-02	2.1E-03	0.0046	0.0006	1.4E-14	0.0019	0.0008	2.0E-02	8.05E-03
PC 16:0;0_17:1;0	0.0023	0.0004	8.0E-08	0.0000	0.0006	9.4E-01	2.0E-03	0.0023	0.0004	3.6E-07	0.0005	0.0006	4.2E-01	1.99E-02
PC 16:0;0_18:0;0	0.0013	0.0002	5.8E-08	-0.0006	0.0003	2.4E-02	2.3E-07	0.0013	0.0002	6.1E-08	-0.0005	0.0003	7.7E-02	1.90E-06
PC 16:0;0_18:1;0	0.0019	0.0003	3.0E-09	0.0001	0.0004	8.9E-01	4.0E-04	0.0019	0.0003	1.2E-08	0.0005	0.0004	2.9E-01	8.35E-03
PC 16:0;0_18:2;0	0.0007	0.0002	4.5E-03	0.0001	0.0003	8.5E-01	1.1E-01	0.0008	0.0003	2.6E-03	0.0004	0.0003	2.3E-01	3.63E-01
PC 16:0;0_18:3;0	0.0024	0.0004	4.5E-08	0.0005	0.0005	3.7E-01	6.3E-03	0.0024	0.0004	9.7E-08	0.0009	0.0006	1.1E-01	4.25E-02
PC 16:0;0_20:1;0	0.0018	0.0004	1.4E-05	0.0008	0.0005	1.2E-01	1.3E-01	0.0018	0.0004	6.1E-05	0.0007	0.0006	2.1E-01	1.31E-01
PC 16:0;0_20:2;0	0.0017	0.0003	7.3E-09	0.0004	0.0004	2.9E-01	4.0E-03	0.0018	0.0003	2.1E-09	0.0006	0.0004	8.8E-02	1.28E-02
PC 16:0;0_20:3;0	0.0014	0.0004	2.8E-04	-0.0017	0.0004	1.4E-04	1.4E-07	0.0015	0.0004	1.1E-04	-0.0014	0.0005	2.2E-03	1.30E-06
PC 16:0;0_20:4;0	0.0017	0.0004	4.4E-06	-0.0017	0.0004	1.0E-04	3.3E-09	0.0017	0.0004	6.2E-06	-0.0017	0.0005	4.1E-04	2.30E-08
PC 16:0;0_20:5;0	0.0066	0.0006	2.9E-28	0.0039	0.0008	3.7E-07	4.2E-03	0.0066	0.0006	1.6E-25	0.0041	0.0008	7.1E-07	1.34E-02
PC 16:0;0_22:4;0	0.0001	0.0003	7.0E-01	-0.0028	0.0004	4.5E-11	5.0E-08	0.0002	0.0003	6.1E-01	-0.0028	0.0004	7.8E-10	1.73E-07
PC 16:0;0_22:5;0	0.0031	0.0003	2.0E-20	-0.0009	0.0004	2.8E-02	6.1E-14	0.0031	0.0003	1.0E-19	-0.0008	0.0004	5.7E-02	1.03E-12
PC 16:0;0_22:6;0	0.0043	0.0004	8.2E-24	0.0046	0.0005	6.1E-17	7.3E-01	0.0043	0.0004	2.8E-21	0.0046	0.0006	6.9E-15	6.81E-01
PC 16:1;0_18:0;0	0.0051	0.0006	1.1E-15	-0.0008	0.0009	3.9E-01	5.2E-08	0.0050	0.0007	1.8E-14	0.0000	0.0009	1.0E+00	8.35E-06
PC 16:1;0_18:1;0	0.0027	0.0004	2.2E-12	-0.0005	0.0005	3.5E-01	6.7E-07	0.0027	0.0004	2.8E-11	-0.0001	0.0005	8.9E-01	4.37E-05
PC 16:1;0_18:2;0	0.0012	0.0004	1.3E-03	-0.0012	0.0005	1.4E-02	9.2E-05	0.0013	0.0004	1.1E-03	-0.0009	0.0005	9.3E-02	9.04E-04
PC 16:1;0_20:4;0	0.0027	0.0005	1.3E-07	-0.0022	0.0007	9.5E-04	5.1E-09	0.0027	0.0005	4.3E-07	-0.0019	0.0007	8.8E-03	2.93E-07
PC 17:0;0_18:1;0	0.0022	0.0003	1.4E-11	-0.0005	0.0004	1.9E-01	1.0E-07	0.0022	0.0003	1.1E-10	-0.0003	0.0004	5.5E-01	5.72E-06
PC 17:0;0_18:2;0	0.0013	0.0003	6.1E-06	-0.0008	0.0004	3.9E-02	1.0E-05	0.0013	0.0003	1.6E-05	-0.0006	0.0004	1.4E-01	1.44E-04
PC 17:0;0_20:4;0	0.0020	0.0003	1.3E-09	-0.0025	0.0004	2.0E-09	2.0E-17	0.0020	0.0003	4.8E-09	-0.0027	0.0004	2.6E-09	8.64E-17
PC 18:0;0_18:1;0	0.0026	0.0004	7.3E-12	-0.0010	0.0005	2.8E-02	1.7E-09	0.0026	0.0004	6.2E-11	-0.0007	0.0005	1.9E-01	3.37E-07

PC 18:0;0_18:2;0	0.0018	0.0003	8.5E-11	-0.0009	0.0004	9.4E-03	1.1E-09	0.0019	0.0003	2.2E-11	-0.0007	0.0004	7.0E-02	2.35E-08
PC 18:0;0_18:3;0	0.0042	0.0005	9.7E-18	-0.0001	0.0006	9.1E-01	4.6E-08	0.0042	0.0005	2.3E-16	0.0001	0.0007	8.8E-01	6.20E-07
PC 18:0;0_20:2;0	0.0026	0.0004	9.1E-10	0.0008	0.0005	1.6E-01	8.6E-03	0.0025	0.0004	4.4E-09	0.0013	0.0006	2.4E-02	8.33E-02
PC 18:0;0_20:3;0	0.0033	0.0004	1.9E-16	-0.0024	0.0005	2.7E-07	1.9E-20	0.0034	0.0004	2.6E-16	-0.0023	0.0005	7.0E-06	3.09E-18
PC 18:0;0_20:4;0	0.0030	0.0003	2.3E-18	-0.0023	0.0004	4.6E-08	1.4E-22	0.0031	0.0004	9.9E-18	-0.0025	0.0004	4.5E-08	4.98E-22
PC 18:0;0_20:5;0	0.0077	0.0006	5.5E-32	0.0024	0.0008	1.8E-03	2.3E-07	0.0076	0.0007	8.3E-29	0.0025	0.0008	2.8E-03	2.14E-06
PC 18:0;0_22:5;0	0.0033	0.0004	2.0E-17	-0.0024	0.0005	2.7E-07	4.6E-21	0.0033	0.0004	2.5E-17	-0.0021	0.0005	9.9E-06	1.47E-18
PC 18:0;0_22:6;0	0.0059	0.0004	1.2E-46	0.0037	0.0005	3.2E-12	1.1E-03	0.0059	0.0004	6.4E-43	0.0037	0.0006	1.3E-10	2.06E-03
PC 18:1;0_18:1;0	0.0011	0.0004	1.6E-03	-0.0009	0.0004	4.9E-02	4.6E-04	0.0010	0.0004	5.0E-03	-0.0004	0.0005	4.0E-01	1.66E-02
PC 18:1;0_18:2;0	-0.0001	0.0003	7.6E-01	-0.0015	0.0004	1.1E-04	4.9E-03	0.0000	0.0003	1.0E+00	-0.0013	0.0004	2.4E-03	1.72E-02
PC 18:1;0_18:3;0	0.0009	0.0005	8.2E-02	-0.0010	0.0007	1.2E-01	2.2E-02	0.0009	0.0006	1.1E-01	-0.0010	0.0007	1.8E-01	3.94E-02
PC 18:1;0_20:2;0	0.0011	0.0005	2.7E-02	-0.0004	0.0006	4.9E-01	5.8E-02	0.0011	0.0005	3.2E-02	0.0002	0.0007	7.9E-01	2.77E-01
PC 18:1;0_20:3;0	0.0011	0.0004	1.5E-03	-0.0032	0.0004	6.0E-13	2.4E-14	0.0012	0.0004	1.0E-03	-0.0031	0.0005	7.3E-11	7.50E-13
PC 18:1;0_20:4;0	0.0017	0.0003	1.7E-07	-0.0024	0.0004	1.9E-09	1.5E-15	0.0017	0.0003	1.2E-07	-0.0024	0.0004	1.4E-08	8.62E-15
PC 18:2;0_18:2;0	-0.0007	0.0004	6.6E-02	-0.0029	0.0005	8.1E-09	7.6E-04	-0.0006	0.0004	1.2E-01	-0.0030	0.0005	2.6E-08	5.69E-04
PC 18:2;0_20:1;0	0.0004	0.0005	4.4E-01	0.0000	0.0007	9.6E-01	6.7E-01	0.0005	0.0005	3.4E-01	0.0002	0.0007	7.8E-01	7.37E-01
PC 18:2;0_20:3;0	0.0003	0.0005	4.7E-01	-0.0042	0.0006	7.2E-13	1.6E-09	0.0004	0.0005	4.2E-01	-0.0043	0.0006	5.9E-12	3.41E-09
PC 18:2;0_20:4;0	0.0006	0.0003	7.5E-02	-0.0030	0.0004	1.1E-11	8.6E-11	0.0007	0.0003	6.0E-02	-0.0031	0.0005	1.5E-11	6.26E-11
PC O-16:0;0/16:0;0	0.0001	0.0004	8.4E-01	-0.0002	0.0005	7.4E-01	7.0E-01	-0.0001	0.0004	7.7E-01	0.0001	0.0006	8.6E-01	7.50E-01
PC O-16:0;0/16:1;0	0.0015	0.0006	9.3E-03	0.0014	0.0008	9.8E-02	9.0E-01	0.0015	0.0006	1.1E-02	0.0020	0.0009	2.0E-02	6.30E-01
PC O-16:0;0/18:1;0	-0.0006	0.0003	2.2E-02	0.0001	0.0004	7.6E-01	9.4E-02	-0.0007	0.0003	1.9E-02	0.0002	0.0004	6.8E-01	7.81E-02
PC O-16:0;0/18:2;0	-0.0003	0.0003	3.8E-01	0.0001	0.0005	8.6E-01	5.0E-01	-0.0004	0.0004	3.3E-01	0.0002	0.0005	6.9E-01	3.62E-01
PC O-16:0;0/20:3;0	-0.0006	0.0004	2.0E-01	-0.0022	0.0006	1.3E-04	2.4E-02	-0.0006	0.0004	1.7E-01	-0.0017	0.0006	5.6E-03	1.61E-01
PC O-16:0;0/20:4;0	0.0005	0.0004	1.6E-01	-0.0017	0.0005	2.9E-04	2.0E-04	0.0004	0.0004	2.9E-01	-0.0018	0.0005	3.7E-04	5.39E-04
PC O-16:0;0/22:5;0	0.0026	0.0005	6.3E-07	0.0006	0.0006	3.8E-01	1.5E-02	0.0026	0.0005	1.7E-06	0.0009	0.0007	1.7E-01	5.47E-02
PC O-16:1;0/16:0;0	0.0005	0.0003	1.1E-01	0.0006	0.0004	1.5E-01	8.5E-01	0.0004	0.0003	2.7E-01	0.0008	0.0005	8.6E-02	4.67E-01
PC O-16:1;0/18:0;0	-0.0011	0.0004	1.3E-02	-0.0020	0.0006	7.8E-04	2.4E-01	-0.0012	0.0005	6.9E-03	-0.0021	0.0006	7.2E-04	2.61E-01
PC O-16:1;0/18:1;0	0.0007	0.0004	8.6E-02	0.0016	0.0005	1.7E-03	1.7E-01	0.0007	0.0004	1.3E-01	0.0017	0.0005	2.1E-03	1.41E-01
PC O-16:1;0/18:2;0	-0.0004	0.0004	2.8E-01	-0.0005	0.0005	2.4E-01	8.0E-01	-0.0004	0.0004	2.8E-01	-0.0003	0.0005	4.7E-01	9.30E-01
PC O-16:1;0/20:3;0	-0.0001	0.0005	8.8E-01	-0.0029	0.0006	4.8E-06	5.0E-04	-0.0002	0.0005	7.6E-01	-0.0022	0.0007	9.1E-04	1.57E-02
PC O-16:1;0/20:4;0	0.0021	0.0004	1.3E-06	-0.0013	0.0005	9.7E-03	3.7E-07	0.0021	0.0004	1.6E-06	-0.0012	0.0005	2.6E-02	1.84E-06
PC O-16:2;0/18:0;0	-0.0008	0.0005	1.1E-01	-0.0030	0.0006	2.9E-06	8.0E-03	-0.0010	0.0005	7.2E-02	-0.0029	0.0007	2.8E-05	2.86E-02
PC O-17:0;0/15:0;0	0.0017	0.0007	1.3E-02	-0.0001	0.0009	8.9E-01	1.1E-01	0.0014	0.0007	3.7E-02	0.0003	0.0009	7.1E-01	3.43E-01

PC O-17:0;0/17:1;0	0.0016	0.0005	7.3E-04	0.0008	0.0006	2.1E-01	2.6E-01	0.0015	0.0005	3.5E-03	0.0011	0.0006	8.7E-02	6.42E-01
PC O-18:0;0/14:0;0	-0.0010	0.0004	4.9E-03	0.0010	0.0004	2.4E-02	4.4E-04	-0.0009	0.0004	1.2E-02	0.0008	0.0005	7.3E-02	3.06E-03
PC O-18:0;0/16:1;0	0.0020	0.0007	2.4E-03	0.0014	0.0009	1.3E-01	5.8E-01	0.0020	0.0007	4.0E-03	0.0016	0.0010	9.5E-02	7.61E-01
PC O-18:0;0/20:4;0	-0.0009	0.0003	8.0E-03	-0.0019	0.0004	1.1E-05	8.5E-02	-0.0010	0.0004	4.0E-03	-0.0019	0.0004	2.8E-05	1.47E-01
PC O-18:1;0/16:0;0	-0.0002	0.0003	4.9E-01	0.0007	0.0004	6.6E-02	6.2E-02	-0.0002	0.0003	4.9E-01	0.0008	0.0004	5.2E-02	5.07E-02
PC O-18:1;0/18:2;0	-0.0014	0.0004	3.4E-04	-0.0003	0.0005	5.3E-01	9.5E-02	-0.0014	0.0004	3.9E-04	-0.0001	0.0005	8.6E-01	4.65E-02
PC O-18:1;0/20:3;0	-0.0023	0.0005	1.6E-06	-0.0027	0.0006	6.2E-06	5.5E-01	-0.0023	0.0005	1.6E-06	-0.0026	0.0006	2.8E-05	7.23E-01
PC O-18:1;0/20:4;0	0.0000	0.0003	9.5E-01	-0.0016	0.0004	5.4E-05	1.7E-03	0.0000	0.0003	9.6E-01	-0.0016	0.0004	8.5E-05	2.11E-03
PC O-18:2;0/16:0;0	-0.0001	0.0003	7.2E-01	0.0006	0.0004	1.7E-01	1.9E-01	-0.0001	0.0003	7.5E-01	0.0006	0.0004	1.4E-01	1.72E-01
PC O-18:2;0/18:1;0	0.0000	0.0005	9.4E-01	-0.0005	0.0007	4.6E-01	5.9E-01	0.0001	0.0005	9.2E-01	-0.0001	0.0007	8.7E-01	8.46E-01
PC O-18:2;0/18:2;0	-0.0009	0.0004	3.1E-02	-0.0016	0.0005	3.1E-03	2.8E-01	-0.0010	0.0004	2.1E-02	-0.0015	0.0006	8.4E-03	4.44E-01
PC O-18:2;0/20:4;0	0.0025	0.0006	1.3E-04	-0.0026	0.0008	7.9E-04	5.0E-07	0.0023	0.0007	7.0E-04	-0.0024	0.0008	3.8E-03	1.16E-05
PE 16:0;0_18:2;0	-0.0003	0.0006	6.6E-01	-0.0014	0.0008	7.8E-02	2.6E-01	-0.0005	0.0006	4.5E-01	-0.0008	0.0009	3.5E-01	7.65E-01
PE 16:0;0_20:4;0	0.0015	0.0005	2.9E-03	-0.0020	0.0007	2.5E-03	2.5E-05	0.0015	0.0005	3.5E-03	-0.0014	0.0007	3.7E-02	5.94E-04
PE 18:0;0_18:2;0	0.0010	0.0005	6.1E-02	-0.0026	0.0007	1.9E-04	4.0E-05	0.0011	0.0006	5.7E-02	-0.0019	0.0007	1.0E-02	1.39E-03
PE 18:0;0_20:4;0	0.0018	0.0004	2.0E-05	-0.0030	0.0006	1.7E-07	1.4E-11	0.0019	0.0004	2.2E-05	-0.0026	0.0006	1.8E-05	2.28E-09
PE 18:1;0_18:1;0	-0.0012	0.0007	8.6E-02	-0.0053	0.0008	4.2E-10	1.3E-04	-0.0010	0.0007	1.5E-01	-0.0045	0.0009	5.3E-07	2.19E-03
PE O-16:1;0/18:2;0	0.0011	0.0005	2.2E-02	-0.0007	0.0006	2.6E-01	2.1E-02	0.0014	0.0005	5.9E-03	-0.0005	0.0006	4.1E-01	1.91E-02
PE O-16:1;0/20:4;0	0.0025	0.0004	5.1E-09	-0.0022	0.0005	4.5E-05	7.0E-12	0.0026	0.0004	1.0E-08	-0.0020	0.0006	4.9E-04	3.10E-10
PE O-16:1;0/22:5;0	0.0024	0.0006	7.2E-05	-0.0013	0.0008	8.2E-02	1.3E-04	0.0024	0.0006	8.8E-05	-0.0007	0.0008	3.9E-01	2.18E-03
PE O-18:1;0/18:2;0	0.0015	0.0005	1.6E-03	-0.0009	0.0006	1.1E-01	1.3E-03	0.0016	0.0005	8.4E-04	-0.0007	0.0006	2.8E-01	3.64E-03
PE O-18:1;0/20:4;0	0.0019	0.0004	5.0E-06	-0.0023	0.0005	6.8E-06	1.8E-10	0.0020	0.0004	4.0E-06	-0.0021	0.0005	9.2E-05	2.91E-09
PE O-18:2;0/18:1;0	0.0007	0.0005	2.0E-01	-0.0023	0.0007	4.3E-04	3.7E-04	0.0007	0.0005	1.7E-01	-0.0019	0.0007	6.7E-03	2.74E-03
PE O-18:2;0/18:2;0	0.0004	0.0004	4.2E-01	-0.0019	0.0006	1.5E-03	2.5E-03	0.0006	0.0005	2.4E-01	-0.0015	0.0006	1.5E-02	7.79E-03
PE O-18:2;0/20:4;0	0.0018	0.0004	5.9E-06	-0.0016	0.0005	1.3E-03	9.1E-08	0.0017	0.0004	2.8E-05	-0.0015	0.0005	3.9E-03	1.14E-06
PI 16:0;0_18:1;0	0.0022	0.0007	1.1E-03	-0.0008	0.0009	3.6E-01	6.2E-03	0.0021	0.0007	1.7E-03	-0.0005	0.0009	5.8E-01	1.93E-02
PI 16:0;0_18:2;0	0.0031	0.0005	4.6E-11	0.0023	0.0006	6.2E-05	2.9E-01	0.0032	0.0005	6.6E-11	0.0025	0.0006	3.0E-05	4.09E-01
PI 16:0;0_20:4;0	0.0028	0.0004	1.1E-11	-0.0010	0.0005	3.7E-02	3.0E-09	0.0029	0.0004	1.3E-11	-0.0008	0.0005	1.3E-01	5.29E-08
PI 18:0;0_18:1;0	0.0015	0.0004	1.2E-04	0.0005	0.0005	3.2E-01	1.1E-01	0.0015	0.0004	1.3E-04	0.0009	0.0005	9.0E-02	3.26E-01
PI 18:0;0_18:2;0	0.0024	0.0004	9.8E-12	0.0012	0.0005	9.1E-03	3.2E-02	0.0025	0.0004	5.3E-12	0.0017	0.0005	3.7E-04	1.67E-01
PI 18:0;0_20:3;0	0.0029	0.0004	6.9E-12	-0.0010	0.0005	5.1E-02	3.7E-09	0.0032	0.0004	1.7E-12	-0.0006	0.0005	2.3E-01	5.19E-08
PI 18:0;0_20:4;0	0.0041	0.0003	1.5E-48	-0.0008	0.0004	2.8E-02	2.5E-27	0.0042	0.0003	1.0E-47	-0.0007	0.0004	7.4E-02	2.14E-25
PI 18:1;0_18:1;0	0.0015	0.0005	1.6E-03	-0.0002	0.0006	6.8E-01	2.2E-02	0.0015	0.0005	2.1E-03	-0.0002	0.0006	7.7E-01	3.33E-02

PI 18:1;0_18:2;0	0.0008	0.0005	7.9E-02	-0.0008	0.0006	1.4E-01	2.4E-02	0.0009	0.0005	4.4E-02	-0.0009	0.0006	1.4E-01	1.64E-02
PI 18:1;0_20:4;0	0.0036	0.0004	1.8E-15	-0.0006	0.0006	3.0E-01	1.2E-08	0.0037	0.0005	1.7E-15	-0.0005	0.0006	4.3E-01	5.31E-08
SM 32:1;2	0.0034	0.0003	1.1E-36	0.0007	0.0003	3.1E-02	1.3E-09	0.0035	0.0003	1.7E-36	0.0010	0.0004	6.9E-03	4.16E-08
SM 34:0;2	0.0014	0.0003	1.0E-04	0.0007	0.0004	1.1E-01	2.6E-01	0.0015	0.0004	3.3E-05	0.0010	0.0005	3.9E-02	3.78E-01
SM 34:1;2	0.0033	0.0002	2.7E-58	0.0018	0.0003	2.5E-12	6.6E-06	0.0034	0.0002	1.1E-58	0.0020	0.0003	1.2E-12	1.70E-05
SM 34:2;2	0.0042	0.0002	7.5E-80	0.0017	0.0003	1.6E-10	7.1E-13	0.0043	0.0002	2.4E-78	0.0017	0.0003	7.1E-10	1.08E-12
SM 36:1;2	0.0037	0.0003	2.5E-47	0.0006	0.0003	8.4E-02	3.7E-14	0.0038	0.0003	1.4E-46	0.0008	0.0003	2.4E-02	3.85E-12
SM 36:2;2	0.0042	0.0003	4.1E-52	0.0008	0.0003	1.7E-02	4.7E-15	0.0043	0.0003	9.0E-50	0.0009	0.0004	9.2E-03	2.11E-13
SM 38:1;2	0.0028	0.0002	1.1E-31	-0.0001	0.0003	8.0E-01	1.0E-13	0.0031	0.0003	9.2E-34	0.0000	0.0003	9.6E-01	3.00E-13
SM 38:2;2	0.0038	0.0003	3.6E-45	0.0008	0.0003	1.4E-02	5.2E-12	0.0039	0.0003	1.1E-44	0.0007	0.0004	4.3E-02	1.72E-12
SM 40:1;2	0.0030	0.0002	4.9E-36	-0.0003	0.0003	3.8E-01	3.3E-17	0.0032	0.0002	1.5E-38	-0.0001	0.0003	7.5E-01	3.34E-16
SM 40:2;2	0.0033	0.0002	1.4E-49	0.0006	0.0003	4.4E-02	9.2E-15	0.0035	0.0002	2.4E-50	0.0006	0.0003	5.8E-02	9.62E-15
SM 42:2;2	0.0036	0.0002	1.4E-57	0.0016	0.0003	1.3E-07	2.7E-08	0.0037	0.0002	7.6E-58	0.0016	0.0003	3.6E-07	3.29E-08
TAG 46:1;0	0.0028	0.0011	1.1E-02	-0.0047	0.0014	6.0E-04	2.0E-05	0.0027	0.0011	1.8E-02	-0.0040	0.0015	5.9E-03	2.87E-04
TAG 46:2;0	0.0023	0.0010	2.0E-02	-0.0045	0.0013	3.7E-04	2.3E-05	0.0024	0.0011	2.4E-02	-0.0041	0.0013	2.1E-03	1.37E-04
TAG 48:0;0	0.0031	0.0011	7.4E-03	-0.0044	0.0014	1.9E-03	4.1E-05	0.0030	0.0012	1.1E-02	-0.0032	0.0015	2.9E-02	1.03E-03
TAG 48:1;0	0.0043	0.0009	3.5E-06	-0.0045	0.0012	2.2E-04	8.3E-09	0.0042	0.0009	8.3E-06	-0.0037	0.0013	4.2E-03	7.25E-07
TAG 48:2;0	0.0046	0.0008	3.6E-08	-0.0045	0.0011	4.0E-05	3.8E-11	0.0045	0.0009	1.8E-07	-0.0041	0.0012	4.7E-04	3.30E-09
TAG 48:3;0	0.0033	0.0008	1.6E-05	-0.0050	0.0010	8.1E-07	5.8E-11	0.0032	0.0008	6.5E-05	-0.0050	0.0011	4.8E-06	1.34E-09
TAG 49:1;0	0.0023	0.0008	5.6E-03	-0.0041	0.0011	1.3E-04	2.3E-06	0.0022	0.0008	9.8E-03	-0.0036	0.0011	1.6E-03	4.67E-05
TAG 49:2;0	0.0028	0.0007	1.2E-04	-0.0036	0.0010	2.5E-04	1.5E-07	0.0026	0.0008	6.0E-04	-0.0035	0.0010	7.5E-04	2.00E-06
TAG 50:1;0	0.0032	0.0008	3.8E-05	-0.0046	0.0010	1.3E-05	2.5E-09	0.0032	0.0008	5.5E-05	-0.0036	0.0011	1.2E-03	5.70E-07
TAG 50:2;0	0.0041	0.0007	2.9E-09	-0.0041	0.0009	1.2E-05	1.8E-12	0.0041	0.0007	5.9E-09	-0.0035	0.0010	4.3E-04	4.11E-10
TAG 50:3;0	0.0036	0.0006	5.0E-09	-0.0040	0.0009	3.1E-06	5.5E-13	0.0037	0.0006	1.1E-08	-0.0037	0.0009	4.3E-05	2.98E-11
TAG 50:4;0	0.0036	0.0006	1.4E-08	-0.0046	0.0009	2.4E-07	5.2E-14	0.0037	0.0007	3.7E-08	-0.0044	0.0009	2.2E-06	1.62E-12
TAG 50:5;0	0.0029	0.0007	3.6E-05	-0.0047	0.0009	2.7E-07	3.8E-11	0.0027	0.0007	1.6E-04	-0.0047	0.0010	1.3E-06	7.57E-10
TAG 51:1;0	0.0023	0.0008	3.7E-03	-0.0044	0.0010	1.9E-05	2.3E-07	0.0019	0.0008	1.6E-02	-0.0040	0.0011	2.7E-04	1.25E-05
TAG 51:2;0	0.0031	0.0006	3.5E-07	-0.0046	0.0008	4.8E-08	1.2E-13	0.0030	0.0006	1.1E-06	-0.0043	0.0009	1.8E-06	1.82E-11
TAG 51:3;0	0.0028	0.0005	1.6E-07	-0.0044	0.0008	7.7E-09	8.7E-15	0.0028	0.0006	4.2E-07	-0.0044	0.0008	7.9E-08	2.71E-13
TAG 51:4;0	0.0018	0.0006	2.1E-03	-0.0038	0.0008	8.8E-07	6.8E-09	0.0016	0.0006	6.2E-03	-0.0035	0.0008	2.9E-05	5.61E-07
TAG 52:2;0	0.0023	0.0006	5.7E-05	-0.0051	0.0008	2.5E-10	5.7E-14	0.0023	0.0006	6.8E-05	-0.0047	0.0008	3.2E-08	8.42E-12
TAG 52:3;0	0.0018	0.0005	8.1E-04	-0.0046	0.0008	1.4E-09	5.0E-12	0.0018	0.0005	8.4E-04	-0.0044	0.0008	4.2E-08	1.31E-10
TAG 52:4;0	0.0018	0.0006	1.5E-03	-0.0047	0.0008	4.3E-09	3.2E-11	0.0019	0.0006	1.5E-03	-0.0045	0.0008	8.7E-08	5.18E-10

TAG 52:5;0	0.0030	0.0006	1.1E-06	-0.0046	0.0008	3.1E-08	1.8E-13	0.0030	0.0006	2.1E-06	-0.0046	0.0009	2.4E-07	2.95E-12
TAG 52:6;0	0.0046	0.0007	3.1E-12	-0.0035	0.0009	1.2E-04	4.6E-13	0.0045	0.0007	6.4E-11	-0.0035	0.0010	2.4E-04	1.02E-11
TAG 53:2;0	0.0029	0.0005	1.9E-08	-0.0050	0.0008	3.4E-11	4.2E-18	0.0029	0.0005	9.7E-08	-0.0047	0.0008	4.3E-09	3.47E-15
TAG 53:3;0	0.0026	0.0005	1.4E-07	-0.0049	0.0007	3.3E-11	2.4E-17	0.0026	0.0005	4.9E-07	-0.0048	0.0008	4.3E-10	1.11E-15
TAG 53:4;0	0.0025	0.0005	2.2E-06	-0.0044	0.0007	1.0E-09	9.9E-15	0.0023	0.0005	1.4E-05	-0.0043	0.0008	2.0E-08	1.14E-12
TAG 54:3;0	0.0021	0.0005	1.1E-04	-0.0064	0.0008	3.8E-16	3.3E-19	0.0022	0.0006	7.5E-05	-0.0061	0.0008	1.4E-13	4.93E-17
TAG 54:4;0	0.0014	0.0005	1.2E-02	-0.0064	0.0008	1.9E-16	2.1E-16	0.0015	0.0006	8.1E-03	-0.0064	0.0008	9.6E-15	2.47E-15
TAG 54:5;0	0.0020	0.0006	4.3E-04	-0.0058	0.0008	7.9E-14	3.8E-16	0.0021	0.0006	4.5E-04	-0.0058	0.0008	1.8E-12	5.84E-15
TAG 54:6;0	0.0041	0.0006	1.6E-10	-0.0035	0.0008	3.9E-05	9.1E-13	0.0040	0.0007	1.3E-09	-0.0033	0.0009	2.1E-04	4.15E-11
TAG 54:7;0	0.0059	0.0007	6.9E-17	-0.0015	0.0009	1.2E-01	4.2E-10	0.0057	0.0007	5.0E-15	-0.0013	0.0010	1.9E-01	1.13E-08
TAG 56:3;0	0.0015	0.0005	6.6E-03	-0.0059	0.0008	1.6E-13	1.7E-14	0.0014	0.0006	1.0E-02	-0.0052	0.0008	8.4E-10	5.50E-11
TAG 56:4;0	0.0019	0.0006	7.0E-04	-0.0063	0.0008	5.2E-15	4.3E-17	0.0020	0.0006	7.0E-04	-0.0057	0.0008	9.5E-12	3.75E-14
TAG 56:5;0	0.0030	0.0007	1.7E-05	-0.0051	0.0008	1.1E-09	8.8E-14	0.0033	0.0007	6.5E-06	-0.0048	0.0009	5.3E-08	1.32E-12
TAG 56:6;0	0.0042	0.0005	4.4E-17	-0.0050	0.0007	1.2E-12	9.8E-27	0.0043	0.0005	1.4E-16	-0.0048	0.0007	7.3E-11	4.23E-24
TAG 56:7;0	0.0060	0.0006	1.0E-25	0.0002	0.0008	7.8E-01	3.2E-09	0.0059	0.0006	2.2E-23	0.0005	0.0008	5.7E-01	9.65E-08
TAG 56:8;0	0.0059	0.0006	2.4E-19	0.0017	0.0009	5.8E-02	1.1E-04	0.0058	0.0007	1.5E-17	0.0018	0.0009	5.8E-02	4.15E-04
TAG 58:7;0	0.0036	0.0006	9.6E-10	-0.0035	0.0008	1.5E-05	9.7E-13	0.0036	0.0006	7.0E-09	-0.0033	0.0008	9.9E-05	4.92E-11
TAG 58:8;0	0.0056	0.0006	3.2E-19	0.0022	0.0008	1.0E-02	9.1E-04	0.0056	0.0007	1.7E-17	0.0024	0.0009	7.2E-03	3.72E-03

The associations were determined by linear regression models that included log10 lipid levels as outcome, age measured in years as independent variable and BMI, diabetes, cardiac disease, lipid lowering medication and smoking; and additionally, hormone replacement therapy for women as covariates.

Table S6: Lipid species detected in the Replication cohort and their mean levels with standard deviation in sex-combined dataset, women and men.

Lipid Species	Lipid class	Mean Plasma Level (pmol)	Standard Deviation	Mean Plasma Level in Women (pmol)	Standard Deviation (Women)	Mean Plasma Level in Men (pmol)	Standard Deviation (Men)
CE 14:0;0	CE	33.5334	15.1188	34.4586	15.2595	32.4916	14.9033
CE 15:0;0	CE	9.0153	3.9830	9.3816	4.0272	8.5915	3.8925
CE 16:0;0	CE	415.1567	124.8435	416.5873	124.8085	413.5487	124.9887
CE 16:1;0	CE	195.7511	108.8963	202.0249	105.8197	188.6376	111.9551
CE 17:0;0	CE	7.2428	2.9176	7.2095	2.8538	7.2803	2.9911
CE 17:1;0	CE	14.6661	5.7374	14.7951	5.6716	14.5186	5.8130
CE 18:0;0	CE	19.4595	8.9377	18.4156	8.2202	20.6496	9.5557
CE 18:1;0	CE	880.4298	273.1762	879.9737	270.0800	880.9199	276.9000
CE 18:2;0	CE	2507.2606	743.0707	2561.0808	769.4177	2446.0769	707.8533
CE 18:3;0	CE	105.3697	43.4997	106.0196	42.8557	104.6257	44.2496
CE 20:2;0	CE	2.5417	1.0466	2.5814	1.0004	2.4909	1.0900
CE 20:3;0	CE	36.6445	13.9244	37.1401	14.4847	36.0825	13.2543
CE 20:4;0	CE	309.2396	107.5010	311.2942	111.3681	306.8780	103.0081
CE 20:5;0	CE	104.1922	70.0335	104.1869	71.1980	104.2224	68.7603
CE 22:6;0	CE	41.2946	21.3223	43.0376	21.8950	39.3382	20.4936
Cer 40:1;2	Cer	0.7594	0.2868	0.7365	0.2722	0.7855	0.3006
Cer 40:2;2	Cer	0.2050	0.0871	0.2048	0.0870	0.2052	0.0872
Cer 42:1;2	Cer	2.0433	0.7710	1.9661	0.7277	2.1310	0.8090
Cer 42:2;2	Cer	1.3605	0.5242	1.3160	0.5169	1.4109	0.5283
Chol	Chol	1787.0596	521.4043	1791.8421	472.2963	1781.3909	571.6454
DAG 16:0;0_18:1;0	DAG	6.2494	11.3463	5.2794	6.0953	7.3463	15.1671
DAG 16:0;0_18:2;0	DAG	2.3765	2.2348	2.1182	1.8156	2.6610	2.5915
DAG 16:1;0_18:1;0	DAG	2.4383	2.5663	2.2667	2.4005	2.6225	2.7228
DAG 18:1;0_18:1;0	DAG	8.7539	8.1246	7.6737	6.4696	9.9797	9.5214
DAG 18:1;0_18:2;0	DAG	7.0557	5.3485	6.2718	4.4025	7.9396	6.1296
DAG 18:1;0_18:3;0	DAG	2.3520	1.5020	2.1619	1.2105	2.5450	1.7289
LPC 16:0;0	LPC	64.0362	19.6188	62.0388	19.7423	66.2884	19.2493
LPC 18:0;0	LPC	16.3831	6.1707	15.7910	6.3233	17.0507	5.9288
LPC 18:1;0	LPC	13.4860	5.2920	12.7137	4.8011	14.3527	5.6750
LPC 18:2;0	LPC	18.7817	9.1898	17.0314	8.0744	20.7528	9.9493
LPC 20:4;0	LPC	3.1224	1.2389	2.8476	1.0874	3.4322	1.3244
LPE 18:1;0	LPE	0.6015	0.3086	0.5672	0.2840	0.6399	0.3300
LPE 18:2;0	LPE	1.1698	0.5739	1.1183	0.5343	1.2276	0.6109
PC 14:0;0_16:0;0	PC	2.9618	1.7420	3.1863	1.7400	2.7070	1.7104
PC 14:0;0_18:1;0	PC	3.6950	2.2989	3.9664	2.2600	3.3842	2.3059
PC 14:0;0_18:2;0	PC	3.9031	1.7197	4.2087	1.8253	3.5346	1.5039
PC 15:0;0_18:1;0	PC	13.7725	4.9566	14.0456	4.8672	13.4360	5.0488
PC 15:0;0_18:2;0	PC	46.0496	13.8699	47.6541	13.5832	44.1237	13.9776
PC 16:0;0_16:0;0	PC	9.9390	3.3560	10.2156	3.1792	9.6259	3.5223
PC 16:0;0_16:1;0	PC	13.7642	10.9522	14.5432	10.5619	12.8827	11.3231
PC 16:0;0_17:1;0	PC	21.3759	11.5654	21.0424	10.7468	21.7568	12.4445
PC 16:0;0_18:0;0	PC	28.8609	11.6289	29.8158	12.0896	27.7863	10.9981
PC 16:0;0_18:1;0	PC	247.0882	91.7806	253.2349	89.4310	240.1115	93.9687
PC 16:0;0_18:2;0	PC	480.3826	146.1467	497.9996	145.3062	460.4012	144.6537
PC 16:0;0_18:3;0	PC	10.6735	5.1360	11.2729	5.2621	9.9942	4.9069

PC 16:0;0_20:1;0	PC	1.2240	0.5609	1.2602	0.5823	1.1822	0.5330
PC 16:0;0_20:2;0	PC	9.1527	3.5125	9.5903	3.7388	8.6538	3.1666
PC 16:0;0_20:3;0	PC	65.4149	28.8506	68.5389	30.4355	61.8810	26.5369
PC 16:0;0_20:4;0	PC	146.9737	58.9659	151.2513	61.1952	142.1404	56.0080
PC 16:0;0_20:5;0	PC	39.9041	26.7936	40.1564	25.9586	39.6337	27.7267
PC 16:0;0_22:4;0	PC	5.4373	2.0922	5.4958	2.1075	5.3701	2.0748
PC 16:0;0_22:5;0	PC	22.8257	9.1351	22.9505	8.6553	22.6745	9.6520
PC 16:0;0_22:6;0	PC	94.1378	43.9236	100.0703	44.3872	87.4487	42.4481
PC 16:1;0_18:0;0	PC	1.7888	1.4564	1.8644	1.4043	1.6994	1.5129
PC 16:1;0_18:1;0	PC	8.3922	4.1127	9.0808	4.0393	7.6039	4.0531
PC 16:1;0_18:2;0	PC	6.4632	2.7477	7.1140	2.8440	5.7224	2.4300
PC 17:0;0_18:2;0	PC	33.0664	12.3410	34.1336	12.0010	31.8447	12.6180
PC 17:0;0_20:4;0	PC	13.0107	4.7907	13.5148	4.8276	12.4345	4.6869
PC 18:0;0_18:1;0	PC	32.8137	15.1019	33.2941	15.0974	32.2727	15.1037
PC 18:0;0_18:2;0	PC	203.1623	65.6260	207.0970	63.5733	198.6973	67.6588
PC 18:0;0_18:3;0	PC	3.7567	2.1742	3.9173	2.2224	3.5765	2.1064
PC 18:0;0_20:2;0	PC	4.0352	1.5892	4.1637	1.6169	3.8841	1.5443
PC 18:0;0_20:3;0	PC	30.2250	13.7864	30.8511	13.4910	29.5192	14.0930
PC 18:0;0_20:4;0	PC	64.4766	25.1779	65.1726	25.0537	63.6923	25.3197
PC 18:0;0_20:5;0	PC	15.2567	14.2477	15.4201	14.6498	15.0816	13.7986
PC 18:0;0_22:5;0	PC	7.3405	3.4469	7.2329	3.1229	7.4578	3.7736
PC 18:0;0_22:6;0	PC	28.7307	13.9285	29.6063	13.5960	27.7282	14.2481
PC 18:1;0_18:1;0	PC	23.2738	8.6485	24.0571	8.5204	22.3789	8.7097
PC 18:1;0_18:2;0	PC	60.0752	21.6590	62.8780	21.8850	56.8881	20.9659
PC 18:1;0_18:3;0	PC	3.1927	1.5727	3.3080	1.5639	3.0530	1.5738
PC 18:1;0_20:2;0	PC	1.3287	0.6691	1.4301	0.7181	1.2024	0.5793
PC 18:1;0_20:3;0	PC	9.8131	4.2053	10.3760	4.4523	9.1736	3.8109
PC 18:1;0_20:4;0	PC	17.2833	5.9899	17.9260	6.2443	16.5500	5.6022
PC 18:2;0_18:2;0	PC	25.7709	10.8032	26.0920	10.5753	25.3972	11.0494
PC 18:2;0_20:3;0	PC	2.4727	1.2569	2.5336	1.3144	2.4014	1.1843
PC 18:2;0_20:4;0	PC	10.5912	3.5477	10.7551	3.5955	10.4025	3.4853
PC O-16:0;0/16:0;0	PCO	0.7983	0.4603	0.8050	0.4880	0.7903	0.4269
PC O-16:0;0/16:1;0	PCO	0.7692	0.4303	0.8323	0.4249	0.6931	0.4241
PC O-16:0;0/18:1;0	PCO	1.6578	0.5225	1.7504	0.5484	1.5520	0.4695
PC O-16:0;0/18:2;0	PCO	3.5726	1.3364	3.7137	1.3446	3.4115	1.3092
PC O-16:0;0/20:3;0	PCO	0.9527	0.4301	0.9793	0.4306	0.9222	0.4280
PC O-16:0;0/20:4;0	PCO	5.6638	2.2353	5.4789	2.2002	5.8715	2.2581
PC O-16:0;0/22:5;0	PCO	1.4953	0.6855	1.4616	0.6707	1.5329	0.7006
PC O-16:1;0/16:0;0	PCO	2.0103	1.0433	2.0603	1.1087	1.9524	0.9608
PC O-16:1;0/18:0;0	PCO	0.0537	0.0321	0.0552	0.0352	0.0520	0.0280
PC O-16:1;0/18:1;0	PCO	0.3625	0.1826	0.3940	0.1843	0.3263	0.1736
PC O-16:1;0/18:2;0	PCO	5.4029	2.0455	5.7238	2.1077	5.0376	1.9097
PC O-16:1;0/20:3;0	PCO	0.6427	0.3204	0.6397	0.3171	0.6459	0.3244
PC O-16:1;0/20:4;0	PCO	6.0946	2.2766	6.1035	2.2649	6.0855	2.2899
PC O-16:2;0/18:0;0	PCO	0.0560	0.0312	0.0561	0.0301	0.0559	0.0324
PC O-17:0;0/15:0;0	PCO	0.1147	0.0767	0.1184	0.0800	0.1102	0.0723
PC O-17:0;0/17:1;0	PCO	0.0885	0.0464	0.0936	0.0467	0.0826	0.0454
PC O-18:0;0/14:0;0	PCO	2.0242	0.5275	2.0295	0.5292	2.0166	0.5238
PC O-18:0;0/16:1;0	PCO	0.0821	0.0541	0.0949	0.0585	0.0650	0.0420
PC O-18:0;0/20:4;0	PCO	3.2277	1.1732	3.2477	1.2035	3.2044	1.1384

PC O-18:1;0/16:0;0	PCO	0.9108	0.2915	0.9569	0.3035	0.8582	0.2676
PC O-18:1;0/18:2;0	PCO	2.1524	0.8746	2.2660	0.8990	2.0224	0.8276
PC O-18:1;0/20:3;0	PCO	1.0413	0.4839	1.0650	0.4882	1.0139	0.4779
PC O-18:1;0/20:4;0	PCO	8.1722	2.4379	8.1260	2.4351	8.2219	2.4411
PC O-18:2;0/16:0;0	PCO	1.2055	0.4174	1.2517	0.4162	1.1530	0.4129
PC O-18:2;0/18:1;0	PCO	0.4734	0.2425	0.5116	0.2367	0.4294	0.2417
PC O-18:2;0/18:2;0	PCO	2.5793	1.9988	2.6623	1.6933	2.4836	2.2951
PE 16:0;0_18:2;0	PE	2.0192	1.6049	2.1750	1.6889	1.8334	1.4794
PE 16:0;0_20:4;0	PE	2.9551	2.0218	3.2020	2.2187	2.6542	1.7078
PE 18:0;0_18:2;0	PE	4.7617	3.2602	4.8258	3.0000	4.6886	3.5359
PE 18:0;0_20:4;0	PE	6.2049	3.8678	6.4181	3.8452	5.9632	3.8828
PE 18:1;0_18:1;0	PE	0.7551	0.6957	0.7475	0.6645	0.7636	0.7303
PE O-16:1;0/18:2;0	PEO	1.2697	0.5677	1.2525	0.5583	1.2893	0.5782
PE O-16:1;0/20:4;0	PEO	3.9086	1.9427	3.7054	1.8244	4.1379	2.0451
PE O-18:1;0/18:2;0	PEO	2.1847	1.0204	2.1627	0.9819	2.2096	1.0630
PE O-18:2;0/18:1;0	PEO	0.3189	0.1841	0.3177	0.1876	0.3202	0.1801
PE O-18:2;0/18:2;0	PEO	1.6589	0.7072	1.6453	0.6799	1.6740	0.7373
PE O-18:2;0/20:4;0	PEO	6.2940	2.7965	6.1218	2.7516	6.4855	2.8360
PI 16:0;0_18:1;0	PI	1.9370	1.1485	1.9651	1.1169	1.9058	1.1834
PI 16:0;0_18:2;0	PI	1.3837	0.6508	1.4823	0.6882	1.2724	0.5861
PI 16:0;0_20:4;0	PI	2.0256	0.9731	2.0955	1.0494	1.9438	0.8685
PI 18:0;0_18:1;0	PI	2.4174	1.0860	2.5128	1.0717	2.3094	1.0930
PI 18:0;0_18:2;0	PI	4.4437	1.8471	4.7704	1.9261	4.0745	1.6804
PI 18:0;0_20:3;0	PI	2.7433	1.1722	2.8429	1.2148	2.6309	1.1128
PI 18:0;0_20:4;0	PI	18.7954	6.5887	18.9858	6.7619	18.5787	6.3869
PI 18:1;0_18:1;0	PI	0.8621	0.4475	0.9017	0.4554	0.8171	0.4344
PI 18:1;0_18:2;0	PI	0.6827	0.3162	0.7158	0.3264	0.6443	0.2997
SM 32:1;2	SM	8.0638	2.3026	8.5280	2.3912	7.5387	2.0790
SM 34:0;2	SM	1.8379	0.6578	1.9566	0.6691	1.7018	0.6176
SM 34:1;2	SM	73.7172	17.9937	76.6399	18.5692	70.3917	16.7175
SM 34:2;2	SM	9.7514	2.6072	10.5220	2.7922	8.8772	2.0583
SM 36:1;2	SM	13.4713	3.8183	14.1905	3.9624	12.6574	3.4774
SM 36:2;2	SM	6.4813	2.0103	7.0565	2.1496	5.8298	1.6103
SM 38:1;2	SM	9.9129	2.5659	10.3866	2.6501	9.3789	2.3574
SM 38:2;2	SM	3.8527	1.1017	4.2288	1.1456	3.4266	0.8731
SM 40:1;2	SM	16.5846	4.5543	17.0116	4.6179	16.1045	4.4361
SM 40:2;2	SM	15.5867	4.0252	16.7186	4.1589	14.3063	3.4506
SM 42:2;2	SM	38.0427	10.1668	38.9345	10.3123	37.0265	9.9100
TAG 46:1;0	TAG	13.9550	23.8773	11.7936	20.4488	16.4050	27.0446
TAG 46:2;0	TAG	7.6680	11.2699	6.8072	9.6145	8.6067	12.7678
TAG 48:0;0	TAG	11.7687	25.3958	9.4546	24.7728	14.3691	25.8541
TAG 48:1;0	TAG	45.4751	69.6291	38.1172	61.4535	53.8225	77.0505
TAG 48:2;0	TAG	33.4792	44.2269	29.5585	38.6143	37.8787	49.4209
TAG 48:3;0	TAG	11.5849	13.3145	10.2527	10.7490	13.0697	15.5536
TAG 49:1;0	TAG	6.1229	6.8624	5.2286	5.2995	7.1202	8.1480
TAG 49:2;0	TAG	5.4435	4.9486	4.9029	4.1041	6.0391	5.6790
TAG 50:1;0	TAG	92.8085	133.7321	75.5490	113.6749	112.3539	150.9961
TAG 50:2;0	TAG	137.4391	152.5464	120.5580	133.4158	156.5419	169.6997
TAG 50:3;0	TAG	61.7072	58.5262	55.0959	49.4962	69.1956	66.5457
TAG 50:4;0	TAG	18.1629	16.9998	16.1892	14.1334	20.3356	19.4545

TAG 51:1;0	TAG	5.3786	6.0334	4.4928	4.5838	6.3398	7.1654
TAG 51:2;0	TAG	11.6475	10.2412	10.2307	8.3081	13.2378	11.8504
TAG 51:3;0	TAG	7.0414	5.2958	6.3486	4.4541	7.8243	6.0170
TAG 52:2;0	TAG	286.5702	280.3217	241.0105	230.6131	338.0729	319.9658
TAG 52:3;0	TAG	260.7247	205.5396	227.1471	167.3526	298.6985	235.9778
TAG 52:4;0	TAG	113.4069	89.7854	98.8841	72.3800	129.7715	103.6669
TAG 52:5;0	TAG	31.8017	26.9795	27.7157	21.6788	36.4045	31.2925
TAG 52:6;0	TAG	10.1436	9.2656	8.8134	7.0316	11.5269	10.9570
TAG 53:2;0	TAG	5.5992	4.8190	4.8205	3.8280	6.4712	5.6037
TAG 53:3;0	TAG	6.8851	5.1148	6.0581	4.2361	7.8092	5.8106
TAG 53:4;0	TAG	4.2025	2.9414	3.7145	2.3829	4.7255	3.3651
TAG 54:3;0	TAG	74.7973	65.4214	62.2716	49.0264	88.9475	77.6473
TAG 54:4;0	TAG	69.5686	57.3872	58.3482	41.9434	82.2300	68.7575
TAG 54:5;0	TAG	51.8650	43.7543	43.5347	32.0794	61.2809	52.4466
TAG 54:6;0	TAG	32.0954	28.0108	26.9171	20.7945	37.9472	33.4455
TAG 54:7;0	TAG	14.4077	12.8435	12.4418	9.8786	16.5424	15.1444
TAG 56:3;0	TAG	2.9744	2.7752	2.4795	2.1287	3.5141	3.2575
TAG 56:4;0	TAG	4.4449	3.7703	3.7665	2.8533	5.1793	4.4464
TAG 56:5;0	TAG	11.2113	8.4372	9.8200	7.0810	12.7494	9.4892
TAG 56:6;0	TAG	21.1955	15.7423	18.0118	12.3360	24.7894	18.2133
TAG 56:7;0	TAG	32.8297	27.9086	28.1835	21.8036	37.9717	32.6265
TAG 56:8;0	TAG	15.4322	13.5395	13.7494	11.3312	17.2197	15.3442
TAG 58:7;0	TAG	4.9285	4.1954	4.3765	3.4779	5.4944	4.7578
TAG 58:8;0	TAG	7.1415	5.6416	6.4053	4.7739	7.9626	6.3729

Table S7: Association of age with lipids in men and women in the replication cohort.

Lipid Species	Beta (Women)	SE (Women)	P (Women)	Beta (Men)	SE (Men)	P (Men)
CE 14:0;0	0.0031	0.0009	1.2E-03	-0.0004	0.0010	6.8E-01
CE 15:0;0	0.0030	0.0009	1.3E-03	0.0014	0.0010	1.6E-01
CE 16:0;0	0.0017	0.0006	5.1E-03	-0.0014	0.0006	3.3E-02
CE 16:1;0	0.0033	0.0010	1.0E-03	-0.0023	0.0012	5.7E-02
CE 17:0;0	0.0017	0.0008	4.2E-02	-0.0019	0.0009	4.8E-02
CE 17:1;0	0.0027	0.0008	1.0E-03	-0.0012	0.0009	2.1E-01
CE 18:0;0	0.0003	0.0009	7.4E-01	-0.0042	0.0010	5.1E-05
CE 18:1;0	0.0018	0.0006	5.9E-03	-0.0026	0.0007	2.6E-04
CE 18:2;0	0.0004	0.0006	5.1E-01	-0.0023	0.0007	7.0E-04
CE 18:3;0	0.0019	0.0009	3.7E-02	-0.0041	0.0010	2.8E-05
CE 20:2;0	0.0006	0.0009	5.1E-01	-0.0022	0.0010	3.1E-02
CE 20:3;0	0.0013	0.0008	1.1E-01	-0.0036	0.0008	1.2E-05
CE 20:4;0	0.0008	0.0007	2.8E-01	-0.0027	0.0008	5.4E-04
CE 20:5;0	0.0061	0.0012	9.6E-07	0.0019	0.0014	1.8E-01
CE 22:6;0	0.0038	0.0010	1.8E-04	0.0026	0.0011	1.8E-02
Cer 40:1;2	0.0019	0.0008	1.6E-02	-0.0024	0.0009	5.4E-03
Cer 40:2;2	0.0018	0.0013	1.5E-01	-0.0018	0.0012	1.2E-01
Cer 42:1;2	0.0014	0.0008	6.6E-02	-0.0028	0.0008	7.3E-04
Cer 42:2;2	0.0025	0.0008	1.5E-03	-0.0017	0.0008	5.0E-02
Chol	0.0011	0.0005	4.4E-02	-0.0018	0.0006	4.9E-03
DAG 16:0;0_18:1;0	0.0012	0.0015	4.4E-01	-0.0056	0.0016	7.4E-04
DAG 16:0;0_18:2;0	0.0018	0.0016	2.7E-01	-0.0060	0.0018	9.0E-04
DAG 16:1;0_18:1;0	0.0029	0.0017	8.5E-02	-0.0048	0.0017	4.4E-03
DAG 18:1;0_18:1;0	0.0009	0.0013	5.0E-01	-0.0070	0.0015	3.2E-06
DAG 18:1;0_18:2;0	0.0002	0.0012	8.6E-01	-0.0061	0.0013	7.1E-06
DAG 18:1;0_18:3;0	0.0003	0.0012	8.2E-01	-0.0055	0.0013	1.9E-05
LPC 16:0;0	-0.0009	0.0007	1.7E-01	-0.0021	0.0006	1.3E-03
LPC 18:0;0	-0.0003	0.0008	6.7E-01	-0.0030	0.0008	9.9E-05
LPC 18:1;0	-0.0009	0.0008	2.9E-01	-0.0024	0.0008	3.0E-03
LPC 18:2;0	-0.0024	0.0010	1.6E-02	-0.0027	0.0010	1.1E-02
LPC 20:4;0	-0.0022	0.0008	9.8E-03	-0.0031	0.0009	4.7E-04
LPE 18:1;0	0.0000	0.0011	9.7E-01	-0.0030	0.0012	1.3E-02
LPE 18:2;0	0.0001	0.0010	9.5E-01	-0.0015	0.0011	1.8E-01
PC 14:0;0_16:0;0	0.0032	0.0011	3.2E-03	0.0007	0.0013	5.8E-01
PC 14:0;0_18:1;0	0.0021	0.0011	5.0E-02	-0.0021	0.0012	8.9E-02
PC 14:0;0_18:2;0	0.0007	0.0009	4.7E-01	-0.0015	0.0010	1.3E-01
PC 15:0;0_18:1;0	0.0010	0.0009	2.3E-01	-0.0007	0.0010	4.9E-01
PC 15:0;0_18:2;0	-0.0003	0.0007	6.5E-01	-0.0008	0.0008	3.6E-01
PC 16:0;0_16:0;0	0.0020	0.0006	1.3E-03	0.0003	0.0007	7.3E-01
PC 16:0;0_16:1;0	0.0037	0.0013	3.9E-03	-0.0011	0.0015	4.6E-01
PC 16:0;0_17:1;0	0.0013	0.0012	2.6E-01	-0.0011	0.0014	4.2E-01
PC 16:0;0_18:0;0	0.0004	0.0008	6.3E-01	-0.0032	0.0010	2.0E-03
PC 16:0;0_18:1;0	0.0014	0.0007	6.7E-02	-0.0020	0.0009	2.2E-02
PC 16:0;0_18:2;0	-0.0003	0.0006	6.6E-01	-0.0023	0.0007	1.6E-03
PC 16:0;0_18:3;0	0.0017	0.0010	8.0E-02	-0.0036	0.0010	5.6E-04
PC 16:0;0_20:1;0	0.0016	0.0010	1.1E-01	-0.0003	0.0011	7.8E-01
PC 16:0;0_20:2;0	0.0015	0.0007	4.6E-02	-0.0014	0.0008	7.5E-02
PC 16:0;0_20:3;0	0.0007	0.0009	4.6E-01	-0.0038	0.0009	3.3E-05

PC 16:0;0_20:4;0	0.0000	0.0008	9.9E-01	-0.0026	0.0009	3.4E-03
PC 16:0;0_20:5;0	0.0048	0.0012	1.0E-04	0.0012	0.0015	4.3E-01
PC 16:0;0_22:4;0	-0.0006	0.0008	5.2E-01	-0.0040	0.0009	5.8E-06
PC 16:0;0_22:5;0	0.0030	0.0008	1.1E-04	-0.0011	0.0009	2.1E-01
PC 16:0;0_22:6;0	0.0023	0.0009	1.5E-02	0.0027	0.0010	7.4E-03
PC 16:1;0_18:0;0	0.0059	0.0015	8.0E-05	-0.0034	0.0018	6.2E-02
PC 16:1;0_18:1;0	0.0023	0.0009	1.2E-02	-0.0030	0.0010	3.5E-03
PC 16:1;0_18:2;0	0.0002	0.0009	7.9E-01	-0.0037	0.0010	2.5E-04
PC 17:0;0_18:2;0	0.0010	0.0009	2.6E-01	-0.0026	0.0011	1.9E-02
PC 17:0;0_20:4;0	0.0003	0.0008	7.1E-01	-0.0022	0.0009	1.7E-02
PC 18:0;0_18:1;0	0.0019	0.0009	3.6E-02	-0.0029	0.0010	3.9E-03
PC 18:0;0_18:2;0	0.0003	0.0007	6.4E-01	-0.0030	0.0008	1.8E-04
PC 18:0;0_18:3;0	0.0034	0.0012	4.0E-03	-0.0025	0.0013	4.6E-02
PC 18:0;0_20:2;0	0.0010	0.0008	2.5E-01	0.0001	0.0009	9.1E-01
PC 18:0;0_20:3;0	0.0018	0.0009	5.2E-02	-0.0044	0.0010	1.1E-05
PC 18:0;0_20:4;0	0.0008	0.0008	3.3E-01	-0.0028	0.0009	1.6E-03
PC 18:0;0_20:5;0	0.0062	0.0015	4.3E-05	0.0005	0.0016	7.6E-01
PC 18:0;0_22:5;0	0.0035	0.0009	3.7E-05	-0.0024	0.0009	1.1E-02
PC 18:0;0_22:6;0	0.0042	0.0009	3.7E-06	0.0011	0.0010	2.8E-01
PC 18:1;0_18:1;0	0.0006	0.0008	3.9E-01	-0.0031	0.0009	3.8E-04
PC 18:1;0_18:2;0	-0.0008	0.0008	3.1E-01	-0.0038	0.0009	2.4E-05
PC 18:1;0_18:3;0	-0.0003	0.0012	8.1E-01	-0.0030	0.0014	3.1E-02
PC 18:1;0_20:2;0	0.0036	0.0012	4.1E-03	-0.0023	0.0014	1.0E-01
PC 18:1;0_20:3;0	0.0007	0.0009	4.5E-01	-0.0048	0.0009	4.2E-07
PC 18:1;0_20:4;0	0.0002	0.0007	8.1E-01	-0.0033	0.0008	1.3E-05
PC 18:2;0_18:2;0	-0.0015	0.0009	1.1E-01	-0.0045	0.0011	3.1E-05
PC 18:2;0_20:3;0	0.0007	0.0013	5.9E-01	-0.0065	0.0015	1.7E-05
PC 18:2;0_20:4;0	-0.0016	0.0008	4.4E-02	-0.0042	0.0009	1.0E-06
PC O-16:0;0/16:0;0	-0.0002	0.0011	8.8E-01	-0.0019	0.0011	9.0E-02
PC O-16:0;0/16:1;0	0.0025	0.0013	5.5E-02	-0.0001	0.0016	9.4E-01
PC O-16:0;0/18:1;0	0.0000	0.0007	9.5E-01	-0.0003	0.0007	6.7E-01
PC O-16:0;0/18:2;0	0.0001	0.0008	8.5E-01	-0.0017	0.0008	4.0E-02
PC O-16:0;0/20:3;0	0.0011	0.0010	2.6E-01	-0.0035	0.0011	1.3E-03
PC O-16:0;0/20:4;0	0.0005	0.0008	5.2E-01	-0.0036	0.0009	5.0E-05
PC O-16:0;0/22:5;0	0.0039	0.0011	5.4E-04	0.0006	0.0013	6.6E-01
PC O-16:1;0/16:0;0	0.0002	0.0009	8.2E-01	-0.0001	0.0009	8.9E-01
PC O-16:1;0/18:0;0	0.0001	0.0013	9.6E-01	-0.0016	0.0013	2.0E-01
PC O-16:1;0/18:1;0	0.0020	0.0011	5.4E-02	0.0003	0.0012	7.8E-01
PC O-16:1;0/18:2;0	-0.0010	0.0008	2.1E-01	-0.0021	0.0009	2.1E-02
PC O-16:1;0/20:3;0	0.0017	0.0011	1.2E-01	-0.0032	0.0013	1.0E-02
PC O-16:1;0/20:4;0	0.0008	0.0009	4.0E-01	-0.0014	0.0009	1.4E-01
PC O-16:2;0/18:0;0	-0.0009	0.0013	5.1E-01	-0.0026	0.0014	7.2E-02
PC O-17:0;0/15:0;0	0.0017	0.0017	2.9E-01	0.0004	0.0017	8.2E-01
PC O-17:0;0/17:1;0	0.0021	0.0011	4.5E-02	-0.0002	0.0012	8.7E-01
PC O-18:0;0/14:0;0	-0.0008	0.0005	1.5E-01	0.0004	0.0006	4.7E-01
PC O-18:0;0/16:1;0	0.0021	0.0014	1.2E-01	0.0045	0.0015	2.6E-03
PC O-18:0;0/20:4;0	-0.0016	0.0008	5.0E-02	-0.0020	0.0009	2.3E-02
PC O-18:1;0/16:0;0	0.0002	0.0007	7.9E-01	-0.0001	0.0007	8.9E-01
PC O-18:1;0/18:2;0	-0.0012	0.0009	1.8E-01	-0.0023	0.0009	1.2E-02
PC O-18:1;0/20:3;0	-0.0016	0.0011	1.3E-01	-0.0046	0.0012	8.5E-05
PC O-18:1;0/20:4;0	-0.0002	0.0007	7.3E-01	-0.0026	0.0007	2.0E-04

PC O-18:2;0/16:0;0	-0.0001	0.0007	9.0E-01	-0.0009	0.0008	2.4E-01
PC O-18:2;0/18:1;0	0.0006	0.0011	6.0E-01	-0.0019	0.0013	1.3E-01
PC O-18:2;0/18:2;0	0.0000	0.0012	9.9E-01	-0.0034	0.0013	8.0E-03
PE 16:0;0_18:2;0	0.0000	0.0014	9.9E-01	-0.0022	0.0017	2.0E-01
PE 16:0;0_20:4;0	0.0008	0.0012	5.0E-01	-0.0019	0.0015	2.1E-01
PE 18:0;0_18:2;0	0.0004	0.0012	7.1E-01	-0.0040	0.0014	5.7E-03
PE 18:0;0_20:4;0	0.0000	0.0010	9.7E-01	-0.0038	0.0012	2.7E-03
PE 18:1;0_18:1;0	-0.0025	0.0019	1.8E-01	-0.0045	0.0021	3.5E-02
PE O-16:1;0/18:2;0	0.0016	0.0010	1.0E-01	-0.0024	0.0011	3.5E-02
PE O-16:1;0/20:4;0	0.0018	0.0010	8.1E-02	-0.0028	0.0012	1.9E-02
PE O-18:1;0/18:2;0	0.0005	0.0010	6.0E-01	-0.0032	0.0012	7.6E-03
PE O-18:2;0/18:1;0	0.0036	0.0013	5.6E-03	-0.0017	0.0016	2.9E-01
PE O-18:2;0/18:2;0	0.0005	0.0009	5.6E-01	-0.0039	0.0011	4.3E-04
PE O-18:2;0/20:4;0	0.0028	0.0009	1.8E-03	-0.0013	0.0010	2.0E-01
PI 16:0;0_18:1;0	0.0011	0.0012	3.6E-01	-0.0027	0.0013	4.2E-02
PI 16:0;0_18:2;0	0.0044	0.0009	3.2E-06	-0.0020	0.0010	5.1E-02
PI 16:0;0_20:4;0	0.0031	0.0010	2.1E-03	-0.0020	0.0010	5.6E-02
PI 18:0;0_18:1;0	0.0020	0.0009	1.9E-02	-0.0024	0.0010	1.5E-02
PI 18:0;0_18:2;0	0.0028	0.0008	5.6E-04	-0.0018	0.0009	6.1E-02
PI 18:0;0_20:3;0	0.0028	0.0009	2.0E-03	-0.0037	0.0010	2.0E-04
PI 18:0;0_20:4;0	0.0030	0.0007	2.0E-05	-0.0026	0.0008	6.1E-04
PI 18:1;0_18:1;0	0.0016	0.0011	1.4E-01	-0.0026	0.0012	3.3E-02
PI 18:1;0_18:2;0	0.0009	0.0009	3.2E-01	-0.0016	0.0010	1.2E-01
SM 32:1;2	0.0028	0.0006	1.5E-05	0.0003	0.0007	6.7E-01
SM 34:0;2	-0.0004	0.0008	6.2E-01	-0.0005	0.0008	5.4E-01
SM 34:1;2	0.0019	0.0005	3.8E-04	0.0000	0.0006	9.4E-01
SM 34:2;2	0.0027	0.0006	2.6E-06	0.0001	0.0006	8.7E-01
SM 36:1;2	0.0009	0.0006	1.2E-01	-0.0008	0.0006	2.1E-01
SM 36:2;2	0.0018	0.0006	4.1E-03	-0.0007	0.0007	3.3E-01
SM 38:1;2	0.0009	0.0006	1.4E-01	-0.0017	0.0006	5.6E-03
SM 38:2;2	0.0011	0.0006	6.4E-02	-0.0008	0.0006	1.8E-01
SM 40:1;2	0.0006	0.0006	3.0E-01	-0.0026	0.0006	5.2E-05
SM 40:2;2	0.0018	0.0006	1.2E-03	-0.0010	0.0006	8.6E-02
SM 42:2;2	0.0015	0.0006	9.4E-03	-0.0011	0.0006	5.9E-02
TAG 46:1;0	0.0040	0.0024	1.0E-01	-0.0071	0.0027	1.0E-02
TAG 46:2;0	0.0037	0.0022	9.4E-02	-0.0041	0.0025	1.0E-01
TAG 48:0;0	0.0034	0.0023	1.3E-01	-0.0062	0.0024	1.1E-02
TAG 48:1;0	0.0034	0.0020	9.2E-02	-0.0065	0.0022	3.4E-03
TAG 48:2;0	0.0025	0.0019	1.8E-01	-0.0060	0.0021	4.0E-03
TAG 48:3;0	0.0034	0.0018	5.6E-02	-0.0052	0.0020	9.5E-03
TAG 49:1;0	0.0046	0.0019	1.4E-02	-0.0056	0.0020	5.8E-03
TAG 49:2;0	0.0044	0.0016	7.5E-03	-0.0040	0.0019	3.3E-02
TAG 50:1;0	0.0021	0.0017	2.2E-01	-0.0060	0.0019	1.8E-03
TAG 50:2;0	0.0024	0.0015	1.1E-01	-0.0061	0.0017	3.4E-04
TAG 50:3;0	0.0023	0.0014	1.1E-01	-0.0060	0.0016	2.2E-04
TAG 50:4;0	0.0028	0.0015	6.2E-02	-0.0060	0.0017	3.5E-04
TAG 51:1;0	0.0030	0.0018	8.3E-02	-0.0045	0.0019	2.0E-02
TAG 51:2;0	0.0034	0.0014	1.7E-02	-0.0056	0.0016	3.8E-04
TAG 51:3;0	0.0024	0.0013	6.5E-02	-0.0044	0.0015	3.6E-03
TAG 52:2;0	0.0007	0.0013	5.9E-01	-0.0069	0.0015	9.5E-06
TAG 52:3;0	0.0004	0.0012	7.2E-01	-0.0064	0.0014	4.5E-06

TAG 52:4;0	0.0007	0.0013	5.9E-01	-0.0065	0.0015	1.4E-05
TAG 52:5;0	0.0020	0.0014	1.4E-01	-0.0062	0.0015	5.8E-05
TAG 52:6;0	0.0055	0.0015	2.5E-04	-0.0037	0.0018	4.0E-02
TAG 53:2;0	0.0022	0.0014	1.3E-01	-0.0053	0.0016	6.4E-04
TAG 53:3;0	0.0019	0.0013	1.2E-01	-0.0057	0.0014	5.3E-05
TAG 53:4;0	0.0019	0.0012	1.3E-01	-0.0052	0.0014	2.8E-04
TAG 54:3;0	0.0002	0.0012	8.7E-01	-0.0078	0.0015	2.1E-07
TAG 54:4;0	0.0001	0.0012	9.4E-01	-0.0076	0.0015	5.4E-07
TAG 54:5;0	0.0010	0.0012	4.0E-01	-0.0071	0.0015	2.5E-06
TAG 54:6;0	0.0030	0.0013	1.9E-02	-0.0049	0.0015	1.2E-03
TAG 54:7;0	0.0055	0.0014	9.8E-05	-0.0022	0.0017	2.0E-01
TAG 56:3;0	0.0010	0.0014	4.8E-01	-0.0079	0.0016	1.0E-06
TAG 56:4;0	0.0004	0.0013	7.2E-01	-0.0069	0.0015	8.5E-06
TAG 56:5;0	0.0008	0.0011	5.0E-01	-0.0063	0.0013	3.3E-06
TAG 56:6;0	0.0023	0.0011	3.7E-02	-0.0052	0.0013	9.4E-05
TAG 56:7;0	0.0038	0.0013	3.4E-03	-0.0014	0.0016	3.8E-01
TAG 56:8;0	0.0037	0.0014	1.1E-02	0.0000	0.0017	9.8E-01
TAG 58:7;0	0.0032	0.0016	4.5E-02	-0.0021	0.0018	2.5E-01
TAG 58:8;0	0.0032	0.0014	2.2E-02	-0.0004	0.0016	7.9E-01

The associations were determined by linear regression models that included log10 lipid levels as outcome, age measured in years as independent variable and BMI, diabetes, cardiac disease, lipid lowering medication and familial combined hyperlipidemia status, and additionally for hormone replacement therapy for women as covariates.

Table S8: Differences in lipid species levels between men and women in different age-groups in the GeneRISK cohort.

Lipid Species	Age Group	Lipid medication adjusted model			Lipid medication excluded model		
		Beta	SE	P	Beta	SE	P
CE 14:0;0	45-50y	0.0159	0.0077	4.0E-02	0.0149	0.0079	5.9E-02
CE 14:0;0	51-55y	-0.0088	0.0084	3.0E-01	-0.0071	0.0087	4.2E-01
CE 14:0;0	56-60y	-0.0425	0.0086	8.9E-07	-0.0390	0.0090	1.5E-05
CE 14:0;0	61-66y	-0.0375	0.0090	3.0E-05	-0.0299	0.0098	2.2E-03
CE 15:0;0	45-50y	0.0033	0.0091	7.2E-01	0.0005	0.0093	9.6E-01
CE 15:0;0	51-55y	-0.0190	0.0096	4.8E-02	-0.0164	0.0099	9.6E-02
CE 15:0;0	56-60y	-0.0458	0.0101	5.6E-06	-0.0424	0.0104	4.9E-05
CE 15:0;0	61-66y	-0.0608	0.0105	7.6E-09	-0.0404	0.0113	3.8E-04
CE 16:0;0	45-50y	0.0313	0.0045	4.8E-12	0.0311	0.0046	1.9E-11
CE 16:0;0	51-55y	0.0087	0.0047	6.6E-02	0.0085	0.0050	8.7E-02
CE 16:0;0	56-60y	-0.0105	0.0046	2.2E-02	-0.0075	0.0049	1.2E-01
CE 16:0;0	61-66y	-0.0115	0.0048	1.7E-02	-0.0132	0.0054	1.4E-02
CE 16:1;0	45-50y	0.0048	0.0090	5.9E-01	-0.0002	0.0091	9.8E-01
CE 16:1;0	51-55y	-0.0323	0.0099	1.2E-03	-0.0326	0.0103	1.6E-03
CE 16:1;0	56-60y	-0.0679	0.0103	5.4E-11	-0.0672	0.0108	6.6E-10
CE 16:1;0	61-66y	-0.0594	0.0106	2.6E-08	-0.0602	0.0118	4.3E-07
CE 17:0;0	45-50y	0.0343	0.0067	3.3E-07	0.0329	0.0068	1.5E-06
CE 17:0;0	51-55y	0.0034	0.0072	6.4E-01	0.0026	0.0075	7.3E-01
CE 17:0;0	56-60y	-0.0258	0.0072	3.7E-04	-0.0208	0.0077	6.9E-03
CE 17:0;0	61-66y	-0.0401	0.0077	2.5E-07	-0.0323	0.0085	1.6E-04
CE 17:1;0	45-50y	0.0215	0.0066	1.1E-03	0.0182	0.0067	6.8E-03
CE 17:1;0	51-55y	-0.0082	0.0072	2.5E-01	-0.0076	0.0075	3.1E-01
CE 17:1;0	56-60y	-0.0338	0.0072	2.8E-06	-0.0314	0.0075	3.3E-05
CE 17:1;0	61-66y	-0.0358	0.0075	2.3E-06	-0.0339	0.0084	5.4E-05
CE 18:0;0	45-50y	0.0776	0.0074	5.9E-25	0.0771	0.0076	1.2E-23
CE 18:0;0	51-55y	0.0363	0.0080	5.8E-06	0.0373	0.0084	8.9E-06
CE 18:0;0	56-60y	0.0006	0.0081	9.4E-01	0.0083	0.0087	3.4E-01
CE 18:0;0	61-66y	-0.0236	0.0083	4.4E-03	-0.0188	0.0090	3.8E-02
CE 18:1;0	45-50y	0.0266	0.0047	1.5E-08	0.0262	0.0048	4.1E-08
CE 18:1;0	51-55y	0.0011	0.0050	8.2E-01	0.0003	0.0052	9.6E-01
CE 18:1;0	56-60y	-0.0171	0.0049	5.7E-04	-0.0149	0.0052	4.1E-03
CE 18:1;0	61-66y	-0.0175	0.0052	7.3E-04	-0.0200	0.0058	5.5E-04
CE 18:2;0	45-50y	0.0064	0.0046	1.6E-01	0.0071	0.0047	1.3E-01
CE 18:2;0	51-55y	-0.0147	0.0049	2.5E-03	-0.0148	0.0051	3.7E-03
CE 18:2;0	56-60y	-0.0311	0.0048	1.3E-10	-0.0304	0.0051	3.9E-09
CE 18:2;0	61-66y	-0.0306	0.0053	1.1E-08	-0.0319	0.0059	8.4E-08
CE 18:3;0	45-50y	0.0255	0.0069	2.4E-04	0.0248	0.0071	4.8E-04
CE 18:3;0	51-55y	-0.0113	0.0077	1.4E-01	-0.0092	0.0080	2.5E-01
CE 18:3;0	56-60y	-0.0449	0.0077	7.1E-09	-0.0404	0.0082	8.2E-07
CE 18:3;0	61-66y	-0.0440	0.0081	5.7E-08	-0.0459	0.0090	3.9E-07
CE 20:2;0	45-50y	0.0164	0.0075	2.8E-02	0.0161	0.0076	3.4E-02
CE 20:2;0	51-55y	-0.0121	0.0077	1.2E-01	-0.0128	0.0081	1.1E-01
CE 20:2;0	56-60y	-0.0094	0.0080	2.4E-01	-0.0102	0.0085	2.3E-01
CE 20:2;0	61-66y	-0.0306	0.0086	3.5E-04	-0.0270	0.0094	4.0E-03
CE 20:3;0	45-50y	0.0516	0.0067	2.1E-14	0.0514	0.0069	1.2E-13
CE 20:3;0	51-55y	0.0064	0.0069	3.6E-01	0.0085	0.0073	2.4E-01

CE 20:3;0	56-60y	-0.0305	0.0070	1.3E-05	-0.0291	0.0075	1.0E-04
CE 20:3;0	61-66y	-0.0255	0.0070	2.9E-04	-0.0325	0.0079	4.4E-05
CE 20:4;0	45-50y	0.0533	0.0066	1.7E-15	0.0536	0.0068	7.8E-15
CE 20:4;0	51-55y	0.0107	0.0070	1.3E-01	0.0125	0.0073	9.0E-02
CE 20:4;0	56-60y	-0.0160	0.0069	2.1E-02	-0.0113	0.0075	1.3E-01
CE 20:4;0	61-66y	-0.0241	0.0074	1.1E-03	-0.0321	0.0083	1.1E-04
CE 20:5;0	45-50y	0.0415	0.0111	1.8E-04	0.0457	0.0114	6.3E-05
CE 20:5;0	51-55y	0.0026	0.0123	8.3E-01	0.0010	0.0130	9.4E-01
CE 20:5;0	56-60y	-0.0238	0.0123	5.4E-02	-0.0167	0.0134	2.2E-01
CE 20:5;0	61-66y	-0.0293	0.0131	2.6E-02	-0.0272	0.0149	6.9E-02
CE 22:6;0	45-50y	0.0066	0.0086	4.5E-01	0.0095	0.0089	2.8E-01
CE 22:6;0	51-55y	-0.0238	0.0089	7.9E-03	-0.0260	0.0094	5.6E-03
CE 22:6;0	56-60y	-0.0167	0.0089	6.1E-02	-0.0132	0.0097	1.8E-01
CE 22:6;0	61-66y	-0.0336	0.0093	3.4E-04	-0.0363	0.0105	5.7E-04
Cer 40:1;2	45-50y	0.0483	0.0063	2.8E-14	0.0466	0.0064	4.5E-13
Cer 40:1;2	51-55y	0.0145	0.0066	2.8E-02	0.0159	0.0068	2.0E-02
Cer 40:1;2	56-60y	-0.0267	0.0066	5.9E-05	-0.0259	0.0071	2.7E-04
Cer 40:1;2	61-66y	-0.0251	0.0069	3.0E-04	-0.0223	0.0075	3.0E-03
Cer 40:2;2	45-50y	0.0277	0.0079	4.3E-04	0.0234	0.0079	3.2E-03
Cer 40:2;2	51-55y	-0.0099	0.0079	2.1E-01	-0.0051	0.0082	5.4E-01
Cer 40:2;2	56-60y	-0.0568	0.0088	1.2E-10	-0.0582	0.0095	1.3E-09
Cer 40:2;2	61-66y	-0.0383	0.0087	1.2E-05	-0.0375	0.0095	9.1E-05
Cer 42:1;2	45-50y	0.0610	0.0059	4.7E-24	0.0593	0.0060	3.1E-22
Cer 42:1;2	51-55y	0.0213	0.0061	4.8E-04	0.0232	0.0064	2.7E-04
Cer 42:1;2	56-60y	-0.0075	0.0060	2.2E-01	-0.0085	0.0064	1.9E-01
Cer 42:1;2	61-66y	-0.0063	0.0063	3.1E-01	-0.0042	0.0069	5.4E-01
Cer 42:2;2	45-50y	0.0523	0.0054	7.6E-22	0.0505	0.0054	4.6E-20
Cer 42:2;2	51-55y	0.0178	0.0056	1.3E-03	0.0194	0.0058	8.0E-04
Cer 42:2;2	56-60y	-0.0045	0.0056	4.2E-01	-0.0059	0.0060	3.3E-01
Cer 42:2;2	61-66y	-0.0081	0.0057	1.5E-01	-0.0084	0.0063	1.8E-01
Chol	45-50y	0.0297	0.0053	2.7E-08	0.0278	0.0054	3.2E-07
Chol	51-55y	-0.0040	0.0055	4.7E-01	-0.0054	0.0058	3.5E-01
Chol	56-60y	-0.0246	0.0056	1.4E-05	-0.0232	0.0060	1.1E-04
Chol	61-66y	-0.0295	0.0058	3.5E-07	-0.0258	0.0063	4.9E-05
DAG 16:0;0_18:1;0	45-50y	0.1480	0.0134	2.2E-27	0.1438	0.0136	3.1E-25
DAG 16:0;0_18:1;0	51-55y	0.1230	0.0140	5.0E-18	0.1202	0.0145	3.2E-16
DAG 16:0;0_18:1;0	56-60y	0.0649	0.0138	3.0E-06	0.0714	0.0148	1.6E-06
DAG 16:0;0_18:1;0	61-66y	0.0392	0.0144	6.7E-03	0.0425	0.0160	7.9E-03
DAG 16:0;0_18:2;0	45-50y	0.1440	0.0135	1.3E-25	0.1390	0.0137	2.6E-23
DAG 16:0;0_18:2;0	51-55y	0.1235	0.0138	1.3E-18	0.1252	0.0145	2.0E-17
DAG 16:0;0_18:2;0	56-60y	0.0690	0.0135	3.3E-07	0.0814	0.0143	1.4E-08
DAG 16:0;0_18:2;0	61-66y	0.0481	0.0148	1.2E-03	0.0481	0.0166	3.8E-03
DAG 16:1;0_18:1;0	45-50y	0.0857	0.0144	3.5E-09	0.0813	0.0147	4.0E-08
DAG 16:1;0_18:1;0	51-55y	0.0487	0.0142	6.5E-04	0.0459	0.0148	2.0E-03
DAG 16:1;0_18:1;0	56-60y	0.0005	0.0143	9.7E-01	0.0111	0.0151	4.6E-01
DAG 16:1;0_18:1;0	61-66y	-0.0093	0.0147	5.3E-01	-0.0100	0.0165	5.4E-01
DAG 18:1;0_18:1;0	45-50y	0.1237	0.0108	4.1E-29	0.1199	0.0110	7.9E-27
DAG 18:1;0_18:1;0	51-55y	0.0813	0.0111	4.2E-13	0.0766	0.0115	3.9E-11
DAG 18:1;0_18:1;0	56-60y	0.0494	0.0111	9.0E-06	0.0506	0.0119	2.1E-05
DAG 18:1;0_18:1;0	61-66y	0.0222	0.0115	5.3E-02	0.0136	0.0127	2.8E-01
DAG 18:1;0_18:2;0	45-50y	0.1083	0.0109	9.9E-23	0.1051	0.0110	5.1E-21

DAG 18:1;0_18:2;0	51-55y	0.0777	0.0109	1.4E-12	0.0744	0.0113	7.6E-11
DAG 18:1;0_18:2;0	56-60y	0.0480	0.0107	8.4E-06	0.0545	0.0114	2.0E-06
DAG 18:1;0_18:2;0	61-66y	0.0291	0.0116	1.2E-02	0.0223	0.0130	8.7E-02
DAG 18:1;0_18:3;0	45-50y	0.0592	0.0068	8.8E-18	0.0573	0.0069	1.7E-16
DAG 18:1;0_18:3;0	51-55y	0.0339	0.0070	1.4E-06	0.0322	0.0073	1.2E-05
DAG 18:1;0_18:3;0	56-60y	0.0148	0.0066	2.6E-02	0.0177	0.0070	1.1E-02
DAG 18:1;0_18:3;0	61-66y	0.0016	0.0073	8.3E-01	-0.0002	0.0083	9.8E-01
LPC 16:0;0	45-50y	0.0336	0.0052	1.8E-10	0.0354	0.0053	3.9E-11
LPC 16:0;0	51-55y	0.0431	0.0053	1.1E-15	0.0426	0.0056	4.1E-14
LPC 16:0;0	56-60y	0.0255	0.0057	7.4E-06	0.0255	0.0061	3.0E-05
LPC 16:0;0	61-66y	0.0341	0.0059	1.1E-08	0.0291	0.0065	7.3E-06
LPC 18:0;0	45-50y	0.0292	0.0061	1.6E-06	0.0329	0.0062	1.2E-07
LPC 18:0;0	51-55y	0.0165	0.0062	8.0E-03	0.0172	0.0065	8.5E-03
LPC 18:0;0	56-60y	-0.0053	0.0063	4.0E-01	-0.0021	0.0068	7.6E-01
LPC 18:0;0	61-66y	-0.0096	0.0066	1.5E-01	-0.0164	0.0073	2.4E-02
LPC 18:1;0	45-50y	0.0424	0.0062	7.7E-12	0.0448	0.0063	1.6E-12
LPC 18:1;0	51-55y	0.0358	0.0064	2.2E-08	0.0343	0.0067	3.3E-07
LPC 18:1;0	56-60y	0.0239	0.0066	3.2E-04	0.0218	0.0071	2.2E-03
LPC 18:1;0	61-66y	0.0299	0.0067	9.6E-06	0.0270	0.0074	2.6E-04
LPC 18:2;0	45-50y	0.0728	0.0071	2.8E-24	0.0767	0.0072	1.2E-25
LPC 18:2;0	51-55y	0.0633	0.0074	2.6E-17	0.0641	0.0078	3.9E-16
LPC 18:2;0	56-60y	0.0502	0.0075	2.2E-11	0.0471	0.0080	4.5E-09
LPC 18:2;0	61-66y	0.0581	0.0079	4.1E-13	0.0593	0.0088	1.9E-11
LPC 20:4;0	45-50y	0.0979	0.0070	2.5E-42	0.0992	0.0072	5.5E-41
LPC 20:4;0	51-55y	0.0825	0.0074	1.5E-27	0.0844	0.0078	1.5E-26
LPC 20:4;0	56-60y	0.0550	0.0075	4.1E-13	0.0567	0.0081	4.4E-12
LPC 20:4;0	61-66y	0.0625	0.0085	2.8E-13	0.0561	0.0093	2.1E-09
LPE 18:0;0	45-50y	0.0232	0.0067	5.8E-04	0.0241	0.0068	4.3E-04
LPE 18:0;0	51-55y	0.0164	0.0071	2.0E-02	0.0161	0.0074	3.0E-02
LPE 18:0;0	56-60y	-0.0110	0.0074	1.4E-01	-0.0126	0.0079	1.1E-01
LPE 18:0;0	61-66y	-0.0019	0.0078	8.0E-01	-0.0046	0.0085	5.9E-01
LPE 18:1;0	45-50y	0.0499	0.0089	2.1E-08	0.0526	0.0091	8.8E-09
LPE 18:1;0	51-55y	0.0326	0.0093	4.5E-04	0.0296	0.0098	2.6E-03
LPE 18:1;0	56-60y	0.0309	0.0101	2.2E-03	0.0296	0.0109	6.7E-03
LPE 18:1;0	61-66y	0.0345	0.0103	7.9E-04	0.0309	0.0116	7.9E-03
LPE 18:2;0	45-50y	0.0304	0.0088	5.3E-04	0.0316	0.0089	4.1E-04
LPE 18:2;0	51-55y	0.0272	0.0092	3.1E-03	0.0279	0.0097	4.0E-03
LPE 18:2;0	56-60y	-0.0006	0.0100	9.5E-01	-0.0049	0.0107	6.5E-01
LPE 18:2;0	61-66y	0.0274	0.0101	6.6E-03	0.0307	0.0111	5.8E-03
PC 14:0;0_16:0;0	45-50y	-0.0213	0.0102	3.6E-02	-0.0214	0.0104	4.0E-02
PC 14:0;0_16:0;0	51-55y	-0.0192	0.0105	6.9E-02	-0.0174	0.0110	1.1E-01
PC 14:0;0_16:0;0	56-60y	-0.0473	0.0108	1.4E-05	-0.0524	0.0114	5.0E-06
PC 14:0;0_16:0;0	61-66y	-0.0180	0.0121	1.4E-01	-0.0159	0.0131	2.2E-01
PC 14:0;0_18:1;0	45-50y	-0.0342	0.0096	3.6E-04	-0.0384	0.0098	9.6E-05
PC 14:0;0_18:1;0	51-55y	-0.0414	0.0099	3.3E-05	-0.0445	0.0104	1.9E-05
PC 14:0;0_18:1;0	56-60y	-0.0837	0.0097	1.1E-17	-0.0856	0.0104	3.4E-16
PC 14:0;0_18:1;0	61-66y	-0.0667	0.0108	7.0E-10	-0.0577	0.0118	1.2E-06
PC 14:0;0_18:2;0	45-50y	-0.0204	0.0081	1.2E-02	-0.0191	0.0082	2.0E-02
PC 14:0;0_18:2;0	51-55y	-0.0210	0.0086	1.5E-02	-0.0190	0.0090	3.5E-02
PC 14:0;0_18:2;0	56-60y	-0.0544	0.0085	1.8E-10	-0.0561	0.0090	6.4E-10
PC 14:0;0_18:2;0	61-66y	-0.0522	0.0087	2.4E-09	-0.0401	0.0095	2.8E-05

PC 15:0;0_18:1;0	45-50y	0.0000	0.0071	1.0E+00	-0.0029	0.0073	6.9E-01
PC 15:0;0_18:1;0	51-55y	-0.0280	0.0074	1.7E-04	-0.0308	0.0076	5.4E-05
PC 15:0;0_18:1;0	56-60y	-0.0351	0.0079	8.5E-06	-0.0350	0.0083	2.7E-05
PC 15:0;0_18:1;0	61-66y	-0.0344	0.0084	4.4E-05	-0.0306	0.0093	9.9E-04
PC 15:0;0_18:2;0	45-50y	-0.0291	0.0056	1.8E-07	-0.0330	0.0056	4.8E-09
PC 15:0;0_18:2;0	51-55y	-0.0411	0.0056	3.1E-13	-0.0423	0.0058	5.1E-13
PC 15:0;0_18:2;0	56-60y	-0.0463	0.0057	1.4E-15	-0.0479	0.0061	5.5E-15
PC 15:0;0_18:2;0	61-66y	-0.0367	0.0062	3.2E-09	-0.0333	0.0066	5.4E-07
PC 16:0;0_16:0;0	45-50y	-0.0039	0.0045	3.8E-01	-0.0066	0.0046	1.5E-01
PC 16:0;0_16:0;0	51-55y	-0.0065	0.0048	1.7E-01	-0.0066	0.0049	1.8E-01
PC 16:0;0_16:0;0	56-60y	-0.0179	0.0050	3.4E-04	-0.0171	0.0052	9.9E-04
PC 16:0;0_16:0;0	61-66y	-0.0110	0.0051	3.3E-02	-0.0089	0.0056	1.1E-01
PC 16:0;0_16:1;0	45-50y	-0.0101	0.0110	3.6E-01	-0.0149	0.0112	1.8E-01
PC 16:0;0_16:1;0	51-55y	-0.0367	0.0114	1.3E-03	-0.0377	0.0118	1.5E-03
PC 16:0;0_16:1;0	56-60y	-0.0693	0.0118	5.8E-09	-0.0698	0.0127	4.1E-08
PC 16:0;0_16:1;0	61-66y	-0.0455	0.0124	2.6E-04	-0.0499	0.0139	3.3E-04
PC 16:0;0_17:1;0	45-50y	0.0174	0.0084	3.7E-02	0.0144	0.0085	9.1E-02
PC 16:0;0_17:1;0	51-55y	0.0020	0.0086	8.1E-01	-0.0033	0.0088	7.1E-01
PC 16:0;0_17:1;0	56-60y	-0.0102	0.0090	2.6E-01	-0.0096	0.0093	3.0E-01
PC 16:0;0_17:1;0	61-66y	-0.0129	0.0097	1.8E-01	-0.0154	0.0106	1.5E-01
PC 16:0;0_18:0;0	45-50y	-0.0110	0.0042	8.9E-03	-0.0117	0.0043	6.5E-03
PC 16:0;0_18:0;0	51-55y	-0.0275	0.0046	2.6E-09	-0.0282	0.0048	6.1E-09
PC 16:0;0_18:0;0	56-60y	-0.0415	0.0046	4.1E-19	-0.0415	0.0048	2.7E-17
PC 16:0;0_18:0;0	61-66y	-0.0408	0.0050	4.4E-16	-0.0399	0.0055	4.2E-13
PC 16:0;0_18:1;0	45-50y	0.0001	0.0061	9.9E-01	-0.0032	0.0062	6.1E-01
PC 16:0;0_18:1;0	51-55y	-0.0110	0.0064	8.5E-02	-0.0139	0.0066	3.5E-02
PC 16:0;0_18:1;0	56-60y	-0.0264	0.0067	8.5E-05	-0.0253	0.0070	3.0E-04
PC 16:0;0_18:1;0	61-66y	-0.0193	0.0070	5.9E-03	-0.0199	0.0078	1.1E-02
PC 16:0;0_18:2;0	45-50y	-0.0187	0.0047	6.4E-05	-0.0208	0.0047	7.8E-06
PC 16:0;0_18:2;0	51-55y	-0.0266	0.0048	4.5E-08	-0.0284	0.0050	1.7E-08
PC 16:0;0_18:2;0	56-60y	-0.0353	0.0049	1.1E-12	-0.0353	0.0052	1.2E-11
PC 16:0;0_18:2;0	61-66y	-0.0269	0.0052	3.2E-07	-0.0249	0.0056	1.0E-05
PC 16:0;0_18:3;0	45-50y	-0.0218	0.0082	8.4E-03	-0.0241	0.0085	4.4E-03
PC 16:0;0_18:3;0	51-55y	-0.0373	0.0085	1.3E-05	-0.0370	0.0088	2.7E-05
PC 16:0;0_18:3;0	56-60y	-0.0533	0.0086	7.9E-10	-0.0503	0.0092	5.1E-08
PC 16:0;0_18:3;0	61-66y	-0.0465	0.0090	2.3E-07	-0.0418	0.0100	3.3E-05
PC 16:0;0_20:1;0	45-50y	0.0182	0.0080	2.3E-02	0.0180	0.0083	3.0E-02
PC 16:0;0_20:1;0	51-55y	0.0089	0.0080	2.7E-01	0.0100	0.0084	2.3E-01
PC 16:0;0_20:1;0	56-60y	0.0087	0.0083	2.9E-01	0.0097	0.0089	2.8E-01
PC 16:0;0_20:1;0	61-66y	-0.0044	0.0091	6.3E-01	-0.0019	0.0102	8.6E-01
PC 16:0;0_20:2;0	45-50y	0.0032	0.0056	5.7E-01	0.0013	0.0058	8.2E-01
PC 16:0;0_20:2;0	51-55y	-0.0065	0.0059	2.7E-01	-0.0057	0.0061	3.5E-01
PC 16:0;0_20:2;0	56-60y	-0.0163	0.0058	4.8E-03	-0.0150	0.0061	1.4E-02
PC 16:0;0_20:2;0	61-66y	-0.0161	0.0060	7.7E-03	-0.0170	0.0067	1.1E-02
PC 16:0;0_20:3;0	45-50y	0.0195	0.0069	4.7E-03	0.0162	0.0070	2.1E-02
PC 16:0;0_20:3;0	51-55y	-0.0055	0.0074	4.6E-01	-0.0055	0.0077	4.8E-01
PC 16:0;0_20:3;0	56-60y	-0.0298	0.0077	1.1E-04	-0.0290	0.0082	4.1E-04
PC 16:0;0_20:3;0	61-66y	-0.0186	0.0075	1.4E-02	-0.0258	0.0084	2.3E-03
PC 16:0;0_20:4;0	45-50y	0.0331	0.0067	8.0E-07	0.0298	0.0069	1.5E-05
PC 16:0;0_20:4;0	51-55y	0.0101	0.0072	1.6E-01	0.0098	0.0075	1.9E-01
PC 16:0;0_20:4;0	56-60y	-0.0078	0.0071	2.8E-01	-0.0036	0.0077	6.4E-01

PC 16:0;0_20:4;0	61-66y	-0.0102	0.0077	1.9E-01	-0.0169	0.0086	5.0E-02
PC 16:0;0_20:5;0	45-50y	0.0219	0.0110	4.6E-02	0.0227	0.0113	4.5E-02
PC 16:0;0_20:5;0	51-55y	0.0093	0.0120	4.4E-01	0.0079	0.0126	5.3E-01
PC 16:0;0_20:5;0	56-60y	-0.0070	0.0122	5.6E-01	-0.0028	0.0133	8.3E-01
PC 16:0;0_20:5;0	61-66y	-0.0179	0.0128	1.6E-01	-0.0109	0.0145	4.5E-01
PC 16:0;0_22:4;0	45-50y	0.0344	0.0060	1.2E-08	0.0323	0.0061	1.7E-07
PC 16:0;0_22:4;0	51-55y	0.0167	0.0065	1.1E-02	0.0183	0.0068	6.9E-03
PC 16:0;0_22:4;0	56-60y	-0.0060	0.0068	3.8E-01	-0.0041	0.0072	5.7E-01
PC 16:0;0_22:4;0	61-66y	-0.0029	0.0073	6.9E-01	-0.0073	0.0081	3.7E-01
PC 16:0;0_22:5;0	45-50y	0.0266	0.0061	1.3E-05	0.0262	0.0063	3.1E-05
PC 16:0;0_22:5;0	51-55y	0.0012	0.0065	8.5E-01	0.0005	0.0068	9.4E-01
PC 16:0;0_22:5;0	56-60y	-0.0236	0.0067	4.7E-04	-0.0178	0.0071	1.3E-02
PC 16:0;0_22:5;0	61-66y	-0.0278	0.0071	9.9E-05	-0.0303	0.0079	1.2E-04
PC 16:0;0_22:6;0	45-50y	-0.0262	0.0082	1.5E-03	-0.0259	0.0085	2.3E-03
PC 16:0;0_22:6;0	51-55y	-0.0319	0.0085	1.8E-04	-0.0354	0.0089	7.4E-05
PC 16:0;0_22:6;0	56-60y	-0.0089	0.0085	2.9E-01	-0.0065	0.0093	4.8E-01
PC 16:0;0_22:6;0	61-66y	-0.0288	0.0088	1.1E-03	-0.0311	0.0098	1.5E-03
PC 16:1;0_18:0;0	45-50y	-0.0102	0.0121	4.0E-01	-0.0153	0.0124	2.2E-01
PC 16:1;0_18:0;0	51-55y	-0.0519	0.0128	5.6E-05	-0.0577	0.0133	1.6E-05
PC 16:1;0_18:0;0	56-60y	-0.1014	0.0135	8.5E-14	-0.1066	0.0142	9.7E-14
PC 16:1;0_18:0;0	61-66y	-0.0821	0.0140	4.9E-09	-0.0772	0.0154	6.1E-07
PC 16:1;0_18:1;0	45-50y	-0.0510	0.0075	1.4E-11	-0.0541	0.0077	3.4E-12
PC 16:1;0_18:1;0	51-55y	-0.0699	0.0077	1.9E-19	-0.0735	0.0080	8.5E-20
PC 16:1;0_18:1;0	56-60y	-0.1042	0.0081	1.1E-36	-0.1074	0.0086	1.5E-34
PC 16:1;0_18:1;0	61-66y	-0.0877	0.0086	1.6E-23	-0.0890	0.0096	5.1E-20
PC 16:1;0_18:2;0	45-50y	-0.0674	0.0071	9.4E-21	-0.0710	0.0073	5.7E-22
PC 16:1;0_18:2;0	51-55y	-0.0924	0.0073	1.4E-35	-0.0931	0.0076	2.0E-33
PC 16:1;0_18:2;0	56-60y	-0.1144	0.0076	2.2E-48	-0.1157	0.0082	8.2E-43
PC 16:1;0_18:2;0	61-66y	-0.0980	0.0081	1.1E-32	-0.0991	0.0088	4.3E-28
PC 16:1;0_20:4;0	45-50y	0.0024	0.0098	8.0E-01	0.0004	0.0101	9.7E-01
PC 16:1;0_20:4;0	51-55y	-0.0384	0.0107	3.4E-04	-0.0444	0.0109	5.1E-05
PC 16:1;0_20:4;0	56-60y	-0.0557	0.0098	1.4E-08	-0.0530	0.0105	5.2E-07
PC 16:1;0_20:4;0	61-66y	-0.0666	0.0111	2.8E-09	-0.0667	0.0125	1.1E-07
PC 17:0;0_18:1;0	45-50y	-0.0164	0.0059	5.3E-03	-0.0176	0.0061	3.8E-03
PC 17:0;0_18:1;0	51-55y	-0.0384	0.0063	1.1E-09	-0.0417	0.0065	1.6E-10
PC 17:0;0_18:1;0	56-60y	-0.0535	0.0065	2.6E-16	-0.0537	0.0069	1.1E-14
PC 17:0;0_18:1;0	61-66y	-0.0545	0.0070	1.9E-14	-0.0548	0.0078	4.3E-12
PC 17:0;0_18:2;0	45-50y	-0.0239	0.0054	8.6E-06	-0.0257	0.0054	1.8E-06
PC 17:0;0_18:2;0	51-55y	-0.0459	0.0057	1.0E-15	-0.0477	0.0059	1.9E-15
PC 17:0;0_18:2;0	56-60y	-0.0602	0.0058	1.4E-24	-0.0602	0.0062	8.3E-22
PC 17:0;0_18:2;0	61-66y	-0.0617	0.0062	1.9E-22	-0.0594	0.0068	9.9E-18
PC 17:0;0_20:4;0	45-50y	0.0110	0.0062	7.4E-02	0.0091	0.0064	1.5E-01
PC 17:0;0_20:4;0	51-55y	-0.0232	0.0066	4.7E-04	-0.0224	0.0069	1.2E-03
PC 17:0;0_20:4;0	56-60y	-0.0471	0.0067	2.1E-12	-0.0428	0.0072	3.4E-09
PC 17:0;0_20:4;0	61-66y	-0.0589	0.0073	1.1E-15	-0.0655	0.0080	8.3E-16
PC 18:0;0_18:1;0	45-50y	0.0009	0.0070	9.0E-01	-0.0005	0.0072	9.5E-01
PC 18:0;0_18:1;0	51-55y	-0.0305	0.0075	5.1E-05	-0.0336	0.0078	1.8E-05
PC 18:0;0_18:1;0	56-60y	-0.0494	0.0078	2.9E-10	-0.0478	0.0082	7.8E-09
PC 18:0;0_18:1;0	61-66y	-0.0551	0.0081	1.0E-11	-0.0543	0.0090	1.8E-09
PC 18:0;0_18:2;0	45-50y	-0.0142	0.0053	7.4E-03	-0.0147	0.0053	5.7E-03
PC 18:0;0_18:2;0	51-55y	-0.0427	0.0055	1.1E-14	-0.0441	0.0057	1.2E-14

PC 18:0;0_18:2;0	56-60y	-0.0582	0.0055	2.7E-25	-0.0566	0.0059	3.3E-21
PC 18:0;0_18:2;0	61-66y	-0.0625	0.0061	2.7E-24	-0.0628	0.0066	6.8E-21
PC 18:0;0_18:3;0	45-50y	-0.0148	0.0094	1.2E-01	-0.0142	0.0097	1.5E-01
PC 18:0;0_18:3;0	51-55y	-0.0466	0.0096	1.4E-06	-0.0475	0.0099	1.8E-06
PC 18:0;0_18:3;0	56-60y	-0.0786	0.0097	9.0E-16	-0.0767	0.0104	2.4E-13
PC 18:0;0_18:3;0	61-66y	-0.0799	0.0103	1.8E-14	-0.0750	0.0115	8.5E-11
PC 18:0;0_20:2;0	45-50y	-0.0155	0.0084	6.5E-02	-0.0178	0.0085	3.6E-02
PC 18:0;0_20:2;0	51-55y	-0.0125	0.0084	1.4E-01	-0.0184	0.0087	3.5E-02
PC 18:0;0_20:2;0	56-60y	-0.0298	0.0082	3.1E-04	-0.0342	0.0088	1.0E-04
PC 18:0;0_20:2;0	61-66y	-0.0429	0.0089	1.4E-06	-0.0431	0.0097	1.0E-05
PC 18:0;0_20:3;0	45-50y	0.0283	0.0072	9.5E-05	0.0271	0.0074	2.6E-04
PC 18:0;0_20:3;0	51-55y	-0.0167	0.0078	3.2E-02	-0.0160	0.0081	4.9E-02
PC 18:0;0_20:3;0	56-60y	-0.0576	0.0081	1.2E-12	-0.0538	0.0086	4.5E-10
PC 18:0;0_20:3;0	61-66y	-0.0559	0.0081	8.1E-12	-0.0629	0.0091	7.0E-12
PC 18:0;0_20:4;0	45-50y	0.0347	0.0062	2.0E-08	0.0338	0.0063	1.1E-07
PC 18:0;0_20:4;0	51-55y	-0.0087	0.0068	2.0E-01	-0.0084	0.0071	2.3E-01
PC 18:0;0_20:4;0	56-60y	-0.0351	0.0067	1.8E-07	-0.0294	0.0072	4.7E-05
PC 18:0;0_20:4;0	61-66y	-0.0465	0.0075	7.6E-10	-0.0550	0.0083	5.0E-11
PC 18:0;0_20:5;0	45-50y	0.0237	0.0111	3.3E-02	0.0262	0.0115	2.3E-02
PC 18:0;0_20:5;0	51-55y	-0.0091	0.0125	4.7E-01	-0.0107	0.0132	4.2E-01
PC 18:0;0_20:5;0	56-60y	-0.0400	0.0137	3.6E-03	-0.0333	0.0151	2.7E-02
PC 18:0;0_20:5;0	61-66y	-0.0599	0.0134	8.8E-06	-0.0563	0.0152	2.2E-04
PC 18:0;0_22:5;0	45-50y	0.0473	0.0068	5.7E-12	0.0461	0.0070	5.8E-11
PC 18:0;0_22:5;0	51-55y	0.0072	0.0073	3.3E-01	0.0062	0.0076	4.1E-01
PC 18:0;0_22:5;0	56-60y	-0.0316	0.0075	2.7E-05	-0.0239	0.0078	2.3E-03
PC 18:0;0_22:5;0	61-66y	-0.0361	0.0082	1.1E-05	-0.0418	0.0091	4.7E-06
PC 18:0;0_22:6;0	45-50y	-0.0018	0.0080	8.2E-01	-0.0007	0.0081	9.4E-01
PC 18:0;0_22:6;0	51-55y	-0.0298	0.0082	2.6E-04	-0.0333	0.0086	1.0E-04
PC 18:0;0_22:6;0	56-60y	-0.0252	0.0082	2.1E-03	-0.0216	0.0089	1.5E-02
PC 18:0;0_22:6;0	61-66y	-0.0424	0.0088	1.4E-06	-0.0442	0.0096	5.0E-06
PC 18:1;0_18:1;0	45-50y	-0.0352	0.0068	2.1E-07	-0.0369	0.0069	1.2E-07
PC 18:1;0_18:1;0	51-55y	-0.0512	0.0070	3.2E-13	-0.0569	0.0073	9.2E-15
PC 18:1;0_18:1;0	56-60y	-0.0630	0.0070	6.2E-19	-0.0648	0.0076	2.2E-17
PC 18:1;0_18:1;0	61-66y	-0.0619	0.0075	4.3E-16	-0.0601	0.0083	8.2E-13
PC 18:1;0_18:2;0	45-50y	-0.0379	0.0060	3.7E-10	-0.0391	0.0061	1.8E-10
PC 18:1;0_18:2;0	51-55y	-0.0579	0.0062	2.4E-20	-0.0602	0.0065	3.8E-20
PC 18:1;0_18:2;0	56-60y	-0.0695	0.0063	1.9E-27	-0.0706	0.0067	8.1E-25
PC 18:1;0_18:2;0	61-66y	-0.0584	0.0067	7.6E-18	-0.0585	0.0073	2.1E-15
PC 18:1;0_18:3;0	45-50y	-0.0323	0.0104	1.9E-03	-0.0316	0.0107	3.2E-03
PC 18:1;0_18:3;0	51-55y	-0.0465	0.0106	1.2E-05	-0.0485	0.0110	1.2E-05
PC 18:1;0_18:3;0	56-60y	-0.0696	0.0106	6.1E-11	-0.0636	0.0115	3.6E-08
PC 18:1;0_18:3;0	61-66y	-0.0582	0.0112	2.1E-07	-0.0533	0.0124	1.9E-05
PC 18:1;0_20:2;0	45-50y	-0.0257	0.0097	7.9E-03	-0.0299	0.0098	2.4E-03
PC 18:1;0_20:2;0	51-55y	-0.0408	0.0098	3.3E-05	-0.0447	0.0103	1.5E-05
PC 18:1;0_20:2;0	56-60y	-0.0628	0.0097	1.5E-10	-0.0584	0.0104	2.6E-08
PC 18:1;0_20:2;0	61-66y	-0.0378	0.0102	2.0E-04	-0.0370	0.0111	9.0E-04
PC 18:1;0_20:3;0	45-50y	0.0015	0.0065	8.2E-01	-0.0012	0.0067	8.6E-01
PC 18:1;0_20:3;0	51-55y	-0.0377	0.0071	1.1E-07	-0.0376	0.0074	3.7E-07
PC 18:1;0_20:3;0	56-60y	-0.0691	0.0071	1.3E-21	-0.0678	0.0077	2.4E-18
PC 18:1;0_20:3;0	61-66y	-0.0591	0.0077	2.4E-14	-0.0670	0.0086	1.6E-14
PC 18:1;0_20:4;0	45-50y	0.0081	0.0057	1.6E-01	0.0066	0.0059	2.6E-01

PC 18:1;0_20:4;0	51-55y	-0.0224	0.0064	4.5E-04	-0.0230	0.0066	5.5E-04
PC 18:1;0_20:4;0	56-60y	-0.0466	0.0062	8.0E-14	-0.0429	0.0067	1.4E-10
PC 18:1;0_20:4;0	61-66y	-0.0489	0.0070	3.6E-12	-0.0564	0.0077	5.1E-13
PC 18:2;0_18:2;0	45-50y	-0.0097	0.0076	2.0E-01	-0.0105	0.0076	1.7E-01
PC 18:2;0_18:2;0	51-55y	-0.0407	0.0078	2.1E-07	-0.0412	0.0082	5.2E-07
PC 18:2;0_18:2;0	56-60y	-0.0599	0.0080	1.2E-13	-0.0605	0.0085	1.9E-12
PC 18:2;0_18:2;0	61-66y	-0.0458	0.0089	3.1E-07	-0.0469	0.0096	1.1E-06
PC 18:2;0_20:1;0	45-50y	-0.0236	0.0095	1.3E-02	-0.0254	0.0096	8.6E-03
PC 18:2;0_20:1;0	51-55y	-0.0424	0.0099	2.2E-05	-0.0456	0.0104	1.3E-05
PC 18:2;0_20:1;0	56-60y	-0.0404	0.0101	6.8E-05	-0.0393	0.0109	3.0E-04
PC 18:2;0_20:1;0	61-66y	-0.0424	0.0109	1.1E-04	-0.0460	0.0119	1.2E-04
PC 18:2;0_20:3;0	45-50y	0.0125	0.0089	1.6E-01	0.0112	0.0090	2.1E-01
PC 18:2;0_20:3;0	51-55y	-0.0244	0.0092	8.4E-03	-0.0222	0.0097	2.2E-02
PC 18:2;0_20:3;0	56-60y	-0.0713	0.0095	9.2E-14	-0.0676	0.0101	2.6E-11
PC 18:2;0_20:3;0	61-66y	-0.0466	0.0103	7.1E-06	-0.0524	0.0111	2.7E-06
PC 18:2;0_20:4;0	45-50y	0.0203	0.0062	1.1E-03	0.0199	0.0063	1.5E-03
PC 18:2;0_20:4;0	51-55y	-0.0188	0.0067	5.1E-03	-0.0188	0.0071	7.7E-03
PC 18:2;0_20:4;0	56-60y	-0.0311	0.0067	4.2E-06	-0.0296	0.0071	3.3E-05
PC 18:2;0_20:4;0	61-66y	-0.0366	0.0075	1.2E-06	-0.0418	0.0082	3.6E-07
PC O-16:0;0/16:0;0	45-50y	0.0069	0.0075	3.6E-01	0.0058	0.0076	4.4E-01
PC O-16:0;0/16:0;0	51-55y	0.0175	0.0085	4.0E-02	0.0126	0.0089	1.5E-01
PC O-16:0;0/16:0;0	56-60y	0.0123	0.0087	1.6E-01	0.0158	0.0092	8.6E-02
PC O-16:0;0/16:0;0	61-66y	0.0087	0.0090	3.3E-01	0.0088	0.0097	3.7E-01
PC O-16:0;0/16:1;0	45-50y	-0.0723	0.0111	8.8E-11	-0.0775	0.0114	1.3E-11
PC O-16:0;0/16:1;0	51-55y	-0.0703	0.0119	4.8E-09	-0.0728	0.0124	5.4E-09
PC O-16:0;0/16:1;0	56-60y	-0.0757	0.0124	1.1E-09	-0.0846	0.0131	1.7E-10
PC O-16:0;0/16:1;0	61-66y	-0.0595	0.0129	4.1E-06	-0.0597	0.0141	2.5E-05
PC O-16:0;0/18:1;0	45-50y	-0.0436	0.0051	3.0E-17	-0.0442	0.0052	7.9E-17
PC O-16:0;0/18:1;0	51-55y	-0.0368	0.0056	4.4E-11	-0.0400	0.0058	6.8E-12
PC O-16:0;0/18:1;0	56-60y	-0.0327	0.0057	1.0E-08	-0.0336	0.0061	3.5E-08
PC O-16:0;0/18:1;0	61-66y	-0.0308	0.0060	3.8E-07	-0.0337	0.0066	3.8E-07
PC O-16:0;0/18:2;0	45-50y	-0.0190	0.0064	3.0E-03	-0.0192	0.0065	3.1E-03
PC O-16:0;0/18:2;0	51-55y	-0.0210	0.0070	2.9E-03	-0.0218	0.0073	3.0E-03
PC O-16:0;0/18:2;0	56-60y	-0.0133	0.0071	5.9E-02	-0.0158	0.0076	3.7E-02
PC O-16:0;0/18:2;0	61-66y	-0.0183	0.0075	1.5E-02	-0.0137	0.0082	9.3E-02
PC O-16:0;0/20:3;0	45-50y	0.0204	0.0080	1.1E-02	0.0153	0.0081	6.0E-02
PC O-16:0;0/20:3;0	51-55y	0.0176	0.0087	4.2E-02	0.0175	0.0089	5.0E-02
PC O-16:0;0/20:3;0	56-60y	0.0021	0.0090	8.2E-01	-0.0002	0.0097	9.9E-01
PC O-16:0;0/20:3;0	61-66y	-0.0012	0.0093	9.0E-01	-0.0008	0.0103	9.4E-01
PC O-16:0;0/20:4;0	45-50y	0.0646	0.0071	1.3E-19	0.0627	0.0072	1.1E-17
PC O-16:0;0/20:4;0	51-55y	0.0526	0.0075	2.5E-12	0.0542	0.0078	5.8E-12
PC O-16:0;0/20:4;0	56-60y	0.0489	0.0077	3.6E-10	0.0528	0.0084	3.8E-10
PC O-16:0;0/20:4;0	61-66y	0.0259	0.0080	1.2E-03	0.0255	0.0089	4.3E-03
PC O-16:0;0/22:5;0	45-50y	0.0282	0.0098	4.2E-03	0.0281	0.0101	5.3E-03
PC O-16:0;0/22:5;0	51-55y	0.0098	0.0099	3.2E-01	0.0072	0.0103	4.8E-01
PC O-16:0;0/22:5;0	56-60y	0.0025	0.0109	8.2E-01	0.0104	0.0117	3.8E-01
PC O-16:0;0/22:5;0	61-66y	0.0016	0.0107	8.8E-01	0.0070	0.0117	5.5E-01
PC O-16:1;0/16:0;0	45-50y	-0.0006	0.0060	9.2E-01	-0.0026	0.0062	6.8E-01
PC O-16:1;0/16:0;0	51-55y	-0.0071	0.0067	2.9E-01	-0.0087	0.0070	2.1E-01
PC O-16:1;0/16:0;0	56-60y	-0.0004	0.0069	9.5E-01	-0.0003	0.0073	9.7E-01
PC O-16:1;0/16:0;0	61-66y	0.0027	0.0069	6.9E-01	0.0031	0.0074	6.8E-01

PC O-16:1;0/18:0;0	45-50y	-0.0142	0.0083	8.7E-02	-0.0123	0.0085	1.5E-01
PC O-16:1;0/18:0;0	51-55y	-0.0141	0.0091	1.2E-01	-0.0209	0.0094	2.6E-02
PC O-16:1;0/18:0;0	56-60y	-0.0203	0.0092	2.8E-02	-0.0238	0.0100	1.8E-02
PC O-16:1;0/18:0;0	61-66y	-0.0376	0.0098	1.2E-04	-0.0346	0.0106	1.2E-03
PC O-16:1;0/18:1;0	45-50y	-0.0688	0.0078	2.4E-18	-0.0671	0.0080	6.8E-17
PC O-16:1;0/18:1;0	51-55y	-0.0716	0.0082	3.9E-18	-0.0741	0.0085	8.3E-18
PC O-16:1;0/18:1;0	56-60y	-0.0578	0.0083	4.3E-12	-0.0602	0.0089	2.1E-11
PC O-16:1;0/18:1;0	61-66y	-0.0563	0.0088	2.5E-10	-0.0519	0.0098	1.2E-07
PC O-16:1;0/18:2;0	45-50y	-0.0373	0.0064	7.1E-09	-0.0374	0.0065	1.2E-08
PC O-16:1;0/18:2;0	51-55y	-0.0416	0.0072	9.5E-09	-0.0446	0.0075	3.9E-09
PC O-16:1;0/18:2;0	56-60y	-0.0380	0.0073	2.3E-07	-0.0400	0.0079	4.1E-07
PC O-16:1;0/18:2;0	61-66y	-0.0425	0.0079	6.9E-08	-0.0399	0.0085	3.2E-06
PC O-16:1;0/20:3;0	45-50y	0.0453	0.0095	1.8E-06	0.0406	0.0096	2.7E-05
PC O-16:1;0/20:3;0	51-55y	0.0207	0.0101	4.1E-02	0.0203	0.0106	5.5E-02
PC O-16:1;0/20:3;0	56-60y	0.0309	0.0103	2.8E-03	0.0343	0.0110	1.9E-03
PC O-16:1;0/20:3;0	61-66y	-0.0003	0.0106	9.8E-01	0.0061	0.0116	6.0E-01
PC O-16:1;0/20:4;0	45-50y	0.0552	0.0076	8.0E-13	0.0541	0.0078	7.8E-12
PC O-16:1;0/20:4;0	51-55y	0.0221	0.0080	6.1E-03	0.0202	0.0084	1.6E-02
PC O-16:1;0/20:4;0	56-60y	0.0136	0.0084	1.0E-01	0.0200	0.0090	2.7E-02
PC O-16:1;0/20:4;0	61-66y	-0.0006	0.0091	9.4E-01	-0.0047	0.0100	6.4E-01
PC O-16:2;0/18:0;0	45-50y	0.0292	0.0097	2.7E-03	0.0304	0.0100	2.5E-03
PC O-16:2;0/18:0;0	51-55y	0.0101	0.0100	3.1E-01	0.0053	0.0105	6.2E-01
PC O-16:2;0/18:0;0	56-60y	-0.0051	0.0105	6.3E-01	-0.0030	0.0113	7.9E-01
PC O-16:2;0/18:0;0	61-66y	-0.0118	0.0108	2.8E-01	-0.0075	0.0118	5.3E-01
PC O-17:0;0/15:0;0	45-50y	-0.0367	0.0125	3.5E-03	-0.0380	0.0128	3.1E-03
PC O-17:0;0/15:0;0	51-55y	-0.0453	0.0136	8.7E-04	-0.0521	0.0139	1.9E-04
PC O-17:0;0/15:0;0	56-60y	-0.0676	0.0141	1.9E-06	-0.0701	0.0150	3.3E-06
PC O-17:0;0/15:0;0	61-66y	-0.0626	0.0147	2.2E-05	-0.0525	0.0158	9.3E-04
PC O-17:0;0/17:1;0	45-50y	-0.0403	0.0087	4.3E-06	-0.0449	0.0089	5.5E-07
PC O-17:0;0/17:1;0	51-55y	-0.0303	0.0101	2.7E-03	-0.0328	0.0105	1.8E-03
PC O-17:0;0/17:1;0	56-60y	-0.0447	0.0096	3.5E-06	-0.0404	0.0102	8.1E-05
PC O-17:0;0/17:1;0	61-66y	-0.0559	0.0103	6.8E-08	-0.0537	0.0114	2.8E-06
PC O-18:0;0/14:0;0	45-50y	-0.0193	0.0064	2.5E-03	-0.0177	0.0065	6.3E-03
PC O-18:0;0/14:0;0	51-55y	-0.0039	0.0069	5.7E-01	-0.0031	0.0072	6.6E-01
PC O-18:0;0/14:0;0	56-60y	0.0083	0.0073	2.5E-01	0.0098	0.0079	2.2E-01
PC O-18:0;0/14:0;0	61-66y	0.0068	0.0076	3.7E-01	0.0046	0.0083	5.8E-01
PC O-18:0;0/16:1;0	45-50y	-0.1350	0.0133	1.8E-23	-0.1398	0.0137	1.1E-23
PC O-18:0;0/16:1;0	51-55y	-0.1311	0.0132	1.4E-22	-0.1371	0.0139	2.3E-22
PC O-18:0;0/16:1;0	56-60y	-0.1576	0.0135	2.3E-30	-0.1758	0.0144	1.1E-32
PC O-18:0;0/16:1;0	61-66y	-0.1378	0.0144	3.6E-21	-0.1432	0.0161	1.8E-18
PC O-18:0;0/20:4;0	45-50y	0.0123	0.0061	4.4E-02	0.0112	0.0063	7.3E-02
PC O-18:0;0/20:4;0	51-55y	0.0057	0.0067	3.9E-01	0.0080	0.0071	2.6E-01
PC O-18:0;0/20:4;0	56-60y	0.0042	0.0072	5.6E-01	0.0042	0.0077	5.9E-01
PC O-18:0;0/20:4;0	61-66y	-0.0040	0.0074	5.9E-01	0.0009	0.0081	9.1E-01
PC O-18:1;0/16:0;0	45-50y	-0.0456	0.0056	7.9E-16	-0.0460	0.0057	2.3E-15
PC O-18:1;0/16:0;0	51-55y	-0.0369	0.0060	7.9E-10	-0.0398	0.0062	2.4E-10
PC O-18:1;0/16:0;0	56-60y	-0.0373	0.0061	1.1E-09	-0.0383	0.0065	5.1E-09
PC O-18:1;0/16:0;0	61-66y	-0.0292	0.0064	6.2E-06	-0.0319	0.0070	6.0E-06
PC O-18:1;0/18:2;0	45-50y	-0.0419	0.0072	6.2E-09	-0.0424	0.0073	7.4E-09
PC O-18:1;0/18:2;0	51-55y	-0.0419	0.0078	8.9E-08	-0.0445	0.0081	4.6E-08
PC O-18:1;0/18:2;0	56-60y	-0.0325	0.0080	4.7E-05	-0.0367	0.0084	1.4E-05

PC O-18:1;0/18:2;0	61-66y	-0.0302	0.0084	3.3E-04	-0.0263	0.0089	3.1E-03
PC O-18:1;0/20:3;0	45-50y	0.0069	0.0087	4.2E-01	0.0065	0.0088	4.6E-01
PC O-18:1;0/20:3;0	51-55y	0.0047	0.0093	6.1E-01	0.0060	0.0096	5.4E-01
PC O-18:1;0/20:3;0	56-60y	0.0067	0.0097	4.9E-01	0.0041	0.0104	6.9E-01
PC O-18:1;0/20:3;0	61-66y	-0.0030	0.0101	7.7E-01	0.0034	0.0111	7.6E-01
PC O-18:1;0/20:4;0	45-50y	0.0277	0.0056	7.6E-07	0.0275	0.0057	1.6E-06
PC O-18:1;0/20:4;0	51-55y	0.0121	0.0062	5.0E-02	0.0117	0.0065	6.9E-02
PC O-18:1;0/20:4;0	56-60y	0.0121	0.0062	5.3E-02	0.0164	0.0067	1.4E-02
PC O-18:1;0/20:4;0	61-66y	-0.0006	0.0067	9.3E-01	-0.0014	0.0074	8.5E-01
PC O-18:2;0/16:0;0	45-50y	-0.0244	0.0058	2.9E-05	-0.0241	0.0059	4.5E-05
PC O-18:2;0/16:0;0	51-55y	-0.0181	0.0063	4.1E-03	-0.0188	0.0066	4.2E-03
PC O-18:2;0/16:0;0	56-60y	-0.0107	0.0064	9.6E-02	-0.0128	0.0069	6.3E-02
PC O-18:2;0/16:0;0	61-66y	-0.0205	0.0069	3.0E-03	-0.0192	0.0075	1.1E-02
PC O-18:2;0/18:1;0	45-50y	-0.0672	0.0100	2.1E-11	-0.0684	0.0102	2.8E-11
PC O-18:2;0/18:1;0	51-55y	-0.0882	0.0107	2.6E-16	-0.0923	0.0111	2.3E-16
PC O-18:2;0/18:1;0	56-60y	-0.0675	0.0107	3.7E-10	-0.0737	0.0114	1.5E-10
PC O-18:2;0/18:1;0	61-66y	-0.0872	0.0114	4.1E-14	-0.0835	0.0122	1.4E-11
PC O-18:2;0/18:2;0	45-50y	-0.0481	0.0075	2.1E-10	-0.0475	0.0076	6.1E-10
PC O-18:2;0/18:2;0	51-55y	-0.0541	0.0079	1.2E-11	-0.0564	0.0082	9.6E-12
PC O-18:2;0/18:2;0	56-60y	-0.0578	0.0084	6.9E-12	-0.0599	0.0088	1.8E-11
PC O-18:2;0/18:2;0	61-66y	-0.0665	0.0092	7.2E-13	-0.0617	0.0098	4.8E-10
PC O-18:2;0/20:4;0	45-50y	0.0266	0.0118	2.4E-02	0.0277	0.0120	2.1E-02
PC O-18:2;0/20:4;0	51-55y	-0.0138	0.0124	2.6E-01	-0.0191	0.0128	1.3E-01
PC O-18:2;0/20:4;0	56-60y	-0.0201	0.0128	1.2E-01	-0.0186	0.0137	1.8E-01
PC O-18:2;0/20:4;0	61-66y	-0.0530	0.0140	1.5E-04	-0.0574	0.0152	1.7E-04
PE 16:0;0_18:2;0	45-50y	-0.0216	0.0124	8.2E-02	-0.0303	0.0127	1.7E-02
PE 16:0;0_18:2;0	51-55y	-0.0249	0.0125	4.6E-02	-0.0299	0.0130	2.2E-02
PE 16:0;0_18:2;0	56-60y	-0.0461	0.0127	3.1E-04	-0.0473	0.0137	5.5E-04
PE 16:0;0_18:2;0	61-66y	-0.0380	0.0133	4.2E-03	-0.0349	0.0147	1.8E-02
PE 16:0;0_20:4;0	45-50y	-0.0072	0.0101	4.8E-01	-0.0127	0.0104	2.2E-01
PE 16:0;0_20:4;0	51-55y	-0.0234	0.0098	1.7E-02	-0.0240	0.0102	1.9E-02
PE 16:0;0_20:4;0	56-60y	-0.0436	0.0102	1.9E-05	-0.0431	0.0108	6.6E-05
PE 16:0;0_20:4;0	61-66y	-0.0575	0.0110	1.9E-07	-0.0635	0.0122	2.4E-07
PE 18:0;0_18:2;0	45-50y	-0.0073	0.0105	4.9E-01	-0.0117	0.0107	2.7E-01
PE 18:0;0_18:2;0	51-55y	-0.0297	0.0107	5.4E-03	-0.0329	0.0111	3.1E-03
PE 18:0;0_18:2;0	56-60y	-0.0539	0.0108	7.1E-07	-0.0524	0.0115	6.1E-06
PE 18:0;0_18:2;0	61-66y	-0.0586	0.0114	3.4E-07	-0.0610	0.0127	1.6E-06
PE 18:0;0_20:4;0	45-50y	0.0123	0.0083	1.4E-01	0.0082	0.0084	3.3E-01
PE 18:0;0_20:4;0	51-55y	-0.0142	0.0088	1.1E-01	-0.0143	0.0091	1.2E-01
PE 18:0;0_20:4;0	56-60y	-0.0414	0.0086	1.8E-06	-0.0408	0.0091	8.4E-06
PE 18:0;0_20:4;0	61-66y	-0.0591	0.0092	1.7E-10	-0.0645	0.0102	3.4E-10
PE 18:1;0_18:1;0	45-50y	0.0173	0.0130	1.9E-01	0.0106	0.0133	4.3E-01
PE 18:1;0_18:1;0	51-55y	0.0079	0.0129	5.4E-01	0.0053	0.0135	6.9E-01
PE 18:1;0_18:1;0	56-60y	-0.0440	0.0137	1.4E-03	-0.0423	0.0149	4.6E-03
PE 18:1;0_18:1;0	61-66y	-0.0421	0.0142	3.1E-03	-0.0432	0.0159	6.6E-03
PE O-16:1;0/18:2;0	45-50y	0.0175	0.0087	4.4E-02	0.0178	0.0089	4.5E-02
PE O-16:1;0/18:2;0	51-55y	-0.0112	0.0096	2.5E-01	-0.0132	0.0100	1.8E-01
PE O-16:1;0/18:2;0	56-60y	-0.0028	0.0099	7.8E-01	0.0014	0.0105	9.0E-01
PE O-16:1;0/18:2;0	61-66y	-0.0132	0.0103	2.0E-01	-0.0192	0.0112	8.6E-02
PE O-16:1;0/20:4;0	45-50y	0.0791	0.0080	3.0E-22	0.0769	0.0083	5.6E-20
PE O-16:1;0/20:4;0	51-55y	0.0337	0.0086	9.4E-05	0.0334	0.0091	2.3E-04

PE O-16:1;0/20:4;0	56-60y	0.0258	0.0083	1.8E-03	0.0322	0.0089	2.8E-04
PE O-16:1;0/20:4;0	61-66y	0.0001	0.0090	9.9E-01	-0.0036	0.0101	7.2E-01
PE O-16:1;0/22:5;0	45-50y	0.0462	0.0111	3.1E-05	0.0425	0.0113	1.7E-04
PE O-16:1;0/22:5;0	51-55y	0.0085	0.0119	4.7E-01	0.0052	0.0125	6.8E-01
PE O-16:1;0/22:5;0	56-60y	0.0045	0.0116	7.0E-01	0.0134	0.0125	2.8E-01
PE O-16:1;0/22:5;0	61-66y	-0.0192	0.0122	1.2E-01	-0.0193	0.0134	1.5E-01
PE O-18:1;0/18:2;0	45-50y	0.0019	0.0085	8.3E-01	0.0007	0.0087	9.3E-01
PE O-18:1;0/18:2;0	51-55y	-0.0291	0.0092	1.6E-03	-0.0278	0.0096	3.8E-03
PE O-18:1;0/18:2;0	56-60y	-0.0295	0.0092	1.4E-03	-0.0300	0.0098	2.1E-03
PE O-18:1;0/18:2;0	61-66y	-0.0452	0.0101	7.6E-06	-0.0417	0.0109	1.3E-04
PE O-18:1;0/20:4;0	45-50y	0.0558	0.0076	2.5E-13	0.0541	0.0078	6.0E-12
PE O-18:1;0/20:4;0	51-55y	0.0183	0.0082	2.6E-02	0.0193	0.0087	2.7E-02
PE O-18:1;0/20:4;0	56-60y	0.0114	0.0080	1.6E-01	0.0177	0.0086	4.1E-02
PE O-18:1;0/20:4;0	61-66y	-0.0166	0.0087	5.7E-02	-0.0195	0.0097	4.4E-02
PE O-18:2;0/18:1;0	45-50y	0.0039	0.0098	6.9E-01	0.0007	0.0100	9.5E-01
PE O-18:2;0/18:1;0	51-55y	-0.0399	0.0101	7.5E-05	-0.0395	0.0106	1.9E-04
PE O-18:2;0/18:1;0	56-60y	-0.0256	0.0102	1.2E-02	-0.0260	0.0110	1.8E-02
PE O-18:2;0/18:1;0	61-66y	-0.0582	0.0110	1.4E-07	-0.0567	0.0121	3.2E-06
PE O-18:2;0/18:2;0	45-50y	0.0010	0.0086	9.1E-01	0.0010	0.0088	9.1E-01
PE O-18:2;0/18:2;0	51-55y	-0.0142	0.0088	1.1E-01	-0.0189	0.0092	4.1E-02
PE O-18:2;0/18:2;0	56-60y	-0.0161	0.0089	7.2E-02	-0.0165	0.0096	8.5E-02
PE O-18:2;0/18:2;0	61-66y	-0.0366	0.0099	2.3E-04	-0.0338	0.0107	1.6E-03
PE O-18:2;0/20:4;0	45-50y	0.0484	0.0072	3.2E-11	0.0466	0.0074	4.7E-10
PE O-18:2;0/20:4;0	51-55y	0.0251	0.0078	1.3E-03	0.0249	0.0082	2.3E-03
PE O-18:2;0/20:4;0	56-60y	0.0084	0.0077	2.8E-01	0.0129	0.0083	1.2E-01
PE O-18:2;0/20:4;0	61-66y	-0.0052	0.0083	5.4E-01	-0.0031	0.0094	7.4E-01
PI 16:0;0_18:1;0	45-50y	0.0412	0.0128	1.3E-03	0.0424	0.0130	1.2E-03
PI 16:0;0_18:1;0	51-55y	0.0236	0.0127	6.3E-02	0.0211	0.0133	1.1E-01
PI 16:0;0_18:1;0	56-60y	-0.0142	0.0135	2.9E-01	-0.0251	0.0141	7.4E-02
PI 16:0;0_18:1;0	61-66y	-0.0002	0.0144	9.9E-01	0.0057	0.0154	7.1E-01
PI 16:0;0_18:2;0	45-50y	-0.0207	0.0088	1.9E-02	-0.0235	0.0089	8.6E-03
PI 16:0;0_18:2;0	51-55y	-0.0162	0.0091	7.6E-02	-0.0121	0.0094	2.0E-01
PI 16:0;0_18:2;0	56-60y	-0.0484	0.0097	6.2E-07	-0.0453	0.0102	1.1E-05
PI 16:0;0_18:2;0	61-66y	-0.0341	0.0099	5.8E-04	-0.0336	0.0108	1.8E-03
PI 16:0;0_20:4;0	45-50y	0.0262	0.0075	5.2E-04	0.0258	0.0077	8.6E-04
PI 16:0;0_20:4;0	51-55y	0.0095	0.0079	2.3E-01	0.0081	0.0083	3.3E-01
PI 16:0;0_20:4;0	56-60y	-0.0256	0.0082	1.9E-03	-0.0258	0.0086	2.9E-03
PI 16:0;0_20:4;0	61-66y	-0.0271	0.0083	1.2E-03	-0.0267	0.0091	3.4E-03
PI 18:0;0_18:1;0	45-50y	-0.0059	0.0075	4.3E-01	-0.0064	0.0075	4.0E-01
PI 18:0;0_18:1;0	51-55y	-0.0108	0.0075	1.5E-01	-0.0109	0.0078	1.6E-01
PI 18:0;0_18:1;0	56-60y	-0.0129	0.0077	9.4E-02	-0.0124	0.0082	1.3E-01
PI 18:0;0_18:1;0	61-66y	-0.0272	0.0081	7.5E-04	-0.0214	0.0087	1.5E-02
PI 18:0;0_18:2;0	45-50y	-0.0315	0.0068	4.6E-06	-0.0335	0.0069	1.5E-06
PI 18:0;0_18:2;0	51-55y	-0.0379	0.0068	2.8E-08	-0.0393	0.0071	3.3E-08
PI 18:0;0_18:2;0	56-60y	-0.0585	0.0072	1.1E-15	-0.0561	0.0076	2.1E-13
PI 18:0;0_18:2;0	61-66y	-0.0508	0.0075	1.6E-11	-0.0471	0.0080	5.2E-09
PI 18:0;0_20:3;0	45-50y	0.0103	0.0081	2.0E-01	0.0089	0.0082	2.8E-01
PI 18:0;0_20:3;0	51-55y	-0.0190	0.0082	2.0E-02	-0.0207	0.0085	1.5E-02
PI 18:0;0_20:3;0	56-60y	-0.0458	0.0084	6.0E-08	-0.0486	0.0090	8.4E-08
PI 18:0;0_20:3;0	61-66y	-0.0435	0.0087	6.1E-07	-0.0510	0.0096	1.4E-07
PI 18:0;0_20:4;0	45-50y	0.0320	0.0050	2.8E-10	0.0316	0.0051	8.6E-10

PI 18:0;0_20:4;0	51-55y	0.0017	0.0056	7.6E-01	0.0002	0.0057	9.7E-01
PI 18:0;0_20:4;0	56-60y	-0.0259	0.0055	2.5E-06	-0.0254	0.0058	1.5E-05
PI 18:0;0_20:4;0	61-66y	-0.0408	0.0060	1.1E-11	-0.0465	0.0065	1.8E-12
PI 18:1;0_18:1;0	45-50y	-0.0187	0.0092	4.3E-02	-0.0169	0.0094	7.1E-02
PI 18:1;0_18:1;0	51-55y	-0.0431	0.0094	5.3E-06	-0.0458	0.0098	3.2E-06
PI 18:1;0_18:1;0	56-60y	-0.0572	0.0098	5.9E-09	-0.0542	0.0104	2.1E-07
PI 18:1;0_18:1;0	61-66y	-0.0582	0.0101	1.0E-08	-0.0548	0.0107	3.5E-07
PI 18:1;0_18:2;0	45-50y	-0.0266	0.0088	2.4E-03	-0.0248	0.0089	5.2E-03
PI 18:1;0_18:2;0	51-55y	-0.0458	0.0089	2.9E-07	-0.0446	0.0093	1.7E-06
PI 18:1;0_18:2;0	56-60y	-0.0591	0.0093	2.2E-10	-0.0616	0.0100	9.4E-10
PI 18:1;0_18:2;0	61-66y	-0.0610	0.0093	6.5E-11	-0.0651	0.0100	1.3E-10
PI 18:1;0_20:4;0	45-50y	0.0070	0.0083	4.0E-01	0.0082	0.0085	3.4E-01
PI 18:1;0_20:4;0	51-55y	-0.0404	0.0086	2.8E-06	-0.0403	0.0089	6.4E-06
PI 18:1;0_20:4;0	56-60y	-0.0634	0.0088	1.1E-12	-0.0586	0.0094	5.4E-10
PI 18:1;0_20:4;0	61-66y	-0.0651	0.0102	2.5E-10	-0.0679	0.0113	2.2E-09
SM 32:1;2	45-50y	-0.0304	0.0049	6.1E-10	-0.0308	0.0050	8.9E-10
SM 32:1;2	51-55y	-0.0590	0.0052	1.3E-28	-0.0589	0.0055	6.3E-26
SM 32:1;2	56-60y	-0.0797	0.0053	1.1E-48	-0.0791	0.0056	1.3E-42
SM 32:1;2	61-66y	-0.0708	0.0057	9.9E-34	-0.0673	0.0064	3.8E-25
SM 34:0;2	45-50y	-0.0304	0.0066	4.7E-06	-0.0308	0.0068	6.1E-06
SM 34:0;2	51-55y	-0.0336	0.0070	1.5E-06	-0.0361	0.0072	6.8E-07
SM 34:0;2	56-60y	-0.0440	0.0071	6.0E-10	-0.0487	0.0075	1.4E-10
SM 34:0;2	61-66y	-0.0373	0.0074	6.0E-07	-0.0395	0.0080	9.8E-07
SM 34:1;2	45-50y	-0.0207	0.0038	5.9E-08	-0.0198	0.0039	3.5E-07
SM 34:1;2	51-55y	-0.0348	0.0040	1.6E-17	-0.0348	0.0042	4.1E-16
SM 34:1;2	56-60y	-0.0446	0.0040	1.4E-27	-0.0452	0.0043	7.2E-25
SM 34:1;2	61-66y	-0.0436	0.0043	1.4E-23	-0.0438	0.0047	9.1E-20
SM 34:2;2	45-50y	-0.0491	0.0040	2.5E-33	-0.0477	0.0041	1.3E-30
SM 34:2;2	51-55y	-0.0746	0.0042	3.7E-64	-0.0754	0.0044	5.7E-60
SM 34:2;2	56-60y	-0.0910	0.0042	2.1E-92	-0.0911	0.0045	1.6E-81
SM 34:2;2	61-66y	-0.0867	0.0047	1.5E-69	-0.0871	0.0052	6.0E-58
SM 36:1;2	45-50y	-0.0204	0.0047	1.7E-05	-0.0213	0.0048	1.0E-05
SM 36:1;2	51-55y	-0.0374	0.0050	8.6E-14	-0.0385	0.0052	2.7E-13
SM 36:1;2	56-60y	-0.0634	0.0052	2.1E-33	-0.0640	0.0056	1.5E-29
SM 36:1;2	61-66y	-0.0626	0.0053	1.3E-30	-0.0648	0.0059	2.2E-27
SM 36:2;2	45-50y	-0.0510	0.0051	2.8E-23	-0.0518	0.0052	4.6E-23
SM 36:2;2	51-55y	-0.0746	0.0053	5.4E-43	-0.0759	0.0055	6.7E-41
SM 36:2;2	56-60y	-0.1010	0.0055	1.2E-69	-0.1016	0.0059	9.5E-61
SM 36:2;2	61-66y	-0.1007	0.0060	3.2E-59	-0.1029	0.0065	1.4E-51
SM 38:1;2	45-50y	-0.0115	0.0045	1.0E-02	-0.0105	0.0046	2.3E-02
SM 38:1;2	51-55y	-0.0390	0.0048	6.1E-16	-0.0380	0.0050	7.3E-14
SM 38:1;2	56-60y	-0.0663	0.0049	1.8E-40	-0.0659	0.0052	1.0E-34
SM 38:1;2	61-66y	-0.0534	0.0052	4.4E-24	-0.0555	0.0058	3.0E-21
SM 38:2;2	45-50y	-0.0575	0.0049	3.0E-30	-0.0564	0.0051	6.3E-28
SM 38:2;2	51-55y	-0.0892	0.0053	1.6E-59	-0.0886	0.0055	5.2E-54
SM 38:2;2	56-60y	-0.1093	0.0053	1.2E-85	-0.1101	0.0057	2.4E-74
SM 38:2;2	61-66y	-0.1015	0.0058	8.0E-64	-0.1045	0.0064	2.0E-55
SM 40:1;2	45-50y	0.0138	0.0045	2.1E-03	0.0156	0.0046	7.3E-04
SM 40:1;2	51-55y	-0.0164	0.0047	5.6E-04	-0.0149	0.0050	2.8E-03
SM 40:1;2	56-60y	-0.0400	0.0047	4.7E-17	-0.0384	0.0051	5.8E-14
SM 40:1;2	61-66y	-0.0369	0.0049	1.3E-13	-0.0363	0.0054	3.3E-11

SM 40:2;2	45-50y	-0.0348	0.0041	2.4E-17	-0.0333	0.0042	1.8E-15
SM 40:2;2	51-55y	-0.0643	0.0044	1.0E-45	-0.0633	0.0046	3.4E-40
SM 40:2;2	56-60y	-0.0863	0.0044	4.6E-79	-0.0859	0.0047	3.0E-67
SM 40:2;2	61-66y	-0.0780	0.0047	3.2E-57	-0.0771	0.0052	2.6E-46
SM 42:2;2	45-50y	0.0068	0.0042	1.0E-01	0.0081	0.0042	5.6E-02
SM 42:2;2	51-55y	-0.0147	0.0045	1.1E-03	-0.0149	0.0047	1.6E-03
SM 42:2;2	56-60y	-0.0235	0.0046	2.6E-07	-0.0239	0.0049	1.4E-06
SM 42:2;2	61-66y	-0.0235	0.0048	9.2E-07	-0.0235	0.0052	6.9E-06
TAG 46:1;0	45-50y	0.1608	0.0208	2.0E-14	0.1596	0.0212	8.6E-14
TAG 46:1;0	51-55y	0.1265	0.0215	4.7E-09	0.1273	0.0224	1.5E-08
TAG 46:1;0	56-60y	0.0473	0.0214	2.7E-02	0.0684	0.0229	2.9E-03
TAG 46:1;0	61-66y	0.0500	0.0232	3.1E-02	0.0648	0.0255	1.1E-02
TAG 46:2;0	45-50y	0.1264	0.0192	6.5E-11	0.1244	0.0196	3.2E-10
TAG 46:2;0	51-55y	0.0892	0.0198	7.1E-06	0.0941	0.0206	5.2E-06
TAG 46:2;0	56-60y	0.0230	0.0196	2.4E-01	0.0341	0.0212	1.1E-01
TAG 46:2;0	61-66y	0.0291	0.0207	1.6E-01	0.0427	0.0230	6.4E-02
TAG 48:0;0	45-50y	0.2015	0.0214	1.6E-20	0.1963	0.0217	5.3E-19
TAG 48:0;0	51-55y	0.1730	0.0227	4.7E-14	0.1680	0.0235	1.4E-12
TAG 48:0;0	56-60y	0.0991	0.0219	6.2E-06	0.1140	0.0233	1.1E-06
TAG 48:0;0	61-66y	0.0907	0.0240	1.6E-04	0.1042	0.0259	6.1E-05
TAG 48:1;0	45-50y	0.1865	0.0179	7.9E-25	0.1790	0.0181	2.3E-22
TAG 48:1;0	51-55y	0.1429	0.0187	3.5E-14	0.1411	0.0194	5.0E-13
TAG 48:1;0	56-60y	0.0718	0.0186	1.2E-04	0.0828	0.0198	3.0E-05
TAG 48:1;0	61-66y	0.0695	0.0195	3.8E-04	0.0753	0.0213	4.2E-04
TAG 48:2;0	45-50y	0.1388	0.0162	2.7E-17	0.1334	0.0166	1.4E-15
TAG 48:2;0	51-55y	0.0887	0.0169	1.7E-07	0.0888	0.0176	4.9E-07
TAG 48:2;0	56-60y	0.0195	0.0169	2.5E-01	0.0267	0.0182	1.4E-01
TAG 48:2;0	61-66y	0.0163	0.0176	3.6E-01	0.0194	0.0194	3.2E-01
TAG 48:3;0	45-50y	0.1260	0.0151	1.2E-16	0.1227	0.0153	2.5E-15
TAG 48:3;0	51-55y	0.0699	0.0154	6.2E-06	0.0725	0.0161	6.9E-06
TAG 48:3;0	56-60y	0.0152	0.0156	3.3E-01	0.0216	0.0168	2.0E-01
TAG 48:3;0	61-66y	0.0074	0.0161	6.5E-01	0.0129	0.0180	4.7E-01
TAG 49:1;0	45-50y	0.1380	0.0159	1.3E-17	0.1367	0.0162	9.2E-17
TAG 49:1;0	51-55y	0.1137	0.0164	6.5E-12	0.1151	0.0171	2.2E-11
TAG 49:1;0	56-60y	0.0467	0.0162	4.0E-03	0.0572	0.0174	1.1E-03
TAG 49:1;0	61-66y	0.0511	0.0172	2.9E-03	0.0657	0.0187	4.5E-04
TAG 49:2;0	45-50y	0.1072	0.0144	1.7E-13	0.1052	0.0147	1.2E-12
TAG 49:2;0	51-55y	0.0891	0.0148	2.0E-09	0.0919	0.0153	2.7E-09
TAG 49:2;0	56-60y	0.0166	0.0147	2.6E-01	0.0302	0.0158	5.7E-02
TAG 49:2;0	61-66y	0.0121	0.0155	4.3E-01	0.0202	0.0171	2.4E-01
TAG 50:1;0	45-50y	0.1999	0.0153	2.7E-37	0.1912	0.0155	1.3E-33
TAG 50:1;0	51-55y	0.1641	0.0159	2.4E-24	0.1626	0.0163	8.1E-23
TAG 50:1;0	56-60y	0.1136	0.0160	1.9E-12	0.1254	0.0169	1.6E-13
TAG 50:1;0	61-66y	0.0971	0.0167	8.0E-09	0.0945	0.0181	2.1E-07
TAG 50:2;0	45-50y	0.1386	0.0136	6.9E-24	0.1311	0.0137	3.7E-21
TAG 50:2;0	51-55y	0.0934	0.0140	3.7E-11	0.0927	0.0145	2.1E-10
TAG 50:2;0	56-60y	0.0407	0.0141	4.0E-03	0.0465	0.0149	1.8E-03
TAG 50:2;0	61-66y	0.0343	0.0145	1.8E-02	0.0281	0.0158	7.6E-02
TAG 50:3;0	45-50y	0.1190	0.0125	3.7E-21	0.1139	0.0126	4.3E-19
TAG 50:3;0	51-55y	0.0751	0.0128	5.1E-09	0.0758	0.0133	1.5E-08
TAG 50:3;0	56-60y	0.0200	0.0127	1.2E-01	0.0250	0.0136	6.5E-02

TAG 50:3;0	61-66y	0.0209	0.0131	1.1E-01	0.0144	0.0144	3.2E-01
TAG 50:4;0	45-50y	0.1233	0.0129	2.9E-21	0.1198	0.0131	1.3E-19
TAG 50:4;0	51-55y	0.0755	0.0132	1.2E-08	0.0776	0.0138	2.1E-08
TAG 50:4;0	56-60y	0.0151	0.0130	2.5E-01	0.0228	0.0140	1.0E-01
TAG 50:4;0	61-66y	0.0135	0.0136	3.2E-01	0.0093	0.0151	5.4E-01
TAG 50:5;0	45-50y	0.1146	0.0139	4.9E-16	0.1141	0.0142	1.9E-15
TAG 50:5;0	51-55y	0.0661	0.0138	1.9E-06	0.0656	0.0144	5.8E-06
TAG 50:5;0	56-60y	0.0163	0.0139	2.4E-01	0.0276	0.0150	6.5E-02
TAG 50:5;0	61-66y	0.0012	0.0145	9.4E-01	-0.0003	0.0162	9.8E-01
TAG 51:1;0	45-50y	0.1456	0.0154	1.6E-20	0.1406	0.0156	9.1E-19
TAG 51:1;0	51-55y	0.1187	0.0160	1.8E-13	0.1173	0.0164	1.7E-12
TAG 51:1;0	56-60y	0.0595	0.0155	1.3E-04	0.0741	0.0166	9.0E-06
TAG 51:1;0	61-66y	0.0445	0.0165	7.2E-03	0.0509	0.0179	4.6E-03
TAG 51:2;0	45-50y	0.1307	0.0121	2.7E-26	0.1254	0.0123	7.6E-24
TAG 51:2;0	51-55y	0.0826	0.0123	3.0E-11	0.0806	0.0128	4.0E-10
TAG 51:2;0	56-60y	0.0389	0.0125	1.8E-03	0.0460	0.0133	5.5E-04
TAG 51:2;0	61-66y	0.0285	0.0130	2.8E-02	0.0241	0.0141	8.9E-02
TAG 51:3;0	45-50y	0.1160	0.0110	4.6E-25	0.1124	0.0112	4.3E-23
TAG 51:3;0	51-55y	0.0702	0.0112	3.9E-10	0.0699	0.0116	2.4E-09
TAG 51:3;0	56-60y	0.0214	0.0111	5.3E-02	0.0261	0.0119	2.8E-02
TAG 51:3;0	61-66y	0.0178	0.0116	1.2E-01	0.0134	0.0127	2.9E-01
TAG 51:4;0	45-50y	0.1082	0.0118	1.8E-19	0.1052	0.0120	5.3E-18
TAG 51:4;0	51-55y	0.0647	0.0114	1.7E-08	0.0653	0.0119	5.3E-08
TAG 51:4;0	56-60y	0.0208	0.0115	7.0E-02	0.0254	0.0123	3.9E-02
TAG 51:4;0	61-66y	0.0318	0.0121	8.5E-03	0.0370	0.0134	5.7E-03
TAG 52:2;0	45-50y	0.1537	0.0116	2.1E-38	0.1479	0.0117	2.3E-35
TAG 52:2;0	51-55y	0.1100	0.0118	2.3E-20	0.1065	0.0121	3.4E-18
TAG 52:2;0	56-60y	0.0757	0.0118	2.0E-10	0.0822	0.0124	5.5E-11
TAG 52:2;0	61-66y	0.0561	0.0123	5.0E-06	0.0440	0.0134	1.0E-03
TAG 52:3;0	45-50y	0.1320	0.0109	1.3E-32	0.1277	0.0109	2.2E-30
TAG 52:3;0	51-55y	0.0950	0.0110	9.2E-18	0.0928	0.0114	7.3E-16
TAG 52:3;0	56-60y	0.0613	0.0109	2.3E-08	0.0672	0.0116	8.0E-09
TAG 52:3;0	61-66y	0.0477	0.0114	3.1E-05	0.0355	0.0126	5.1E-03
TAG 52:4;0	45-50y	0.1306	0.0117	4.4E-28	0.1269	0.0118	2.9E-26
TAG 52:4;0	51-55y	0.0919	0.0117	7.8E-15	0.0907	0.0123	2.4E-13
TAG 52:4;0	56-60y	0.0534	0.0117	5.3E-06	0.0609	0.0124	1.0E-06
TAG 52:4;0	61-66y	0.0423	0.0124	6.3E-04	0.0317	0.0139	2.3E-02
TAG 52:5;0	45-50y	0.1367	0.0122	3.1E-28	0.1341	0.0123	1.3E-26
TAG 52:5;0	51-55y	0.0890	0.0124	1.0E-12	0.0901	0.0130	5.9E-12
TAG 52:5;0	56-60y	0.0403	0.0122	1.0E-03	0.0499	0.0130	1.3E-04
TAG 52:5;0	61-66y	0.0330	0.0129	1.1E-02	0.0251	0.0145	8.3E-02
TAG 52:6;0	45-50y	0.1505	0.0130	4.8E-30	0.1483	0.0132	2.9E-28
TAG 52:6;0	51-55y	0.0837	0.0138	1.6E-09	0.0845	0.0144	6.0E-09
TAG 52:6;0	56-60y	0.0409	0.0133	2.2E-03	0.0519	0.0143	2.8E-04
TAG 52:6;0	61-66y	0.0300	0.0140	3.2E-02	0.0265	0.0156	9.0E-02
TAG 53:2;0	45-50y	0.1310	0.0107	5.9E-33	0.1257	0.0109	7.2E-30
TAG 53:2;0	51-55y	0.0777	0.0108	9.8E-13	0.0743	0.0112	3.8E-11
TAG 53:2;0	56-60y	0.0394	0.0110	3.4E-04	0.0469	0.0117	6.6E-05
TAG 53:2;0	61-66y	0.0180	0.0114	1.1E-01	0.0114	0.0123	3.6E-01
TAG 53:3;0	45-50y	0.1184	0.0104	3.5E-29	0.1145	0.0105	5.0E-27
TAG 53:3;0	51-55y	0.0674	0.0103	8.9E-11	0.0651	0.0107	1.6E-09

TAG 53:3;0	56-60y	0.0293	0.0104	4.7E-03	0.0352	0.0111	1.5E-03
TAG 53:3;0	61-66y	0.0127	0.0110	2.5E-01	0.0031	0.0121	7.9E-01
TAG 53:4;0	45-50y	0.1186	0.0106	7.4E-28	0.1144	0.0107	1.3E-25
TAG 53:4;0	51-55y	0.0759	0.0105	8.9E-13	0.0768	0.0110	4.2E-12
TAG 53:4;0	56-60y	0.0299	0.0105	4.5E-03	0.0348	0.0113	2.1E-03
TAG 53:4;0	61-66y	0.0208	0.0110	5.8E-02	0.0158	0.0122	1.9E-01
TAG 54:3;0	45-50y	0.1448	0.0112	6.3E-37	0.1411	0.0112	1.1E-34
TAG 54:3;0	51-55y	0.0869	0.0112	1.2E-14	0.0835	0.0116	7.6E-13
TAG 54:3;0	56-60y	0.0437	0.0113	1.1E-04	0.0467	0.0120	1.0E-04
TAG 54:3;0	61-66y	0.0302	0.0116	9.5E-03	0.0156	0.0129	2.3E-01
TAG 54:4;0	45-50y	0.1392	0.0112	6.1E-34	0.1375	0.0114	2.2E-32
TAG 54:4;0	51-55y	0.0893	0.0112	3.1E-15	0.0871	0.0117	1.4E-13
TAG 54:4;0	56-60y	0.0443	0.0112	8.2E-05	0.0488	0.0120	5.0E-05
TAG 54:4;0	61-66y	0.0329	0.0119	5.7E-03	0.0192	0.0133	1.5E-01
TAG 54:5;0	45-50y	0.1488	0.0115	1.5E-36	0.1473	0.0117	9.1E-35
TAG 54:5;0	51-55y	0.1007	0.0116	8.6E-18	0.0999	0.0121	3.7E-16
TAG 54:5;0	56-60y	0.0514	0.0115	7.8E-06	0.0589	0.0121	1.3E-06
TAG 54:5;0	61-66y	0.0427	0.0120	3.9E-04	0.0311	0.0135	2.2E-02
TAG 54:6;0	45-50y	0.1551	0.0128	2.0E-32	0.1525	0.0130	8.7E-31
TAG 54:6;0	51-55y	0.1156	0.0130	1.8E-18	0.1151	0.0137	7.6E-17
TAG 54:6;0	56-60y	0.0630	0.0129	1.1E-06	0.0742	0.0135	4.7E-08
TAG 54:6;0	61-66y	0.0551	0.0129	2.1E-05	0.0501	0.0145	5.8E-04
TAG 54:7;0	45-50y	0.1343	0.0138	6.8E-22	0.1319	0.0140	1.6E-20
TAG 54:7;0	51-55y	0.1049	0.0145	6.3E-13	0.1040	0.0152	1.1E-11
TAG 54:7;0	56-60y	0.0439	0.0145	2.4E-03	0.0530	0.0153	5.3E-04
TAG 54:7;0	61-66y	0.0389	0.0146	7.5E-03	0.0393	0.0163	1.6E-02
TAG 56:3;0	45-50y	0.1483	0.0119	4.9E-34	0.1410	0.0120	1.5E-30
TAG 56:3;0	51-55y	0.0987	0.0112	2.8E-18	0.0952	0.0115	2.9E-16
TAG 56:3;0	56-60y	0.0603	0.0114	1.4E-07	0.0656	0.0123	1.2E-07
TAG 56:3;0	61-66y	0.0394	0.0116	6.6E-04	0.0347	0.0130	7.6E-03
TAG 56:4;0	45-50y	0.1566	0.0120	4.3E-37	0.1507	0.0119	1.1E-34
TAG 56:4;0	51-55y	0.0960	0.0115	1.8E-16	0.0949	0.0118	2.0E-15
TAG 56:4;0	56-60y	0.0505	0.0116	1.4E-05	0.0555	0.0124	7.6E-06
TAG 56:4;0	61-66y	0.0337	0.0116	3.8E-03	0.0249	0.0129	5.3E-02
TAG 56:5;0	45-50y	0.1645	0.0131	3.7E-34	0.1600	0.0133	1.2E-31
TAG 56:5;0	51-55y	0.0962	0.0139	6.0E-12	0.0989	0.0145	1.3E-11
TAG 56:5;0	56-60y	0.0768	0.0129	3.6E-09	0.0862	0.0142	1.8E-09
TAG 56:5;0	61-66y	0.0398	0.0143	5.5E-03	0.0237	0.0161	1.4E-01
TAG 56:6;0	45-50y	0.1652	0.0101	1.2E-56	0.1616	0.0102	5.6E-53
TAG 56:6;0	51-55y	0.1087	0.0105	2.4E-24	0.1083	0.0109	1.5E-22
TAG 56:6;0	56-60y	0.0591	0.0099	3.2E-09	0.0663	0.0105	3.7E-10
TAG 56:6;0	61-66y	0.0381	0.0107	3.8E-04	0.0262	0.0118	2.7E-02
TAG 56:7;0	45-50y	0.1457	0.0113	3.5E-36	0.1432	0.0116	1.1E-33
TAG 56:7;0	51-55y	0.1144	0.0118	9.3E-22	0.1128	0.0123	1.5E-19
TAG 56:7;0	56-60y	0.0963	0.0116	2.2E-16	0.1037	0.0125	2.2E-16
TAG 56:7;0	61-66y	0.0609	0.0121	5.9E-07	0.0554	0.0135	4.0E-05
TAG 56:8;0	45-50y	0.1171	0.0126	4.6E-20	0.1162	0.0129	6.7E-19
TAG 56:8;0	51-55y	0.0963	0.0134	1.0E-12	0.0958	0.0141	1.3E-11
TAG 56:8;0	56-60y	0.0814	0.0131	6.4E-10	0.0896	0.0142	3.9E-10
TAG 56:8;0	61-66y	0.0534	0.0139	1.2E-04	0.0489	0.0156	1.8E-03
TAG 58:7;0	45-50y	0.1466	0.0120	1.5E-32	0.1415	0.0123	2.3E-29

TAG 58:7;0	51-55y	0.0956	0.0121	5.0E-15	0.0934	0.0126	1.9E-13
TAG 58:7;0	56-60y	0.0760	0.0118	1.7E-10	0.0825	0.0126	9.6E-11
TAG 58:7;0	61-66y	0.0431	0.0128	8.1E-04	0.0344	0.0144	1.7E-02
TAG 58:8;0	45-50y	0.0849	0.0123	8.4E-12	0.0813	0.0126	1.4E-10
TAG 58:8;0	51-55y	0.0741	0.0128	9.5E-09	0.0733	0.0134	5.6E-08
TAG 58:8;0	56-60y	0.0669	0.0125	1.0E-07	0.0706	0.0136	2.3E-07
TAG 58:8;0	61-66y	0.0444	0.0133	8.7E-04	0.0404	0.0149	6.9E-03

The effect estimates and P values were obtained using linear regression models including log10 lipid levels as outcomes, sex as independent variable with age, BMI, diabetes, cardiac disease, lipid lowering medication and smoking as covariates. Positive beta means higher level in men while negative beta means lower level in men compared with women.

Table S9: Differences in molecular lipid species levels between men and women in different age-groups in the replication cohort.

Lipid Species	Age Group	Beta	SE	P
CE 14:0;0	45-50y	-0.0182	0.0234	4.4E-01
CE 14:0;0	51-55y	-0.0003	0.0282	9.9E-01
CE 14:0;0	56-60y	0.0198	0.0261	4.5E-01
CE 14:0;0	61-66y	-0.0907	0.0251	3.7E-04
CE 15:0;0	45-50y	-0.0540	0.0225	1.7E-02
CE 15:0;0	51-55y	-0.0307	0.0278	2.7E-01
CE 15:0;0	56-60y	-0.0007	0.0248	9.8E-01
CE 15:0;0	61-66y	-0.0928	0.0244	1.9E-04
CE 16:0;0	45-50y	0.0101	0.0142	4.8E-01
CE 16:0;0	51-55y	0.0205	0.0186	2.7E-01
CE 16:0;0	56-60y	0.0052	0.0158	7.4E-01
CE 16:0;0	61-66y	-0.0387	0.0158	1.5E-02
CE 16:1;0	45-50y	0.0128	0.0258	6.2E-01
CE 16:1;0	51-55y	-0.0335	0.0357	3.5E-01
CE 16:1;0	56-60y	-0.0458	0.0282	1.1E-01
CE 16:1;0	61-66y	-0.1119	0.0269	4.5E-05
CE 17:0;0	45-50y	-0.0002	0.0198	9.9E-01
CE 17:0;0	51-55y	0.0209	0.0260	4.2E-01
CE 17:0;0	56-60y	0.0135	0.0224	5.5E-01
CE 17:0;0	61-66y	-0.0742	0.0231	1.5E-03
CE 17:1;0	45-50y	0.0042	0.0200	8.3E-01
CE 17:1;0	51-55y	-0.0047	0.0261	8.6E-01
CE 17:1;0	56-60y	-0.0153	0.0214	4.7E-01
CE 17:1;0	61-66y	-0.0805	0.0221	3.3E-04
CE 18:0;0	45-50y	0.0367	0.0207	7.7E-02
CE 18:0;0	51-55y	0.0760	0.0258	3.6E-03
CE 18:0;0	56-60y	0.0320	0.0253	2.1E-01
CE 18:0;0	61-66y	-0.0630	0.0254	1.4E-02
CE 18:1;0	45-50y	0.0257	0.0153	9.4E-02
CE 18:1;0	51-55y	0.0094	0.0192	6.2E-01
CE 18:1;0	56-60y	-0.0040	0.0171	8.1E-01
CE 18:1;0	61-66y	-0.0596	0.0175	8.0E-04
CE 18:2;0	45-50y	-0.0151	0.0135	2.6E-01
CE 18:2;0	51-55y	-0.0026	0.0195	8.9E-01
CE 18:2;0	56-60y	-0.0222	0.0182	2.2E-01
CE 18:2;0	61-66y	-0.0397	0.0163	1.6E-02
CE 18:3;0	45-50y	0.0173	0.0207	4.0E-01
CE 18:3;0	51-55y	0.0047	0.0266	8.6E-01
CE 18:3;0	56-60y	-0.0129	0.0259	6.2E-01
CE 18:3;0	61-66y	-0.0809	0.0231	5.6E-04
CE 20:2;0	45-50y	-0.0339	0.0199	9.0E-02
CE 20:2;0	51-55y	0.0276	0.0272	3.1E-01
CE 20:2;0	56-60y	-0.0002	0.0274	9.9E-01
CE 20:2;0	61-66y	-0.0287	0.0234	2.2E-01
CE 20:3;0	45-50y	0.0224	0.0180	2.1E-01
CE 20:3;0	51-55y	0.0134	0.0240	5.8E-01
CE 20:3;0	56-60y	-0.0326	0.0203	1.1E-01

CE 20:3;0	61-66y	-0.0514	0.0218	1.9E-02
CE 20:4;0	45-50y	0.0063	0.0173	7.2E-01
CE 20:4;0	51-55y	0.0273	0.0213	2.0E-01
CE 20:4;0	56-60y	0.0017	0.0194	9.3E-01
CE 20:4;0	61-66y	-0.0446	0.0196	2.4E-02
CE 20:5;0	45-50y	-0.0100	0.0311	7.5E-01
CE 20:5;0	51-55y	0.0180	0.0339	6.0E-01
CE 20:5;0	56-60y	-0.0053	0.0368	8.9E-01
CE 20:5;0	61-66y	-0.0812	0.0325	1.3E-02
CE 22:6;0	45-50y	-0.0464	0.0231	4.6E-02
CE 22:6;0	51-55y	0.0057	0.0286	8.4E-01
CE 22:6;0	56-60y	-0.0253	0.0280	3.7E-01
CE 22:6;0	61-66y	-0.0513	0.0266	5.4E-02
Cer 40:1;2	45-50y	0.0354	0.0179	4.9E-02
Cer 40:1;2	51-55y	0.0203	0.0222	3.6E-01
Cer 40:1;2	56-60y	0.0030	0.0222	8.9E-01
Cer 40:1;2	61-66y	-0.0329	0.0208	1.1E-01
Cer 40:2;2	45-50y	0.0088	0.0214	6.8E-01
Cer 40:2;2	51-55y	0.0100	0.0260	7.0E-01
Cer 40:2;2	56-60y	0.0152	0.0471	7.5E-01
Cer 40:2;2	61-66y	-0.0737	0.0260	5.1E-03
Cer 42:1;2	45-50y	0.0467	0.0179	9.7E-03
Cer 42:1;2	51-55y	0.0248	0.0225	2.7E-01
Cer 42:1;2	56-60y	0.0147	0.0206	4.8E-01
Cer 42:1;2	61-66y	-0.0132	0.0199	5.1E-01
Cer 42:2;2	45-50y	0.0360	0.0183	4.9E-02
Cer 42:2;2	51-55y	0.0278	0.0226	2.2E-01
Cer 42:2;2	56-60y	0.0050	0.0226	8.2E-01
Cer 42:2;2	61-66y	-0.0064	0.0193	7.4E-01
Chol	45-50y	0.0040	0.0128	7.6E-01
Chol	51-55y	0.0011	0.0166	9.5E-01
Chol	56-60y	0.0004	0.0159	9.8E-01
Chol	61-66y	-0.0431	0.0147	3.7E-03
DAG 16:0;0_18:1;0	45-50y	0.1556	0.0351	1.3E-05
DAG 16:0;0_18:1;0	51-55y	0.0784	0.0469	9.6E-02
DAG 16:0;0_18:1;0	56-60y	0.1209	0.0404	3.1E-03
DAG 16:0;0_18:1;0	61-66y	0.0462	0.0366	2.1E-01
DAG 16:0;0_18:2;0	45-50y	0.1360	0.0363	2.2E-04
DAG 16:0;0_18:2;0	51-55y	0.0093	0.0522	8.6E-01
DAG 16:0;0_18:2;0	56-60y	0.0474	0.0480	3.2E-01
DAG 16:0;0_18:2;0	61-66y	-0.0343	0.0416	4.1E-01
DAG 16:1;0_18:1;0	45-50y	0.1084	0.0381	4.8E-03
DAG 16:1;0_18:1;0	51-55y	0.0777	0.0498	1.2E-01
DAG 16:1;0_18:1;0	56-60y	0.0144	0.0447	7.5E-01
DAG 16:1;0_18:1;0	61-66y	0.0297	0.0386	4.4E-01
DAG 18:1;0_18:1;0	45-50y	0.1441	0.0310	4.9E-06
DAG 18:1;0_18:1;0	51-55y	0.0736	0.0411	7.5E-02
DAG 18:1;0_18:1;0	56-60y	0.0835	0.0369	2.5E-02
DAG 18:1;0_18:1;0	61-66y	0.0228	0.0328	4.9E-01
DAG 18:1;0_18:2;0	45-50y	0.1243	0.0271	6.5E-06
DAG 18:1;0_18:2;0	51-55y	0.0805	0.0396	4.4E-02

DAG 18:1;0_18:2;0	56-60y	0.0693	0.0334	3.9E-02
DAG 18:1;0_18:2;0	61-66y	0.0522	0.0294	7.8E-02
DAG 18:1;0_18:3;0	45-50y	0.0675	0.0268	1.3E-02
DAG 18:1;0_18:3;0	51-55y	0.0399	0.0375	2.9E-01
DAG 18:1;0_18:3;0	56-60y	0.0257	0.0339	4.5E-01
DAG 18:1;0_18:3;0	61-66y	0.0190	0.0283	5.0E-01
LPC 16:0;0	45-50y	0.0268	0.0149	7.2E-02
LPC 16:0;0	51-55y	0.0279	0.0179	1.2E-01
LPC 16:0;0	56-60y	0.0367	0.0176	3.8E-02
LPC 16:0;0	61-66y	0.0126	0.0164	4.4E-01
LPC 18:0;0	45-50y	0.0218	0.0181	2.3E-01
LPC 18:0;0	51-55y	0.0370	0.0216	8.8E-02
LPC 18:0;0	56-60y	0.0330	0.0219	1.3E-01
LPC 18:0;0	61-66y	-0.0212	0.0192	2.7E-01
LPC 18:1;0	45-50y	0.0554	0.0195	4.7E-03
LPC 18:1;0	51-55y	0.0079	0.0222	7.2E-01
LPC 18:1;0	56-60y	0.0539	0.0235	2.3E-02
LPC 18:1;0	61-66y	0.0024	0.0179	9.0E-01
LPC 18:2;0	45-50y	0.0778	0.0245	1.7E-03
LPC 18:2;0	51-55y	0.0292	0.0289	3.1E-01
LPC 18:2;0	56-60y	0.0599	0.0273	3.0E-02
LPC 18:2;0	61-66y	0.0540	0.0231	2.0E-02
LPC 20:4;0	45-50y	0.0754	0.0197	1.6E-04
LPC 20:4;0	51-55y	0.0463	0.0237	5.2E-02
LPC 20:4;0	56-60y	0.0623	0.0237	9.2E-03
LPC 20:4;0	61-66y	0.0389	0.0214	7.1E-02
LPE 18:1;0	45-50y	0.0788	0.0243	1.4E-03
LPE 18:1;0	51-55y	0.0268	0.0325	4.1E-01
LPE 18:1;0	56-60y	0.0316	0.0321	3.3E-01
LPE 18:1;0	61-66y	0.0251	0.0260	3.4E-01
LPE 18:2;0	45-50y	0.0483	0.0230	3.6E-02
LPE 18:2;0	51-55y	-0.0031	0.0317	9.2E-01
LPE 18:2;0	56-60y	0.0032	0.0288	9.1E-01
LPE 18:2;0	61-66y	0.0036	0.0267	8.9E-01
PC 14:0;0_16:0;0	45-50y	-0.0521	0.0276	6.0E-02
PC 14:0;0_16:0;0	51-55y	-0.0246	0.0334	4.6E-01
PC 14:0;0_16:0;0	56-60y	0.0026	0.0322	9.4E-01
PC 14:0;0_16:0;0	61-66y	-0.1031	0.0274	2.2E-04
PC 14:0;0_18:1;0	45-50y	-0.0337	0.0266	2.1E-01
PC 14:0;0_18:1;0	51-55y	-0.0915	0.0330	6.1E-03
PC 14:0;0_18:1;0	56-60y	-0.0384	0.0333	2.5E-01
PC 14:0;0_18:1;0	61-66y	-0.1430	0.0257	7.9E-08
PC 14:0;0_18:2;0	45-50y	-0.0483	0.0212	2.4E-02
PC 14:0;0_18:2;0	51-55y	-0.0625	0.0300	3.9E-02
PC 14:0;0_18:2;0	56-60y	-0.0401	0.0281	1.6E-01
PC 14:0;0_18:2;0	61-66y	-0.0893	0.0242	2.9E-04
PC 15:0;0_18:1;0	45-50y	0.0147	0.0187	4.3E-01
PC 15:0;0_18:1;0	51-55y	-0.0268	0.0301	3.7E-01
PC 15:0;0_18:1;0	56-60y	0.0141	0.0237	5.5E-01
PC 15:0;0_18:1;0	61-66y	-0.0559	0.0240	2.1E-02
PC 15:0;0_18:2;0	45-50y	-0.0241	0.0160	1.3E-01

PC 15:0;0_18:2;0	51-55y	-0.0115	0.0234	6.3E-01
PC 15:0;0_18:2;0	56-60y	-0.0182	0.0206	3.8E-01
PC 15:0;0_18:2;0	61-66y	-0.0262	0.0186	1.6E-01
PC 16:0;0_16:0;0	45-50y	-0.0082	0.0150	5.9E-01
PC 16:0;0_16:0;0	51-55y	-0.0023	0.0199	9.1E-01
PC 16:0;0_16:0;0	56-60y	0.0175	0.0189	3.5E-01
PC 16:0;0_16:0;0	61-66y	-0.0307	0.0171	7.4E-02
PC 16:0;0_16:1;0	45-50y	-0.0094	0.0329	7.7E-01
PC 16:0;0_16:1;0	51-55y	-0.0634	0.0432	1.4E-01
PC 16:0;0_16:1;0	56-60y	-0.0364	0.0395	3.6E-01
PC 16:0;0_16:1;0	61-66y	-0.1285	0.0324	9.9E-05
PC 16:0;0_17:1;0	45-50y	0.0337	0.0272	2.2E-01
PC 16:0;0_17:1;0	51-55y	0.0274	0.0402	5.0E-01
PC 16:0;0_17:1;0	56-60y	0.0274	0.0322	4.0E-01
PC 16:0;0_17:1;0	61-66y	-0.0547	0.0313	8.2E-02
PC 16:0;0_18:0;0	45-50y	-0.0213	0.0214	3.2E-01
PC 16:0;0_18:0;0	51-55y	0.0011	0.0236	9.6E-01
PC 16:0;0_18:0;0	56-60y	-0.0150	0.0218	4.9E-01
PC 16:0;0_18:0;0	61-66y	-0.0411	0.0208	5.0E-02
PC 16:0;0_18:1;0	45-50y	0.0083	0.0181	6.5E-01
PC 16:0;0_18:1;0	51-55y	-0.0236	0.0251	3.5E-01
PC 16:0;0_18:1;0	56-60y	-0.0041	0.0208	8.5E-01
PC 16:0;0_18:1;0	61-66y	-0.0635	0.0191	1.0E-03
PC 16:0;0_18:2;0	45-50y	-0.0104	0.0138	4.5E-01
PC 16:0;0_18:2;0	51-55y	-0.0227	0.0210	2.8E-01
PC 16:0;0_18:2;0	56-60y	-0.0210	0.0194	2.8E-01
PC 16:0;0_18:2;0	61-66y	-0.0291	0.0160	7.0E-02
PC 16:0;0_18:3;0	45-50y	-0.0093	0.0219	6.7E-01
PC 16:0;0_18:3;0	51-55y	-0.0433	0.0305	1.6E-01
PC 16:0;0_18:3;0	56-60y	-0.0169	0.0290	5.6E-01
PC 16:0;0_18:3;0	61-66y	-0.0924	0.0247	2.3E-04
PC 16:0;0_20:1;0	45-50y	0.0034	0.0221	8.8E-01
PC 16:0;0_20:1;0	51-55y	-0.0034	0.0272	9.0E-01
PC 16:0;0_20:1;0	56-60y	0.0118	0.0281	6.8E-01
PC 16:0;0_20:1;0	61-66y	-0.0273	0.0265	3.0E-01
PC 16:0;0_20:2;0	45-50y	-0.0031	0.0175	8.6E-01
PC 16:0;0_20:2;0	51-55y	-0.0101	0.0233	6.7E-01
PC 16:0;0_20:2;0	56-60y	-0.0105	0.0209	6.1E-01
PC 16:0;0_20:2;0	61-66y	-0.0445	0.0180	1.4E-02
PC 16:0;0_20:3;0	45-50y	0.0150	0.0204	4.6E-01
PC 16:0;0_20:3;0	51-55y	-0.0243	0.0264	3.6E-01
PC 16:0;0_20:3;0	56-60y	-0.0346	0.0228	1.3E-01
PC 16:0;0_20:3;0	61-66y	-0.0643	0.0224	4.5E-03
PC 16:0;0_20:4;0	45-50y	0.0031	0.0191	8.7E-01
PC 16:0;0_20:4;0	51-55y	0.0075	0.0248	7.6E-01
PC 16:0;0_20:4;0	56-60y	0.0005	0.0225	9.8E-01
PC 16:0;0_20:4;0	61-66y	-0.0328	0.0199	1.0E-01
PC 16:0;0_20:5;0	45-50y	-0.0130	0.0316	6.8E-01
PC 16:0;0_20:5;0	51-55y	0.0064	0.0353	8.6E-01
PC 16:0;0_20:5;0	56-60y	-0.0096	0.0381	8.0E-01
PC 16:0;0_20:5;0	61-66y	-0.0606	0.0316	5.6E-02

PC 16:0;0_22:4;0	45-50y	0.0234	0.0182	2.0E-01
PC 16:0;0_22:4;0	51-55y	0.0182	0.0255	4.8E-01
PC 16:0;0_22:4;0	56-60y	0.0216	0.0234	3.6E-01
PC 16:0;0_22:4;0	61-66y	-0.0630	0.0221	4.9E-03
PC 16:0;0_22:5;0	45-50y	0.0036	0.0193	8.5E-01
PC 16:0;0_22:5;0	51-55y	0.0023	0.0239	9.2E-01
PC 16:0;0_22:5;0	56-60y	0.0181	0.0232	4.3E-01
PC 16:0;0_22:5;0	61-66y	-0.0862	0.0206	4.1E-05
PC 16:0;0_22:6;0	45-50y	-0.0656	0.0221	3.2E-03
PC 16:0;0_22:6;0	51-55y	-0.0176	0.0276	5.2E-01
PC 16:0;0_22:6;0	56-60y	-0.0302	0.0257	2.4E-01
PC 16:0;0_22:6;0	61-66y	-0.0521	0.0238	3.0E-02
PC 16:1;0_18:0;0	45-50y	0.0466	0.0353	1.9E-01
PC 16:1;0_18:0;0	51-55y	-0.0831	0.0498	9.7E-02
PC 16:1;0_18:0;0	56-60y	-0.0764	0.0446	8.9E-02
PC 16:1;0_18:0;0	61-66y	-0.1873	0.0402	6.1E-06
PC 16:1;0_18:1;0	45-50y	-0.0233	0.0212	2.7E-01
PC 16:1;0_18:1;0	51-55y	-0.0954	0.0280	8.0E-04
PC 16:1;0_18:1;0	56-60y	-0.0636	0.0272	2.1E-02
PC 16:1;0_18:1;0	61-66y	-0.1499	0.0225	2.3E-10
PC 16:1;0_18:2;0	45-50y	-0.0491	0.0200	1.5E-02
PC 16:1;0_18:2;0	51-55y	-0.1088	0.0252	2.6E-05
PC 16:1;0_18:2;0	56-60y	-0.0698	0.0277	1.3E-02
PC 16:1;0_18:2;0	61-66y	-0.1354	0.0238	4.3E-08
PC 17:0;0_18:2;0	45-50y	-0.0215	0.0191	2.6E-01
PC 17:0;0_18:2;0	51-55y	-0.0395	0.0277	1.6E-01
PC 17:0;0_18:2;0	56-60y	-0.0013	0.0280	9.6E-01
PC 17:0;0_18:2;0	61-66y	-0.1027	0.0267	1.6E-04
PC 17:0;0_20:4;0	45-50y	-0.0160	0.0185	3.9E-01
PC 17:0;0_20:4;0	51-55y	-0.0364	0.0267	1.7E-01
PC 17:0;0_20:4;0	56-60y	-0.0213	0.0235	3.7E-01
PC 17:0;0_20:4;0	61-66y	-0.0769	0.0209	2.9E-04
PC 18:0;0_18:1;0	45-50y	0.0095	0.0213	6.6E-01
PC 18:0;0_18:1;0	51-55y	-0.0156	0.0286	5.9E-01
PC 18:0;0_18:1;0	56-60y	-0.0031	0.0249	9.0E-01
PC 18:0;0_18:1;0	61-66y	-0.0954	0.0227	3.7E-05
PC 18:0;0_18:2;0	45-50y	-0.0115	0.0151	4.5E-01
PC 18:0;0_18:2;0	51-55y	-0.0121	0.0219	5.8E-01
PC 18:0;0_18:2;0	56-60y	-0.0220	0.0215	3.1E-01
PC 18:0;0_18:2;0	61-66y	-0.0529	0.0175	2.8E-03
PC 18:0;0_18:3;0	45-50y	-0.0069	0.0259	7.9E-01
PC 18:0;0_18:3;0	51-55y	-0.0467	0.0382	2.2E-01
PC 18:0;0_18:3;0	56-60y	-0.0386	0.0335	2.5E-01
PC 18:0;0_18:3;0	61-66y	-0.1175	0.0303	1.4E-04
PC 18:0;0_20:2;0	45-50y	-0.0185	0.0198	3.5E-01
PC 18:0;0_20:2;0	51-55y	-0.0294	0.0256	2.5E-01
PC 18:0;0_20:2;0	56-60y	-0.0221	0.0248	3.7E-01
PC 18:0;0_20:2;0	61-66y	-0.0338	0.0206	1.0E-01
PC 18:0;0_20:3;0	45-50y	0.0225	0.0219	3.0E-01
PC 18:0;0_20:3;0	51-55y	-0.0105	0.0269	7.0E-01
PC 18:0;0_20:3;0	56-60y	-0.0388	0.0240	1.1E-01

PC 18:0;0_20:3;0	61-66y	-0.0989	0.0238	4.7E-05
PC 18:0;0_20:4;0	45-50y	-0.0017	0.0188	9.3E-01
PC 18:0;0_20:4;0	51-55y	0.0073	0.0236	7.6E-01
PC 18:0;0_20:4;0	56-60y	-0.0023	0.0216	9.2E-01
PC 18:0;0_20:4;0	61-66y	-0.0590	0.0197	3.1E-03
PC 18:0;0_20:5;0	45-50y	-0.0073	0.0344	8.3E-01
PC 18:0;0_20:5;0	51-55y	0.0103	0.0428	8.1E-01
PC 18:0;0_20:5;0	56-60y	-0.0259	0.0430	5.5E-01
PC 18:0;0_20:5;0	61-66y	-0.0738	0.0384	5.6E-02
PC 18:0;0_22:5;0	45-50y	0.0398	0.0211	6.0E-02
PC 18:0;0_22:5;0	51-55y	0.0113	0.0270	6.8E-01
PC 18:0;0_22:5;0	56-60y	0.0152	0.0256	5.5E-01
PC 18:0;0_22:5;0	61-66y	-0.0991	0.0201	1.6E-06
PC 18:0;0_22:6;0	45-50y	-0.0193	0.0222	3.8E-01
PC 18:0;0_22:6;0	51-55y	-0.0088	0.0266	7.4E-01
PC 18:0;0_22:6;0	56-60y	-0.0131	0.0240	5.8E-01
PC 18:0;0_22:6;0	61-66y	-0.0851	0.0232	3.0E-04
PC 18:1;0_18:1;0	45-50y	0.0006	0.0167	9.7E-01
PC 18:1;0_18:1;0	51-55y	-0.0449	0.0229	5.1E-02
PC 18:1;0_18:1;0	56-60y	-0.0134	0.0239	5.7E-01
PC 18:1;0_18:1;0	61-66y	-0.0746	0.0197	2.0E-04
PC 18:1;0_18:2;0	45-50y	-0.0236	0.0170	1.7E-01
PC 18:1;0_18:2;0	51-55y	-0.0370	0.0239	1.2E-01
PC 18:1;0_18:2;0	56-60y	-0.0333	0.0242	1.7E-01
PC 18:1;0_18:2;0	61-66y	-0.0587	0.0210	5.6E-03
PC 18:1;0_18:3;0	45-50y	0.0057	0.0255	8.2E-01
PC 18:1;0_18:3;0	51-55y	-0.0758	0.0368	4.1E-02
PC 18:1;0_18:3;0	56-60y	-0.0337	0.0327	3.0E-01
PC 18:1;0_18:3;0	61-66y	-0.0842	0.0324	1.0E-02
PC 18:1;0_20:2;0	45-50y	0.0468	0.0286	1.0E-01
PC 18:1;0_20:2;0	51-55y	-0.0915	0.0333	6.8E-03
PC 18:1;0_20:2;0	56-60y	-0.0953	0.0350	7.3E-03
PC 18:1;0_20:2;0	61-66y	-0.1448	0.0332	2.4E-05
PC 18:1;0_20:3;0	45-50y	0.0034	0.0204	8.7E-01
PC 18:1;0_20:3;0	51-55y	-0.0521	0.0251	3.9E-02
PC 18:1;0_20:3;0	56-60y	-0.0403	0.0257	1.2E-01
PC 18:1;0_20:3;0	61-66y	-0.1010	0.0234	2.4E-05
PC 18:1;0_20:4;0	45-50y	-0.0085	0.0162	6.0E-01
PC 18:1;0_20:4;0	51-55y	-0.0295	0.0210	1.6E-01
PC 18:1;0_20:4;0	56-60y	-0.0086	0.0206	6.7E-01
PC 18:1;0_20:4;0	61-66y	-0.0688	0.0180	1.7E-04
PC 18:2;0_18:2;0	45-50y	0.0047	0.0199	8.1E-01
PC 18:2;0_18:2;0	51-55y	-0.0054	0.0284	8.5E-01
PC 18:2;0_18:2;0	56-60y	0.0007	0.0292	9.8E-01
PC 18:2;0_18:2;0	61-66y	-0.0368	0.0254	1.5E-01
PC 18:2;0_20:3;0	45-50y	0.0395	0.0256	1.2E-01
PC 18:2;0_20:3;0	51-55y	0.0076	0.0388	8.4E-01
PC 18:2;0_20:3;0	56-60y	-0.0173	0.0363	6.3E-01
PC 18:2;0_20:3;0	61-66y	-0.0732	0.0373	5.2E-02
PC 18:2;0_20:4;0	45-50y	0.0100	0.0176	5.7E-01
PC 18:2;0_20:4;0	51-55y	0.0148	0.0223	5.1E-01

PC 18:2;0_20:4;0	56-60y	-0.0141	0.0224	5.3E-01
PC 18:2;0_20:4;0	61-66y	-0.0546	0.0224	1.6E-02
PC O-16:0;0/16:0;0	45-50y	-0.0173	0.0267	5.2E-01
PC O-16:0;0/16:0;0	51-55y	-0.0122	0.0355	7.3E-01
PC O-16:0;0/16:0;0	56-60y	0.0135	0.0285	6.4E-01
PC O-16:0;0/16:0;0	61-66y	-0.0400	0.0243	1.0E-01
PC O-16:0;0/16:1;0	45-50y	-0.0504	0.0289	8.2E-02
PC O-16:0;0/16:1;0	51-55y	-0.0891	0.0426	3.8E-02
PC O-16:0;0/16:1;0	56-60y	-0.0399	0.0399	3.2E-01
PC O-16:0;0/16:1;0	61-66y	-0.1323	0.0370	4.4E-04
PC O-16:0;0/18:1;0	45-50y	-0.0461	0.0146	1.7E-03
PC O-16:0;0/18:1;0	51-55y	-0.0608	0.0206	3.5E-03
PC O-16:0;0/18:1;0	56-60y	-0.0032	0.0179	8.6E-01
PC O-16:0;0/18:1;0	61-66y	-0.0533	0.0165	1.4E-03
PC O-16:0;0/18:2;0	45-50y	-0.0173	0.0170	3.1E-01
PC O-16:0;0/18:2;0	51-55y	-0.0373	0.0245	1.3E-01
PC O-16:0;0/18:2;0	56-60y	-0.0008	0.0222	9.7E-01
PC O-16:0;0/18:2;0	61-66y	-0.0303	0.0193	1.2E-01
PC O-16:0;0/20:3;0	45-50y	0.0375	0.0218	8.7E-02
PC O-16:0;0/20:3;0	51-55y	-0.0354	0.0333	2.9E-01
PC O-16:0;0/20:3;0	56-60y	-0.0228	0.0267	4.0E-01
PC O-16:0;0/20:3;0	61-66y	-0.0599	0.0247	1.6E-02
PC O-16:0;0/20:4;0	45-50y	0.0690	0.0180	1.6E-04
PC O-16:0;0/20:4;0	51-55y	0.0536	0.0250	3.3E-02
PC O-16:0;0/20:4;0	56-60y	0.0359	0.0216	9.8E-02
PC O-16:0;0/20:4;0	61-66y	0.0001	0.0206	1.0E+00
PC O-16:0;0/22:5;0	45-50y	0.0487	0.0245	4.8E-02
PC O-16:0;0/22:5;0	51-55y	-0.0403	0.0366	2.7E-01
PC O-16:0;0/22:5;0	56-60y	0.0335	0.0322	3.0E-01
PC O-16:0;0/22:5;0	61-66y	-0.0210	0.0328	5.2E-01
PC O-16:1;0/16:0;0	45-50y	-0.0289	0.0201	1.5E-01
PC O-16:1;0/16:0;0	51-55y	-0.0216	0.0255	4.0E-01
PC O-16:1;0/16:0;0	56-60y	-0.0147	0.0233	5.3E-01
PC O-16:1;0/16:0;0	61-66y	-0.0096	0.0214	6.5E-01
PC O-16:1;0/18:0;0	45-50y	-0.0180	0.0276	5.2E-01
PC O-16:1;0/18:0;0	51-55y	-0.0020	0.0375	9.6E-01
PC O-16:1;0/18:0;0	56-60y	-0.0230	0.0313	4.6E-01
PC O-16:1;0/18:0;0	61-66y	-0.0176	0.0289	5.4E-01
PC O-16:1;0/18:1;0	45-50y	-0.0687	0.0230	3.0E-03
PC O-16:1;0/18:1;0	51-55y	-0.0994	0.0318	2.1E-03
PC O-16:1;0/18:1;0	56-60y	-0.0217	0.0285	4.5E-01
PC O-16:1;0/18:1;0	61-66y	-0.1066	0.0305	5.6E-04
PC O-16:1;0/18:2;0	45-50y	-0.0404	0.0181	2.7E-02
PC O-16:1;0/18:2;0	51-55y	-0.0709	0.0267	8.5E-03
PC O-16:1;0/18:2;0	56-60y	-0.0334	0.0231	1.5E-01
PC O-16:1;0/18:2;0	61-66y	-0.0360	0.0214	9.4E-02
PC O-16:1;0/20:3;0	45-50y	0.0903	0.0252	4.1E-04
PC O-16:1;0/20:3;0	51-55y	-0.0224	0.0357	5.3E-01
PC O-16:1;0/20:3;0	56-60y	-0.0325	0.0292	2.7E-01
PC O-16:1;0/20:3;0	61-66y	-0.0651	0.0316	4.1E-02
PC O-16:1;0/20:4;0	45-50y	0.0233	0.0201	2.5E-01

PC O-16:1;0/20:4;0	51-55y	-0.0081	0.0262	7.6E-01
PC O-16:1;0/20:4;0	56-60y	-0.0027	0.0259	9.2E-01
PC O-16:1;0/20:4;0	61-66y	-0.0317	0.0221	1.5E-01
PC O-16:2;0/18:0;0	45-50y	0.0006	0.0325	9.8E-01
PC O-16:2;0/18:0;0	51-55y	0.0021	0.0382	9.6E-01
PC O-16:2;0/18:0;0	56-60y	0.0340	0.0337	3.1E-01
PC O-16:2;0/18:0;0	61-66y	0.0003	0.0320	9.9E-01
PC O-17:0;0/15:0;0	45-50y	-0.0115	0.0352	7.4E-01
PC O-17:0;0/15:0;0	51-55y	-0.0080	0.0452	8.6E-01
PC O-17:0;0/15:0;0	56-60y	0.0318	0.0479	5.1E-01
PC O-17:0;0/15:0;0	61-66y	-0.0572	0.0444	2.0E-01
PC O-17:0;0/17:1;0	45-50y	-0.0405	0.0240	9.3E-02
PC O-17:0;0/17:1;0	51-55y	-0.0634	0.0349	7.1E-02
PC O-17:0;0/17:1;0	56-60y	0.0089	0.0312	7.8E-01
PC O-17:0;0/17:1;0	61-66y	-0.1094	0.0294	2.6E-04
PC O-18:0;0/14:0;0	45-50y	-0.0337	0.0143	1.9E-02
PC O-18:0;0/14:0;0	51-55y	0.0062	0.0154	6.9E-01
PC O-18:0;0/14:0;0	56-60y	-0.0086	0.0149	5.6E-01
PC O-18:0;0/14:0;0	61-66y	0.0086	0.0134	5.2E-01
PC O-18:0;0/16:1;0	45-50y	-0.1647	0.0301	1.1E-07
PC O-18:0;0/16:1;0	51-55y	-0.2119	0.0430	2.1E-06
PC O-18:0;0/16:1;0	56-60y	-0.1517	0.0340	1.4E-05
PC O-18:0;0/16:1;0	61-66y	-0.1437	0.0393	3.3E-04
PC O-18:0;0/20:4;0	45-50y	-0.0135	0.0179	4.5E-01
PC O-18:0;0/20:4;0	51-55y	0.0240	0.0245	3.3E-01
PC O-18:0;0/20:4;0	56-60y	0.0097	0.0248	7.0E-01
PC O-18:0;0/20:4;0	61-66y	-0.0048	0.0200	8.1E-01
PC O-18:1;0/16:0;0	45-50y	-0.0377	0.0143	8.6E-03
PC O-18:1;0/16:0;0	51-55y	-0.0507	0.0212	1.8E-02
PC O-18:1;0/16:0;0	56-60y	-0.0184	0.0178	3.0E-01
PC O-18:1;0/16:0;0	61-66y	-0.0308	0.0169	6.9E-02
PC O-18:1;0/18:2;0	45-50y	-0.0279	0.0188	1.4E-01
PC O-18:1;0/18:2;0	51-55y	-0.0464	0.0248	6.2E-02
PC O-18:1;0/18:2;0	56-60y	-0.0338	0.0250	1.8E-01
PC O-18:1;0/18:2;0	61-66y	-0.0272	0.0228	2.3E-01
PC O-18:1;0/20:3;0	45-50y	0.0143	0.0241	5.5E-01
PC O-18:1;0/20:3;0	51-55y	-0.0344	0.0314	2.7E-01
PC O-18:1;0/20:3;0	56-60y	-0.0097	0.0283	7.3E-01
PC O-18:1;0/20:3;0	61-66y	-0.0635	0.0293	3.2E-02
PC O-18:1;0/20:4;0	45-50y	0.0279	0.0141	4.8E-02
PC O-18:1;0/20:4;0	51-55y	0.0073	0.0197	7.1E-01
PC O-18:1;0/20:4;0	56-60y	0.0167	0.0177	3.5E-01
PC O-18:1;0/20:4;0	61-66y	-0.0060	0.0167	7.2E-01
PC O-18:2;0/16:0;0	45-50y	-0.0296	0.0167	7.7E-02
PC O-18:2;0/16:0;0	51-55y	-0.0255	0.0228	2.7E-01
PC O-18:2;0/16:0;0	56-60y	-0.0144	0.0210	4.9E-01
PC O-18:2;0/16:0;0	61-66y	-0.0341	0.0187	6.9E-02
PC O-18:2;0/18:1;0	45-50y	-0.0635	0.0256	1.4E-02
PC O-18:2;0/18:1;0	51-55y	-0.1040	0.0330	1.9E-03
PC O-18:2;0/18:1;0	56-60y	-0.0726	0.0310	2.0E-02
PC O-18:2;0/18:1;0	61-66y	-0.1188	0.0311	1.7E-04

PC O-18:2;0/18:2;0	45-50y	-0.0268	0.0255	2.9E-01
PC O-18:2;0/18:2;0	51-55y	-0.0464	0.0340	1.7E-01
PC O-18:2;0/18:2;0	56-60y	-0.0310	0.0317	3.3E-01
PC O-18:2;0/18:2;0	61-66y	-0.0541	0.0337	1.1E-01
PE 16:0;0_18:2;0	45-50y	-0.0092	0.0322	7.8E-01
PE 16:0;0_18:2;0	51-55y	-0.0487	0.0488	3.2E-01
PE 16:0;0_18:2;0	56-60y	-0.0561	0.0429	1.9E-01
PE 16:0;0_18:2;0	61-66y	-0.0537	0.0361	1.4E-01
PE 16:0;0_20:4;0	45-50y	-0.0265	0.0287	3.6E-01
PE 16:0;0_20:4;0	51-55y	-0.0046	0.0415	9.1E-01
PE 16:0;0_20:4;0	56-60y	-0.0431	0.0417	3.0E-01
PE 16:0;0_20:4;0	61-66y	-0.0628	0.0305	4.1E-02
PE 18:0;0_18:2;0	45-50y	0.0177	0.0278	5.2E-01
PE 18:0;0_18:2;0	51-55y	-0.0185	0.0410	6.5E-01
PE 18:0;0_18:2;0	56-60y	-0.0227	0.0369	5.4E-01
PE 18:0;0_18:2;0	61-66y	-0.0384	0.0309	2.2E-01
PE 18:0;0_20:4;0	45-50y	-0.0160	0.0258	5.3E-01
PE 18:0;0_20:4;0	51-55y	-0.0144	0.0349	6.8E-01
PE 18:0;0_20:4;0	56-60y	-0.0163	0.0317	6.1E-01
PE 18:0;0_20:4;0	61-66y	-0.0544	0.0256	3.4E-02
PE 18:1;0_18:1;0	45-50y	0.0723	0.0403	7.4E-02
PE 18:1;0_18:1;0	51-55y	0.0343	0.0583	5.6E-01
PE 18:1;0_18:1;0	56-60y	0.0588	0.0511	2.5E-01
PE 18:1;0_18:1;0	61-66y	0.0294	0.0534	5.8E-01
PE O-16:1;0/18:2;0	45-50y	0.0371	0.0223	9.8E-02
PE O-16:1;0/18:2;0	51-55y	0.0055	0.0302	8.5E-01
PE O-16:1;0/18:2;0	56-60y	0.0203	0.0295	4.9E-01
PE O-16:1;0/18:2;0	61-66y	-0.0163	0.0274	5.5E-01
PE O-16:1;0/20:4;0	45-50y	0.0815	0.0240	7.8E-04
PE O-16:1;0/20:4;0	51-55y	0.0814	0.0302	7.6E-03
PE O-16:1;0/20:4;0	56-60y	0.0361	0.0307	2.4E-01
PE O-16:1;0/20:4;0	61-66y	0.0062	0.0261	8.1E-01
PE O-18:1;0/18:2;0	45-50y	0.0219	0.0231	3.4E-01
PE O-18:1;0/18:2;0	51-55y	-0.0039	0.0326	9.1E-01
PE O-18:1;0/18:2;0	56-60y	0.0132	0.0315	6.8E-01
PE O-18:1;0/18:2;0	61-66y	-0.0190	0.0285	5.1E-01
PE O-18:2;0/18:1;0	45-50y	0.0270	0.0279	3.3E-01
PE O-18:2;0/18:1;0	51-55y	-0.0402	0.0375	2.9E-01
PE O-18:2;0/18:1;0	56-60y	-0.0127	0.0384	7.4E-01
PE O-18:2;0/18:1;0	61-66y	-0.0392	0.0384	3.1E-01
PE O-18:2;0/18:2;0	45-50y	0.0548	0.0219	1.3E-02
PE O-18:2;0/18:2;0	51-55y	0.0206	0.0274	4.5E-01
PE O-18:2;0/18:2;0	56-60y	-0.0122	0.0276	6.6E-01
PE O-18:2;0/18:2;0	61-66y	-0.0460	0.0261	8.0E-02
PE O-18:2;0/20:4;0	45-50y	0.0493	0.0202	1.6E-02
PE O-18:2;0/20:4;0	51-55y	0.0225	0.0286	4.3E-01
PE O-18:2;0/20:4;0	56-60y	-0.0168	0.0264	5.3E-01
PE O-18:2;0/20:4;0	61-66y	-0.0157	0.0228	4.9E-01
PI 16:0;0_18:1;0	45-50y	0.0208	0.0273	4.5E-01
PI 16:0;0_18:1;0	51-55y	0.0574	0.0367	1.2E-01
PI 16:0;0_18:1;0	56-60y	0.0571	0.0340	9.5E-02

PI 16:0;0_18:1;0	61-66y	-0.0543	0.0320	9.1E-02
PI 16:0;0_18:2;0	45-50y	0.0081	0.0209	7.0E-01
PI 16:0;0_18:2;0	51-55y	-0.0437	0.0300	1.5E-01
PI 16:0;0_18:2;0	56-60y	-0.0451	0.0265	9.1E-02
PI 16:0;0_18:2;0	61-66y	-0.0788	0.0237	1.0E-03
PI 16:0;0_20:4;0	45-50y	0.0211	0.0215	3.3E-01
PI 16:0;0_20:4;0	51-55y	0.0152	0.0302	6.2E-01
PI 16:0;0_20:4;0	56-60y	-0.0131	0.0269	6.3E-01
PI 16:0;0_20:4;0	61-66y	-0.0731	0.0254	4.4E-03
PI 18:0;0_18:1;0	45-50y	0.0042	0.0201	8.3E-01
PI 18:0;0_18:1;0	51-55y	0.0090	0.0265	7.3E-01
PI 18:0;0_18:1;0	56-60y	0.0121	0.0267	6.5E-01
PI 18:0;0_18:1;0	61-66y	-0.0631	0.0226	5.7E-03
PI 18:0;0_18:2;0	45-50y	-0.0209	0.0187	2.6E-01
PI 18:0;0_18:2;0	51-55y	-0.0266	0.0271	3.3E-01
PI 18:0;0_18:2;0	56-60y	-0.0531	0.0239	2.7E-02
PI 18:0;0_18:2;0	61-66y	-0.0641	0.0213	2.9E-03
PI 18:0;0_20:3;0	45-50y	0.0204	0.0212	3.4E-01
PI 18:0;0_20:3;0	51-55y	-0.0239	0.0274	3.9E-01
PI 18:0;0_20:3;0	56-60y	-0.0336	0.0256	1.9E-01
PI 18:0;0_20:3;0	61-66y	-0.0980	0.0211	5.8E-06
PI 18:0;0_20:4;0	45-50y	0.0156	0.0160	3.3E-01
PI 18:0;0_20:4;0	51-55y	0.0099	0.0208	6.3E-01
PI 18:0;0_20:4;0	56-60y	-0.0062	0.0191	7.5E-01
PI 18:0;0_20:4;0	61-66y	-0.0851	0.0168	8.8E-07
PI 18:1;0_18:1;0	45-50y	0.0055	0.0231	8.1E-01
PI 18:1;0_18:1;0	51-55y	-0.0422	0.0342	2.2E-01
PI 18:1;0_18:1;0	56-60y	-0.0178	0.0316	5.7E-01
PI 18:1;0_18:1;0	61-66y	-0.0801	0.0298	7.7E-03
PI 18:1;0_18:2;0	45-50y	-0.0231	0.0200	2.5E-01
PI 18:1;0_18:2;0	51-55y	-0.0278	0.0321	3.9E-01
PI 18:1;0_18:2;0	56-60y	-0.0275	0.0275	3.2E-01
PI 18:1;0_18:2;0	61-66y	-0.0393	0.0232	9.2E-02
SM 32:1;2	45-50y	-0.0475	0.0152	1.9E-03
SM 32:1;2	51-55y	-0.0595	0.0188	1.8E-03
SM 32:1;2	56-60y	-0.0495	0.0173	4.7E-03
SM 32:1;2	61-66y	-0.0915	0.0162	4.7E-08
SM 34:0;2	45-50y	-0.0570	0.0179	1.6E-03
SM 34:0;2	51-55y	-0.0431	0.0232	6.4E-02
SM 34:0;2	56-60y	-0.0095	0.0220	6.7E-01
SM 34:0;2	61-66y	-0.0287	0.0211	1.8E-01
SM 34:1;2	45-50y	-0.0299	0.0123	1.6E-02
SM 34:1;2	51-55y	-0.0228	0.0165	1.7E-01
SM 34:1;2	56-60y	-0.0254	0.0149	9.0E-02
SM 34:1;2	61-66y	-0.0557	0.0133	4.2E-05
SM 34:2;2	45-50y	-0.0705	0.0126	5.2E-08
SM 34:2;2	51-55y	-0.0775	0.0168	7.7E-06
SM 34:2;2	56-60y	-0.0680	0.0143	3.6E-06
SM 34:2;2	61-66y	-0.0999	0.0140	1.3E-11
SM 36:1;2	45-50y	-0.0472	0.0138	7.3E-04
SM 36:1;2	51-55y	-0.0472	0.0175	7.7E-03

SM 36:1;2	56-60y	-0.0503	0.0161	2.0E-03
SM 36:1;2	61-66y	-0.0633	0.0163	1.3E-04
SM 36:2;2	45-50y	-0.0828	0.0149	6.5E-08
SM 36:2;2	51-55y	-0.0906	0.0186	2.3E-06
SM 36:2;2	56-60y	-0.0769	0.0163	4.3E-06
SM 36:2;2	61-66y	-0.1059	0.0173	4.4E-09
SM 38:1;2	45-50y	-0.0257	0.0132	5.4E-02
SM 38:1;2	51-55y	-0.0466	0.0171	6.9E-03
SM 38:1;2	56-60y	-0.0497	0.0159	2.0E-03
SM 38:1;2	61-66y	-0.0582	0.0158	2.8E-04
SM 38:2;2	45-50y	-0.0866	0.0140	1.9E-09
SM 38:2;2	51-55y	-0.0898	0.0173	5.7E-07
SM 38:2;2	56-60y	-0.0788	0.0158	1.2E-06
SM 38:2;2	61-66y	-0.1046	0.0166	1.6E-09
SM 40:1;2	45-50y	-0.0084	0.0138	5.4E-01
SM 40:1;2	51-55y	-0.0160	0.0184	3.9E-01
SM 40:1;2	56-60y	-0.0327	0.0167	5.1E-02
SM 40:1;2	61-66y	-0.0478	0.0167	4.5E-03
SM 40:2;2	45-50y	-0.0568	0.0129	1.6E-05
SM 40:2;2	51-55y	-0.0656	0.0165	9.7E-05
SM 40:2;2	56-60y	-0.0789	0.0144	1.2E-07
SM 40:2;2	61-66y	-0.0901	0.0152	1.1E-08
SM 42:2;2	45-50y	-0.0057	0.0125	6.5E-01
SM 42:2;2	51-55y	-0.0133	0.0170	4.4E-01
SM 42:2;2	56-60y	-0.0244	0.0161	1.3E-01
SM 42:2;2	61-66y	-0.0344	0.0154	2.7E-02
TAG 46:1;0	45-50y	0.1907	0.0583	1.2E-03
TAG 46:1;0	51-55y	0.0743	0.0779	3.4E-01
TAG 46:1;0	56-60y	0.1153	0.0721	1.1E-01
TAG 46:1;0	61-66y	-0.0159	0.0563	7.8E-01
TAG 46:2;0	45-50y	0.1309	0.0531	1.4E-02
TAG 46:2;0	51-55y	-0.0189	0.0719	7.9E-01
TAG 46:2;0	56-60y	0.0585	0.0643	3.6E-01
TAG 46:2;0	61-66y	-0.0728	0.0568	2.0E-01
TAG 48:0;0	45-50y	0.2130	0.0543	1.1E-04
TAG 48:0;0	51-55y	0.1212	0.0704	8.7E-02
TAG 48:0;0	56-60y	0.1681	0.0645	9.8E-03
TAG 48:0;0	61-66y	0.0609	0.0529	2.5E-01
TAG 48:1;0	45-50y	0.1933	0.0483	8.1E-05
TAG 48:1;0	51-55y	0.0763	0.0644	2.4E-01
TAG 48:1;0	56-60y	0.1449	0.0572	1.2E-02
TAG 48:1;0	61-66y	-0.0027	0.0493	9.6E-01
TAG 48:2;0	45-50y	0.1334	0.0459	3.9E-03
TAG 48:2;0	51-55y	0.0447	0.0596	4.5E-01
TAG 48:2;0	56-60y	0.0953	0.0551	8.5E-02
TAG 48:2;0	61-66y	-0.0473	0.0456	3.0E-01
TAG 48:3;0	45-50y	0.1342	0.0420	1.6E-03
TAG 48:3;0	51-55y	0.0218	0.0587	7.1E-01
TAG 48:3;0	56-60y	0.0935	0.0512	6.9E-02
TAG 48:3;0	61-66y	-0.0593	0.0428	1.7E-01
TAG 49:1;0	45-50y	0.1660	0.0435	1.7E-04

TAG 49:1;0	51-55y	0.1032	0.0584	7.9E-02
TAG 49:1;0	56-60y	0.1185	0.0523	2.4E-02
TAG 49:1;0	61-66y	-0.0390	0.0460	4.0E-01
TAG 49:2;0	45-50y	0.1196	0.0388	2.3E-03
TAG 49:2;0	51-55y	0.0713	0.0528	1.8E-01
TAG 49:2;0	56-60y	0.0707	0.0478	1.4E-01
TAG 49:2;0	61-66y	-0.0312	0.0399	4.4E-01
TAG 50:1;0	45-50y	0.2026	0.0409	1.3E-06
TAG 50:1;0	51-55y	0.1269	0.0573	2.8E-02
TAG 50:1;0	56-60y	0.1361	0.0482	5.2E-03
TAG 50:1;0	61-66y	0.0645	0.0419	1.3E-01
TAG 50:2;0	45-50y	0.1559	0.0370	3.4E-05
TAG 50:2;0	51-55y	0.0637	0.0492	2.0E-01
TAG 50:2;0	56-60y	0.0800	0.0437	6.9E-02
TAG 50:2;0	61-66y	-0.0032	0.0374	9.3E-01
TAG 50:3;0	45-50y	0.1332	0.0343	1.3E-04
TAG 50:3;0	51-55y	0.0657	0.0459	1.5E-01
TAG 50:3;0	56-60y	0.0605	0.0409	1.4E-01
TAG 50:3;0	61-66y	-0.0023	0.0359	9.5E-01
TAG 50:4;0	45-50y	0.1276	0.0354	3.7E-04
TAG 50:4;0	51-55y	0.0587	0.0492	2.3E-01
TAG 50:4;0	56-60y	0.0693	0.0433	1.1E-01
TAG 50:4;0	61-66y	-0.0278	0.0366	4.5E-01
TAG 51:1;0	45-50y	0.1700	0.0418	6.4E-05
TAG 51:1;0	51-55y	0.0438	0.0582	4.5E-01
TAG 51:1;0	56-60y	0.0949	0.0489	5.4E-02
TAG 51:1;0	61-66y	0.0138	0.0425	7.5E-01
TAG 51:2;0	45-50y	0.1551	0.0335	5.4E-06
TAG 51:2;0	51-55y	0.0685	0.0461	1.4E-01
TAG 51:2;0	56-60y	0.0980	0.0405	1.7E-02
TAG 51:2;0	61-66y	-0.0174	0.0354	6.2E-01
TAG 51:3;0	45-50y	0.1133	0.0314	3.6E-04
TAG 51:3;0	51-55y	0.0446	0.0418	2.9E-01
TAG 51:3;0	56-60y	0.0698	0.0361	5.4E-02
TAG 51:3;0	61-66y	-0.0041	0.0334	9.0E-01
TAG 52:2;0	45-50y	0.1726	0.0330	3.3E-07
TAG 52:2;0	51-55y	0.0877	0.0437	4.6E-02
TAG 52:2;0	56-60y	0.1028	0.0368	5.7E-03
TAG 52:2;0	61-66y	0.0418	0.0343	2.2E-01
TAG 52:3;0	45-50y	0.1425	0.0287	1.2E-06
TAG 52:3;0	51-55y	0.0845	0.0398	3.5E-02
TAG 52:3;0	56-60y	0.0800	0.0338	1.9E-02
TAG 52:3;0	61-66y	0.0502	0.0314	1.1E-01
TAG 52:4;0	45-50y	0.1346	0.0298	8.9E-06
TAG 52:4;0	51-55y	0.0890	0.0431	4.0E-02
TAG 52:4;0	56-60y	0.0724	0.0356	4.3E-02
TAG 52:4;0	61-66y	0.0465	0.0334	1.6E-01
TAG 52:5;0	45-50y	0.1365	0.0316	2.1E-05
TAG 52:5;0	51-55y	0.0942	0.0464	4.4E-02
TAG 52:5;0	56-60y	0.0721	0.0379	5.9E-02
TAG 52:5;0	61-66y	0.0290	0.0330	3.8E-01

TAG 52:6;0	45-50y	0.1306	0.0374	5.7E-04
TAG 52:6;0	51-55y	0.0504	0.0509	3.2E-01
TAG 52:6;0	56-60y	0.0687	0.0485	1.6E-01
TAG 52:6;0	61-66y	-0.0394	0.0360	2.8E-01
TAG 53:2;0	45-50y	0.1458	0.0323	9.8E-06
TAG 53:2;0	51-55y	0.0923	0.0442	3.8E-02
TAG 53:2;0	56-60y	0.1161	0.0396	3.8E-03
TAG 53:2;0	61-66y	0.0333	0.0354	3.5E-01
TAG 53:3;0	45-50y	0.1370	0.0284	2.3E-06
TAG 53:3;0	51-55y	0.0894	0.0409	3.0E-02
TAG 53:3;0	56-60y	0.0819	0.0356	2.2E-02
TAG 53:3;0	61-66y	0.0235	0.0310	4.5E-01
TAG 53:4;0	45-50y	0.1389	0.0294	3.9E-06
TAG 53:4;0	51-55y	0.0413	0.0396	3.0E-01
TAG 53:4;0	56-60y	0.0796	0.0364	3.0E-02
TAG 53:4;0	61-66y	0.0155	0.0296	6.0E-01
TAG 54:3;0	45-50y	0.1741	0.0303	2.4E-08
TAG 54:3;0	51-55y	0.0885	0.0402	2.9E-02
TAG 54:3;0	56-60y	0.0956	0.0371	1.1E-02
TAG 54:3;0	61-66y	0.0480	0.0299	1.1E-01
TAG 54:4;0	45-50y	0.1661	0.0300	6.6E-08
TAG 54:4;0	51-55y	0.0982	0.0411	1.8E-02
TAG 54:4;0	56-60y	0.0836	0.0366	2.3E-02
TAG 54:4;0	61-66y	0.0686	0.0313	3.0E-02
TAG 54:5;0	45-50y	0.1645	0.0303	1.2E-07
TAG 54:5;0	51-55y	0.1090	0.0422	1.1E-02
TAG 54:5;0	56-60y	0.0863	0.0361	1.8E-02
TAG 54:5;0	61-66y	0.0564	0.0312	7.2E-02
TAG 54:6;0	45-50y	0.1553	0.0317	1.6E-06
TAG 54:6;0	51-55y	0.1214	0.0437	6.1E-03
TAG 54:6;0	56-60y	0.0905	0.0363	1.4E-02
TAG 54:6;0	61-66y	0.0515	0.0297	8.4E-02
TAG 54:7;0	45-50y	0.1261	0.0355	4.5E-04
TAG 54:7;0	51-55y	0.0790	0.0523	1.3E-01
TAG 54:7;0	56-60y	0.0530	0.0406	1.9E-01
TAG 54:7;0	61-66y	0.0366	0.0319	2.5E-01
TAG 56:3;0	45-50y	0.1863	0.0330	4.0E-08
TAG 56:3;0	51-55y	0.1163	0.0450	1.1E-02
TAG 56:3;0	56-60y	0.1155	0.0402	4.5E-03
TAG 56:3;0	61-66y	0.0828	0.0330	1.3E-02
TAG 56:4;0	45-50y	0.1528	0.0319	2.8E-06
TAG 56:4;0	51-55y	0.1115	0.0415	8.0E-03
TAG 56:4;0	56-60y	0.0804	0.0373	3.2E-02
TAG 56:4;0	61-66y	0.0725	0.0298	1.6E-02
TAG 56:5;0	45-50y	0.1212	0.0283	2.5E-05
TAG 56:5;0	51-55y	0.0983	0.0369	8.3E-03
TAG 56:5;0	56-60y	0.0767	0.0330	2.1E-02
TAG 56:5;0	61-66y	0.0358	0.0271	1.9E-01
TAG 56:6;0	45-50y	0.1354	0.0266	6.4E-07
TAG 56:6;0	51-55y	0.1288	0.0383	9.4E-04
TAG 56:6;0	56-60y	0.0971	0.0324	3.0E-03

TAG 56:6;0	61-66y	0.0174	0.0265	5.1E-01
TAG 56:7;0	45-50y	0.1221	0.0334	3.1E-04
TAG 56:7;0	51-55y	0.1218	0.0439	6.1E-03
TAG 56:7;0	56-60y	0.0856	0.0382	2.6E-02
TAG 56:7;0	61-66y	0.0644	0.0307	3.7E-02
TAG 56:8;0	45-50y	0.0696	0.0366	5.8E-02
TAG 56:8;0	51-55y	0.1013	0.0476	3.5E-02
TAG 56:8;0	56-60y	0.0585	0.0413	1.6E-01
TAG 56:8;0	61-66y	0.0500	0.0371	1.8E-01
TAG 58:7;0	45-50y	0.0959	0.0384	1.3E-02
TAG 58:7;0	51-55y	0.1050	0.0526	4.8E-02
TAG 58:7;0	56-60y	0.1351	0.0443	2.7E-03
TAG 58:7;0	61-66y	0.0167	0.0400	6.8E-01
TAG 58:8;0	45-50y	0.0822	0.0343	1.7E-02
TAG 58:8;0	51-55y	0.0898	0.0455	5.0E-02
TAG 58:8;0	56-60y	0.0436	0.0403	2.8E-01
TAG 58:8;0	61-66y	0.0805	0.0334	1.7E-02

The effect estimates and P values were obtained using linear regression models including log10 lipid levels as outcomes, sex as independent variable with age, BMI, diabetes, cardiac disease, lipid lowering medication and familial combined hyperlipidemia status as covariates. Positive beta means higher level in men while negative beta means lower level in men compared with women.

Table S10: Association of menopause status with plasma lipid levels.

Lipid Species	Beta (Age adjusted)	SE (Age adjusted)	P (Age adjusted)	Beta (Age unadjusted)	SE (Age unadjusted)	P (Age unadjusted)
CE 14:0;0	-0.0007	0.0113	9.5E-01	0.0246	0.0092	7.7E-03
CE 15:0;0	0.0100	0.0125	4.2E-01	0.0263	0.0103	1.1E-02
CE 16:0;0	0.0012	0.0065	8.6E-01	0.0204	0.0054	1.5E-04
CE 16:1;0	0.0184	0.0127	1.5E-01	0.0525	0.0104	5.4E-07
CE 17:0;0	0.0148	0.0094	1.2E-01	0.0287	0.0077	2.0E-04
CE 17:1;0	0.0144	0.0097	1.4E-01	0.0386	0.0079	1.3E-06
CE 18:0;0	0.0301	0.0110	6.5E-03	0.0442	0.0090	9.3E-07
CE 18:1;0	0.0091	0.0067	1.8E-01	0.0288	0.0055	2.2E-07
CE 18:2;0	0.0080	0.0068	2.4E-01	0.0222	0.0056	7.3E-05
CE 18:3;0	0.0152	0.0103	1.4E-01	0.0427	0.0084	4.8E-07
CE 20:2;0	0.0012	0.0105	9.1E-01	0.0197	0.0085	2.0E-02
CE 20:3;0	0.0132	0.0100	1.9E-01	0.0367	0.0082	8.3E-06
CE 20:4;0	-0.0070	0.0098	4.8E-01	0.0203	0.0080	1.1E-02
CE 20:5;0	-0.0177	0.0167	2.9E-01	0.0413	0.0138	2.8E-03
CE 22:6;0	-0.0164	0.0121	1.8E-01	0.0221	0.0100	2.6E-02
Cer 40:1;2	0.0297	0.0093	1.5E-03	0.0500	0.0076	8.1E-11
Cer 40:2;2	0.0341	0.0114	2.8E-03	0.0536	0.0093	1.3E-08
Cer 42:1;2	0.0259	0.0086	2.6E-03	0.0478	0.0070	1.6E-11
Cer 42:2;2	0.0278	0.0076	2.5E-04	0.0472	0.0062	6.6E-14
Chol	0.0102	0.0076	1.8E-01	0.0289	0.0062	3.8E-06
DAG 16:0;0_18:1;0	0.0190	0.0191	3.2E-01	0.0343	0.0157	2.9E-02
DAG 16:0;0_18:2;0	0.0162	0.0193	4.0E-01	0.0210	0.0159	1.9E-01
DAG 16:1;0_18:1;0	0.0283	0.0199	1.5E-01	0.0539	0.0164	1.1E-03
DAG 18:1;0_18:1;0	0.0143	0.0145	3.3E-01	0.0298	0.0118	1.2E-02
DAG 18:1;0_18:2;0	-0.0059	0.0145	6.8E-01	0.0069	0.0118	5.6E-01
DAG 18:1;0_18:3;0	0.0106	0.0097	2.8E-01	0.0190	0.0079	1.6E-02
LPC 16:0;0	0.0143	0.0077	6.3E-02	0.0141	0.0063	2.4E-02
LPC 18:0;0	0.0293	0.0090	1.2E-03	0.0349	0.0073	2.2E-06
LPC 18:1;0	0.0244	0.0090	7.0E-03	0.0247	0.0073	7.8E-04
LPC 18:2;0	0.0343	0.0105	1.1E-03	0.0225	0.0086	8.6E-03
LPC 20:4;0	0.0127	0.0100	2.0E-01	0.0122	0.0081	1.3E-01
LPE 18:0;0	0.0159	0.0099	1.1E-01	0.0223	0.0081	5.8E-03
LPE 18:1;0	0.0210	0.0131	1.1E-01	0.0250	0.0107	1.9E-02
LPE 18:2;0	0.0301	0.0128	1.9E-02	0.0297	0.0105	4.7E-03
PC 14:0;0_16:0;0	-0.0047	0.0143	7.4E-01	0.0028	0.0115	8.1E-01
PC 14:0;0_18:1;0	0.0172	0.0143	2.3E-01	0.0270	0.0116	2.1E-02
PC 14:0;0_18:2;0	0.0196	0.0118	9.8E-02	0.0240	0.0096	1.2E-02
PC 15:0;0_18:1;0	-0.0023	0.0103	8.2E-01	0.0154	0.0083	6.5E-02
PC 15:0;0_18:2;0	-0.0041	0.0078	6.0E-01	0.0036	0.0064	5.7E-01
PC 16:0;0_16:0;0	-0.0078	0.0064	2.3E-01	0.0022	0.0053	6.7E-01
PC 16:0;0_16:1;0	0.0233	0.0157	1.4E-01	0.0406	0.0128	1.5E-03
PC 16:0;0_17:1;0	0.0038	0.0114	7.4E-01	0.0144	0.0093	1.2E-01
PC 16:0;0_18:0;0	0.0107	0.0063	9.0E-02	0.0121	0.0051	1.9E-02
PC 16:0;0_18:1;0	0.0043	0.0086	6.2E-01	0.0166	0.0070	1.8E-02
PC 16:0;0_18:2;0	0.0065	0.0065	3.2E-01	0.0099	0.0052	5.8E-02
PC 16:0;0_18:3;0	0.0092	0.0117	4.3E-01	0.0220	0.0095	2.1E-02
PC 16:0;0_20:1;0	-0.0137	0.0115	2.3E-01	-0.0017	0.0093	8.6E-01

PC 16:0;0_20:2;0	-0.0112	0.0082	1.7E-01	0.0001	0.0066	9.9E-01
PC 16:0;0_20:3;0	0.0014	0.0102	8.9E-01	0.0123	0.0083	1.4E-01
PC 16:0;0_20:4;0	-0.0170	0.0098	8.5E-02	-0.0007	0.0080	9.3E-01
PC 16:0;0_20:5;0	-0.0281	0.0165	8.8E-02	0.0170	0.0135	2.1E-01
PC 16:0;0_22:4;0	-0.0047	0.0088	5.9E-01	-0.0006	0.0072	9.3E-01
PC 16:0;0_22:5;0	-0.0036	0.0089	6.9E-01	0.0176	0.0073	1.5E-02
PC 16:0;0_22:6;0	-0.0285	0.0115	1.3E-02	-0.0011	0.0094	9.1E-01
PC 16:1;0_18:0;0	0.0400	0.0172	2.1E-02	0.0633	0.0140	6.5E-06
PC 16:1;0_18:1;0	0.0218	0.0105	3.9E-02	0.0337	0.0086	8.9E-05
PC 16:1;0_18:2;0	0.0260	0.0101	1.0E-02	0.0324	0.0082	8.7E-05
PC 16:1;0_20:4;0	0.0043	0.0135	7.5E-01	0.0242	0.0111	2.9E-02
PC 17:0;0_18:1;0	0.0084	0.0089	3.4E-01	0.0226	0.0072	1.8E-03
PC 17:0;0_18:2;0	0.0080	0.0077	3.0E-01	0.0158	0.0063	1.2E-02
PC 17:0;0_20:4;0	-0.0101	0.0090	2.6E-01	0.0049	0.0073	5.0E-01
PC 18:0;0_18:1;0	0.0205	0.0102	4.5E-02	0.0391	0.0083	3.0E-06
PC 18:0;0_18:2;0	0.0200	0.0074	7.0E-03	0.0286	0.0060	2.4E-06
PC 18:0;0_18:3;0	0.0173	0.0135	2.0E-01	0.0371	0.0109	6.8E-04
PC 18:0;0_20:2;0	-0.0037	0.0111	7.4E-01	-0.0004	0.0091	9.7E-01
PC 18:0;0_20:3;0	0.0209	0.0106	4.9E-02	0.0364	0.0086	2.7E-05
PC 18:0;0_20:4;0	-0.0030	0.0090	7.4E-01	0.0182	0.0074	1.4E-02
PC 18:0;0_20:5;0	-0.0059	0.0169	7.2E-01	0.0413	0.0138	2.9E-03
PC 18:0;0_22:5;0	0.0127	0.0099	2.0E-01	0.0280	0.0081	5.7E-04
PC 18:0;0_22:6;0	-0.0037	0.0109	7.3E-01	0.0229	0.0089	1.0E-02
PC 18:1;0_18:1;0	0.0144	0.0098	1.4E-01	0.0266	0.0080	8.5E-04
PC 18:1;0_18:2;0	0.0159	0.0084	5.8E-02	0.0210	0.0068	2.1E-03
PC 18:1;0_18:3;0	0.0102	0.0148	4.9E-01	0.0227	0.0121	6.1E-02
PC 18:1;0_20:2;0	0.0032	0.0134	8.1E-01	0.0117	0.0109	2.9E-01
PC 18:1;0_20:3;0	0.0118	0.0094	2.1E-01	0.0249	0.0077	1.2E-03
PC 18:1;0_20:4;0	-0.0021	0.0082	8.0E-01	0.0181	0.0067	7.4E-03
PC 18:2;0_18:2;0	0.0285	0.0107	8.0E-03	0.0280	0.0087	1.3E-03
PC 18:2;0_20:1;0	-0.0058	0.0129	6.5E-01	-0.0004	0.0104	9.7E-01
PC 18:2;0_20:3;0	0.0402	0.0130	2.1E-03	0.0451	0.0106	2.2E-05
PC 18:2;0_20:4;0	0.0165	0.0088	6.0E-02	0.0226	0.0071	1.6E-03
PC O-16:0;0/16:0;0	-0.0043	0.0116	7.1E-01	-0.0104	0.0095	2.8E-01
PC O-16:0;0/16:1;0	0.0124	0.0151	4.1E-01	0.0169	0.0124	1.7E-01
PC O-16:0;0/18:1;0	-0.0114	0.0075	1.3E-01	-0.0129	0.0061	3.4E-02
PC O-16:0;0/18:2;0	-0.0041	0.0093	6.6E-01	-0.0032	0.0076	6.7E-01
PC O-16:0;0/20:3;0	-0.0069	0.0110	5.3E-01	-0.0071	0.0089	4.3E-01
PC O-16:0;0/20:4;0	-0.0109	0.0103	2.9E-01	-0.0045	0.0084	5.9E-01
PC O-16:0;0/22:5;0	-0.0150	0.0138	2.8E-01	0.0004	0.0112	9.7E-01
PC O-16:1;0/16:0;0	0.0049	0.0089	5.9E-01	0.0073	0.0073	3.2E-01
PC O-16:1;0/18:0;0	-0.0003	0.0123	9.8E-01	-0.0027	0.0100	7.9E-01
PC O-16:1;0/18:1;0	-0.0067	0.0112	5.5E-01	0.0056	0.0091	5.4E-01
PC O-16:1;0/18:2;0	-0.0027	0.0096	7.8E-01	-0.0040	0.0078	6.1E-01
PC O-16:1;0/20:3;0	-0.0067	0.0136	6.2E-01	-0.0031	0.0110	7.8E-01
PC O-16:1;0/20:4;0	-0.0211	0.0116	6.9E-02	0.0000	0.0094	1.0E+00
PC O-16:2;0/18:0;0	-0.0210	0.0145	1.5E-01	-0.0190	0.0119	1.1E-01
PC O-17:0;0/15:0;0	-0.0044	0.0187	8.1E-01	-0.0043	0.0152	7.8E-01
PC O-17:0;0/17:1;0	-0.0130	0.0139	3.5E-01	-0.0066	0.0113	5.6E-01
PC O-18:0;0/14:0;0	-0.0158	0.0101	1.2E-01	-0.0175	0.0083	3.4E-02
PC O-18:0;0/16:1;0	-0.0187	0.0182	3.0E-01	-0.0004	0.0148	9.8E-01

PC O-18:0;0/20:4;0	-0.0022	0.0090	8.1E-01	-0.0054	0.0074	4.7E-01
PC O-18:1;0/16:0;0	-0.0104	0.0081	2.0E-01	-0.0108	0.0066	1.0E-01
PC O-18:1;0/18:2;0	-0.0021	0.0104	8.4E-01	-0.0095	0.0085	2.6E-01
PC O-18:1;0/20:3;0	0.0008	0.0127	9.5E-01	-0.0113	0.0103	2.8E-01
PC O-18:1;0/20:4;0	-0.0023	0.0082	7.8E-01	0.0004	0.0067	9.5E-01
PC O-18:2;0/16:0;0	-0.0042	0.0086	6.2E-01	-0.0057	0.0070	4.1E-01
PC O-18:2;0/18:1;0	0.0038	0.0145	7.9E-01	0.0097	0.0118	4.1E-01
PC O-18:2;0/18:2;0	0.0130	0.0107	2.3E-01	0.0103	0.0087	2.4E-01
PC O-18:2;0/20:4;0	-0.0311	0.0169	6.5E-02	-0.0064	0.0136	6.4E-01
PE 16:0;0_18:2;0	0.0148	0.0169	3.8E-01	0.0001	0.0138	9.9E-01
PE 16:0;0_20:4;0	-0.0075	0.0136	5.8E-01	0.0017	0.0111	8.8E-01
PE 18:0;0_18:2;0	0.0157	0.0147	2.9E-01	0.0181	0.0120	1.3E-01
PE 18:0;0_20:4;0	0.0021	0.0117	8.6E-01	0.0128	0.0095	1.8E-01
PE 18:1;0_18:1;0	0.0064	0.0182	7.3E-01	0.0070	0.0149	6.4E-01
PE O-16:1;0/18:2;0	0.0260	0.0129	4.4E-02	0.0287	0.0106	6.7E-03
PE O-16:1;0/20:4;0	0.0152	0.0121	2.1E-01	0.0252	0.0098	1.1E-02
PE O-16:1;0/22:5;0	-0.0178	0.0161	2.7E-01	0.0225	0.0133	9.3E-02
PE O-18:1;0/18:2;0	0.0311	0.0124	1.3E-02	0.0329	0.0102	1.3E-03
PE O-18:1;0/20:4;0	0.0175	0.0113	1.2E-01	0.0222	0.0092	1.6E-02
PE O-18:2;0/18:1;0	0.0195	0.0139	1.6E-01	0.0307	0.0113	6.9E-03
PE O-18:2;0/18:2;0	0.0147	0.0126	2.5E-01	0.0147	0.0102	1.5E-01
PE O-18:2;0/20:4;0	0.0093	0.0108	3.9E-01	0.0133	0.0087	1.3E-01
PI 16:0;0_18:1;0	-0.0077	0.0177	6.6E-01	0.0152	0.0144	2.9E-01
PI 16:0;0_18:2;0	0.0245	0.0125	5.0E-02	0.0347	0.0102	6.9E-04
PI 16:0;0_20:4;0	0.0158	0.0110	1.5E-01	0.0221	0.0090	1.4E-02
PI 18:0;0_18:1;0	-0.0059	0.0104	5.7E-01	0.0081	0.0084	3.4E-01
PI 18:0;0_18:2;0	0.0001	0.0097	9.9E-01	0.0084	0.0079	2.8E-01
PI 18:0;0_20:3;0	0.0198	0.0114	8.3E-02	0.0303	0.0093	1.1E-03
PI 18:0;0_20:4;0	0.0159	0.0073	3.1E-02	0.0333	0.0060	3.7E-08
PI 18:1;0_18:1;0	0.0268	0.0130	3.9E-02	0.0332	0.0105	1.6E-03
PI 18:1;0_18:2;0	-0.0069	0.0122	5.7E-01	0.0102	0.0100	3.1E-01
PI 18:1;0_20:4;0	0.0172	0.0115	1.3E-01	0.0386	0.0094	4.5E-05
SM 32:1;2	0.0171	0.0068	1.1E-02	0.0367	0.0056	5.6E-11
SM 34:0;2	-0.0246	0.0092	7.9E-03	-0.0149	0.0075	4.6E-02
SM 34:1;2	0.0097	0.0053	6.6E-02	0.0246	0.0043	1.8E-08
SM 34:2;2	0.0184	0.0056	9.8E-04	0.0406	0.0046	4.7E-18
SM 36:1;2	0.0140	0.0067	3.5E-02	0.0314	0.0055	1.1E-08
SM 36:2;2	0.0205	0.0072	4.6E-03	0.0424	0.0059	1.5E-12
SM 38:1;2	0.0160	0.0063	1.2E-02	0.0353	0.0052	2.1E-11
SM 38:2;2	0.0240	0.0070	6.0E-04	0.0419	0.0057	4.9E-13
SM 40:1;2	0.0162	0.0063	1.1E-02	0.0355	0.0052	1.4E-11
SM 40:2;2	0.0182	0.0057	1.4E-03	0.0398	0.0047	6.9E-17
SM 42:2;2	0.0120	0.0058	4.0E-02	0.0278	0.0048	7.4E-09
TAG 46:1;0	0.0508	0.0297	8.8E-02	0.0635	0.0244	9.5E-03
TAG 46:2;0	0.0518	0.0270	5.5E-02	0.0568	0.0224	1.1E-02
TAG 48:0;0	0.0270	0.0317	4.0E-01	0.0301	0.0258	2.4E-01
TAG 48:1;0	0.0230	0.0252	3.6E-01	0.0433	0.0205	3.5E-02
TAG 48:2;0	0.0341	0.0231	1.4E-01	0.0523	0.0187	5.2E-03
TAG 48:3;0	0.0229	0.0212	2.8E-01	0.0426	0.0172	1.3E-02
TAG 49:1;0	0.0499	0.0223	2.6E-02	0.0590	0.0183	1.3E-03
TAG 49:2;0	0.0235	0.0200	2.4E-01	0.0377	0.0165	2.2E-02

TAG 50:1;0	0.0145	0.0211	4.9E-01	0.0291	0.0172	9.0E-02
TAG 50:2;0	0.0183	0.0186	3.3E-01	0.0380	0.0152	1.2E-02
TAG 50:3;0	0.0192	0.0171	2.6E-01	0.0337	0.0139	1.5E-02
TAG 50:4;0	0.0249	0.0177	1.6E-01	0.0378	0.0144	8.6E-03
TAG 50:5;0	0.0276	0.0195	1.6E-01	0.0409	0.0159	1.0E-02
TAG 51:1;0	0.0563	0.0214	8.6E-03	0.0581	0.0176	9.8E-04
TAG 51:2;0	0.0175	0.0163	2.9E-01	0.0377	0.0133	4.6E-03
TAG 51:3;0	0.0078	0.0151	6.1E-01	0.0241	0.0123	5.1E-02
TAG 51:4;0	0.0087	0.0162	5.9E-01	0.0245	0.0132	6.4E-02
TAG 52:2;0	0.0114	0.0155	4.6E-01	0.0280	0.0126	2.7E-02
TAG 52:3;0	0.0051	0.0144	7.2E-01	0.0144	0.0117	2.2E-01
TAG 52:4;0	0.0094	0.0154	5.4E-01	0.0155	0.0125	2.2E-01
TAG 52:5;0	0.0151	0.0164	3.6E-01	0.0238	0.0133	7.5E-02
TAG 52:6;0	0.0203	0.0182	2.6E-01	0.0392	0.0147	7.7E-03
TAG 53:2;0	0.0187	0.0142	1.9E-01	0.0398	0.0116	6.0E-04
TAG 53:3;0	0.0182	0.0136	1.8E-01	0.0352	0.0111	1.6E-03
TAG 53:4;0	0.0132	0.0144	3.6E-01	0.0231	0.0116	4.7E-02
TAG 54:3;0	0.0305	0.0145	3.6E-02	0.0449	0.0118	1.6E-04
TAG 54:4;0	0.0246	0.0146	9.1E-02	0.0318	0.0119	7.4E-03
TAG 54:5;0	0.0165	0.0151	2.7E-01	0.0244	0.0123	4.7E-02
TAG 54:6;0	0.0018	0.0171	9.2E-01	0.0167	0.0139	2.3E-01
TAG 54:7;0	-0.0209	0.0189	2.7E-01	0.0066	0.0154	6.7E-01
TAG 56:3;0	0.0132	0.0150	3.8E-01	0.0294	0.0121	1.5E-02
TAG 56:4;0	0.0248	0.0153	1.1E-01	0.0374	0.0124	2.7E-03
TAG 56:5;0	0.0157	0.0199	4.3E-01	0.0358	0.0160	2.6E-02
TAG 56:6;0	0.0039	0.0138	7.8E-01	0.0307	0.0113	6.6E-03
TAG 56:7;0	-0.0116	0.0155	4.5E-01	0.0176	0.0127	1.6E-01
TAG 56:8;0	-0.0167	0.0179	3.5E-01	0.0135	0.0145	3.6E-01
TAG 58:7;0	0.0019	0.0175	9.1E-01	0.0331	0.0140	1.8E-02
TAG 58:8;0	-0.0118	0.0177	5.0E-01	0.0212	0.0143	1.4E-01

Beta coefficients and P values were obtained from linear regression models adjusted for age, BMI, diabetes, cardiac disease, lipid lowering medication, hormone replacement therapy and smoking habits. Positive beta values mean higher levels in menopausal women and negative beta values mean lower levels in menopausal women compared with premenopausal women. Results for models without adjustment for age are also presented.

Table S11: Age and menopause interactions in the levels of lipid species.

Lipid species	Beta	SE	Interaction P
CE 14:0;0	-0.0049	0.0035	1.7E-01
CE 15:0;0	-0.0032	0.0039	4.2E-01
CE 16:0;0	-0.0063	0.0020	1.8E-03
CE 16:1;0	-0.0068	0.0039	8.6E-02
CE 17:0;0	-0.0045	0.0029	1.2E-01
CE 17:1;0	-0.0043	0.0030	1.5E-01
CE 18:0;0	-0.0038	0.0034	2.7E-01
CE 18:1;0	-0.0038	0.0021	7.2E-02
CE 18:2;0	-0.0053	0.0021	1.2E-02
CE 18:3;0	-0.0082	0.0032	9.9E-03
CE 20:2;0	-0.0056	0.0033	8.7E-02
CE 20:3;0	-0.0073	0.0031	1.8E-02
CE 20:4;0	-0.0089	0.0030	3.2E-03
CE 20:5;0	-0.0074	0.0052	1.6E-01
CE 22:6;0	-0.0041	0.0037	2.7E-01
Cer 40:1;2	-0.0043	0.0029	1.4E-01
Cer 40:2;2	-0.0048	0.0035	1.7E-01
Cer 42:1;2	-0.0069	0.0027	9.2E-03
Cer 42:2;2	-0.0060	0.0023	1.1E-02
Chol	-0.0055	0.0024	1.9E-02
DAG 16:0;0_18:1;0	-0.0038	0.0060	5.3E-01
DAG 16:0;0_18:2;0	-0.0064	0.0060	2.9E-01
DAG 16:1;0_18:1;0	-0.0048	0.0062	4.4E-01
DAG 18:1;0_18:1;0	-0.0004	0.0045	9.3E-01
DAG 18:1;0_18:2;0	0.0006	0.0045	8.9E-01
DAG 18:1;0_18:3;0	-0.0031	0.0030	3.1E-01
LPC 16:0;0	0.0034	0.0024	1.6E-01
LPC 18:0;0	0.0014	0.0028	6.2E-01
LPC 18:1;0	0.0044	0.0028	1.2E-01
LPC 18:2;0	0.0030	0.0033	3.6E-01
LPC 20:4;0	0.0000	0.0031	9.9E-01
LPE 18:0;0	-0.0030	0.0031	3.4E-01
LPE 18:1;0	0.0009	0.0040	8.3E-01
LPE 18:2;0	0.0029	0.0040	4.7E-01
PC 14:0;0_16:0;0	-0.0009	0.0044	8.4E-01
PC 14:0;0_18:1;0	-0.0043	0.0044	3.3E-01
PC 14:0;0_18:2;0	-0.0018	0.0037	6.2E-01
PC 15:0;0_18:1;0	-0.0017	0.0032	5.9E-01
PC 15:0;0_18:2;0	-0.0042	0.0024	8.3E-02
PC 16:0;0_16:0;0	-0.0052	0.0020	8.7E-03
PC 16:0;0_16:1;0	0.0017	0.0049	7.2E-01
PC 16:0;0_17:1;0	0.0003	0.0035	9.3E-01
PC 16:0;0_18:0;0	-0.0033	0.0020	9.2E-02
PC 16:0;0_18:1;0	-0.0016	0.0027	5.4E-01
PC 16:0;0_18:2;0	-0.0029	0.0020	1.5E-01
PC 16:0;0_18:3;0	-0.0058	0.0036	1.1E-01
PC 16:0;0_20:1;0	0.0020	0.0036	5.7E-01
PC 16:0;0_20:2;0	-0.0029	0.0025	2.6E-01

PC 16:0;0_20:3;0	-0.0054	0.0031	8.7E-02
PC 16:0;0_20:4;0	-0.0062	0.0030	4.1E-02
PC 16:0;0_20:5;0	-0.0068	0.0051	1.8E-01
PC 16:0;0_22:4;0	-0.0050	0.0027	6.5E-02
PC 16:0;0_22:5;0	-0.0033	0.0028	2.3E-01
PC 16:0;0_22:6;0	-0.0011	0.0036	7.5E-01
PC 16:1;0_18:0;0	-0.0047	0.0053	3.8E-01
PC 16:1;0_18:1;0	-0.0013	0.0033	7.0E-01
PC 16:1;0_18:2;0	-0.0002	0.0031	9.5E-01
PC 16:1;0_20:4;0	-0.0019	0.0042	6.6E-01
PC 17:0;0_18:1;0	0.0017	0.0027	5.3E-01
PC 17:0;0_18:2;0	-0.0056	0.0024	2.0E-02
PC 17:0;0_20:4;0	-0.0043	0.0028	1.2E-01
PC 18:0;0_18:1;0	-0.0022	0.0032	4.9E-01
PC 18:0;0_18:2;0	-0.0036	0.0023	1.2E-01
PC 18:0;0_18:3;0	-0.0080	0.0041	5.3E-02
PC 18:0;0_20:2;0	-0.0032	0.0035	3.6E-01
PC 18:0;0_20:3;0	-0.0065	0.0033	4.8E-02
PC 18:0;0_20:4;0	-0.0065	0.0028	2.1E-02
PC 18:0;0_20:5;0	-0.0074	0.0052	1.6E-01
PC 18:0;0_22:5;0	-0.0052	0.0031	8.9E-02
PC 18:0;0_22:6;0	-0.0043	0.0034	2.1E-01
PC 18:1;0_18:1;0	-0.0025	0.0030	4.1E-01
PC 18:1;0_18:2;0	-0.0006	0.0026	8.3E-01
PC 18:1;0_18:3;0	-0.0058	0.0046	2.1E-01
PC 18:1;0_20:2;0	0.0000	0.0041	1.0E+00
PC 18:1;0_20:3;0	-0.0051	0.0029	7.7E-02
PC 18:1;0_20:4;0	-0.0042	0.0025	9.9E-02
PC 18:2;0_18:2;0	-0.0014	0.0033	6.8E-01
PC 18:2;0_20:1;0	-0.0045	0.0040	2.6E-01
PC 18:2;0_20:3;0	-0.0066	0.0040	1.0E-01
PC 18:2;0_20:4;0	-0.0032	0.0027	2.3E-01
PC O-16:0;0/16:0;0	-0.0030	0.0036	4.1E-01
PC O-16:0;0/16:1;0	0.0041	0.0047	3.8E-01
PC O-16:0;0/18:1;0	0.0014	0.0023	5.6E-01
PC O-16:0;0/18:2;0	0.0024	0.0029	4.0E-01
PC O-16:0;0/20:3;0	-0.0003	0.0034	9.4E-01
PC O-16:0;0/20:4;0	-0.0027	0.0032	3.9E-01
PC O-16:0;0/22:5;0	-0.0064	0.0042	1.3E-01
PC O-16:1;0/16:0;0	-0.0002	0.0028	9.5E-01
PC O-16:1;0/18:0;0	0.0028	0.0038	4.6E-01
PC O-16:1;0/18:1;0	0.0016	0.0035	6.4E-01
PC O-16:1;0/18:2;0	-0.0007	0.0030	8.2E-01
PC O-16:1;0/20:3;0	0.0051	0.0042	2.2E-01
PC O-16:1;0/20:4;0	-0.0075	0.0036	3.9E-02
PC O-16:2;0/18:0;0	0.0045	0.0045	3.2E-01
PC O-17:0;0/15:0;0	-0.0018	0.0058	7.6E-01
PC O-17:0;0/17:1;0	0.0037	0.0043	3.9E-01
PC O-18:0;0/14:0;0	0.0000	0.0032	9.9E-01
PC O-18:0;0/16:1;0	-0.0023	0.0057	6.8E-01
PC O-18:0;0/20:4;0	-0.0004	0.0028	8.9E-01

PC O-18:1;0/16:0;0	0.0018	0.0025	4.8E-01
PC O-18:1;0/18:2;0	0.0013	0.0032	7.0E-01
PC O-18:1;0/20:3;0	0.0035	0.0039	3.8E-01
PC O-18:1;0/20:4;0	-0.0024	0.0025	3.5E-01
PC O-18:2;0/16:0;0	0.0008	0.0027	7.6E-01
PC O-18:2;0/18:1;0	0.0014	0.0045	7.6E-01
PC O-18:2;0/18:2;0	-0.0011	0.0033	7.5E-01
PC O-18:2;0/20:4;0	-0.0056	0.0053	2.9E-01
PE 16:0;0_18:2;0	-0.0036	0.0053	4.9E-01
PE 16:0;0_20:4;0	-0.0092	0.0042	3.0E-02
PE 18:0;0_18:2;0	-0.0017	0.0046	7.1E-01
PE 18:0;0_20:4;0	-0.0046	0.0036	2.1E-01
PE 18:1;0_18:1;0	0.0011	0.0057	8.5E-01
PE O-16:1;0/18:2;0	-0.0040	0.0040	3.2E-01
PE O-16:1;0/20:4;0	-0.0038	0.0037	3.1E-01
PE O-16:1;0/22:5;0	-0.0062	0.0051	2.2E-01
PE O-18:1;0/18:2;0	-0.0013	0.0039	7.4E-01
PE O-18:1;0/20:4;0	-0.0030	0.0035	3.9E-01
PE O-18:2;0/18:1;0	-0.0015	0.0043	7.3E-01
PE O-18:2;0/18:2;0	0.0043	0.0039	2.7E-01
PE O-18:2;0/20:4;0	-0.0045	0.0033	1.8E-01
PI 16:0;0_18:1;0	-0.0081	0.0055	1.4E-01
PI 16:0;0_18:2;0	-0.0049	0.0039	2.0E-01
PI 16:0;0_20:4;0	-0.0002	0.0035	9.5E-01
PI 18:0;0_18:1;0	-0.0048	0.0032	1.3E-01
PI 18:0;0_18:2;0	-0.0067	0.0030	2.6E-02
PI 18:0;0_20:3;0	-0.0034	0.0036	3.4E-01
PI 18:0;0_20:4;0	-0.0046	0.0023	4.5E-02
PI 18:1;0_18:1;0	-0.0049	0.0040	2.2E-01
PI 18:1;0_18:2;0	-0.0026	0.0038	4.9E-01
PI 18:1;0_20:4;0	-0.0044	0.0036	2.2E-01
SM 32:1;2	-0.0004	0.0021	8.6E-01
SM 34:0;2	-0.0046	0.0029	1.1E-01
SM 34:1;2	-0.0039	0.0016	1.8E-02
SM 34:2;2	-0.0032	0.0017	6.0E-02
SM 36:1;2	-0.0047	0.0021	2.4E-02
SM 36:2;2	-0.0053	0.0022	1.9E-02
SM 38:1;2	-0.0019	0.0020	3.2E-01
SM 38:2;2	-0.0031	0.0022	1.6E-01
SM 40:1;2	-0.0041	0.0020	3.6E-02
SM 40:2;2	-0.0023	0.0018	1.9E-01
SM 42:2;2	-0.0060	0.0018	9.0E-04
TAG 46:1;0	-0.0026	0.0093	7.8E-01
TAG 46:2;0	-0.0032	0.0083	7.0E-01
TAG 48:0;0	-0.0001	0.0098	9.9E-01
TAG 48:1;0	-0.0019	0.0078	8.0E-01
TAG 48:2;0	0.0016	0.0072	8.2E-01
TAG 48:3;0	0.0017	0.0066	7.9E-01
TAG 49:1;0	-0.0048	0.0070	4.9E-01
TAG 49:2;0	-0.0066	0.0062	2.9E-01
TAG 50:1;0	-0.0065	0.0065	3.2E-01

TAG 50:2;0	-0.0029	0.0058	6.2E-01
TAG 50:3;0	-0.0013	0.0053	8.1E-01
TAG 50:4;0	-0.0021	0.0055	7.1E-01
TAG 50:5;0	-0.0047	0.0061	4.4E-01
TAG 51:1;0	-0.0066	0.0066	3.2E-01
TAG 51:2;0	-0.0019	0.0051	7.1E-01
TAG 51:3;0	-0.0028	0.0047	5.6E-01
TAG 51:4;0	-0.0079	0.0051	1.2E-01
TAG 52:2;0	-0.0027	0.0048	5.8E-01
TAG 52:3;0	-0.0022	0.0045	6.2E-01
TAG 52:4;0	-0.0028	0.0048	5.6E-01
TAG 52:5;0	-0.0044	0.0051	3.9E-01
TAG 52:6;0	-0.0035	0.0056	5.4E-01
TAG 53:2;0	-0.0014	0.0044	7.4E-01
TAG 53:3;0	-0.0039	0.0042	3.6E-01
TAG 53:4;0	-0.0048	0.0045	2.8E-01
TAG 54:3;0	-0.0011	0.0045	8.0E-01
TAG 54:4;0	-0.0009	0.0045	8.4E-01
TAG 54:5;0	-0.0024	0.0047	6.1E-01
TAG 54:6;0	-0.0060	0.0053	2.6E-01
TAG 54:7;0	-0.0048	0.0058	4.1E-01
TAG 56:3;0	-0.0052	0.0047	2.7E-01
TAG 56:4;0	-0.0064	0.0048	1.8E-01
TAG 56:5;0	-0.0048	0.0061	4.3E-01
TAG 56:6;0	-0.0066	0.0043	1.2E-01
TAG 56:7;0	-0.0064	0.0048	1.8E-01
TAG 56:8;0	-0.0058	0.0056	3.0E-01
TAG 58:7;0	-0.0048	0.0054	3.7E-01
TAG 58:8;0	-0.0034	0.0055	5.4E-01

Interaction between age and menopause was determined using age, menopause, BMI, diabetes, cardiac disease, lipid lowering medication, hormone replacement therapy and smoking habits as covariates and interaction term for age and menopause.

Table S12: Association of sex with lipidome stratified by menopause status among women.

Lipid Species	Men vs Premenopausal women			Men vs Postmenopausal women			P_het
	Beta	SE	P	Beta	SE	P	
CE 14:0;0	0.0084	0.0090	3.5E-01	-0.0013	0.0091	8.9E-01	4.5E-01
CE 15:0;0	-0.0040	0.0108	7.1E-01	-0.0131	0.0109	2.3E-01	5.5E-01
CE 16:0;0	0.0324	0.0053	9.0E-10	0.0152	0.0053	4.4E-03	2.2E-02
CE 16:1;0	0.0103	0.0107	3.4E-01	-0.0280	0.0109	1.0E-02	1.2E-02
CE 17:0;0	0.0354	0.0078	5.6E-06	0.0063	0.0079	4.3E-01	8.6E-03
CE 17:1;0	0.0288	0.0077	1.8E-04	-0.0016	0.0077	8.3E-01	5.1E-03
CE 18:0;0	0.0853	0.0084	1.7E-23	0.0409	0.0087	3.1E-06	2.5E-04
CE 18:1;0	0.0327	0.0054	1.7E-09	0.0061	0.0055	2.7E-01	5.9E-04
CE 18:2;0	0.0061	0.0053	2.4E-01	-0.0122	0.0054	2.4E-02	1.5E-02
CE 18:3;0	0.0264	0.0080	9.9E-04	-0.0081	0.0081	3.2E-01	2.5E-03
CE 20:2;0	0.0138	0.0082	9.2E-02	-0.0127	0.0083	1.2E-01	2.3E-02
CE 20:3;0	0.0539	0.0075	1.1E-12	0.0138	0.0074	6.2E-02	1.4E-04
CE 20:4;0	0.0495	0.0077	1.4E-10	0.0292	0.0077	1.6E-04	6.1E-02
CE 20:5;0	0.0292	0.0131	2.5E-02	0.0167	0.0131	2.0E-01	5.0E-01
CE 22:6;0	-0.0069	0.0100	4.9E-01	-0.0149	0.0100	1.3E-01	5.7E-01
Cer 40:1;2	0.0509	0.0072	2.5E-12	0.0107	0.0071	1.3E-01	7.4E-05
Cer 40:2;2	0.0351	0.0089	8.2E-05	-0.0162	0.0085	5.6E-02	2.9E-05
Cer 42:1;2	0.0606	0.0067	5.1E-19	0.0212	0.0066	1.3E-03	2.9E-05
Cer 42:2;2	0.0579	0.0062	1.4E-20	0.0140	0.0061	2.3E-02	4.3E-07
Chol	0.0256	0.0060	2.0E-05	0.0015	0.0060	8.1E-01	4.5E-03
DAG 16:0;0_18:1;0	0.1420	0.0161	3.4E-18	0.1240	0.0161	2.4E-14	4.3E-01
DAG 16:0;0_18:2;0	0.1296	0.0158	4.4E-16	0.1168	0.0159	3.2E-13	5.7E-01
DAG 16:1;0_18:1;0	0.0801	0.0167	1.8E-06	0.0426	0.0167	1.1E-02	1.1E-01
DAG 18:1;0_18:1;0	0.1136	0.0131	7.8E-18	0.0881	0.0131	2.7E-11	1.7E-01
DAG 18:1;0_18:2;0	0.0890	0.0128	5.6E-12	0.0813	0.0128	2.8E-10	6.7E-01
DAG 18:1;0_18:3;0	0.0542	0.0079	8.3E-12	0.0363	0.0080	5.8E-06	1.1E-01
LPC 16:0;0	0.0457	0.0059	1.7E-14	0.0326	0.0058	1.6E-08	1.1E-01
LPC 18:0;0	0.0413	0.0066	6.3E-10	0.0056	0.0064	3.8E-01	1.1E-04
LPC 18:1;0	0.0605	0.0070	1.6E-17	0.0281	0.0068	3.5E-05	9.3E-04
LPC 18:2;0	0.0909	0.0081	3.5E-28	0.0524	0.0079	3.7E-11	6.8E-04
LPC 20:4;0	0.1074	0.0081	1.5E-38	0.0841	0.0078	2.4E-26	3.7E-02
LPE 18:0;0	0.0289	0.0077	1.8E-04	0.0108	0.0075	1.5E-01	9.2E-02
LPE 18:1;0	0.0608	0.0104	6.1E-09	0.0299	0.0106	4.8E-03	3.7E-02
LPE 18:2;0	0.0468	0.0101	4.1E-06	0.0150	0.0099	1.3E-01	2.5E-02
PC 14:0;0_16:0;0	-0.0289	0.0113	1.1E-02	-0.0128	0.0114	2.6E-01	3.2E-01
PC 14:0;0_18:1;0	-0.0389	0.0108	3.1E-04	-0.0498	0.0107	3.8E-06	4.7E-01
PC 14:0;0_18:2;0	-0.0266	0.0090	3.1E-03	-0.0334	0.0092	3.1E-04	6.0E-01
PC 15:0;0_18:1;0	-0.0093	0.0079	2.4E-01	-0.0196	0.0081	1.5E-02	3.6E-01
PC 15:0;0_18:2;0	-0.0395	0.0061	9.0E-11	-0.0350	0.0061	1.2E-08	6.0E-01
PC 16:0;0_16:0;0	-0.0086	0.0052	1.0E-01	-0.0034	0.0051	5.1E-01	4.8E-01
PC 16:0;0_16:1;0	-0.0119	0.0129	3.6E-01	-0.0375	0.0128	3.3E-03	1.6E-01
PC 16:0;0_17:1;0	0.0060	0.0097	5.3E-01	0.0087	0.0097	3.7E-01	8.4E-01
PC 16:0;0_18:0;0	-0.0135	0.0049	5.9E-03	-0.0251	0.0049	3.8E-07	9.5E-02
PC 16:0;0_18:1;0	-0.0009	0.0069	9.0E-01	-0.0095	0.0070	1.8E-01	3.8E-01
PC 16:0;0_18:2;0	-0.0233	0.0053	1.3E-05	-0.0277	0.0053	1.8E-07	5.6E-01

PC 16:0;0_18:3;0	-0.0289	0.0093	1.8E-03	-0.0356	0.0093	1.3E-04	6.1E-01
PC 16:0;0_20:1;0	0.0166	0.0089	6.1E-02	0.0181	0.0088	3.9E-02	9.1E-01
PC 16:0;0_20:2;0	-0.0062	0.0063	3.3E-01	0.0021	0.0062	7.4E-01	3.5E-01
PC 16:0;0_20:3;0	0.0112	0.0078	1.5E-01	0.0001	0.0078	9.9E-01	3.1E-01
PC 16:0;0_20:4;0	0.0205	0.0076	7.3E-03	0.0263	0.0077	6.6E-04	5.9E-01
PC 16:0;0_20:5;0	0.0032	0.0126	8.0E-01	0.0225	0.0126	7.6E-02	2.8E-01
PC 16:0;0_22:4;0	0.0321	0.0070	5.4E-06	0.0294	0.0072	4.5E-05	7.9E-01
PC 16:0;0_22:5;0	0.0195	0.0070	5.5E-03	0.0078	0.0070	2.6E-01	2.4E-01
PC 16:0;0_22:6;0	-0.0487	0.0094	2.6E-07	-0.0267	0.0093	4.2E-03	9.5E-02
PC 16:1;0_18:0;0	-0.0126	0.0143	3.8E-01	-0.0597	0.0142	2.8E-05	2.0E-02
PC 16:1;0_18:1;0	-0.0478	0.0084	1.7E-08	-0.0763	0.0085	9.2E-19	1.7E-02
PC 16:1;0_18:2;0	-0.0673	0.0081	1.6E-16	-0.0981	0.0080	1.2E-33	6.8E-03
PC 16:1;0_20:4;0	-0.0147	0.0110	1.8E-01	-0.0347	0.0110	1.6E-03	2.0E-01
PC 17:0;0_18:1;0	-0.0194	0.0067	3.7E-03	-0.0353	0.0068	2.0E-07	9.4E-02
PC 17:0;0_18:2;0	-0.0297	0.0061	1.1E-06	-0.0414	0.0061	1.6E-11	1.8E-01
PC 17:0;0_20:4;0	-0.0019	0.0069	7.9E-01	-0.0062	0.0072	3.9E-01	6.7E-01
PC 18:0;0_18:1;0	0.0010	0.0081	9.0E-01	-0.0305	0.0082	1.9E-04	6.0E-03
PC 18:0;0_18:2;0	-0.0188	0.0060	1.9E-03	-0.0443	0.0060	2.1E-13	2.7E-03
PC 18:0;0_18:3;0	-0.0253	0.0106	1.7E-02	-0.0480	0.0106	6.1E-06	1.3E-01
PC 18:0;0_20:2;0	-0.0217	0.0093	1.9E-02	-0.0157	0.0092	8.7E-02	6.4E-01
PC 18:0;0_20:3;0	0.0225	0.0082	6.3E-03	-0.0155	0.0083	6.1E-02	1.1E-03
PC 18:0;0_20:4;0	0.0227	0.0072	1.6E-03	0.0052	0.0073	4.8E-01	8.6E-02
PC 18:0;0_20:5;0	0.0087	0.0129	5.0E-01	-0.0044	0.0131	7.4E-01	4.8E-01
PC 18:0;0_22:5;0	0.0425	0.0078	6.7E-08	0.0139	0.0080	8.2E-02	1.1E-02
PC 18:0;0_22:6;0	-0.0205	0.0091	2.4E-02	-0.0266	0.0091	3.7E-03	6.4E-01
PC 18:1;0_18:1;0	-0.0310	0.0076	4.3E-05	-0.0544	0.0076	1.1E-12	2.9E-02
PC 18:1;0_18:2;0	-0.0373	0.0067	3.1E-08	-0.0606	0.0067	5.2E-19	1.4E-02
PC 18:1;0_18:3;0	-0.0323	0.0115	5.0E-03	-0.0466	0.0113	3.6E-05	3.7E-01
PC 18:1;0_20:2;0	-0.0245	0.0107	2.2E-02	-0.0359	0.0106	7.1E-04	4.5E-01
PC 18:1;0_20:3;0	-0.0020	0.0075	7.9E-01	-0.0324	0.0075	1.9E-05	4.3E-03
PC 18:1;0_20:4;0	0.0040	0.0067	5.4E-01	-0.0119	0.0067	7.7E-02	9.2E-02
PC 18:2;0_18:2;0	-0.0088	0.0087	3.1E-01	-0.0447	0.0085	1.9E-07	3.2E-03
PC 18:2;0_20:1;0	-0.0321	0.0106	2.6E-03	-0.0363	0.0106	6.0E-04	7.8E-01
PC 18:2;0_20:3;0	0.0205	0.0100	4.2E-02	-0.0299	0.0100	2.8E-03	3.8E-04
PC 18:2;0_20:4;0	0.0143	0.0073	4.9E-02	-0.0142	0.0072	4.9E-02	5.3E-03
PC O-16:0;0/16:0;0	0.0080	0.0088	3.6E-01	0.0189	0.0090	3.5E-02	3.8E-01
PC O-16:0;0/16:1;0	-0.0757	0.0128	4.0E-09	-0.0829	0.0131	3.2E-10	6.9E-01
PC O-16:0;0/18:1;0	-0.0425	0.0058	3.5E-13	-0.0298	0.0059	4.4E-07	1.2E-01
PC O-16:0;0/18:2;0	-0.0211	0.0076	5.4E-03	-0.0162	0.0076	3.4E-02	6.5E-01
PC O-16:0;0/20:3;0	0.0111	0.0093	2.3E-01	0.0205	0.0092	2.7E-02	4.8E-01
PC O-16:0;0/20:4;0	0.0578	0.0081	1.8E-12	0.0686	0.0082	7.5E-17	3.5E-01
PC O-16:0;0/22:5;0	0.0090	0.0108	4.1E-01	0.0235	0.0108	3.0E-02	3.4E-01
PC O-16:1;0/16:0;0	0.0011	0.0069	8.8E-01	-0.0007	0.0071	9.2E-01	8.6E-01
PC O-16:1;0/18:0;0	-0.0026	0.0096	7.8E-01	-0.0076	0.0099	4.4E-01	7.2E-01
PC O-16:1;0/18:1;0	-0.0658	0.0088	9.7E-14	-0.0660	0.0088	9.9E-14	9.9E-01
PC O-16:1;0/18:2;0	-0.0446	0.0074	2.5E-09	-0.0423	0.0076	2.5E-08	8.3E-01
PC O-16:1;0/20:3;0	0.0330	0.0109	2.5E-03	0.0318	0.0107	3.0E-03	9.4E-01
PC O-16:1;0/20:4;0	0.0386	0.0087	1.1E-05	0.0445	0.0089	7.4E-07	6.4E-01
PC O-16:2;0/18:0;0	0.0171	0.0108	1.1E-01	0.0347	0.0112	2.0E-03	2.6E-01
PC O-17:0;0/15:0;0	-0.0533	0.0143	2.0E-04	-0.0415	0.0147	4.9E-03	5.6E-01

PC O-17:0;0/17:1;0	-0.0407	0.0102	7.4E-05	-0.0198	0.0108	6.8E-02	1.6E-01
PC O-18:0;0/14:0;0	-0.0243	0.0073	9.7E-04	-0.0032	0.0077	6.8E-01	4.8E-02
PC O-18:0;0/16:1;0	-0.1367	0.0147	4.6E-20	-0.1200	0.0142	5.6E-17	4.1E-01
PC O-18:0;0/20:4;0	0.0069	0.0070	3.2E-01	0.0169	0.0071	1.6E-02	3.1E-01
PC O-18:1;0/16:0;0	-0.0434	0.0063	5.8E-12	-0.0315	0.0064	7.8E-07	1.8E-01
PC O-18:1;0/18:2;0	-0.0473	0.0083	1.7E-08	-0.0401	0.0084	2.0E-06	5.4E-01
PC O-18:1;0/20:3;0	0.0058	0.0099	5.6E-01	0.0129	0.0100	2.0E-01	6.1E-01
PC O-18:1;0/20:4;0	0.0257	0.0065	8.2E-05	0.0230	0.0066	4.9E-04	7.7E-01
PC O-18:2;0/16:0;0	-0.0260	0.0066	9.5E-05	-0.0146	0.0068	3.2E-02	2.3E-01
PC O-18:2;0/18:1;0	-0.0700	0.0114	1.1E-09	-0.0810	0.0115	3.1E-12	5.0E-01
PC O-18:2;0/18:2;0	-0.0394	0.0089	9.4E-06	-0.0561	0.0090	5.7E-10	1.9E-01
PC O-18:2;0/20:4;0	-0.0042	0.0126	7.4E-01	0.0065	0.0131	6.2E-01	5.6E-01
PE 16:0;0_18:2;0	-0.0256	0.0139	6.6E-02	-0.0268	0.0136	5.0E-02	9.5E-01
PE 16:0;0_20:4;0	-0.0216	0.0110	4.9E-02	-0.0186	0.0110	9.1E-02	8.4E-01
PE 18:0;0_18:2;0	-0.0237	0.0120	4.9E-02	-0.0384	0.0119	1.3E-03	3.9E-01
PE 18:0;0_20:4;0	-0.0001	0.0097	9.9E-01	-0.0092	0.0097	3.4E-01	5.1E-01
PE 18:1;0_18:1;0	0.0128	0.0145	3.7E-01	0.0046	0.0145	7.5E-01	6.9E-01
PE O-16:1;0/18:2;0	0.0173	0.0100	8.4E-02	-0.0110	0.0103	2.9E-01	4.9E-02
PE O-16:1;0/20:4;0	0.0639	0.0093	7.9E-12	0.0424	0.0094	6.6E-06	1.0E-01
PE O-16:1;0/22:5;0	0.0340	0.0130	9.0E-03	0.0287	0.0129	2.6E-02	7.7E-01
PE O-18:1;0/18:2;0	-0.0002	0.0098	9.9E-01	-0.0270	0.0100	7.2E-03	5.6E-02
PE O-18:1;0/20:4;0	0.0450	0.0088	3.5E-07	0.0249	0.0088	5.0E-03	1.1E-01
PE O-18:2;0/18:1;0	-0.0021	0.0110	8.5E-01	-0.0310	0.0111	5.1E-03	6.4E-02
PE O-18:2;0/18:2;0	-0.0062	0.0099	5.3E-01	-0.0146	0.0099	1.4E-01	5.5E-01
PE O-18:2;0/20:4;0	0.0378	0.0084	6.7E-06	0.0280	0.0084	9.3E-04	4.1E-01
PI 16:0;0_18:1;0	0.0439	0.0142	2.0E-03	0.0307	0.0141	2.9E-02	5.1E-01
PI 16:0;0_18:2;0	-0.0144	0.0099	1.5E-01	-0.0314	0.0097	1.3E-03	2.2E-01
PI 16:0;0_20:4;0	0.0304	0.0087	4.9E-04	0.0070	0.0085	4.1E-01	5.4E-02
PI 18:0;0_18:1;0	-0.0093	0.0084	2.7E-01	-0.0098	0.0083	2.4E-01	9.6E-01
PI 18:0;0_18:2;0	-0.0373	0.0077	1.3E-06	-0.0391	0.0075	2.0E-07	8.7E-01
PI 18:0;0_20:3;0	0.0104	0.0088	2.4E-01	-0.0267	0.0089	2.7E-03	3.0E-03
PI 18:0;0_20:4;0	0.0303	0.0060	4.8E-07	0.0019	0.0060	7.6E-01	8.4E-04
PI 18:1;0_18:1;0	-0.0070	0.0104	5.0E-01	-0.0445	0.0103	1.6E-05	1.0E-02
PI 18:1;0_18:2;0	-0.0397	0.0097	4.4E-05	-0.0465	0.0095	1.1E-06	6.2E-01
PI 18:1;0_20:4;0	0.0090	0.0094	3.4E-01	-0.0324	0.0094	5.4E-04	1.8E-03
SM 32:1;2	-0.0320	0.0057	1.8E-08	-0.0594	0.0058	3.6E-24	7.1E-04
SM 34:0;2	-0.0410	0.0075	4.5E-08	-0.0223	0.0076	3.4E-03	7.8E-02
SM 34:1;2	-0.0171	0.0044	1.1E-04	-0.0345	0.0044	1.1E-14	5.5E-03
SM 34:2;2	-0.0428	0.0046	2.3E-20	-0.0742	0.0046	2.2E-55	1.2E-06
SM 36:1;2	-0.0183	0.0054	7.1E-04	-0.0381	0.0055	4.5E-12	1.0E-02
SM 36:2;2	-0.0441	0.0057	2.0E-14	-0.0758	0.0057	3.0E-38	9.2E-05
SM 38:1;2	-0.0129	0.0051	1.1E-02	-0.0388	0.0052	1.4E-13	3.7E-04
SM 38:2;2	-0.0553	0.0057	6.0E-22	-0.0902	0.0058	9.5E-52	1.7E-05
SM 40:1;2	0.0125	0.0051	1.5E-02	-0.0158	0.0052	2.2E-03	1.0E-04
SM 40:2;2	-0.0317	0.0046	1.2E-11	-0.0654	0.0047	1.3E-41	3.7E-07
SM 42:2;2	0.0089	0.0049	7.1E-02	-0.0154	0.0049	1.7E-03	4.7E-04
TAG 46:1;0	0.1556	0.0238	8.0E-11	0.1070	0.0242	1.1E-05	1.5E-01
TAG 46:2;0	0.1241	0.0222	2.7E-08	0.0709	0.0221	1.4E-03	8.9E-02
TAG 48:0;0	0.1864	0.0255	4.6E-13	0.1828	0.0259	2.8E-12	9.2E-01
TAG 48:1;0	0.1636	0.0205	3.0E-15	0.1370	0.0212	1.3E-10	3.7E-01

TAG 48:2;0	0.1220	0.0187	8.6E-11	0.0770	0.0193	6.6E-05	9.4E-02
TAG 48:3;0	0.1051	0.0174	2.0E-09	0.0625	0.0176	4.0E-04	8.6E-02
TAG 49:1;0	0.1355	0.0187	7.0E-13	0.0991	0.0189	1.8E-07	1.7E-01
TAG 49:2;0	0.1000	0.0168	3.4E-09	0.0755	0.0169	8.6E-06	3.1E-01
TAG 50:1;0	0.1851	0.0177	5.3E-25	0.1628	0.0183	1.3E-18	3.8E-01
TAG 50:2;0	0.1256	0.0157	2.4E-15	0.0911	0.0163	2.8E-08	1.3E-01
TAG 50:3;0	0.1049	0.0144	5.7E-13	0.0700	0.0148	2.6E-06	9.2E-02
TAG 50:4;0	0.1086	0.0148	3.8E-13	0.0694	0.0152	5.4E-06	6.5E-02
TAG 50:5;0	0.1058	0.0161	7.5E-11	0.0627	0.0164	1.4E-04	6.1E-02
TAG 51:1;0	0.1523	0.0184	2.7E-16	0.1001	0.0187	1.1E-07	4.7E-02
TAG 51:2;0	0.1159	0.0142	5.2E-16	0.0833	0.0144	8.4E-09	1.1E-01
TAG 51:3;0	0.0989	0.0128	1.9E-14	0.0729	0.0130	2.2E-08	1.5E-01
TAG 51:4;0	0.0947	0.0137	6.9E-12	0.0710	0.0134	1.4E-07	2.2E-01
TAG 52:2;0	0.1426	0.0136	5.1E-25	0.1122	0.0139	1.3E-15	1.2E-01
TAG 52:3;0	0.1176	0.0127	5.9E-20	0.0952	0.0128	1.8E-13	2.1E-01
TAG 52:4;0	0.1151	0.0135	2.6E-17	0.0897	0.0135	4.0E-11	1.8E-01
TAG 52:5;0	0.1214	0.0140	9.8E-18	0.0869	0.0142	1.0E-09	8.4E-02
TAG 52:6;0	0.1344	0.0153	4.0E-18	0.0858	0.0155	3.2E-08	2.5E-02
TAG 53:2;0	0.1202	0.0127	9.8E-21	0.0790	0.0128	8.2E-10	2.2E-02
TAG 53:3;0	0.1070	0.0122	3.8E-18	0.0671	0.0122	4.6E-08	2.1E-02
TAG 53:4;0	0.1103	0.0123	6.2E-19	0.0790	0.0124	2.2E-10	7.3E-02
TAG 54:3;0	0.1406	0.0131	5.9E-26	0.0846	0.0133	2.7E-10	2.7E-03
TAG 54:4;0	0.1328	0.0130	9.9E-24	0.0856	0.0131	7.0E-11	1.1E-02
TAG 54:5;0	0.1371	0.0132	1.5E-24	0.0998	0.0133	8.9E-14	4.6E-02
TAG 54:6;0	0.1396	0.0146	4.3E-21	0.1149	0.0147	9.8E-15	2.3E-01
TAG 54:7;0	0.1199	0.0159	8.6E-14	0.1050	0.0161	9.8E-11	5.1E-01
TAG 56:3;0	0.1358	0.0141	2.3E-21	0.1006	0.0140	1.0E-12	7.6E-02
TAG 56:4;0	0.1522	0.0139	5.3E-27	0.0980	0.0137	1.5E-12	5.5E-03
TAG 56:5;0	0.1514	0.0155	9.9E-22	0.1031	0.0152	1.6E-11	2.6E-02
TAG 56:6;0	0.1533	0.0119	1.2E-36	0.1159	0.0121	2.8E-21	2.7E-02
TAG 56:7;0	0.1251	0.0133	2.0E-20	0.1161	0.0133	5.2E-18	6.3E-01
TAG 56:8;0	0.1039	0.0148	3.3E-12	0.0975	0.0149	7.3E-11	7.6E-01
TAG 58:7;0	0.1370	0.0144	6.5E-21	0.0986	0.0145	1.5E-11	6.0E-02
TAG 58:8;0	0.0810	0.0146	3.3E-08	0.0757	0.0144	1.8E-07	8.0E-01

Table S13: Genome-wide sex-heterogeneity in effect of genetic variants on plasma lipidome. All the variants with $P_{het} < 5.0 \times 10^{-8}$ are listed.

SNP	CHR	BP (hg38)	Lipid	Allele 1	Allele 2	Effect Allele	N (Men)	Beta (Men)	SE (Men)	P (Men)	N (Women)	Beta (Women)	SE (Women)	P (Women)	P_{het}
rs149525092	1	67248012	PC O-16:0;0/18:2;0	A	G	A	2585	-0.2968	0.0780	1.5E-04	4100	0.2868	0.0634	6.2E-06	6.4E-09
rs149525092	1	67248012	PC O-18:2;0/16:0;0	A	G	A	2585	-0.2607	0.0781	8.5E-04	4100	0.3072	0.0634	1.3E-06	1.6E-08
rs11675138	2	118118808	LPC 16:0;0	A	G	A	2592	-0.1648	0.0397	3.3E-05	4109	0.1235	0.0315	9.2E-05	1.3E-08
rs116116576	2	136824006	CE 18:2;0	T	A	T	2592	0.3399	0.0819	3.4E-05	4109	-0.2284	0.0614	2.0E-04	2.8E-08
rs6773315	3	57075067	TAG 52:6;0	C	T	C	2382	0.1859	0.0415	8.0E-06	3746	-0.1122	0.0324	5.5E-04	1.6E-08
rs74932439	3	57081539	TAG 52:6;0	T	C	T	2382	0.1904	0.0416	5.0E-06	3746	-0.1142	0.0326	4.6E-04	8.2E-09
rs2035656	3	57091073	TAG 52:6;0	C	A	C	2382	0.1934	0.0415	3.4E-06	3746	-0.1176	0.0325	3.0E-04	3.7E-09
rs12486855	3	57091836	TAG 52:6;0	G	A	G	2382	0.1935	0.0415	3.3E-06	3746	-0.1177	0.0325	3.0E-04	3.6E-09
rs146995638	3	57092462	TAG 52:6;0	GC	G	GC	2382	0.1935	0.0415	3.3E-06	3746	-0.1179	0.0325	2.9E-04	3.5E-09
rs56914717	3	57096615	TAG 52:6;0	T	TA	T	2382	0.1938	0.0415	3.1E-06	3746	-0.1182	0.0325	2.8E-04	3.2E-09
rs74494823	3	57096953	TAG 52:6;0	G	T	G	2382	0.1938	0.0415	3.1E-06	3746	-0.1184	0.0325	2.7E-04	3.1E-09
rs17057718	3	57102557	TAG 52:6;0	T	C	T	2382	0.1934	0.0415	3.3E-06	3746	-0.1173	0.0325	3.1E-04	3.7E-09
rs3215002	3	57103204	TAG 52:6;0	G	GA	G	2382	0.1934	0.0415	3.3E-06	3746	-0.1173	0.0325	3.1E-04	3.7E-09
rs1075398	3	57103568	TAG 52:6;0	C	A	C	2382	0.1934	0.0415	3.3E-06	3746	-0.1173	0.0325	3.1E-04	3.7E-09
rs1077034	3	57104200	TAG 52:6;0	A	T	A	2382	0.1934	0.0415	3.3E-06	3746	-0.1173	0.0325	3.1E-04	3.7E-09
rs76645245	3	57106766	TAG 52:6;0	G	A	G	2382	0.1934	0.0415	3.3E-06	3746	-0.1173	0.0325	3.1E-04	3.7E-09
rs78345417	3	57109914	TAG 52:6;0	T	C	T	2382	0.1939	0.0415	3.1E-06	3746	-0.1181	0.0325	2.8E-04	3.2E-09
rs79932559	3	57111698	TAG 52:6;0	T	C	T	2382	0.1939	0.0415	3.1E-06	3746	-0.1181	0.0325	2.8E-04	3.2E-09
rs74386625	3	57114065	TAG 52:6;0	T	TC	T	2382	0.1939	0.0415	3.1E-06	3746	-0.1181	0.0325	2.8E-04	3.2E-09
rs77543785	3	57114243	TAG 52:6;0	T	C	T	2382	0.1939	0.0415	3.1E-06	3746	-0.1181	0.0325	2.8E-04	3.2E-09
rs6792236	3	57115287	TAG 52:6;0	G	T	G	2382	0.1939	0.0415	3.1E-06	3746	-0.1181	0.0325	2.8E-04	3.2E-09
rs80095764	3	57115765	TAG 52:6;0	T	C	T	2382	0.1939	0.0415	3.1E-06	3746	-0.1181	0.0325	2.8E-04	3.2E-09
rs1488123	3	57117784	TAG 52:6;0	A	G	A	2382	0.1939	0.0415	3.1E-06	3746	-0.1181	0.0325	2.8E-04	3.2E-09
rs1386832	3	57117978	TAG 52:6;0	G	A	G	2382	0.1939	0.0415	3.1E-06	3746	-0.1181	0.0325	2.8E-04	3.2E-09
rs1386833	3	57118013	TAG 52:6;0	T	C	T	2382	0.1909	0.0415	4.4E-06	3746	-0.1178	0.0325	2.9E-04	4.6E-09
rs747089	3	57119841	TAG 52:6;0	T	C	T	2382	0.1939	0.0415	3.1E-06	3746	-0.1181	0.0325	2.8E-04	3.2E-09
rs1872942	3	57120850	TAG 52:6;0	T	C	T	2382	0.1937	0.0415	3.2E-06	3746	-0.1181	0.0325	2.8E-04	3.3E-09
rs111888204	3	57123950	TAG 52:6;0	T	C	T	2382	0.1924	0.0416	3.9E-06	3746	-0.1183	0.0325	2.8E-04	3.9E-09

rs10933857	3	106557080	PE O-18:1;0/20:4;0	G	A	G	2591	0.2205	0.0730	2.6E-03	4108	-0.2903	0.0585	7.3E-07	4.8E-08
rs10933858	3	106557151	PE O-18:1;0/20:4;0	C	A	C	2591	0.2205	0.0730	2.6E-03	4108	-0.2903	0.0585	7.3E-07	4.8E-08
rs28615087	4	3881007	LPE 18:2;0	G	T	G	2516	0.3774	0.0927	4.8E-05	3931	-0.2813	0.0685	4.1E-05	1.1E-08
rs35599734	4	172613428	TAG 56:5;0	G	A	A	2042	0.1447	0.0354	4.6E-05	3091	-0.1028	0.0282	2.7E-04	4.6E-08
rs141179074	5	144747962	PI 18:0;0_18:2;0	G	A	G	2590	0.6820	0.1226	2.9E-08	4107	-0.2340	0.1059	2.7E-02	1.6E-08
rs7760319	6	148473113	PC 17:0;0_20:4;0	T	C	C	2570	0.1319	0.0284	3.7E-06	4066	-0.1005	0.0229	1.2E-05	1.9E-10
rs7760319	6	148473113	PC 18:0;0_20:4;0	T	C	C	2592	0.1049	0.0284	2.3E-04	4109	-0.1058	0.0228	3.5E-06	7.2E-09
rs1737668	6	148475351	PC 17:0;0_20:4;0	A	G	G	2570	0.1326	0.0284	3.2E-06	4066	-0.0989	0.0228	1.5E-05	2.1E-10
rs1737668	6	148475351	PC 18:0;0_20:4;0	A	G	G	2592	0.1034	0.0284	2.7E-04	4109	-0.1037	0.0227	5.2E-06	1.2E-08
rs7769947	6	148477916	PC 17:0;0_20:4;0	T	C	C	2570	0.1053	0.0285	2.2E-04	4066	-0.1098	0.0228	1.5E-06	3.8E-09
rs7769947	6	148477916	PC 18:0;0_20:4;0	T	C	C	2592	0.0944	0.0284	9.1E-04	4109	-0.1130	0.0227	6.7E-07	1.2E-08
rs1147865	6	148506671	PC 17:0;0_20:4;0	G	T	T	2570	0.1185	0.0301	8.4E-05	4066	-0.1001	0.0242	3.5E-05	1.5E-08
rs74655126	7	43066311	CE 20:4;0	C	T	C	2592	0.2811	0.0719	9.4E-05	4109	-0.2315	0.0600	1.2E-04	4.4E-08
rs75811693	7	43074917	CE 20:4;0	T	G	T	2592	0.2836	0.0717	7.8E-05	4109	-0.2303	0.0599	1.2E-04	3.7E-08
rs76604143	7	43079624	CE 20:4;0	T	C	T	2592	0.2844	0.0716	7.2E-05	4109	-0.2298	0.0598	1.3E-04	3.5E-08
rs57566258	7	43085152	CE 20:4;0	A	G	A	2592	0.2849	0.0715	7.0E-05	4109	-0.2295	0.0598	1.3E-04	3.4E-08
rs75262081	7	43108938	CE 20:4;0	C	G	C	2592	0.2963	0.0728	4.8E-05	4109	-0.2326	0.0608	1.3E-04	2.5E-08
rs77082033	7	43115345	CE 20:4;0	A	G	A	2592	0.2956	0.0729	5.2E-05	4109	-0.2325	0.0608	1.3E-04	2.7E-08
rs73169556	7	141401684	PC 18:0;0_20:5;0	A	G	A	2571	-0.3810	0.0859	9.6E-06	4083	0.2191	0.0664	9.7E-04	3.3E-08
8:17110740	8	17110740	PC 16:0;0_20:4;0	G	GA	G	2592	0.4920	0.1241	7.6E-05	4109	-0.3998	0.1062	1.7E-04	4.8E-08
rs6986290	8	28213602	CE 16:0;0	C	T	C	2592	-0.1012	0.0287	4.3E-04	4109	0.1052	0.0234	7.0E-06	2.4E-08
rs9314362	8	28218754	CE 16:0;0	A	C	A	2592	-0.1024	0.0293	4.8E-04	4109	0.1040	0.0238	1.3E-05	4.4E-08
rs7833868	8	28220136	CE 16:0;0	A	G	A	2592	-0.1039	0.0291	3.6E-04	4109	0.1042	0.0237	1.1E-05	2.9E-08
rs4415272	8	28222376	CE 16:0;0	C	T	C	2592	-0.1042	0.0291	3.5E-04	4109	0.1044	0.0237	1.1E-05	2.7E-08
rs115910551	8	28222380	CE 16:0;0	C	T	C	2592	-0.1042	0.0291	3.5E-04	4109	0.1044	0.0237	1.1E-05	2.7E-08
rs6988117	8	28223749	CE 16:0;0	A	C	A	2592	-0.1045	0.0291	3.4E-04	4109	0.1045	0.0237	1.0E-05	2.5E-08
rs7011989	8	28223862	CE 16:0;0	C	T	C	2592	-0.1045	0.0291	3.3E-04	4109	0.1045	0.0237	1.0E-05	2.5E-08
rs201802953	8	28224014	CE 16:0;0	C	CTGTTA	C	2592	-0.1045	0.0291	3.3E-04	4109	0.1045	0.0237	1.0E-05	2.5E-08
rs7846116	8	28225376	CE 16:0;0	C	A	C	2592	-0.1048	0.0291	3.2E-04	4109	0.1046	0.0237	1.0E-05	2.4E-08
rs13259246	8	28225601	CE 16:0;0	G	T	G	2592	-0.1048	0.0291	3.2E-04	4109	0.1046	0.0237	1.0E-05	2.4E-08
rs10094977	8	28228291	CE 16:0;0	C	T	C	2592	-0.1056	0.0291	2.9E-04	4109	0.1049	0.0237	9.7E-06	2.0E-08
rs1391996	8	46982824	SM 32:1;2	G	A	A	2592	-0.3108	0.0829	1.8E-04	4109	0.2923	0.0712	4.2E-05	3.4E-08

rs1995212	8	46986565	SM 32:1;2	C	T	T	2592	-0.3108	0.0829	1.8E-04	4109	0.2923	0.0712	4.2E-05	3.4E-08
rs2454594	8	47056263	SM 32:1;2	C	A	A	2592	-0.3118	0.0829	1.7E-04	4109	0.2931	0.0712	3.9E-05	3.1E-08
rs392013	8	47081962	SM 32:1;2	C	T	T	2592	-0.3119	0.0829	1.7E-04	4109	0.2930	0.0712	4.0E-05	3.1E-08
rs116980433	8	47148937	SM 32:1;2	C	T	C	2592	-0.3100	0.0829	1.9E-04	4109	0.2853	0.0706	5.4E-05	4.6E-08
8:47176195	8	47176195	SM 32:1;2	T	C	T	2592	-0.3100	0.0829	1.9E-04	4109	0.2853	0.0706	5.4E-05	4.6E-08
rs2381666	9	7842487	CE 14:0;0	A	C	A	2592	-0.0986	0.0321	2.1E-03	4109	0.1259	0.0256	8.9E-07	4.4E-08
rs150714333	9	20391588	TAG 50:4;0	G	A	G	2589	0.7313	0.1352	7.0E-08	4104	-0.3616	0.1221	3.1E-03	2.0E-09
rs150714333	9	20391588	TAG 52:5;0	G	A	G	2591	0.7480	0.1352	3.5E-08	4108	-0.2990	0.1221	1.4E-02	9.1E-09
rs4759802	12	130922632	PC O-16:1;0/20:3;0	G	A	A	2433	-0.1922	0.0445	1.6E-05	3887	0.1128	0.0334	7.4E-04	4.2E-08
rs79579293	14	88355724	PC 18:0;0_20:2;0	G	A	G	2039	0.1880	0.0376	6.1E-07	3357	-0.0858	0.0287	2.8E-03	7.0E-09
rs144366565	14	88355888	PC 18:0;0_20:2;0	TC	T	TC	2039	0.1888	0.0376	5.8E-07	3357	-0.0796	0.0288	5.7E-03	1.5E-08
rs61977026	14	88356338	PC 18:0;0_20:2;0	C	T	C	2039	0.1889	0.0376	5.6E-07	3357	-0.0796	0.0288	5.7E-03	1.5E-08
rs60310240	14	88356365	PC 18:0;0_20:2;0	C	T	C	2039	0.1889	0.0376	5.6E-07	3357	-0.0796	0.0288	5.8E-03	1.5E-08
rs17772064	14	88356527	PC 18:0;0_20:2;0	T	C	T	2039	0.1888	0.0376	5.7E-07	3357	-0.0786	0.0288	6.3E-03	1.6E-08
rs17698817	14	88356632	PC 18:0;0_20:2;0	C	G	C	2039	0.1889	0.0376	5.6E-07	3357	-0.0795	0.0288	5.8E-03	1.5E-08
rs12589467	14	88357239	PC 18:0;0_20:2;0	C	A	C	2039	0.1889	0.0376	5.6E-07	3357	-0.0795	0.0288	5.8E-03	1.5E-08
rs12433464	14	88357671	PC 18:0;0_20:2;0	G	T	G	2039	0.1881	0.0376	5.9E-07	3357	-0.0833	0.0287	3.7E-03	9.4E-09
rs56987357	14	88358019	PC 18:0;0_20:2;0	A	G	A	2039	0.1889	0.0376	5.6E-07	3357	-0.0795	0.0288	5.8E-03	1.5E-08
rs1955599	14	88358788	PC 18:0;0_20:2;0	A	T	A	2039	0.1889	0.0376	5.6E-07	3357	-0.0795	0.0288	5.8E-03	1.5E-08
rs1955600	14	88359040	PC 18:0;0_20:2;0	A	G	A	2039	0.1889	0.0376	5.6E-07	3357	-0.0795	0.0288	5.8E-03	1.5E-08
rs17772222	14	88360138	PC 18:0;0_20:2;0	G	A	G	2039	0.1889	0.0376	5.6E-07	3357	-0.0795	0.0288	5.8E-03	1.5E-08
rs7145588	14	88360452	PC 18:0;0_20:2;0	A	G	A	2039	0.1889	0.0376	5.6E-07	3357	-0.0795	0.0288	5.8E-03	1.5E-08
rs61977049	14	88360656	PC 18:0;0_20:2;0	G	C	G	2039	0.1889	0.0376	5.6E-07	3357	-0.0795	0.0288	5.8E-03	1.5E-08
rs17772288	14	88361022	PC 18:0;0_20:2;0	A	G	A	2039	0.1889	0.0376	5.6E-07	3357	-0.0795	0.0288	5.8E-03	1.5E-08
rs12587386	14	88361420	PC 18:0;0_20:2;0	T	A	T	2039	0.1889	0.0376	5.6E-07	3357	-0.0795	0.0288	5.8E-03	1.5E-08
rs61977051	14	88371090	PC 18:0;0_20:2;0	A	T	A	2039	0.1881	0.0376	5.9E-07	3357	-0.0833	0.0287	3.7E-03	9.4E-09
rs8006250	14	88373989	PC 18:0;0_20:2;0	G	A	G	2039	0.1881	0.0376	5.9E-07	3357	-0.0833	0.0287	3.7E-03	9.4E-09
rs61977053	14	88380876	PC 18:0;0_20:2;0	A	C	A	2039	0.1889	0.0376	5.6E-07	3357	-0.0794	0.0288	5.8E-03	1.5E-08
rs12434374	14	88397859	PC 18:0;0_20:2;0	A	G	A	2039	0.1889	0.0376	5.6E-07	3357	-0.0809	0.0288	4.9E-03	1.2E-08
rs61579615	14	88400054	PC 18:0;0_20:2;0	T	C	T	2039	0.1889	0.0376	5.6E-07	3357	-0.0809	0.0288	4.9E-03	1.2E-08
rs60213984	14	88401473	PC 18:0;0_20:2;0	T	A	T	2039	0.1889	0.0376	5.6E-07	3357	-0.0809	0.0288	4.9E-03	1.2E-08
rs75611886	14	88402337	PC 18:0;0_20:2;0	C	CAATCTT	C	2039	0.1890	0.0376	5.6E-07	3357	-0.0808	0.0288	5.0E-03	1.2E-08

rs4570770	14	88408836	PC 18:0;0_20:2;0	G	A	G	2039	0.1889	0.0376	5.6E-07	3357	-0.0809	0.0288	4.9E-03	1.2E-08
rs55722539	14	88411691	PC 18:0;0_20:2;0	A	G	A	2039	0.1889	0.0376	5.6E-07	3357	-0.0803	0.0288	5.3E-03	1.3E-08
rs12589480	14	88414926	PC 18:0;0_20:2;0	T	C	T	2039	0.1889	0.0376	5.6E-07	3357	-0.0809	0.0288	4.9E-03	1.2E-08
rs61977058	14	88415571	PC 18:0;0_20:2;0	C	A	C	2039	0.1889	0.0376	5.6E-07	3357	-0.0809	0.0288	4.9E-03	1.2E-08
rs74071851	14	88415858	PC 18:0;0_20:2;0	A	G	A	2039	0.1889	0.0376	5.6E-07	3357	-0.0809	0.0288	4.9E-03	1.2E-08
rs11159856	14	88417585	PC 18:0;0_20:2;0	G	A	G	2039	0.1889	0.0376	5.7E-07	3357	-0.0810	0.0288	4.9E-03	1.2E-08
rs17124652	14	88424384	PC 18:0;0_20:2;0	G	A	G	2039	0.1889	0.0376	5.6E-07	3357	-0.0809	0.0288	4.9E-03	1.2E-08
rs2295135	14	88427866	PC 18:0;0_20:2;0	G	T	G	2039	0.1888	0.0376	5.7E-07	3357	-0.0810	0.0288	4.9E-03	1.2E-08
rs61975260	14	88429597	PC 18:0;0_20:2;0	G	C	G	2039	0.2030	0.0386	1.6E-07	3357	-0.0904	0.0295	2.2E-03	1.6E-09
rs17124700	14	88439285	PC 18:0;0_20:2;0	T	C	T	2039	0.1895	0.0376	5.2E-07	3357	-0.0814	0.0288	4.7E-03	1.1E-08
rs140651402	14	88439331	PC 18:0;0_20:2;0	CAG	C	CAG	2039	0.1895	0.0376	5.2E-07	3357	-0.0814	0.0288	4.7E-03	1.1E-08
rs112788894	14	88442850	PC 18:0;0_20:2;0	T	C	T	2039	0.1893	0.0376	5.3E-07	3357	-0.0814	0.0288	4.7E-03	1.1E-08
rs201164673	14	88445245	PC 18:0;0_20:2;0	A	C	A	2039	0.1891	0.0377	5.8E-07	3357	-0.0818	0.0288	4.6E-03	1.1E-08
rs148725469	14	88448387	PC 18:0;0_20:2;0	C	T	C	2039	0.2015	0.0386	2.0E-07	3357	-0.0916	0.0295	2.0E-03	1.7E-09
rs4375590	14	88451334	PC 18:0;0_20:2;0	G	T	G	2039	0.1893	0.0376	5.3E-07	3357	-0.0814	0.0288	4.7E-03	1.1E-08
rs201592732	14	88460396	PC 18:0;0_20:2;0	CT	C	CT	2039	0.1893	0.0376	5.3E-07	3357	-0.0814	0.0288	4.7E-03	1.1E-08
rs10129917	14	88465461	PC 18:0;0_20:2;0	T	C	T	2039	0.1894	0.0377	5.4E-07	3357	-0.0815	0.0288	4.6E-03	1.1E-08
rs3814855	14	88467016	PC 18:0;0_20:2;0	A	G	A	2039	0.1893	0.0376	5.3E-07	3357	-0.0814	0.0288	4.7E-03	1.1E-08
rs10139921	14	88468512	PC 18:0;0_20:2;0	A	G	A	2039	0.1884	0.0381	8.5E-07	3357	-0.0881	0.0290	2.4E-03	8.1E-09
rs2274737	14	88469307	PC 18:0;0_20:2;0	G	A	G	2039	0.1910	0.0376	4.2E-07	3357	-0.0797	0.0287	5.6E-03	1.1E-08
rs2297128	14	88469910	PC 18:0;0_20:2;0	G	A	G	2039	0.1896	0.0376	5.2E-07	3357	-0.0813	0.0288	4.7E-03	1.1E-08
rs12587528	14	88487652	PC 18:0;0_20:2;0	G	T	G	2039	0.1895	0.0377	5.3E-07	3357	-0.0823	0.0288	4.3E-03	9.8E-09
rs79491510	14	88489817	PC 18:0;0_20:2;0	G	GGT	G	2039	0.1896	0.0376	5.1E-07	3357	-0.0813	0.0288	4.7E-03	1.1E-08
rs77306894	14	88494507	PC 18:0;0_20:2;0	G	A	G	2039	0.1896	0.0376	5.1E-07	3357	-0.0813	0.0288	4.7E-03	1.1E-08
rs59136503	14	88501921	PC 18:0;0_20:2;0	A	G	A	2039	0.1897	0.0376	5.0E-07	3357	-0.0815	0.0287	4.6E-03	1.0E-08
rs1998670	14	88504581	PC 18:0;0_20:2;0	T	C	T	2039	0.1892	0.0376	5.4E-07	3357	-0.0812	0.0288	4.8E-03	1.1E-08
rs1816372	14	88507033	PC 18:0;0_20:2;0	G	A	G	2039	0.1892	0.0376	5.4E-07	3357	-0.0804	0.0288	5.2E-03	1.2E-08
rs60878614	14	88513871	PC 18:0;0_20:2;0	G	A	G	2039	0.1918	0.0377	3.9E-07	3357	-0.0828	0.0288	4.0E-03	7.0E-09
rs10143767	14	88514867	PC 18:0;0_20:2;0	C	A	C	2039	0.1918	0.0377	3.9E-07	3357	-0.0828	0.0288	4.0E-03	7.0E-09
rs76559451	14	88523193	PC 18:0;0_20:2;0	C	T	C	2039	0.1918	0.0377	3.9E-07	3357	-0.0828	0.0288	4.0E-03	7.0E-09
rs1123421	14	88524651	PC 18:0;0_20:2;0	G	A	G	2039	0.1918	0.0377	3.9E-07	3357	-0.0828	0.0288	4.0E-03	7.0E-09
rs2004329	14	88532965	PC 18:0;0_20:2;0	C	T	C	2039	0.1918	0.0377	3.9E-07	3357	-0.0828	0.0288	4.0E-03	7.0E-09

rs12436326	14	88533632	PC 18:0;0_20:2;0	T	C	T	2039	0.1918	0.0377	3.9E-07	3357	-0.0828	0.0288	4.0E-03	7.0E-09
rs17203789	14	88541362	PC 18:0;0_20:2;0	T	C	T	2039	0.1927	0.0377	3.5E-07	3357	-0.0825	0.0288	4.2E-03	6.5E-09
rs28490252	14	88544241	PC 18:0;0_20:2;0	T	A	T	2039	0.1927	0.0377	3.5E-07	3357	-0.0825	0.0288	4.2E-03	6.5E-09
rs10143948	14	88545112	PC 18:0;0_20:2;0	T	C	T	2039	0.1927	0.0377	3.5E-07	3357	-0.0825	0.0288	4.2E-03	6.5E-09
rs17798341	14	88548201	PC 18:0;0_20:2;0	C	T	C	2039	0.1924	0.0378	3.9E-07	3357	-0.0844	0.0288	3.4E-03	5.7E-09
rs10134008	14	88549183	PC 18:0;0_20:2;0	T	C	T	2039	0.1927	0.0377	3.5E-07	3357	-0.0825	0.0288	4.2E-03	6.5E-09
rs891750	14	88550856	PC 18:0;0_20:2;0	A	G	A	2039	0.1927	0.0377	3.5E-07	3357	-0.0825	0.0288	4.2E-03	6.5E-09
rs891749	14	88550893	PC 18:0;0_20:2;0	T	C	T	2039	0.1926	0.0377	3.5E-07	3357	-0.0825	0.0288	4.2E-03	6.5E-09
rs61984683	14	88553162	PC 18:0;0_20:2;0	C	T	C	2039	0.1927	0.0377	3.5E-07	3357	-0.0825	0.0288	4.2E-03	6.6E-09
rs61984684	14	88559104	PC 18:0;0_20:2;0	C	T	C	2039	0.1920	0.0377	3.8E-07	3357	-0.0816	0.0289	4.7E-03	8.2E-09
rs11159859	14	88561547	PC 18:0;0_20:2;0	C	G	G	2039	0.1738	0.0358	1.3E-06	3357	-0.0870	0.0274	1.5E-03	7.3E-09
rs11629164	14	88564740	PC 18:0;0_20:2;0	A	G	G	2039	0.1740	0.0358	1.3E-06	3357	-0.0888	0.0275	1.3E-03	5.8E-09
rs61984708	14	88565523	PC 18:0;0_20:2;0	C	T	C	2039	0.1921	0.0377	3.8E-07	3357	-0.0828	0.0289	4.2E-03	7.3E-09
rs12434911	14	88577660	PC 18:0;0_20:2;0	G	T	G	2039	0.1950	0.0377	2.6E-07	3357	-0.0805	0.0290	5.6E-03	7.1E-09
rs7143853	14	88578477	PC 18:0;0_20:2;0	C	G	C	2039	0.1922	0.0377	3.7E-07	3357	-0.0816	0.0290	4.9E-03	8.5E-09
rs140285150	14	88590995	PC 18:0;0_20:2;0	GC	G	GC	2039	0.1922	0.0377	3.7E-07	3357	-0.0816	0.0290	4.9E-03	8.5E-09
rs61173654	14	88616052	PC 18:0;0_20:2;0	AT	A	AT	2039	0.1823	0.0379	1.6E-06	3357	-0.0831	0.0291	4.3E-03	2.7E-08
rs4635267	14	88621922	PC 18:0;0_20:2;0	T	C	T	2039	0.1857	0.0379	1.0E-06	3357	-0.0817	0.0291	5.0E-03	2.2E-08
rs56144430	14	88622013	PC 18:0;0_20:2;0	A	G	A	2039	0.1820	0.0379	1.7E-06	3357	-0.0832	0.0291	4.2E-03	2.8E-08
rs17188046	14	88624417	PC 18:0;0_20:2;0	T	A	T	2039	0.1828	0.0379	1.5E-06	3357	-0.0829	0.0291	4.3E-03	2.6E-08
rs61984736	14	88626359	PC 18:0;0_20:2;0	C	T	C	2039	0.1828	0.0379	1.5E-06	3357	-0.0829	0.0291	4.3E-03	2.6E-08
rs8006652	14	88631290	PC 18:0;0_20:2;0	T	C	T	2039	0.1828	0.0379	1.5E-06	3357	-0.0829	0.0291	4.3E-03	2.6E-08
rs12587200	14	88632060	PC 18:0;0_20:2;0	G	C	G	2039	0.1828	0.0379	1.5E-06	3357	-0.0829	0.0291	4.3E-03	2.6E-08
rs12431548	14	88635826	PC 18:0;0_20:2;0	T	C	T	2039	0.1850	0.0379	1.1E-06	3357	-0.0832	0.0290	4.2E-03	1.9E-08
rs61984737	14	88637028	PC 18:0;0_20:2;0	A	C	A	2039	0.1828	0.0379	1.5E-06	3357	-0.0829	0.0291	4.4E-03	2.6E-08
rs12586348	14	88643523	PC 18:0;0_20:2;0	G	A	G	2039	0.1828	0.0379	1.5E-06	3357	-0.0828	0.0291	4.4E-03	2.6E-08
rs12434935	14	88645449	PC 18:0;0_20:2;0	T	C	T	2039	0.1828	0.0379	1.5E-06	3357	-0.0828	0.0291	4.4E-03	2.6E-08
rs57118463	14	88665822	PC 18:0;0_20:2;0	C	T	C	2039	0.1832	0.0380	1.5E-06	3357	-0.0817	0.0291	5.0E-03	3.0E-08
rs61984746	14	88668136	PC 18:0;0_20:2;0	T	C	T	2039	0.1832	0.0380	1.5E-06	3357	-0.0816	0.0291	5.0E-03	3.0E-08
rs148751892	14	88672865	PC 18:0;0_20:2;0	G	A	G	2039	0.1833	0.0380	1.5E-06	3357	-0.0819	0.0291	4.9E-03	2.9E-08
rs56960439	14	88679624	PC 18:0;0_20:2;0	A	G	A	2039	0.1832	0.0380	1.5E-06	3357	-0.0816	0.0291	5.0E-03	3.0E-08
rs17260380	14	88682142	PC 18:0;0_20:2;0	T	C	T	2039	0.1832	0.0380	1.5E-06	3357	-0.0816	0.0291	5.0E-03	3.0E-08

rs12436982	14	88689862	PC 18:0;0_20:2;0	A	G	A	2039	0.1832	0.0380	1.5E-06	3357	-0.0816	0.0291	5.0E-03	3.0E-08
rs142151065	14	88695209	PC 18:0;0_20:2;0	C	CTATGAT	C	2039	0.1833	0.0380	1.5E-06	3357	-0.0817	0.0291	5.0E-03	3.0E-08
rs58984912	14	88698172	PC 18:0;0_20:2;0	T	A	T	2039	0.1832	0.0380	1.5E-06	3357	-0.0814	0.0290	5.1E-03	3.1E-08
rs17188207	14	88699579	PC 18:0;0_20:2;0	C	G	C	2039	0.1833	0.0380	1.5E-06	3357	-0.0814	0.0290	5.1E-03	3.1E-08
rs61986664	14	88711251	PC 18:0;0_20:2;0	A	G	A	2039	0.1838	0.0380	1.4E-06	3357	-0.0821	0.0291	4.7E-03	2.7E-08
rs8018755	14	88714249	PC 18:0;0_20:2;0	T	C	T	2039	0.1836	0.0380	1.4E-06	3357	-0.0822	0.0291	4.7E-03	2.7E-08
rs8018630	14	88714250	PC 18:0;0_20:2;0	C	A	C	2039	0.1836	0.0380	1.4E-06	3357	-0.0822	0.0291	4.7E-03	2.7E-08
rs8020072	14	88714332	PC 18:0;0_20:2;0	C	T	C	2039	0.1836	0.0380	1.4E-06	3357	-0.0822	0.0291	4.7E-03	2.7E-08
rs17260408	14	88715464	PC 18:0;0_20:2;0	G	A	G	2039	0.1836	0.0380	1.4E-06	3357	-0.0822	0.0291	4.7E-03	2.7E-08
rs12589982	14	88716861	PC 18:0;0_20:2;0	G	A	G	2039	0.1836	0.0380	1.4E-06	3357	-0.0822	0.0291	4.7E-03	2.7E-08
rs8021690	14	88717806	PC 18:0;0_20:2;0	C	T	C	2039	0.1836	0.0380	1.4E-06	3357	-0.0822	0.0291	4.7E-03	2.7E-08
rs61986669	14	88727121	PC 18:0;0_20:2;0	A	C	A	2039	0.1836	0.0380	1.4E-06	3357	-0.0822	0.0291	4.7E-03	2.7E-08
rs77726584	14	88728321	PC 18:0;0_20:2;0	T	TGCACCAGTTAGAA	T	2039	0.1836	0.0380	1.4E-06	3357	-0.0822	0.0291	4.7E-03	2.7E-08
rs12587598	14	88729474	PC 18:0;0_20:2;0	C	T	C	2039	0.1836	0.0380	1.4E-06	3357	-0.0822	0.0291	4.7E-03	2.7E-08
rs61986670	14	88730875	PC 18:0;0_20:2;0	A	G	A	2039	0.1836	0.0380	1.4E-06	3357	-0.0822	0.0291	4.7E-03	2.7E-08
rs61986671	14	88732917	PC 18:0;0_20:2;0	G	A	G	2039	0.1836	0.0380	1.4E-06	3357	-0.0822	0.0291	4.7E-03	2.7E-08
rs17188228	14	88738921	PC 18:0;0_20:2;0	C	T	C	2039	0.1842	0.0379	1.3E-06	3357	-0.0816	0.0291	5.0E-03	2.7E-08
rs61983297	14	88741122	PC 18:0;0_20:2;0	T	C	T	2039	0.1836	0.0380	1.4E-06	3357	-0.0822	0.0291	4.7E-03	2.7E-08
rs78077739	14	88741176	PC 18:0;0_20:2;0	A	T	A	2039	0.1836	0.0380	1.4E-06	3357	-0.0824	0.0291	4.6E-03	2.7E-08
rs17260415	14	88745629	PC 18:0;0_20:2;0	G	C	G	2039	0.1836	0.0380	1.4E-06	3357	-0.0822	0.0291	4.7E-03	2.7E-08
rs58655091	14	88748567	PC 18:0;0_20:2;0	A	G	A	2039	0.1835	0.0380	1.4E-06	3357	-0.0822	0.0291	4.7E-03	2.7E-08
rs1956406	14	88749711	PC 18:0;0_20:2;0	C	T	C	2039	0.1835	0.0380	1.5E-06	3357	-0.0822	0.0291	4.7E-03	2.7E-08
rs61983300	14	88754047	PC 18:0;0_20:2;0	G	A	G	2039	0.1838	0.0380	1.4E-06	3357	-0.0822	0.0291	4.7E-03	2.7E-08
rs78068036	14	88754817	PC 18:0;0_20:2;0	C	T	C	2039	0.1838	0.0380	1.4E-06	3357	-0.0822	0.0291	4.7E-03	2.7E-08
rs35685702	14	88760479	PC 18:0;0_20:2;0	A	AC	A	2039	0.1837	0.0380	1.4E-06	3357	-0.0822	0.0291	4.7E-03	2.7E-08
rs11159868	14	88760528	PC 18:0;0_20:2;0	C	T	C	2039	0.1837	0.0380	1.4E-06	3357	-0.0822	0.0291	4.7E-03	2.7E-08
rs61983302	14	88762022	PC 18:0;0_20:2;0	G	A	G	2039	0.1837	0.0380	1.4E-06	3357	-0.0822	0.0291	4.7E-03	2.7E-08
rs7154157	14	88762672	PC 18:0;0_20:2;0	C	T	C	2039	0.1837	0.0380	1.4E-06	3357	-0.0822	0.0291	4.7E-03	2.7E-08
rs61983303	14	88764459	PC 18:0;0_20:2;0	C	T	C	2039	0.1837	0.0380	1.4E-06	3357	-0.0822	0.0291	4.7E-03	2.7E-08
rs140491924	14	88765121	PC 18:0;0_20:2;0	T	TCACAAATTAC	T	2039	0.1836	0.0380	1.4E-06	3357	-0.0822	0.0291	4.7E-03	2.7E-08
rs7157149	14	88765501	PC 18:0;0_20:2;0	C	T	C	2039	0.1836	0.0380	1.4E-06	3357	-0.0822	0.0291	4.7E-03	2.7E-08

rs2224333	14	88768748	PC 18:0;0_20:2;0	T	C	T	2039	0.1836	0.0380	1.5E-06	3357	-0.0822	0.0291	4.7E-03	2.8E-08
rs12590826	14	88769357	PC 18:0;0_20:2;0	G	T	G	2039	0.1836	0.0380	1.5E-06	3357	-0.0822	0.0291	4.7E-03	2.8E-08
rs57889459	14	88770820	PC 18:0;0_20:2;0	T	C	T	2039	0.1835	0.0380	1.5E-06	3357	-0.0822	0.0291	4.7E-03	2.8E-08
rs1950806	14	88774412	PC 18:0;0_20:2;0	T	C	T	2039	0.1835	0.0380	1.5E-06	3357	-0.0822	0.0291	4.7E-03	2.8E-08
rs58550317	14	88775243	PC 18:0;0_20:2;0	C	T	C	2039	0.1835	0.0380	1.5E-06	3357	-0.0822	0.0291	4.7E-03	2.8E-08
rs61982733	14	88776244	PC 18:0;0_20:2;0	T	C	T	2039	0.1834	0.0380	1.5E-06	3357	-0.0822	0.0291	4.7E-03	2.8E-08
rs2145120	14	88777699	PC 18:0;0_20:2;0	A	G	A	2039	0.1835	0.0380	1.5E-06	3357	-0.0822	0.0291	4.7E-03	2.8E-08
rs12588535	14	88781900	PC 18:0;0_20:2;0	G	C	G	2039	0.1834	0.0380	1.5E-06	3357	-0.0822	0.0291	4.7E-03	2.9E-08
rs8049548	16	57891625	TAG 54:7;0	C	T	C	2494	-0.2707	0.0583	3.6E-06	3883	0.1418	0.0464	2.2E-03	3.1E-08
rs34861637	16	57892665	TAG 54:7;0	A	C	A	2494	-0.2707	0.0583	3.7E-06	3883	0.1417	0.0463	2.2E-03	3.1E-08
rs35176541	16	57892769	TAG 54:7;0	G	C	G	2494	-0.2707	0.0583	3.6E-06	3883	0.1417	0.0463	2.2E-03	3.1E-08
rs7204867	16	57894516	TAG 54:7;0	G	A	G	2494	-0.2739	0.0585	3.0E-06	3883	0.1359	0.0465	3.5E-03	4.2E-08
rs62094702	18	76204381	PC O-16:1;0/18:1;0	C	T	C	2583	0.3987	0.1101	3.0E-04	4098	-0.3912	0.0924	2.3E-05	3.9E-08
rs79136298	19	4933702	TAG 52:6;0	C	G	C	2382	-0.3631	0.0968	1.8E-04	3746	0.3368	0.0802	2.8E-05	2.6E-08
rs117078498	19	4966371	TAG 52:6;0	G	A	G	2382	-0.3576	0.0952	1.8E-04	3746	0.3524	0.0814	1.5E-05	1.4E-08
rs150573802	22	49818067	SM 34:1;2	T	C	T	2592	-0.5545	0.1103	5.3E-07	4109	0.2359	0.0905	9.2E-03	3.0E-08
rs150573802	22	49818067	SM 36:1;2	T	C	T	2592	-0.4715	0.1105	2.0E-05	4109	0.3278	0.0904	2.9E-04	2.2E-08
rs151272416	22	49837131	SM 34:1;2	A	C	A	2592	-0.5562	0.1104	5.0E-07	4109	0.2374	0.0886	7.4E-03	2.1E-08
rs151272416	22	49837131	SM 36:1;2	A	C	A	2592	-0.4704	0.1105	2.2E-05	4109	0.3060	0.0886	5.6E-04	4.2E-08
rs2954104	X	147554900	TAG56.3.0	T	C	T	2335	0.0757	0.0211	3.3E-04	3455	-0.1065	0.0244	1.3E-05	1.6E-08

Table S14: Summary of sex-heterogeneity at loci associated with lipid species in sex-stratified GWAS. The 193 unique lipid-locus associations (P < 7.0×10⁻¹⁰) identified either in men or women in sex-stratified GWAS are presented here.

SNP	CHR	BP (hg38)	Lipid	Allele 1	Allele 2	Effect Allele	N (Men)	Beta (Men)	SE (Men)	P (Men)	N (Women)	Beta (Women)	SE (Women)	P (Women)	P$_{het}$
rs2639458	1	39921664	LPC 16:0;0	C	T	C	2592	0.0987	0.0325	2.4E-03	4109	0.1610	0.0260	6.3E-10	1.3E-01
rs7529794	1	39937698	LPE 18:0;0	T	G	T	2274	0.1224	0.0341	3.4E-04	3582	0.1749	0.0274	2.1E-10	2.3E-01
rs11591147	1	55039974	SM 34:1;2	T	G	T	2592	-0.5233	0.0798	6.6E-11	4109	-0.3681	0.0603	1.1E-09	1.2E-01
rs1168041	1	62494579	PI 18:0;0_18:1;0	C	T	T	2588	-0.1268	0.0313	5.4E-05	4103	-0.1736	0.0247	2.7E-12	2.4E-01
rs1781195	1	62523301	PI 18:0;0_18:2;0	C	T	T	2590	-0.1632	0.0314	2.3E-07	4107	-0.1987	0.0246	9.9E-16	3.7E-01
rs10889352	1	62633352	PI 18:0;0_20:4;0	C	T	C	2592	-0.1559	0.0314	7.5E-07	4109	-0.2140	0.0246	4.4E-18	1.5E-01
rs10889352	1	62633352	PI 18:0;0_20:3;0	C	T	C	2453	-0.1022	0.0325	1.7E-03	3888	-0.1701	0.0254	2.4E-11	1.0E-01
rs10889352	1	62633352	PC 16:0;0_18:2;0	C	T	C	2592	-0.0490	0.0316	1.2E-01	4109	-0.1648	0.0247	2.7E-11	3.9E-03
rs56280080	1	62687528	PI 18:1;0_18:1;0	T	TCAGAA	T	2587	-0.1411	0.0316	8.1E-06	4104	-0.1564	0.0248	3.0E-10	7.0E-01
rs2797620	1	94975736	PC 18:0;0_20:3;0	T	C	T	2589	-0.1025	0.0289	3.9E-04	4107	-0.1505	0.0234	1.4E-10	2.0E-01
rs1260326	2	27508073	TAG 50:4;0	C	T	T	2589	0.1499	0.0286	1.6E-07	4104	0.1813	0.0232	6.5E-15	3.9E-01
rs1260326	2	27508073	TAG 50:3;0	C	T	T	2586	0.1317	0.0286	4.3E-06	4104	0.1806	0.0232	8.2E-15	1.8E-01
rs1260326	2	27508073	TAG 48:3;0	C	T	T	2482	0.0994	0.0292	6.7E-04	3925	0.1749	0.0237	1.7E-13	4.4E-02
rs1260326	2	27508073	TAG 50:5;0	C	T	T	2083	0.1123	0.0316	3.9E-04	3073	0.1924	0.0267	6.9E-13	5.3E-02
rs1260326	2	27508073	TAG 50:2;0	C	T	T	2592	0.1056	0.0286	2.3E-04	4107	0.1641	0.0232	1.7E-12	1.1E-01
rs1260326	2	27508073	TAG 52:5;0	C	T	T	2591	0.1384	0.0286	1.3E-06	4108	0.1612	0.0232	4.3E-12	5.4E-01
rs1260326	2	27508073	PC 16:0;0_16:1;0	C	T	T	2592	0.0372	0.0287	2.0E-01	4107	0.1571	0.0232	1.5E-11	1.2E-03
rs1260326	2	27508073	TAG 48:2;0	C	T	T	2556	0.1130	0.0288	8.9E-05	4052	0.1578	0.0234	1.7E-11	2.3E-01
rs1260326	2	27508073	TAG 52:3;0	C	T	T	2592	0.1184	0.0286	3.5E-05	4108	0.1521	0.0232	6.3E-11	3.6E-01
rs1260326	2	27508073	TAG 51:3;0	C	T	T	2572	0.1219	0.0287	2.2E-05	4079	0.1505	0.0233	1.2E-10	4.4E-01
rs1260326	2	27508073	PC 16:1;0_18:1;0	C	T	T	2589	0.0440	0.0287	1.3E-01	4104	0.1501	0.0232	1.2E-10	4.1E-03
rs1260326	2	27508073	TAG 49:2;0	C	T	T	2239	0.0548	0.0307	7.5E-02	3442	0.1617	0.0253	2.0E-10	7.2E-03
rs1260326	2	27508073	PC 16:0;0_18:1;0	C	T	T	2592	0.0297	0.0287	3.0E-01	4109	0.1477	0.0232	2.2E-10	1.4E-03
rs1260326	2	27508073	TAG 52:4;0	C	T	T	2592	0.1254	0.0286	1.2E-05	4109	0.1467	0.0232	2.9E-10	5.6E-01
rs1260326	2	27508073	TAG 53:3;0	C	T	T	2577	0.1233	0.0286	1.7E-05	4071	0.1473	0.0233	3.1E-10	5.2E-01
rs1260326	2	27508073	PE 18:0;0_18:2;0	C	T	T	2574	0.0929	0.0287	1.2E-03	4082	0.1451	0.0233	5.0E-10	1.6E-01
rs780094	2	27518370	LPE 18:2;0	C	T	T	2516	0.0568	0.0291	5.1E-02	3931	0.1505	0.0235	1.6E-10	1.2E-02

rs6544713	2	43846742	CE 20:2;0	C	T	T	2051	0.1746	0.0368	2.2E-06	3418	0.2921	0.0284	1.9E-24	1.1E-02
rs2354167	3	142938363	PI 18:0;0_18:1;0	G	T	T	2588	-0.1478	0.0282	1.8E-07	4103	-0.1579	0.0228	5.1E-12	7.8E-01
rs151193598	4	72437677	SM 38:2;2	A	G	A	2578	0.2204	0.1035	3.3E-02	4100	0.5191	0.0816	2.2E-10	2.3E-02
rs187918276	4	73167847	SM 40:1;2	C	G	C	2592	0.4591	0.1060	1.5E-05	4109	0.6064	0.0818	1.5E-13	2.7E-01
rs187918276	4	73167847	SM 42:2;2	C	G	C	2592	0.5043	0.1060	2.0E-06	4109	0.5391	0.0819	5.2E-11	8.0E-01
rs187918276	4	73167847	SM 40:2;2	C	G	C	2592	0.3627	0.1062	6.4E-04	4109	0.5249	0.0819	1.7E-10	2.3E-01
4:73646563	4	73646563	SM 38:1;2	A	G	A	2592	0.4233	0.1079	9.0E-05	4109	0.5530	0.0844	6.4E-11	3.4E-01
rs116302332	4	74505174	SM 34:1;2	T	C	T	2592	0.2307	0.0892	9.7E-03	4109	0.4163	0.0660	3.1E-10	9.4E-02
9:133279427	9	133279427	CE 18:0;0	C	T	T	2589	0.1284	0.0343	1.9E-04	4097	0.1699	0.0274	6.5E-10	3.4E-01
rs174528	11	61776027	PC 18:2;0_20:4;0	C	T	C	2544	-0.1465	0.0285	3.1E-07	4036	-0.1716	0.0224	2.6E-14	4.9E-01
rs174529	11	61776489	SM 34:2;2	C	T	C	2592	-0.1598	0.0283	1.9E-08	4109	-0.1487	0.0223	2.8E-11	7.6E-01
rs174530	11	61779120	PI 18:1;0_18:1;0	G	A	G	2587	0.1493	0.0284	1.5E-07	4104	0.1558	0.0223	3.1E-12	8.6E-01
rs174535	11	61783884	PC O-16:1;0/20:4;0	C	T	C	2266	-0.4089	0.0294	3.4E-42	3374	-0.3955	0.0240	1.0E-58	7.2E-01
rs174536	11	61784455	PC O-18:0;0/20:4;0	C	A	C	2516	-0.2805	0.0283	1.1E-22	3984	-0.3232	0.0223	1.4E-46	2.4E-01
rs174536	11	61784455	PC O-18:1;0/20:4;0	C	A	C	2592	-0.2593	0.0281	6.3E-20	4108	-0.2904	0.0220	5.1E-39	3.8E-01
rs174536	11	61784455	PE O-18:1;0/20:4;0	C	A	C	2591	-0.2279	0.0283	1.1E-15	4108	-0.2698	0.0221	8.4E-34	2.4E-01
rs174536	11	61784455	PE O-16:1;0/20:4;0	C	A	C	2590	-0.1951	0.0283	7.5E-12	4106	-0.2127	0.0222	1.7E-21	6.2E-01
rs174536	11	61784455	PE O-18:2;0/20:4;0	C	A	C	2588	-0.1698	0.0284	2.6E-09	4096	-0.1736	0.0223	9.4E-15	9.2E-01
rs174536	11	61784455	PC O-18:2;0/20:4;0	C	A	C	2177	-0.1682	0.0311	6.9E-08	3548	-0.1794	0.0242	1.4E-13	7.8E-01
rs174537	11	61785208	PC 16:0;0_20:4;0	T	G	T	2592	-0.5633	0.0264	1.9E-93	4109	-0.6086	0.0204	6.8E-178	1.7E-01
rs174537	11	61785208	PC 18:1;0_20:4;0	T	G	T	2592	-0.4880	0.0269	3.6E-69	4108	-0.5060	0.0210	8.1E-120	6.0E-01
rs174537	11	61785208	PI 18:0;0_20:4;0	T	G	T	2592	-0.2109	0.0283	1.2E-13	4109	-0.2516	0.0221	1.5E-29	2.6E-01
rs174537	11	61785208	PE O-18:1;0/18:2;0	T	G	T	2465	0.2147	0.0290	1.7E-13	3954	0.1722	0.0227	3.9E-14	2.5E-01
rs61896141	11	61788567	PC O-16:1;0/20:3;0	C	A	C	2433	0.1863	0.0453	4.0E-05	3887	0.2323	0.0352	4.7E-11	4.2E-01
rs61896141	11	61788567	PC 18:1;0_20:3;0	C	A	C	2590	0.2126	0.0443	1.7E-06	4108	0.2262	0.0346	6.9E-11	8.1E-01
rs102275	11	61790331	PC 18:0;0_20:4;0	C	T	C	2592	-0.6403	0.0256	4.9E-124	4109	-0.6758	0.0198	2.4E-224	2.7E-01
rs102275	11	61790331	LPC 20:4;0	C	T	C	2275	-0.4898	0.0287	2.0E-61	3548	-0.5494	0.0223	1.2E-123	1.0E-01
rs102275	11	61790331	PC 16:0;0_22:5;0	C	T	C	2592	-0.3985	0.0274	4.2E-46	4107	-0.4112	0.0215	5.3E-78	7.2E-01
rs102275	11	61790331	PC O-16:0;0/20:4;0	C	T	C	2592	-0.3405	0.0277	8.7E-34	4109	-0.3990	0.0216	2.3E-73	9.6E-02
rs102275	11	61790331	PC 16:0;0_20:5;0	C	T	C	2591	-0.3552	0.0276	1.1E-36	4109	-0.3685	0.0217	1.8E-62	7.0E-01
rs102275	11	61790331	PC 16:1;0_20:4;0	C	T	C	1892	-0.2648	0.0335	4.8E-15	3301	-0.3427	0.0246	6.7E-43	6.1E-02
rs102275	11	61790331	PC 18:0;0_22:5;0	C	T	C	2482	-0.2680	0.0286	1.5E-20	3876	-0.2843	0.0226	1.5E-35	6.6E-01

rs102275	11	61790331	CE 16:0;0	C	T	C	2592	-0.1685	0.0283	3.0E-09	4109	-0.2187	0.0222	1.2E-22	1.6E-01
rs102275	11	61790331	PC 16:0;0_16:0;0	C	T	C	2592	-0.1234	0.0284	1.5E-05	4109	-0.1602	0.0223	8.4E-13	3.1E-01
rs4246215	11	61796827	TAG 56:7;0	T	G	T	2584	-0.1251	0.0283	1.0E-05	4093	-0.1672	0.0220	3.7E-14	2.4E-01
rs4246215	11	61796827	TAG 56:5;0	T	G	T	2042	-0.0826	0.0321	1.0E-02	3091	-0.1786	0.0254	2.7E-12	1.9E-02
rs4246215	11	61796827	TAG 56:8;0	T	G	T	2492	-0.1008	0.0289	5.1E-04	3862	-0.1587	0.0227	3.4E-12	1.2E-01
rs174548	11	61803876	CE 20:5;0	G	C	G	2592	-0.3854	0.0280	1.4E-41	4109	-0.4063	0.0219	4.3E-74	5.6E-01
rs174548	11	61803876	PC 18:0;0_20:5;0	G	C	G	2571	-0.4103	0.0281	1.8E-46	4083	-0.4087	0.0220	5.2E-74	9.7E-01
rs174548	11	61803876	PE 16:0;0_18:2;0	G	C	G	1837	0.2644	0.0333	3.7E-15	3256	0.3404	0.0247	3.4E-42	6.7E-02
rs174548	11	61803876	PE 18:1;0_18:1;0	G	C	G	2538	0.1712	0.0292	4.9E-09	4040	0.2051	0.0227	2.6E-19	3.6E-01
rs174548	11	61803876	PC O-16:0;0/22:5;0	G	C	G	2140	-0.1483	0.0319	3.6E-06	3465	-0.1735	0.0247	2.8E-12	5.3E-01
rs174549	11	61803910	PC 18:2;0_20:3;0	A	G	A	2365	0.2329	0.0300	1.2E-14	3809	0.2020	0.0234	9.5E-18	4.2E-01
rs174551	11	61806212	PC 18:0;0_18:2;0	C	T	C	2592	0.2651	0.0282	1.2E-20	4109	0.2530	0.0221	7.2E-30	7.4E-01
rs174551	11	61806212	PC O-18:1;0/18:2;0	C	T	C	2392	0.2409	0.0293	3.0E-16	3884	0.2215	0.0228	4.9E-22	6.0E-01
rs174554	11	61811991	PC O-18:1;0/20:3;0	G	A	G	2465	0.2578	0.0288	5.9E-19	3924	0.2426	0.0226	1.7E-26	6.8E-01
rs174556	11	61813163	PE 18:0;0_18:2;0	T	C	T	2574	0.3151	0.0286	1.1E-27	4082	0.3712	0.0221	2.1E-61	1.2E-01
rs174556	11	61813163	PC 16:0;0_20:2;0	T	C	T	2578	0.2700	0.0287	1.2E-20	4087	0.2592	0.0224	2.2E-30	7.7E-01
rs174556	11	61813163	PC 14:0;0_18:2;0	T	C	T	2451	0.1492	0.0296	5.2E-07	3961	0.2101	0.0229	7.9E-20	1.0E-01
rs174556	11	61813163	PI 16:0;0_18:2;0	T	C	T	2507	0.1433	0.0294	1.2E-06	4028	0.1811	0.0228	2.6E-15	3.1E-01
rs174556	11	61813163	TAG 54:3;0	T	C	T	2589	0.1364	0.0290	2.8E-06	4101	0.1598	0.0226	2.0E-12	5.3E-01
11:61813890	11	61813890	PE O-18:2;0/18:2;0	CG	C	CG	2271	0.1466	0.0326	7.3E-06	3647	0.1762	0.0252	3.1E-12	4.7E-01
rs174560	11	61814292	PC 16:1;0_18:2;0	C	T	C	2590	0.3533	0.0282	6.5E-35	4102	0.3857	0.0220	1.4E-66	3.7E-01
rs174560	11	61814292	LPE 18:2;0	C	T	C	2516	0.3591	0.0286	4.0E-35	3931	0.3630	0.0225	1.6E-56	9.1E-01
rs174560	11	61814292	TAG 56:3;0	C	T	C	2335	0.1806	0.0302	2.6E-09	3455	0.1817	0.0245	1.6E-13	9.8E-01
rs174561	11	61815236	SM 36:2;2	C	T	C	2591	-0.1596	0.0290	4.0E-08	4109	-0.1684	0.0226	1.2E-13	8.1E-01
rs35473591	11	61818856	PC 16:0;0_22:4;0	CT	C	CT	2486	-0.2466	0.0288	1.7E-17	3931	-0.3112	0.0224	6.3E-43	7.7E-02
rs174564	11	61820833	CE 20:4;0	G	A	G	2592	-0.6351	0.0257	3.8E-121	4109	-0.6622	0.0199	6.2E-215	4.0E-01
rs28456	11	61822009	PI 18:0;0_20:3;0	G	A	G	2453	0.3711	0.0289	1.4E-36	3888	0.3386	0.0227	6.1E-49	3.8E-01
rs28456	11	61822009	PC 16:1;0_18:1;0	G	A	G	2589	0.1632	0.0289	1.8E-08	4104	0.1935	0.0226	1.4E-17	4.1E-01
rs174566	11	61824890	PC 18:1;0_18:2;0	G	A	G	2592	0.3954	0.0275	4.8E-45	4109	0.3803	0.0216	1.1E-66	6.7E-01
rs174567	11	61825533	PC 18:1;0_20:2;0	G	A	G	2036	0.4452	0.0304	4.0E-46	3435	0.4236	0.0233	1.8E-70	5.7E-01
rs174568	11	61826344	PI 18:0;0_18:2;0	T	C	T	2590	0.2739	0.0282	5.5E-22	4107	0.3056	0.0219	3.3E-43	3.8E-01
rs174568	11	61826344	PC 17:0;0_18:2;0	T	C	T	2591	0.2932	0.0281	5.4E-25	4106	0.2501	0.0221	2.9E-29	2.3E-01

rs968567	11	61828092	PC O-16:0;0/20:3;0	T	C	T	2389	0.2339	0.0456	3.2E-07	3878	0.2834	0.0353	1.3E-15	3.9E-01
rs968567	11	61828092	PC 16:0;0_20:3;0	T	C	T	2592	0.2387	0.0443	7.7E-08	4109	0.2490	0.0346	7.0E-13	8.6E-01
rs968567	11	61828092	PC 18:0;0_20:3;0	T	C	T	2589	0.2198	0.0445	8.2E-07	4107	0.2360	0.0346	1.0E-11	7.7E-01
rs78596000	11	61829989	PC 17:0;0_20:4;0	C	T	C	2570	-0.4962	0.0759	7.7E-11	4066	-0.3382	0.0620	5.2E-08	1.1E-01
rs1535	11	61830500	PC 18:0;0_20:2;0	G	A	G	2039	0.2771	0.0314	2.5E-18	3357	0.2744	0.0243	5.7E-29	9.5E-01
rs1535	11	61830500	PC 18:1;0_18:1;0	G	A	G	2592	0.2105	0.0284	1.5E-13	4109	0.2009	0.0222	2.3E-19	7.9E-01
rs174574	11	61832870	TAG 58:7;0	C	A	A	2048	-0.1134	0.0323	4.5E-04	3011	-0.1794	0.0262	8.4E-12	1.1E-01
rs2727270	11	61835765	PI 18:1;0_18:2;0	T	C	T	2270	0.1821	0.0335	6.3E-08	3790	0.1850	0.0260	1.3E-12	9.5E-01
rs2524299	11	61837310	PC 15:0;0_18:2;0	T	A	T	2309	0.3188	0.0329	8.1E-22	3884	0.3456	0.0253	1.8E-41	5.2E-01
rs2524299	11	61837310	CE 20:3;0	T	A	T	2591	-0.0988	0.0318	1.9E-03	4107	-0.2134	0.0250	1.9E-17	4.6E-03
rs174577	11	61837342	PC 16:0;0_18:2;0	A	C	A	2592	0.3410	0.0278	1.5E-33	4109	0.3270	0.0218	2.3E-49	6.9E-01
rs174577	11	61837342	PC O-18:2;0/18:2;0	A	C	A	2577	0.1591	0.0285	2.7E-08	4103	0.1496	0.0223	2.4E-11	7.9E-01
rs174578	11	61838027	PC O-16:0;0/18:2;0	A	T	A	2585	0.1955	0.0284	7.4E-12	4100	0.1707	0.0223	2.5E-14	4.9E-01
rs174584	11	61843278	TAG 56:6;0	A	G	A	2585	-0.1851	0.0285	1.0E-10	4094	-0.2557	0.0221	1.9E-30	5.1E-02
rs174584	11	61843278	PE 18:0;0_20:4;0	A	G	A	2587	-0.1636	0.0285	1.1E-08	4104	-0.1933	0.0222	5.0E-18	4.1E-01
rs174584	11	61843278	CE 18:3;0	A	G	A	2592	-0.1700	0.0285	2.7E-09	4109	-0.1873	0.0222	4.9E-17	6.3E-01
rs174599	11	61854084	PC 18:2;0_20:1;0	C	G	C	1918	0.3348	0.0321	7.8E-25	3231	0.3232	0.0244	3.7E-39	7.7E-01
rs174601	11	61855668	PC 18:2;0_18:2;0	T	C	T	2592	0.2248	0.0282	2.3E-15	4109	0.2224	0.0220	1.0E-23	9.5E-01
rs174601	11	61855668	PC 16:0;0_18:0;0	T	C	T	2582	0.1571	0.0284	3.6E-08	4100	0.1503	0.0222	1.5E-11	8.5E-01
rs97384	11	61856709	CE 22:6;0	C	T	T	2592	-0.1904	0.0284	2.6E-11	4108	-0.1967	0.0222	1.1E-18	8.6E-01
rs97384	11	61856709	PC 18:0;0_22:6;0	C	T	T	2519	-0.1681	0.0289	6.6E-09	4030	-0.1500	0.0225	3.0E-11	6.2E-01
rs66505542	11	116752497	TAG 54:4;0	T	TA	TA	2588	0.2497	0.0355	2.5E-12	4105	0.2901	0.0284	2.9E-24	3.7E-01
rs66505542	11	116752497	TAG 54:3;0	T	TA	TA	2589	0.2484	0.0355	3.2E-12	4101	0.2805	0.0284	9.6E-23	4.8E-01
rs66505542	11	116752497	TAG 53:4;0	T	TA	TA	2369	0.2403	0.0371	1.1E-10	3686	0.2584	0.0298	5.9E-18	7.0E-01
rs66505542	11	116752497	PI 18:0;0_18:2;0	T	TA	TA	2590	0.2077	0.0356	5.9E-09	4107	0.2227	0.0285	7.3E-15	7.4E-01
rs66505542	11	116752497	TAG 51:2;0	T	TA	TA	2585	0.2024	0.0357	1.6E-08	4092	0.2008	0.0286	2.5E-12	9.7E-01
rs66505542	11	116752497	TAG 56:5;0	T	TA	TA	2042	0.2109	0.0391	7.5E-08	3091	0.2026	0.0323	4.1E-10	8.7E-01
rs964184	11	116778201	TAG 52:3;0	C	G	G	2592	0.3134	0.0383	4.2E-16	4108	0.3113	0.0303	1.8E-24	9.7E-01
rs964184	11	116778201	TAG 52:4;0	C	G	G	2592	0.2917	0.0384	4.0E-14	4109	0.3030	0.0303	3.0E-23	8.2E-01
rs964184	11	116778201	TAG 53:3;0	C	G	G	2577	0.2877	0.0385	1.0E-13	4071	0.2921	0.0304	1.4E-21	9.3E-01
rs964184	11	116778201	DAG 18:1;0_18:2;0	C	G	G	2401	0.3175	0.0394	1.2E-15	3770	0.2955	0.0314	9.0E-21	6.6E-01
rs964184	11	116778201	TAG 54:5;0	C	G	G	2581	0.2796	0.0384	4.6E-13	4093	0.2801	0.0304	4.9E-20	9.9E-01

rs964184	11	116778201	TAG 52:5;0	C	G	G	2591	0.2528	0.0385	6.5E-11	4108	0.2755	0.0304	1.8E-19	6.4E-01
rs964184	11	116778201	PI 18:0;0_20:4;0	C	G	G	2592	0.2755	0.0384	9.3E-13	4109	0.2741	0.0304	2.8E-19	9.8E-01
rs964184	11	116778201	TAG 51:3;0	C	G	G	2572	0.2671	0.0386	5.8E-12	4079	0.2598	0.0305	2.2E-17	8.8E-01
rs964184	11	116778201	TAG 56:6;0	C	G	G	2585	0.2523	0.0385	6.8E-11	4094	0.2546	0.0305	8.6E-17	9.6E-01
rs964184	11	116778201	DAG 18:1;0_18:1;0	C	G	G	2494	0.2987	0.0390	2.8E-14	3935	0.2580	0.0310	1.1E-16	4.1E-01
rs964184	11	116778201	TAG 52:2;0	C	G	G	2590	0.2693	0.0384	3.0E-12	4105	0.2490	0.0304	3.8E-16	6.8E-01
rs964184	11	116778201	TAG 50:3;0	C	G	G	2586	0.2185	0.0386	1.6E-08	4104	0.2291	0.0305	7.1E-14	8.3E-01
rs964184	11	116778201	TAG 53:2;0	C	G	G	2543	0.2448	0.0388	3.2E-10	3993	0.2295	0.0308	1.1E-13	7.6E-01
rs964184	11	116778201	TAG 56:7;0	C	G	G	2584	0.2201	0.0386	1.3E-08	4093	0.2264	0.0305	1.4E-13	9.0E-01
rs964184	11	116778201	TAG 54:6;0	C	G	G	2556	0.2255	0.0387	6.4E-09	4039	0.2278	0.0307	1.4E-13	9.6E-01
rs964184	11	116778201	TAG 50:4;0	C	G	G	2589	0.1988	0.0386	2.8E-07	4104	0.2226	0.0305	3.5E-13	6.3E-01
rs964184	11	116778201	TAG 56:4;0	C	G	G	2127	0.2747	0.0421	8.6E-11	3330	0.2322	0.0335	5.3E-12	4.3E-01
rs964184	11	116778201	TAG 56:3;0	C	G	G	2335	0.2673	0.0398	2.4E-11	3455	0.2192	0.0327	2.5E-11	3.5E-01
rs964184	11	116778201	TAG 56:8;0	C	G	G	2492	0.1920	0.0393	1.1E-06	3862	0.2043	0.0316	1.1E-10	8.1E-01
rs964184	11	116778201	PC 17:0;0_18:2;0	C	G	G	2591	0.1076	0.0387	5.5E-03	4106	0.1950	0.0305	1.9E-10	7.6E-02
rs964184	11	116778201	TAG 52:6;0	C	G	G	2382	0.2128	0.0402	1.3E-07	3746	0.2016	0.0317	2.3E-10	8.3E-01
rs964184	11	116778201	TAG 54:7;0	C	G	G	2494	0.1645	0.0392	2.8E-05	3883	0.1955	0.0313	4.8E-10	5.4E-01
rs964184	11	116778201	TAG 51:4;0	C	G	G	1959	0.2789	0.0431	1.2E-10	2941	0.2152	0.0349	7.7E-10	2.5E-01
rs964184	11	116778201	DAG 16:0;0_18:2;0	C	G	G	2240	0.2880	0.0408	2.1E-12	3431	0.1933	0.0330	5.0E-09	7.1E-02
rs2280696	12	53118972	CE 18:0;0	T	A	T	2589	0.2738	0.0414	4.6E-11	4097	0.2369	0.0331	9.0E-13	4.9E-01
rs34978457	14	63765799	SM 34:0;2	T	TAA	T	2171	-0.2962	0.0451	6.1E-11	3627	-0.3544	0.0358	8.9E-23	3.1E-01
rs34609767	14	63767316	SM 40:2;2	G	T	G	2592	0.3391	0.0408	1.5E-16	4109	0.3064	0.0332	4.2E-20	5.4E-01
rs7157785	14	63768838	SM 32:1;2	T	G	T	2592	0.4981	0.0402	2.3E-34	4109	0.5016	0.0326	3.9E-52	9.5E-01
rs7157785	14	63768838	SM 38:1;2	T	G	T	2592	0.3647	0.0407	6.1E-19	4109	0.3514	0.0330	4.3E-26	8.0E-01
rs1077989	14	67509105	PC O-16:1;0/16:0;0	C	A	C	2061	-0.1769	0.0310	1.4E-08	3418	-0.1767	0.0240	2.0E-13	9.9E-01
rs1077989	14	67509105	PC O-16:1;0/20:4;0	C	A	C	2266	-0.2192	0.0294	1.3E-13	3374	-0.1651	0.0243	1.4E-11	1.6E-01
rs10468017	15	58386313	PC O-16:2;0/18:0;0	T	C	T	2417	0.1953	0.0302	1.2E-10	3815	0.1650	0.0238	4.5E-12	4.3E-01
rs1077834	15	58431280	PE 16:0;0_18:2;0	C	T	C	1837	0.2433	0.0364	3.1E-11	3256	0.3608	0.0275	2.3E-38	1.0E-02
rs1077834	15	58431280	PE 18:1;0_18:1;0	C	T	C	2538	0.2075	0.0319	9.3E-11	4040	0.2839	0.0254	1.8E-28	6.1E-02
rs1077834	15	58431280	PC 16:0;0_18:2;0	C	T	C	2592	0.0883	0.0319	5.6E-03	4109	0.1650	0.0255	1.1E-10	6.0E-02
rs1800588	15	58431476	PE 16:0;0_20:4;0	T	C	T	2362	0.3339	0.0326	4.2E-24	3865	0.4207	0.0256	9.8E-59	3.6E-02
rs1800588	15	58431476	PE 18:0;0_20:4;0	T	C	T	2587	0.3285	0.0315	5.8E-25	4104	0.3850	0.0251	1.3E-51	1.6E-01

rs1800588	15	58431476	PE 18:0;0_18:2;0	T	C	T	2574	0.2508	0.0319	5.1E-15	4082	0.3460	0.0253	1.5E-41	1.9E-02
rs1800588	15	58431476	PC 15:0;0_18:2;0	T	C	T	2309	0.0512	0.0340	1.3E-01	3884	0.1723	0.0265	8.2E-11	5.0E-03
rs6498540	16	15036737	PC 18:0;0_20:3;0	G	A	G	2589	-0.1762	0.0292	1.7E-09	4107	-0.2018	0.0234	1.1E-17	5.0E-01
rs6498540	16	15036737	PC 16:0;0_20:3;0	G	A	G	2592	-0.1699	0.0292	6.3E-09	4109	-0.1931	0.0235	2.5E-16	5.4E-01
rs6498540	16	15036737	PC 18:1;0_20:3;0	G	A	G	2590	-0.1443	0.0292	8.4E-07	4108	-0.1467	0.0235	5.2E-10	9.5E-01
rs6498540	16	15036737	PC O-16:1;0/20:3;0	G	A	G	2433	-0.1438	0.0301	1.9E-06	3887	-0.1506	0.0242	5.5E-10	8.6E-01
rs1135999	16	15038105	CE 20:3;0	G	A	G	2591	-0.2169	0.0293	1.7E-13	4107	-0.2245	0.0237	4.4E-21	8.4E-01
rs173539	16	56954132	PC 16:0;0_16:0;0	T	C	T	2592	0.1359	0.0309	1.2E-05	4109	0.1539	0.0242	2.2E-10	6.5E-01
rs79202680	17	4789345	SM 40:1;2	T	G	T	2592	-0.7971	0.0743	2.7E-26	4109	-0.7230	0.0629	4.2E-30	4.5E-01
rs79202680	17	4789345	SM 34:0;2	T	G	T	2171	-0.6660	0.0916	5.0E-13	3627	-0.6977	0.0715	3.0E-22	7.9E-01
rs79202680	17	4789345	SM 42:2;2	T	G	T	2592	-0.6004	0.0750	1.8E-15	4109	-0.4707	0.0635	1.5E-13	1.9E-01
rs79202680	17	4789345	SM 38:1;2	T	G	T	2592	-0.5120	0.0753	1.3E-11	4109	-0.4340	0.0636	9.9E-12	4.3E-01
18:20932590	18	20932590	PC 14:0;0_18:2;0	C	G	C	2451	0.4865	0.1364	3.7E-04	3961	0.6232	0.1002	5.6E-10	4.2E-01
rs9958734	18	49592028	PI 18:0;0_18:2;0	C	T	C	2590	0.1291	0.0468	5.9E-03	4107	0.2670	0.0379	2.3E-12	2.2E-02
rs7258249	19	8206837	SM 38:1;2	A	G	A	2592	0.2128	0.0281	5.3E-14	4109	0.2288	0.0223	2.2E-24	6.6E-01
rs2336171	19	8209156	SM 38:2;2	C	G	C	2578	0.2508	0.0282	9.6E-19	4100	0.2749	0.0223	2.1E-34	5.0E-01
rs12610250	19	8212829	SM 36:1;2	G	A	G	2592	0.1844	0.0282	6.9E-11	4109	0.1948	0.0224	5.2E-18	7.7E-01
rs7253584	19	8222034	SM 36:2;2	C	T	T	2591	-0.2010	0.0300	2.5E-11	4109	-0.1611	0.0232	4.3E-12	2.9E-01
rs113722226	19	11078596	SM 42:2;2	C	T	C	2592	-0.1717	0.0473	2.8E-04	4109	-0.2540	0.0371	9.0E-12	1.7E-01
rs60173709	19	11091312	SM 34:1;2	G	GT	G	2592	-0.1863	0.0474	8.7E-05	4109	-0.2833	0.0371	3.0E-14	1.1E-01
rs150057262	19	19210016	TAG 56:6;0	G	C	G	2585	-0.3187	0.0671	2.1E-06	4094	-0.3447	0.0495	3.7E-12	7.6E-01
rs187429064	19	19269704	CE 20:4;0	G	A	G	2592	-0.4150	0.0649	1.9E-10	4109	-0.1960	0.0484	5.2E-05	6.8E-03
rs8100204	19	19282905	Cer 42:1;2	A	G	A	2592	-0.1625	0.0385	2.5E-05	4109	-0.1846	0.0290	2.2E-10	6.5E-01
rs7412	19	44908822	CE 18:2;0	T	C	T	2592	-0.3778	0.0612	7.9E-10	4109	-0.5269	0.0489	1.1E-26	5.7E-02
rs7412	19	44908822	CE 16:0;0	T	C	T	2592	-0.3393	0.0613	3.5E-08	4109	-0.4515	0.0491	6.0E-20	1.5E-01
rs7412	19	44908822	CE 18:1;0	T	C	T	2592	-0.1933	0.0616	1.7E-03	4109	-0.3481	0.0493	2.0E-12	5.0E-02
rs7412	19	44908822	CE 20:4;0	T	C	T	2592	-0.2763	0.0614	7.2E-06	4109	-0.3375	0.0493	9.0E-12	4.4E-01
19:54173307	19	54173307	PI 18:0;0_20:3;0	G	C	C	2453	-0.1766	0.0285	6.9E-10	3888	-0.2528	0.0232	2.7E-27	3.8E-02
19:54173495	19	54173495	PI 18:0;0_18:2;0	C	T	T	2590	0.3916	0.0268	2.0E-46	4107	0.3502	0.0223	3.3E-54	2.3E-01
19:54173495	19	54173495	PI 18:0;0_20:4;0	C	T	T	2592	-0.2322	0.0275	5.4E-17	4109	-0.3148	0.0224	6.2E-44	2.0E-02
19:54173495	19	54173495	PI 16:0;0_18:2;0	C	T	T	2507	0.2789	0.0278	2.9E-23	4028	0.2151	0.0228	7.5E-21	7.6E-02
19:54173495	19	54173495	PI 18:0;0_18:1;0	C	T	T	2588	0.2409	0.0275	3.6E-18	4103	0.2024	0.0227	7.5E-19	2.8E-01

rs438568	20	12978039	Cer 40:2;2	G	A	A	1913	0.2357	0.0334	2.3E-12	3022	0.2198	0.0269	4.3E-16	7.1E-01
rs364585	20	12982070	Cer 40:1;2	G	A	A	2572	0.2607	0.0290	4.5E-19	4077	0.2565	0.0231	3.2E-28	9.1E-01
rs364585	20	12982070	Cer 42:2;2	G	A	A	2592	0.2788	0.0288	8.8E-22	4108	0.2441	0.0231	7.5E-26	3.5E-01
rs364585	20	12982070	Cer 42:1;2	G	A	A	2592	0.2171	0.0290	9.9E-14	4109	0.2162	0.0231	1.4E-20	9.8E-01
rs364585	20	12982070	SM 38:1;2	G	A	A	2592	0.1662	0.0291	1.3E-08	4109	0.1509	0.0233	9.7E-11	6.8E-01
rs738409	22	43928847	TAG 56:6;0	G	C	G	2585	0.1859	0.0330	1.9E-08	4094	0.2177	0.0266	3.6E-16	4.5E-01

Table S15: Detail of lipid indices used in the study.

Index name	N (numerator)	Lipid (numerator)	N (denominator)	Lipid (denominator)
16:1/16:0 in CE	1	CE 16:1;0-FA-16:1;0	1	CE 16:0;0-FA-16:0;0
16:1/16:0 in DAG	1	DAG 16:1;0_18:1;0-FA-16:1;0	2	c("DAG 16:0;0_18:1;0-FA-16:0;0", "DAG 16:0;0_18:2;0-FA-16:0;0")
16:1/16:0 in PC	5	c("PC 16:0;0_16:1;0-FA-16:1;0", "PC 16:1;0_18:0;0-FA-16:1;0", "PC 16:1;0_18:1;0-FA-16:1;0", "PC 16:1;0_18:2;0-FA-16:1;0", "PC 16:1;0_20:4;0-FA-16:1;0")	16	c("PC 14:0;0_16:0;0-FA-16:0;0", "PC 16:0;0_16:0;0-FA-16:0;0", "PC 16:0;0_16:1;0-FA-16:0;0", "PC 16:0;0_17:1;0-FA-16:0;0", "PC 16:0;0_18:0;0-FA-16:0;0", "PC 16:0;0_18:1;0-FA-16:0;0", "PC 16:0;0_18:2;0-FA-16:0;0", "PC 16:0;0_18:3;0-FA-16:0;0", "PC 16:0;0_20:1;0-FA-16:0;0", "PC 16:0;0_20:2;0-FA-16:0;0", "PC 16:0;0_20:3;0-FA-16:0;0", "PC 16:0;0_20:4;0-FA-16:0;0", "PC 16:0;0_20:5;0-FA-16:0;0", "PC 16:0;0_22:4;0-FA-16:0;0", "PC 16:0;0_22:5;0-FA-16:0;0", "PC 16:0;0_22:6;0-FA-16:0;0")
16:1/16:0 in PC O-	2	c("PC O-16:0;0/16:1;0-FA-16:1;0", "PC O-18:0;0/16:1;0-FA-16:1;0")	4	c("PC O-16:0;0/16:0;0-FA-16:0;0", "PC O-16:1;0/16:0;0-FA-16:0;0", "PC O-18:1;0/16:0;0-FA-16:0;0", "PC O-18:2;0/16:0;0-FA-16:0;0")
16:1/16:0 in TAG	37	c("TAG 46:1;0-FA 16:1;0-FA-16:1;0", "TAG 46:2;0-FA 16:1;0-FA-16:1;0", "TAG 48:1;0-FA 16:1;0-FA-16:1;0", "TAG 48:2;0-FA 16:1;0-FA-16:1;0", "TAG 48:3;0-FA 16:1;0-FA-16:1;0", "TAG 49:1;0-FA 16:1;0-FA-16:1;0", "TAG 49:2;0-FA 16:1;0-FA-16:1;0", "TAG 50:1;0-FA 16:1;0-FA-16:1;0", "TAG 50:2;0-FA 16:1;0-FA-16:1;0", "TAG 50:3;0-FA 16:1;0-FA-16:1;0", "TAG 50:4;0-FA 16:1;0-FA-16:1;0", "TAG 50:5;0-FA 16:1;0-FA-16:1;0", "TAG 51:1;0-FA 16:1;0-FA-16:1;0", "TAG 51:2;0-FA 16:1;0-FA-16:1;0", "TAG 51:3;0-FA 16:1;0-FA-16:1;0", "TAG 51:4;0-FA 16:1;0-FA-16:1;0", "TAG 52:2;0-FA 16:1;0-FA-16:1;0", "TAG 52:3;0-FA 16:1;0-FA-16:1;0", "TAG 52:4;0-FA 16:1;0-FA-16:1;0", "TAG 52:5;0-FA 16:1;0-FA-16:1;0", "TAG 52:6;0-FA 16:1;0-FA-16:1;0", "TAG 53:2;0-FA 16:1;0-FA-16:1;0", "TAG 53:3;0-FA 16:1;0-FA-16:1;0", "TAG 53:4;0-FA 16:1;0-FA-16:1;0", "TAG 54:3;0-FA 16:1;0-FA-16:1;0", "TAG 54:4;0-FA 16:1;0-FA-16:1;0", "TAG 54:5;0-FA 16:1;0-FA-16:1;0", "TAG 54:6;0-FA 16:1;0-FA-16:1;0", "TAG 54:7;0-FA 16:1;0-FA-16:1;0", "TAG 56:3;0-FA 16:1;0-FA-16:1;0", "TAG 56:4;0-FA 16:1;0-FA-16:1;0", "TAG 56:5;0-FA 16:1;0-FA-16:1;0", "TAG 56:6;0-FA 16:1;0-FA-16:1;0", "TAG 56:7;0-FA 16:1;0-FA-16:1;0", "TAG 56:8;0-FA 16:1;0-FA-16:1;0", "TAG 58:7;0-FA 16:1;0-FA-16:1;0", "TAG 58:8;0-FA 16:1;0-FA-16:1;0")	38	c("TAG 46:1;0-FA 16:0;0-FA-16:0;0", "TAG 46:2;0-FA 16:0;0-FA-16:0;0", "TAG 48:0;0-FA 16:0;0-FA-16:0;0", "TAG 48:1;0-FA 16:0;0-FA-16:0;0", "TAG 48:2;0-FA 16:0;0-FA-16:0;0", "TAG 48:3;0-FA 16:0;0-FA-16:0;0", "TAG 49:1;0-FA 16:0;0-FA-16:0;0", "TAG 49:2;0-FA 16:0;0-FA-16:0;0", "TAG 50:1;0-FA 16:0;0-FA-16:0;0", "TAG 50:2;0-FA 16:0;0-FA-16:0;0", "TAG 50:3;0-FA 16:0;0-FA-16:0;0", "TAG 50:4;0-FA 16:0;0-FA-16:0;0", "TAG 50:5;0-FA 16:0;0-FA-16:0;0", "TAG 51:1;0-FA 16:0;0-FA-16:0;0", "TAG 51:2;0-FA 16:0;0-FA-16:0;0", "TAG 51:3;0-FA 16:0;0-FA-16:0;0", "TAG 51:4;0-FA 16:0;0-FA-16:0;0", "TAG 52:2;0-FA 16:0;0-FA-16:0;0", "TAG 52:3;0-FA 16:0;0-FA-16:0;0", "TAG 52:4;0-FA 16:0;0-FA-16:0;0", "TAG 52:5;0-FA 16:0;0-FA-16:0;0", "TAG 52:6;0-FA 16:0;0-FA-16:0;0", "TAG 53:2;0-FA 16:0;0-FA-16:0;0", "TAG 53:3;0-FA 16:0;0-FA-16:0;0", "TAG 53:4;0-FA 16:0;0-FA-16:0;0", "TAG 54:3;0-FA 16:0;0-FA-16:0;0", "TAG 54:4;0-FA 16:0;0-FA-16:0;0", "TAG 54:5;0-FA 16:0;0-FA-16:0;0", "TAG 54:6;0-FA 16:0;0-FA-16:0;0", "TAG 54:7;0-FA 16:0;0-FA-16:0;0", "TAG 56:3;0-FA 16:0;0-FA-16:0;0", "TAG 56:4;0-FA 16:0;0-FA-16:0;0", "TAG 56:5;0-FA 16:0;0-FA-16:0;0", "TAG 56:6;0-FA 16:0;0-FA-16:0;0", "TAG 56:7;0-FA 16:0;0-FA-16:0;0", "TAG 56:8;0-FA 16:0;0-FA-16:0;0", "TAG 58:7;0-FA 16:0;0-FA-16:0;0", "TAG 58:8;0-FA 16:0;0-FA-16:0;0")
18:1/18:0 in CE	1	CE 18:1;0-FA-18:1;0	1	CE 18:0;0-FA-18:0;0
18:1/18:0 in LPC	1	LPC 18:1;0-FA-18:1;0	1	LPC 18:0;0-FA-18:0;0
18:1/18:0 in PC	12	c("PC 14:0;0_18:1;0-FA-18:1;0", "PC 15:0;0_18:1;0-FA-18:1;0", "PC 16:0;0_18:1;0-FA-18:1;0", "PC 16:1;0_18:1;0-FA-18:1;0", "PC 17:0;0_18:1;0-FA-18:1;0", "PC 18:0;0_18:1;0-FA-18:1;0", "PC	11	c("PC 16:0;0_18:0;0-FA-18:0;0", "PC 16:1;0_18:0;0-FA-18:0;0", "PC 18:0;0_18:1;0-FA-18:0;0", "PC 18:0;0_18:2;0-FA-18:0;0", "PC 18:0;0_18:3;0-FA-18:0;0", "PC 18:0;0_20:2;0-FA-18:0;0", "PC

		18:1;0_18:1;0-FA-18:1;0", "PC 18:1;0_18:2;0-FA-18:1;0", "PC 18:1;0_18:3;0-FA-18:1;0", "PC 18:1;0_20:2;0-FA-18:1;0", "PC 18:1;0_20:3;0-FA-18:1;0", "PC 18:1;0_20:4;0-FA-18:1;0")		18:0;0_20:3;0-FA-18:0;0", "PC 18:0;0_20:4;0-FA-18:0;0", "PC 18:0;0_20:5;0-FA-18:0;0", "PC 18:0;0_22:5;0-FA-18:0;0", "PC 18:0;0_22:6;0-FA-18:0;0")
18:1/18:0 in PC O-	3	c("PC O-16:0;0/18:1;0-FA-18:1;0", "PC O-16:1;0/18:1;0-FA-18:1;0", "PC O-18:2;0/18:1;0-FA-18:1;0")	2	c("PC O-16:1;0/18:0;0-FA-18:0;0", "PC O-16:2;0/18:0;0-FA-18:0;0")
18:1/18:0 in PE	1	PE 18:1;0_18:1;0-FA-18:1;0	2	c("PE 18:0;0_18:2;0-FA-18:0;0", "PE 18:0;0_20:4;0-FA-18:0;0")
18:1/18:0 in PI	5	c("PI 16:0;0_18:1;0-FA-18:1;0", "PI 18:0;0_18:1;0-FA-18:1;0", "PI 18:1;0_18:1;0-FA-18:1;0", "PI 18:1;0_18:2;0-FA-18:1;0", "PI 18:1;0_20:4;0-FA-18:1;0")	4	c("PI 18:0;0_18:1;0-FA-18:0;0", "PI 18:0;0_18:2;0-FA-18:0;0", "PI 18:0;0_20:3;0-FA-18:0;0", "PI 18:0;0_20:4;0-FA-18:0;0")
18:1/18:0 in TAG	37	c("TAG 46:1;0-FA 18:1;0-FA-18:1;0", "TAG 46:2;0-FA 18:1;0-FA-18:1;0", "TAG 48:1;0-FA 18:1;0-FA-18:1;0", "TAG 48:2;0-FA 18:1;0-FA-18:1;0", "TAG 48:3;0-FA 18:1;0-FA-18:1;0", "TAG 49:1;0-FA 18:1;0-FA-18:1;0", "TAG 49:2;0-FA 18:1;0-FA-18:1;0", "TAG 50:1;0-FA 18:1;0-FA-18:1;0", "TAG 50:2;0-FA 18:1;0-FA-18:1;0", "TAG 50:3;0-FA 18:1;0-FA-18:1;0", "TAG 50:4;0-FA 18:1;0-FA-18:1;0", "TAG 50:5;0-FA 18:1;0-FA-18:1;0", "TAG 51:1;0-FA 18:1;0-FA-18:1;0", "TAG 51:2;0-FA 18:1;0-FA-18:1;0", "TAG 51:3;0-FA 18:1;0-FA-18:1;0", "TAG 51:4;0-FA 18:1;0-FA-18:1;0", "TAG 52:2;0-FA 18:1;0-FA-18:1;0", "TAG 52:3;0-FA 18:1;0-FA-18:1;0", "TAG 52:4;0-FA 18:1;0-FA-18:1;0", "TAG 52:5;0-FA 18:1;0-FA-18:1;0", "TAG 52:6;0-FA 18:1;0-FA-18:1;0", "TAG 53:2;0-FA 18:1;0-FA-18:1;0", "TAG 53:3;0-FA 18:1;0-FA-18:1;0", "TAG 53:4;0-FA 18:1;0-FA-18:1;0", "TAG 54:3;0-FA 18:1;0-FA-18:1;0", "TAG 54:4;0-FA 18:1;0-FA-18:1;0", "TAG 54:5;0-FA 18:1;0-FA-18:1;0", "TAG 54:6;0-FA 18:1;0-FA-18:1;0", "TAG 54:7;0-FA 18:1;0-FA-18:1;0", "TAG 56:3;0-FA 18:1;0-FA-18:1;0", "TAG 56:4;0-FA 18:1;0-FA-18:1;0", "TAG 56:5;0-FA 18:1;0-FA-18:1;0", "TAG 56:6;0-FA 18:1;0-FA-18:1;0", "TAG 56:7;0-FA 18:1;0-FA-18:1;0", "TAG 56:8;0-FA 18:1;0-FA-18:1;0", "TAG 58:7;0-FA 18:1;0-FA-18:1;0", "TAG 58:8;0-FA 18:1;0-FA-18:1;0")	34	c("TAG 46:1;0-FA 18:0;0-FA-18:0;0", "TAG 46:2;0-FA 18:0;0-FA-18:0;0", "TAG 48:0;0-FA 18:0;0-FA-18:0;0", "TAG 48:1;0-FA 18:0;0-FA-18:0;0", "TAG 48:2;0-FA 18:0;0-FA-18:0;0", "TAG 48:3;0-FA 18:0;0-FA-18:0;0", "TAG 49:1;0-FA 18:0;0-FA-18:0;0", "TAG 49:2;0-FA 18:0;0-FA-18:0;0", "TAG 50:1;0-FA 18:0;0-FA-18:0;0", "TAG 50:2;0-FA 18:0;0-FA-18:0;0", "TAG 50:3;0-FA 18:0;0-FA-18:0;0", "TAG 50:4;0-FA 18:0;0-FA-18:0;0", "TAG 51:1;0-FA 18:0;0-FA-18:0;0", "TAG 51:2;0-FA 18:0;0-FA-18:0;0", "TAG 51:3;0-FA 18:0;0-FA-18:0;0", "TAG 52:2;0-FA 18:0;0-FA-18:0;0", "TAG 52:3;0-FA 18:0;0-FA-18:0;0", "TAG 52:4;0-FA 18:0;0-FA-18:0;0", "TAG 52:5;0-FA 18:0;0-FA-18:0;0", "TAG 53:2;0-FA 18:0;0-FA-18:0;0", "TAG 53:3;0-FA 18:0;0-FA-18:0;0", "TAG 53:4;0-FA 18:0;0-FA-18:0;0", "TAG 54:3;0-FA 18:0;0-FA-18:0;0", "TAG 54:4;0-FA 18:0;0-FA-18:0;0", "TAG 54:5;0-FA 18:0;0-FA-18:0;0", "TAG 54:6;0-FA 18:0;0-FA-18:0;0", "TAG 56:3;0-FA 18:0;0-FA-18:0;0", "TAG 56:4;0-FA 18:0;0-FA-18:0;0", "TAG 56:5;0-FA 18:0;0-FA-18:0;0", "TAG 56:6;0-FA 18:0;0-FA-18:0;0", "TAG 56:7;0-FA 18:0;0-FA-18:0;0", "TAG 56:8;0-FA 18:0;0-FA-18:0;0", "TAG 58:7;0-FA 18:0;0-FA-18:0;0", "TAG 58:8;0-FA 18:0;0-FA-18:0;0")
D5D in CE	1	CE 20:4;0-FA-20:4;0	1	CE 20:3;0-FA-20:3;0
D5D in PC	6	c("PC 16:0;0_20:4;0-FA-20:4;0", "PC 16:1;0_20:4;0-FA-20:4;0", "PC 17:0;0_20:4;0-FA-20:4;0", "PC 18:0;0_20:4;0-FA-20:4;0", "PC 18:1;0_20:4;0-FA-20:4;0", "PC 18:2;0_20:4;0-FA-20:4;0")	4	c("PC 16:0;0_20:3;0-FA-20:3;0", "PC 18:0;0_20:3;0-FA-20:3;0", "PC 18:1;0_20:3;0-FA-20:3;0", "PC 18:2;0_20:3;0-FA-20:3;0")
D5D in PC O-	5	c("PC O-16:0;0/20:4;0-FA-20:4;0", "PC O-16:1;0/20:4;0-FA-20:4;0", "PC O-18:0;0/20:4;0-FA-20:4;0", "PC O-18:1;0/20:4;0-FA-20:4;0", "PC O-18:2;0/20:4;0-FA-20:4;0")	3	c("PC O-16:0;0/20:3;0-FA-20:3;0", "PC O-16:1;0/20:3;0-FA-20:3;0", "PC O-18:1;0/20:3;0-FA-20:3;0")
D5D in PI	3	c("PI 16:0;0_20:4;0-FA-20:4;0", "PI 18:0;0_20:4;0-FA-20:4;0", "PI 18:1;0_20:4;0-FA-20:4;0")	1	PI 18:0;0_20:3;0-FA-20:3;0
D5D in TAG	18	c("TAG 50:4;0-FA 20:4;0-FA-20:4;0", "TAG 50:5;0-FA 20:4;0-FA-20:4;0", "TAG 51:4;0-FA 20:4;0-FA-20:4;0", "TAG 52:4;0-FA 20:4;0-FA-20:4;0", "TAG 52:5;0-FA 20:4;0-FA-20:4;0", "TAG 52:6;0-FA 20:4;0-FA-20:4;0", "TAG 53:4;0-FA 20:4;0-FA-20:4;0", "TAG 54:4;0-FA 20:4;0-FA-20:4;0", "TAG 54:5;0-FA 20:4;0-FA-20:4;0", "TAG 54:6;0-FA 20:4;0-FA-20:4;0", "TAG 54:7;0-FA 20:4;0-FA-20:4;0", "TAG 56:4;0-FA 20:4;0-FA-20:4;0", "TAG	25	c("TAG 48:3;0-FA 20:3;0-FA-20:3;0", "TAG 50:3;0-FA 20:3;0-FA-20:3;0", "TAG 50:4;0-FA 20:3;0-FA-20:3;0", "TAG 50:5;0-FA 20:3;0-FA-20:3;0", "TAG 51:3;0-FA 20:3;0-FA-20:3;0", "TAG 51:4;0-FA 20:3;0-FA-20:3;0", "TAG 52:3;0-FA 20:3;0-FA-20:3;0", "TAG 52:4;0-FA 20:3;0-FA-20:3;0", "TAG 52:5;0-FA 20:3;0-FA-20:3;0", "TAG 52:6;0-FA 20:3;0-FA-20:3;0", "TAG 53:3;0-FA 20:3;0-FA-20:3;0", "TAG 53:4;0-FA 20:3;0-FA-20:3;0", "TAG 54:3;0-FA 20:3;0-FA-20:3;0", "TAG 54:4;0-FA 20:3;0-FA-20:3;0",

		56:5;0-FA 20:4;0-FA-20:4;0", "TAG 56:6;0-FA 20:4;0-FA-20:4;0", "TAG 56:7;0-FA 20:4;0-FA-20:4;0", "TAG 56:8;0-FA 20:4;0-FA-20:4;0", "TAG 58:7;0-FA 20:4;0-FA-20:4;0", "TAG 58:8;0-FA 20:4;0-FA-20:4;0")			"TAG 54:5;0-FA 20:3;0-FA-20:3;0", "TAG 54:6;0-FA 20:3;0-FA-20:3;0", "TAG 54:7;0-FA 20:3;0-FA-20:3;0", "TAG 56:3;0-FA 20:3;0-FA-20:3;0", "TAG 56:4;0-FA 20:3;0-FA-20:3;0", "TAG 56:5;0-FA 20:3;0-FA-20:3;0", "TAG 56:6;0-FA 20:3;0-FA-20:3;0", "TAG 56:7;0-FA 20:3;0-FA-20:3;0", "TAG 56:8;0-FA 20:3;0-FA-20:3;0", "TAG 58:7;0-FA 20:3;0-FA-20:3;0", "TAG 58:8;0-FA 20:3;0-FA-20:3;0")
D6D in CE	1	CE 18:3;0-FA-18:3;0	1	CE 18:2;0-FA-18:2;0
D6D in DAG	1	DAG 18:1;0_18:3;0-FA-18:3;0	2	c("DAG 16:0;0_18:2;0-FA-18:2;0", "DAG 18:1;0_18:2;0-FA-18:2;0")
D6D in PC	3	c("PC 16:0;0_18:3;0-FA-18:3;0", "PC 18:0;0_18:3;0-FA-18:3;0", "PC 18:1;0_18:3;0-FA-18:3;0")	11	c("PC 14:0;0_18:2;0-FA-18:2;0", "PC 15:0;0_18:2;0-FA-18:2;0", "PC 16:0;0_18:2;0-FA-18:2;0", "PC 16:1;0_18:2;0-FA-18:2;0", "PC 17:0;0_18:2;0-FA-18:2;0", "PC 18:0;0_18:2;0-FA-18:2;0", "PC 18:1;0_18:2;0-FA-18:2;0", "PC 18:2;0_18:2;0-FA-18:2;0", "PC 18:2;0_20:1;0-FA-18:2;0", "PC 18:2;0_20:3;0-FA-18:2;0", "PC 18:2;0_20:4;0-FA-18:2;0")
D6D in TAG	25	c("TAG 48:3;0-FA 18:3;0-FA-18:3;0", "TAG 50:3;0-FA 18:3;0-FA-18:3;0", "TAG 50:4;0-FA 18:3;0-FA-18:3;0", "TAG 50:5;0-FA 18:3;0-FA-18:3;0", "TAG 51:3;0-FA 18:3;0-FA-18:3;0", "TAG 51:4;0-FA 18:3;0-FA-18:3;0", "TAG 52:3;0-FA 18:3;0-FA-18:3;0", "TAG 52:4;0-FA 18:3;0-FA-18:3;0", "TAG 52:5;0-FA 18:3;0-FA-18:3;0", "TAG 52:6;0-FA 18:3;0-FA-18:3;0", "TAG 53:3;0-FA 18:3;0-FA-18:3;0", "TAG 53:4;0-FA 18:3;0-FA-18:3;0", "TAG 54:3;0-FA 18:3;0-FA-18:3;0", "TAG 54:4;0-FA 18:3;0-FA-18:3;0", "TAG 54:5;0-FA 18:3;0-FA-18:3;0", "TAG 54:6;0-FA 18:3;0-FA-18:3;0", "TAG 54:7;0-FA 18:3;0-FA-18:3;0", "TAG 56:3;0-FA 18:3;0-FA-18:3;0", "TAG 56:4;0-FA 18:3;0-FA-18:3;0", "TAG 56:5;0-FA 18:3;0-FA-18:3;0", "TAG 56:6;0-FA 18:3;0-FA-18:3;0", "TAG 56:7;0-FA 18:3;0-FA-18:3;0", "TAG 56:8;0-FA 18:3;0-FA-18:3;0", "TAG 58:7;0-FA 18:3;0-FA-18:3;0", "TAG 58:8;0-FA 18:3;0-FA-18:3;0")	32	c("TAG 46:2;0-FA 18:2;0-FA-18:2;0", "TAG 48:2;0-FA 18:2;0-FA-18:2;0", "TAG 48:3;0-FA 18:2;0-FA-18:2;0", "TAG 49:2;0-FA 18:2;0-FA-18:2;0", "TAG 50:2;0-FA 18:2;0-FA-18:2;0", "TAG 50:3;0-FA 18:2;0-FA-18:2;0", "TAG 50:4;0-FA 18:2;0-FA-18:2;0", "TAG 50:5;0-FA 18:2;0-FA-18:2;0", "TAG 51:2;0-FA 18:2;0-FA-18:2;0", "TAG 51:3;0-FA 18:2;0-FA-18:2;0", "TAG 51:4;0-FA 18:2;0-FA-18:2;0", "TAG 52:2;0-FA 18:2;0-FA-18:2;0", "TAG 52:3;0-FA 18:2;0-FA-18:2;0", "TAG 52:4;0-FA 18:2;0-FA-18:2;0", "TAG 52:5;0-FA 18:2;0-FA-18:2;0", "TAG 52:6;0-FA 18:2;0-FA-18:2;0", "TAG 53:2;0-FA 18:2;0-FA-18:2;0", "TAG 53:3;0-FA 18:2;0-FA-18:2;0", "TAG 53:4;0-FA 18:2;0-FA-18:2;0", "TAG 54:3;0-FA 18:2;0-FA-18:2;0", "TAG 54:4;0-FA 18:2;0-FA-18:2;0", "TAG 54:5;0-FA 18:2;0-FA-18:2;0", "TAG 54:6;0-FA 18:2;0-FA-18:2;0", "TAG 54:7;0-FA 18:2;0-FA-18:2;0", "TAG 56:3;0-FA 18:2;0-FA-18:2;0", "TAG 56:4;0-FA 18:2;0-FA-18:2;0", "TAG 56:5;0-FA 18:2;0-FA-18:2;0", "TAG 56:6;0-FA 18:2;0-FA-18:2;0", "TAG 56:7;0-FA 18:2;0-FA-18:2;0", "TAG 56:8;0-FA 18:2;0-FA-18:2;0", "TAG 58:7;0-FA 18:2;0-FA-18:2;0", "TAG 58:8;0-FA 18:2;0-FA-18:2;0")
ELOVL5 in CE	1	CE 20:3;0-FA-20:3;0	1	CE 18:3;0-FA-18:3;0
ELOVL5 in PC	4	c("PC 16:0;0_20:3;0-FA-20:3;0", "PC 18:0;0_20:3;0-FA-20:3;0", "PC 18:1;0_20:3;0-FA-20:3;0", "PC 18:2;0_20:3;0-FA-20:3;0")	3	c("PC 16:0;0_18:3;0-FA-18:3;0", "PC 18:0;0_18:3;0-FA-18:3;0", "PC 18:1;0_18:3;0-FA-18:3;0")
ELOVL5 in TAG	25	c("TAG 48:3;0-FA 20:3;0-FA-20:3;0", "TAG 50:3;0-FA 20:3;0-FA-20:3;0", "TAG 50:4;0-FA 20:3;0-FA-20:3;0", "TAG 50:5;0-FA 20:3;0-FA-20:3;0", "TAG 51:3;0-FA 20:3;0-FA-20:3;0", "TAG 51:4;0-FA 20:3;0-FA-20:3;0", "TAG 52:3;0-FA 20:3;0-FA-20:3;0", "TAG 52:4;0-FA 20:3;0-FA-20:3;0", "TAG 52:5;0-FA 20:3;0-FA-20:3;0", "TAG 52:6;0-FA 20:3;0-FA-20:3;0", "TAG 53:3;0-FA 20:3;0-FA-20:3;0", "TAG 53:4;0-FA 20:3;0-FA-20:3;0", "TAG 54:3;0-FA 20:3;0-FA-20:3;0", "TAG 54:4;0-FA 20:3;0-FA-20:3;0", "TAG 54:5;0-FA 20:3;0-FA-20:3;0", "TAG 54:6;0-FA 20:3;0-FA-20:3;0", "TAG 54:7;0-FA 20:3;0-FA-20:3;0", "TAG 56:3;0-FA 20:3;0-FA-20:3;0", "TAG 56:4;0-FA 20:3;0-FA-20:3;0", "TAG 56:5;0-FA 20:3;0-FA-20:3;0", "TAG	25	c("TAG 48:3;0-FA 18:3;0-FA-18:3;0", "TAG 50:3;0-FA 18:3;0-FA-18:3;0", "TAG 50:4;0-FA 18:3;0-FA-18:3;0", "TAG 50:5;0-FA 18:3;0-FA-18:3;0", "TAG 51:3;0-FA 18:3;0-FA-18:3;0", "TAG 51:4;0-FA 18:3;0-FA-18:3;0", "TAG 52:3;0-FA 18:3;0-FA-18:3;0", "TAG 52:4;0-FA 18:3;0-FA-18:3;0", "TAG 52:5;0-FA 18:3;0-FA-18:3;0", "TAG 52:6;0-FA 18:3;0-FA-18:3;0", "TAG 53:3;0-FA 18:3;0-FA-18:3;0", "TAG 53:4;0-FA 18:3;0-FA-18:3;0", "TAG 54:3;0-FA 18:3;0-FA-18:3;0", "TAG 54:4;0-FA 18:3;0-FA-18:3;0", "TAG 54:5;0-FA 18:3;0-FA-18:3;0", "TAG 54:6;0-FA 18:3;0-FA-18:3;0", "TAG 54:7;0-FA 18:3;0-FA-18:3;0", "TAG 56:3;0-FA 18:3;0-FA-18:3;0", "TAG 56:4;0-FA 18:3;0-FA-18:3;0", "TAG 56:5;0-FA 18:3;0-FA-18:3;0", "TAG 56:6;0-FA 18:3;0-FA-18:3;0",

		56:6;0-FA 20:3;0-FA-20:3;0", "TAG 56:7;0-FA 20:3;0-FA-20:3;0", "TAG 56:8;0-FA 20:3;0-FA-20:3;0", "TAG 58:7;0-FA 20:3;0-FA-20:3;0", "TAG 58:8;0-FA 20:3;0-FA-20:3;0")		"TAG 56:7;0-FA 18:3;0-FA-18:3;0", "TAG 56:8;0-FA 18:3;0-FA-18:3;0", "TAG 58:7;0-FA 18:3;0-FA-18:3;0", "TAG 58:8;0-FA 18:3;0-FA-18:3;0")
ELOVL6 in CE	1	CE 18:0;0-FA-18:0;0	1	CE 16:0;0-FA-16:0;0
ELOVL6 in LPC	1	LPC 18:0;0-FA-18:0;0	1	LPC 16:0;0-FA-16:0;0
ELOVL6 in PC	11	c("PC 16:0;0_18:0;0-FA-18:0;0", "PC 16:1;0_18:0;0-FA-18:0;0", "PC 18:0;0_18:1;0-FA-18:0;0", "PC 18:0;0_18:2;0-FA-18:0;0", "PC 18:0;0_18:3;0-FA-18:0;0", "PC 18:0;0_20:2;0-FA-18:0;0", "PC 18:0;0_20:3;0-FA-18:0;0", "PC 18:0;0_20:4;0-FA-18:0;0", "PC 18:0;0_20:5;0-FA-18:0;0", "PC 18:0;0_22:5;0-FA-18:0;0", "PC 18:0;0_22:6;0-FA-18:0;0")	16	c("PC 14:0;0_16:0;0-FA-16:0;0", "PC 16:0;0_16:0;0-FA-16:0;0", "PC 16:0;0_16:1;0-FA-16:0;0", "PC 16:0;0_17:1;0-FA-16:0;0", "PC 16:0;0_18:0;0-FA-16:0;0", "PC 16:0;0_18:1;0-FA-16:0;0", "PC 16:0;0_18:2;0-FA-16:0;0", "PC 16:0;0_18:3;0-FA-16:0;0", "PC 16:0;0_20:1;0-FA-16:0;0", "PC 16:0;0_20:2;0-FA-16:0;0", "PC 16:0;0_20:3;0-FA-16:0;0", "PC 16:0;0_20:4;0-FA-16:0;0", "PC 16:0;0_20:5;0-FA-16:0;0", "PC 16:0;0_22:4;0-FA-16:0;0", "PC 16:0;0_22:5;0-FA-16:0;0", "PC 16:0;0_22:6;0-FA-16:0;0")
ELOVL6 in PC O-	2	c("PC O-16:1;0/18:0;0-FA-18:0;0", "PC O-16:2;0/18:0;0-FA-18:0;0")	4	c("PC O-16:0;0/16:0;0-FA-16:0;0", "PC O-16:1;0/16:0;0-FA-16:0;0", "PC O-18:1;0/16:0;0-FA-16:0;0", "PC O-18:2;0/16:0;0-FA-16:0;0")
ELOVL6 in PE	2	c("PE 18:0;0_18:2;0-FA-18:0;0", "PE 18:0;0_20:4;0-FA-18:0;0")	2	c("PE 16:0;0_18:2;0-FA-16:0;0", "PE 16:0;0_20:4;0-FA-16:0;0")
ELOVL6 in PI	4	c("PI 18:0;0_18:1;0-FA-18:0;0", "PI 18:0;0_18:2;0-FA-18:0;0", "PI 18:0;0_20:3;0-FA-18:0;0", "PI 18:0;0_20:4;0-FA-18:0;0")	3	c("PI 16:0;0_18:1;0-FA-16:0;0", "PI 16:0;0_18:2;0-FA-16:0;0", "PI 16:0;0_20:4;0-FA-16:0;0")
ELOVL6 in TAG	34	c("TAG 46:1;0-FA 18:0;0-FA-18:0;0", "TAG 46:2;0-FA 18:0;0-FA-18:0;0", "TAG 48:0;0-FA 18:0;0-FA-18:0;0", "TAG 48:1;0-FA 18:0;0-FA-18:0;0", "TAG 48:2;0-FA 18:0;0-FA-18:0;0", "TAG 48:3;0-FA 18:0;0-FA-18:0;0", "TAG 49:1;0-FA 18:0;0-FA-18:0;0", "TAG 49:2;0-FA 18:0;0-FA-18:0;0", "TAG 50:1;0-FA 18:0;0-FA-18:0;0", "TAG 50:2;0-FA 18:0;0-FA-18:0;0", "TAG 50:3;0-FA 18:0;0-FA-18:0;0", "TAG 50:4;0-FA 18:0;0-FA-18:0;0", "TAG 51:1;0-FA 18:0;0-FA-18:0;0", "TAG 51:2;0-FA 18:0;0-FA-18:0;0", "TAG 51:3;0-FA 18:0;0-FA-18:0;0", "TAG 52:2;0-FA 18:0;0-FA-18:0;0", "TAG 52:3;0-FA 18:0;0-FA-18:0;0", "TAG 52:4;0-FA 18:0;0-FA-18:0;0", "TAG 52:5;0-FA 18:0;0-FA-18:0;0", "TAG 53:2;0-FA 18:0;0-FA-18:0;0", "TAG 53:3;0-FA 18:0;0-FA-18:0;0", "TAG 53:4;0-FA 18:0;0-FA-18:0;0", "TAG 54:3;0-FA 18:0;0-FA-18:0;0", "TAG 54:4;0-FA 18:0;0-FA-18:0;0", "TAG 54:5;0-FA 18:0;0-FA-18:0;0", "TAG 54:6;0-FA 18:0;0-FA-18:0;0", "TAG 56:3;0-FA 18:0;0-FA-18:0;0", "TAG 56:4;0-FA 18:0;0-FA-18:0;0", "TAG 56:5;0-FA 18:0;0-FA-18:0;0", "TAG 56:6;0-FA 18:0;0-FA-18:0;0", "TAG 56:7;0-FA 18:0;0-FA-18:0;0", "TAG 56:8;0-FA 18:0;0-FA-18:0;0", "TAG 58:7;0-FA 18:0;0-FA-18:0;0", "TAG 58:8;0-FA 18:0;0-FA-18:0;0")	38	c("TAG 46:1;0-FA 16:0;0-FA-16:0;0", "TAG 46:2;0-FA 16:0;0-FA-16:0;0", "TAG 48:0;0-FA 16:0;0-FA-16:0;0", "TAG 48:1;0-FA 16:0;0-FA-16:0;0", "TAG 48:2;0-FA 16:0;0-FA-16:0;0", "TAG 48:3;0-FA 16:0;0-FA-16:0;0", "TAG 49:1;0-FA 16:0;0-FA-16:0;0", "TAG 49:2;0-FA 16:0;0-FA-16:0;0", "TAG 50:1;0-FA 16:0;0-FA-16:0;0", "TAG 50:2;0-FA 16:0;0-FA-16:0;0", "TAG 50:3;0-FA 16:0;0-FA-16:0;0", "TAG 50:4;0-FA 16:0;0-FA-16:0;0", "TAG 50:5;0-FA 16:0;0-FA-16:0;0", "TAG 51:1;0-FA 16:0;0-FA-16:0;0", "TAG 51:2;0-FA 16:0;0-FA-16:0;0", "TAG 51:3;0-FA 16:0;0-FA-16:0;0", "TAG 51:4;0-FA 16:0;0-FA-16:0;0", "TAG 52:2;0-FA 16:0;0-FA-16:0;0", "TAG 52:3;0-FA 16:0;0-FA-16:0;0", "TAG 52:4;0-FA 16:0;0-FA-16:0;0", "TAG 52:5;0-FA 16:0;0-FA-16:0;0", "TAG 52:6;0-FA 16:0;0-FA-16:0;0", "TAG 53:2;0-FA 16:0;0-FA-16:0;0", "TAG 53:3;0-FA 16:0;0-FA-16:0;0", "TAG 53:4;0-FA 16:0;0-FA-16:0;0", "TAG 54:3;0-FA 16:0;0-FA-16:0;0", "TAG 54:4;0-FA 16:0;0-FA-16:0;0", "TAG 54:5;0-FA 16:0;0-FA-16:0;0", "TAG 54:6;0-FA 16:0;0-FA-16:0;0", "TAG 54:7;0-FA 16:0;0-FA-16:0;0", "TAG 56:3;0-FA 16:0;0-FA-16:0;0", "TAG 56:4;0-FA 16:0;0-FA-16:0;0", "TAG 56:5;0-FA 16:0;0-FA-16:0;0", "TAG 56:6;0-FA 16:0;0-FA-16:0;0", "TAG 56:7;0-FA 16:0;0-FA-16:0;0", "TAG 56:8;0-FA 16:0;0-FA-16:0;0", "TAG 58:7;0-FA 16:0;0-FA-16:0;0", "TAG 58:8;0-FA 16:0;0-FA-16:0;0")

Table S16: Association of genetic variants in regions encoding genes involved in lipid metabolic pathways with their respective lipid indices. Associations with P < 4.0×10^{-4} are listed here.

Region	SNP	CHR	BP (hg38)	Lipid	Allele 1	Allele 2	Effect Allele	N (Men)	Beta (Men)	SE (Men)	P (Men)	N (Women)	Beta (Women)	SE (Women)	P (Women)	P$_{het}$
ELOVL6	rs62337379	4	110944678	ELOVL6 in PI	T	C	T	2588	0.3011	0.0827	2.8E-04	4107	-0.0884	0.0692	2.0E-01	3.0E-04
FADS1-2-3	rs35723406	11	61343874	D6D in TAG	G	C	G	2592	0.1857	0.0479	1.1E-04	4109	-0.0950	0.0395	1.6E-02	6.2E-06
FADS1-2-3	rs4274208	11	61267020	D6D in TAG	A	G	A	2592	0.1842	0.0483	1.4E-04	4109	-0.0951	0.0396	1.6E-02	7.7E-06
FADS1-2-3	rs28720282	11	61323484	D6D in TAG	C	T	C	2592	0.1844	0.0482	1.3E-04	4109	-0.0942	0.0396	1.7E-02	8.0E-06
FADS1-2-3	rs112830700	11	61366508	D6D in TAG	A	G	A	2592	0.1785	0.0483	2.3E-04	4109	-0.0963	0.0398	1.6E-02	1.1E-05
FADS1-2-3	rs61895887	11	61249407	D6D in TAG	A	C	A	2592	0.1691	0.0454	2.0E-04	4109	-0.0868	0.0376	2.1E-02	1.4E-05
FADS1-2-3	rs603061	11	61250856	D6D in TAG	C	A	C	2592	0.1670	0.0447	1.9E-04	4109	-0.0775	0.0370	3.6E-02	2.5E-05
FADS1-2-3	rs28599952	11	61250463	D6D in TAG	G	A	G	2592	0.1571	0.0434	3.0E-04	4109	-0.0751	0.0351	3.2E-02	3.2E-05
FADS1-2-3	rs4939511	11	61250479	D6D in TAG	G	A	G	2592	0.1639	0.0449	2.7E-04	4109	-0.0746	0.0372	4.5E-02	4.3E-05
FADS1-2-3	rs192513811	11	62289929	D6D in TAG	G	A	G	2592	-0.1547	0.0924	9.4E-02	4109	0.2670	0.0683	9.4E-05	2.4E-04
FADS1-2-3	rs72914991	11	60828432	D5D in CE	C	T	C	2591	-0.0294	0.1339	8.3E-01	4107	-0.4575	0.1148	6.9E-05	1.5E-02
SCD1	rs7914602	10	99795662	16:1/16:0 in PC O-	A	G	A	2303	0.1370	0.0317	1.6E-05	3867	-0.0222	0.0241	0.357791	6.4E-05
SCD1	rs1124269	10	99778753	16:1/16:0 in PC O-	C	T	C	2303	0.1361	0.0317	1.8E-05	3867	-0.0218	0.0242	0.367067	7.5E-05
SCD1	rs4148384	10	99785801	16:1/16:0 in PC O-	C	G	C	2303	0.1360	0.0317	1.9E-05	3867	-0.0218	0.0242	0.366179	7.5E-05
SCD1	rs35683214	10	99787519	16:1/16:0 in PC O-	A	G	A	2303	0.1360	0.0317	1.9E-05	3867	-0.0218	0.0242	0.366179	7.5E-05
SCD1	rs4148394	10	99812586	16:1/16:0 in PC O-	C	A	C	2303	0.1357	0.0317	2.0E-05	3867	-0.0230	0.0242	0.341372	6.9E-05
SCD1	rs5787360	10	99819413	16:1/16:0 in PC O-	C	CTG	C	2303	0.1344	0.0315	2.1E-05	3867	-0.0163	0.0239	0.49497	1.4E-04
SCD1	rs9633711	10	99822230	16:1/16:0 in PC O-	A	C	A	2303	0.1344	0.0315	2.1E-05	3867	-0.0163	0.0239	0.49497	1.4E-04
SCD1	rs4077146	10	99829571	16:1/16:0 in PC O-	A	G	A	2303	0.1343	0.0315	2.1E-05	3867	-0.0164	0.0239	0.493259	1.4E-04
SCD1	rs2002042	10	99828174	16:1/16:0 in PC O-	T	C	T	2303	0.1340	0.0315	2.3E-05	3867	-0.0162	0.0239	0.497603	1.5E-04
SCD1	rs2224506	10	99803096	16:1/16:0 in PC O-	C	G	G	2303	0.1281	0.0312	4.2E-05	3867	-0.0169	0.0239	0.478851	2.2E-04
SCD1	rs2490291	10	99460303	18:1/18:0 in TAG	C	T	C	2592	0.2329	0.0575	5.2E-05	4109	-0.0328	0.0451	0.467339	2.8E-04
SCD1	rs56382802	10	99462372	18:1/18:0 in TAG	T	C	T	2592	0.2524	0.0632	6.7E-05	4109	-0.0482	0.0484	0.319444	1.6E-04
SCD1	rs2001223	10	99881163	16:1/16:0 in PC O-	C	T	T	2303	0.1198	0.0304	8.6E-05	3867	-0.0243	0.0236	0.302226	1.8E-04
SCD1	rs7652	10	99875704	16:1/16:0 in PC O-	A	T	T	2303	0.1165	0.0304	1.3E-04	3867	-0.0251	0.0235	0.286891	2.3E-04
SCD1	rs2252676	10	99895570	16:1/16:0 in PC O-	C	T	T	2303	0.1164	0.0305	1.4E-04	3867	-0.0203	0.0236	0.389328	3.9E-04

Figure S1: Details of lipid species detected in the GeneRISK cohort. (A) Relative abundance of lipid species in human plasma lipidome. The outer circle shows the proportion of each lipid species in human plasma as determined by the mean plasma level of lipid species divided by the mean total lipids (sum of all 179 lipids detected in our dataset). The inner circle shows the proportion of a lipid class in human plasma determined as the mean of sum of all lipid species in a lipid class divided by the mean total lipids. **(B) Number of lipid species detected in each lipid class** - CE: Cholesteryl esters; Cer: Ceramides; DAG: Diacylglycerides; LPC: Lysophosphatidylcholines; LPE: Lysophosphatidylamines; PC: Phosphatidylcholines; PC-O: Phosphatidylcholine-ethers; PE: Phosphatidylamines, PE-O: Phosphatidylamine-ethers; PI: Phosphatidylinositols; SM: Sphingomyelins; TG: Triacylglycerides; Chol: Free cholesterol. The lipid classes are represented by the same colors in A and B.
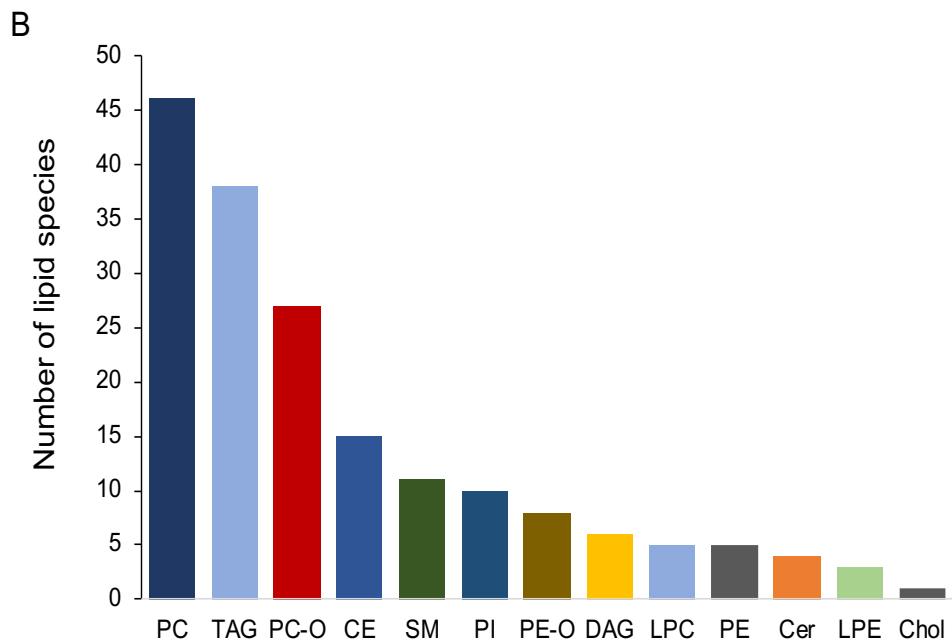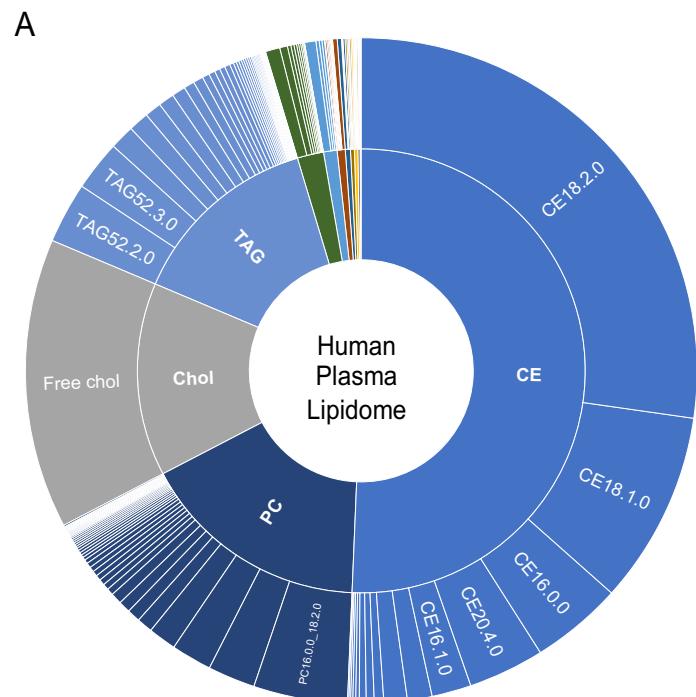
Figure S2: Age-related trends in traditional lipid in GeneRISK (A) and UKBB (B). Mean levels after log10 transformation and standard errors of total cholesterol, triglycerides, HDL-C, LDL-C, Apolipoprotein B and Apolipoprotein A-1 at 5-year intervals are plotted for men (blue solid lines) and women (red solid lines). Dotted lines present the trends for lipid levels after excluding the individuals with lipid lowering medication from the analyses.
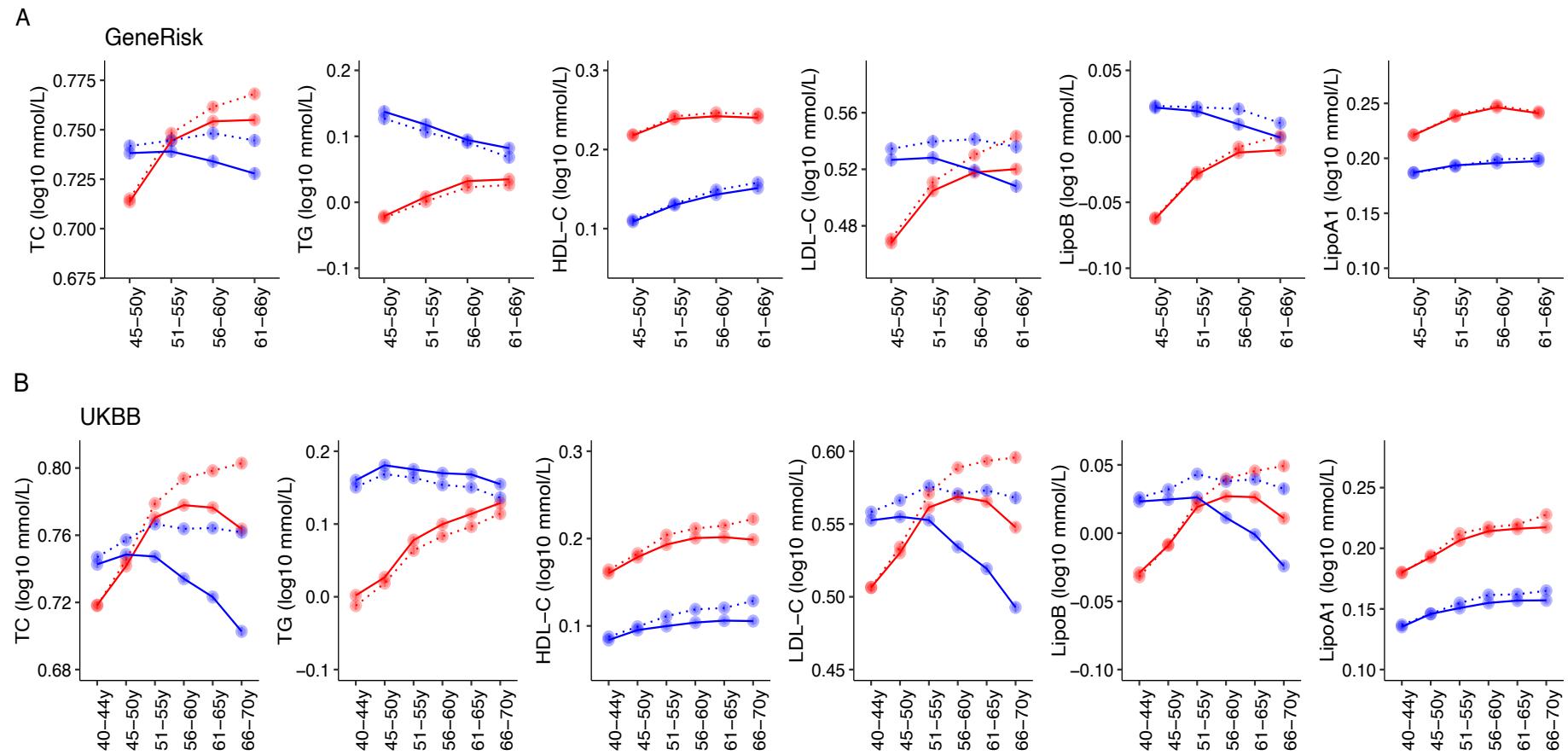
Figure S3: Age-related trends in lipidome profiles. Change in molecular lipid species across 1-year intervals in men (upper panel) and women (lower panel). The average lipid species levels (adjusted for covariates) were calculated for each 1-year interval and centered and scaled to the mean and standard deviation of the reference age-group 44-50-years.
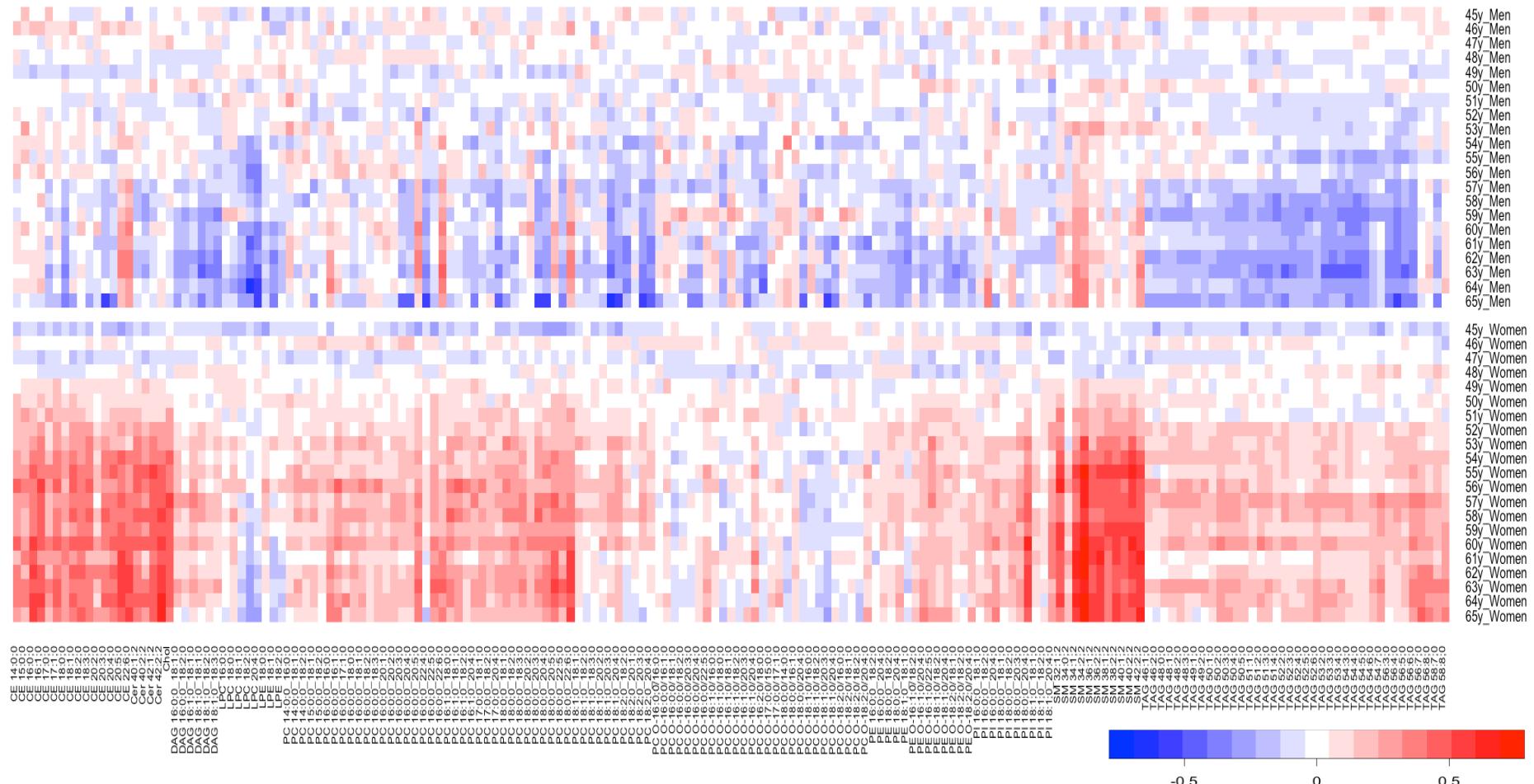
Figure S4: Association of age with lipid species in the GeneRISK cohort. Percent change in lipid levels (log10 transformed) per year for men (blue) and women (red) are plotted on y-axis. The error bars represent the 95% confidence interval. The significant associations are filled with white color. The lipid species are grouped by their lipid classes and are arranged in increasing number of carbon atoms and double bonds. The percent differences were calculated from beta coefficients obtained from linear regression analyses with lipid levels as dependent variable and age as independent variables along with covariates mentioned in the methods (difference (%) =100 x (10$^\beta$-1)).
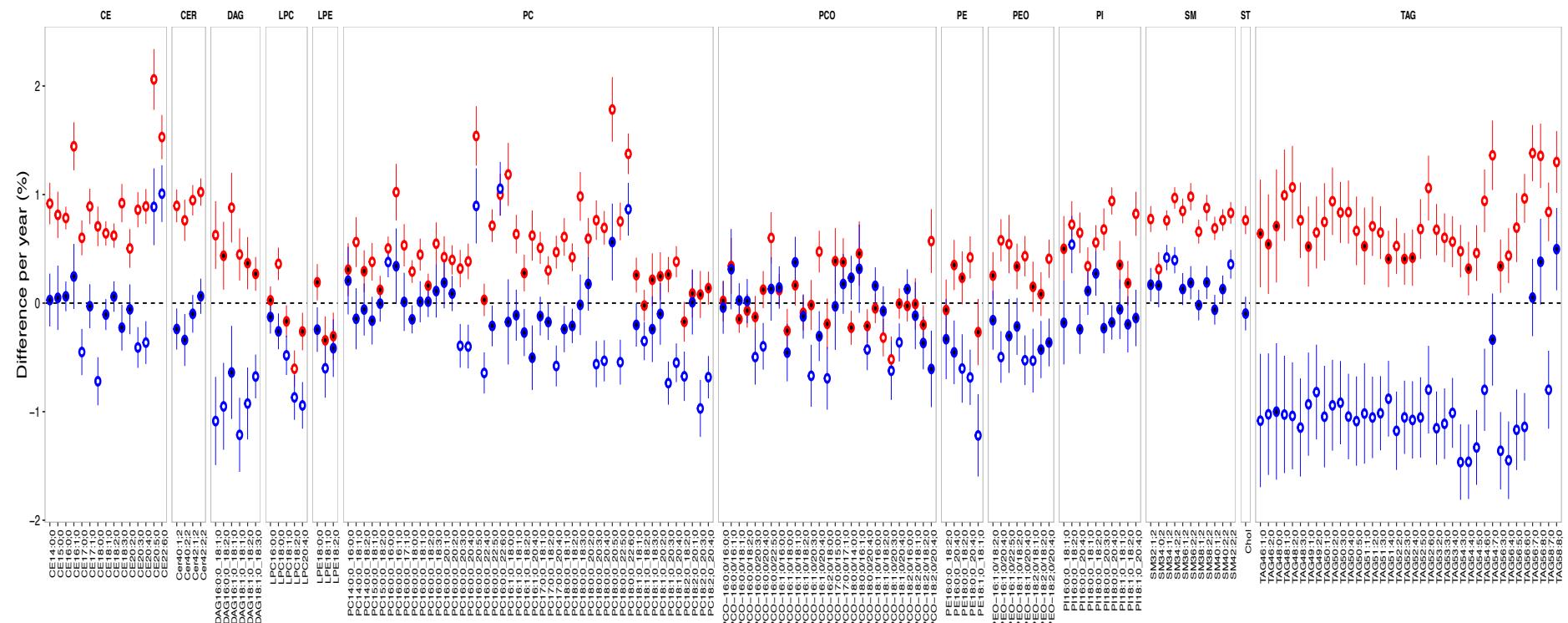
Figure S5: Association of age with lipidome in replication cohort. Percent change in lipid levels (log10 transformed) per year for men (blue) and women (red) are plotted on y-axis. The error bars represent the 95% confidence interval. The significant associations are filled with white color.
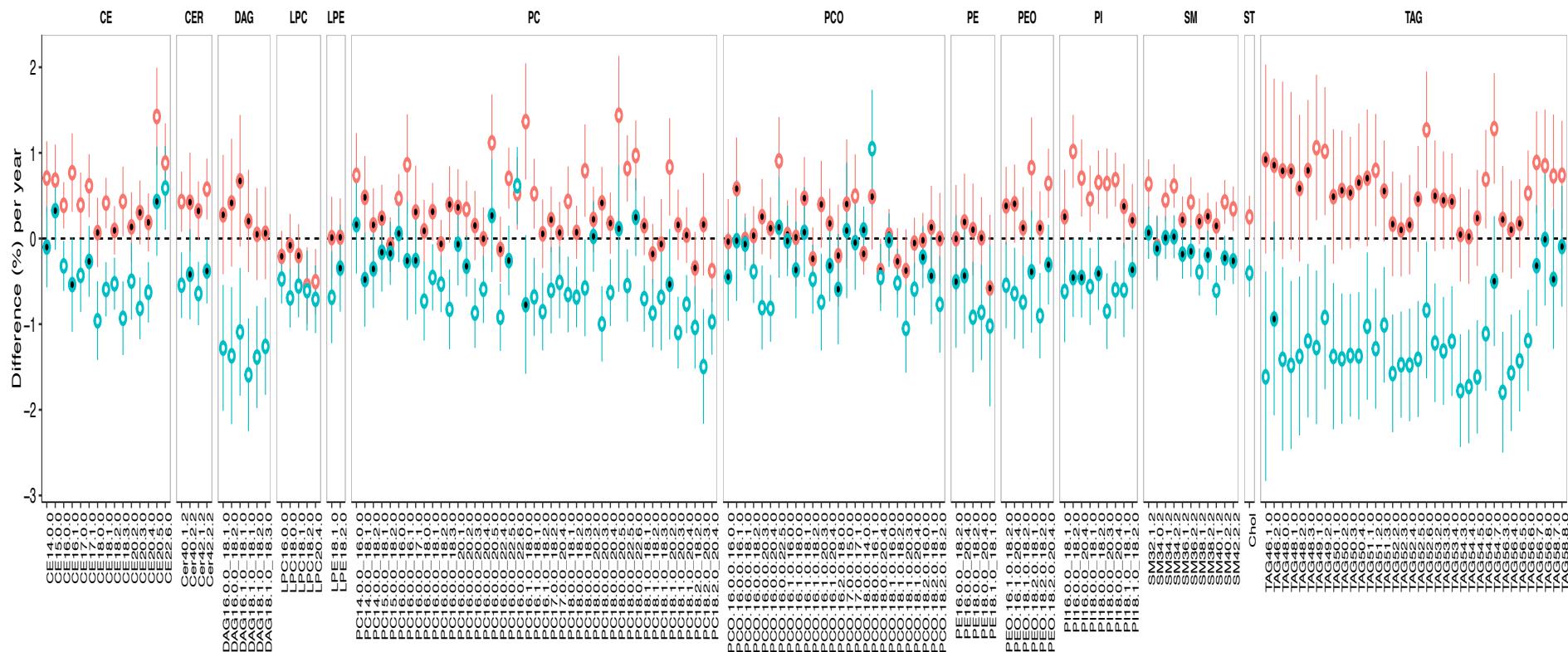
Figure S6: Comparison of effect size for association with age in the GeneRISK and the replication cohort. Lipid species with significant association with age in the GeneRISK cohort are plotted.
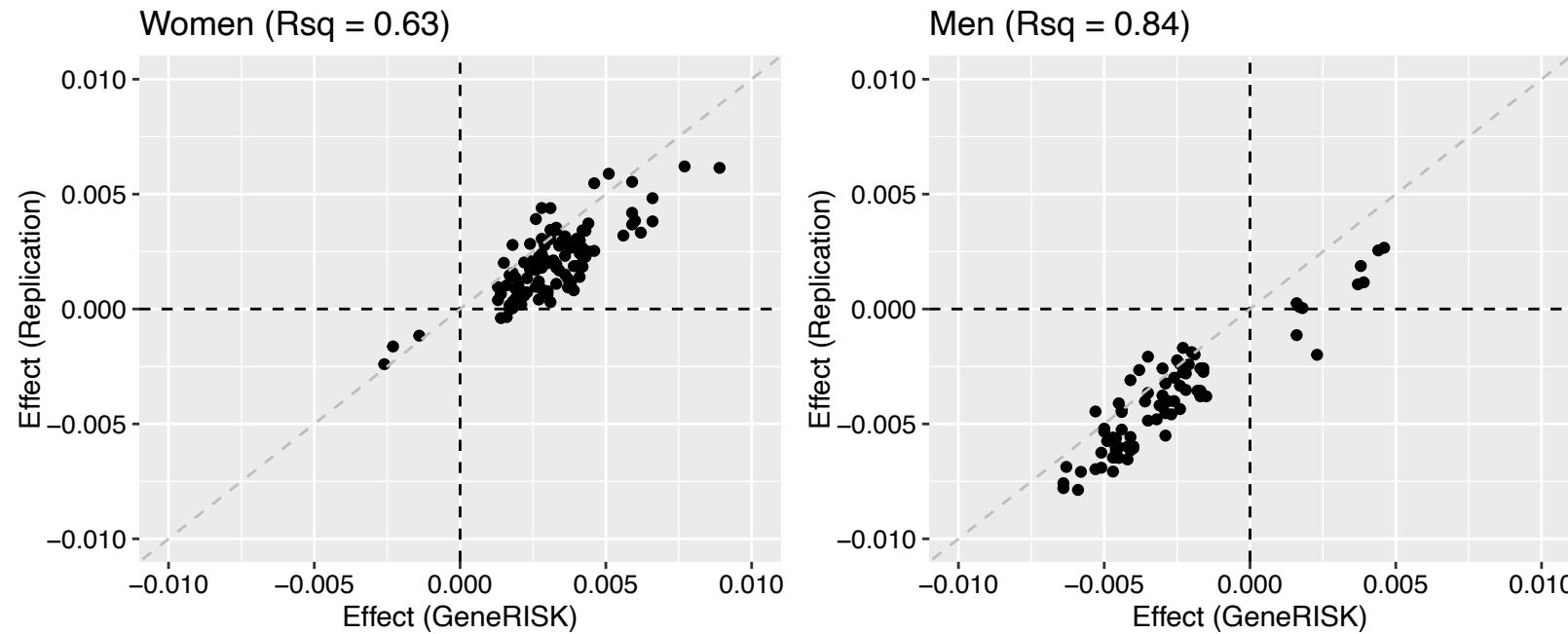
Figure S7: Age-dependent sex differences in plasma lipidome in the GeneRISK cohort. Difference in effect of age on lipid levels (percent) in men relative to women determined separately for age-groups 45-50 years (red), 51-55 years (green), 56-60 years (blue) and 61-66 years (purple) along with their 95% confidence intervals are plotted on y-axis. The effects were calculated from beta coefficients of male sex obtained from linear regression analyses with lipid levels as dependent variable and male sex as independent variables along with covariates mentioned in the methods and turned into percentages (difference (%) =100 x (10^{β}-1)). The error bars represent the 95% confidence interval. The significant associations in linear regression models adjusted for covariates (P < 7.0x10^{-4}) are filled with white color.
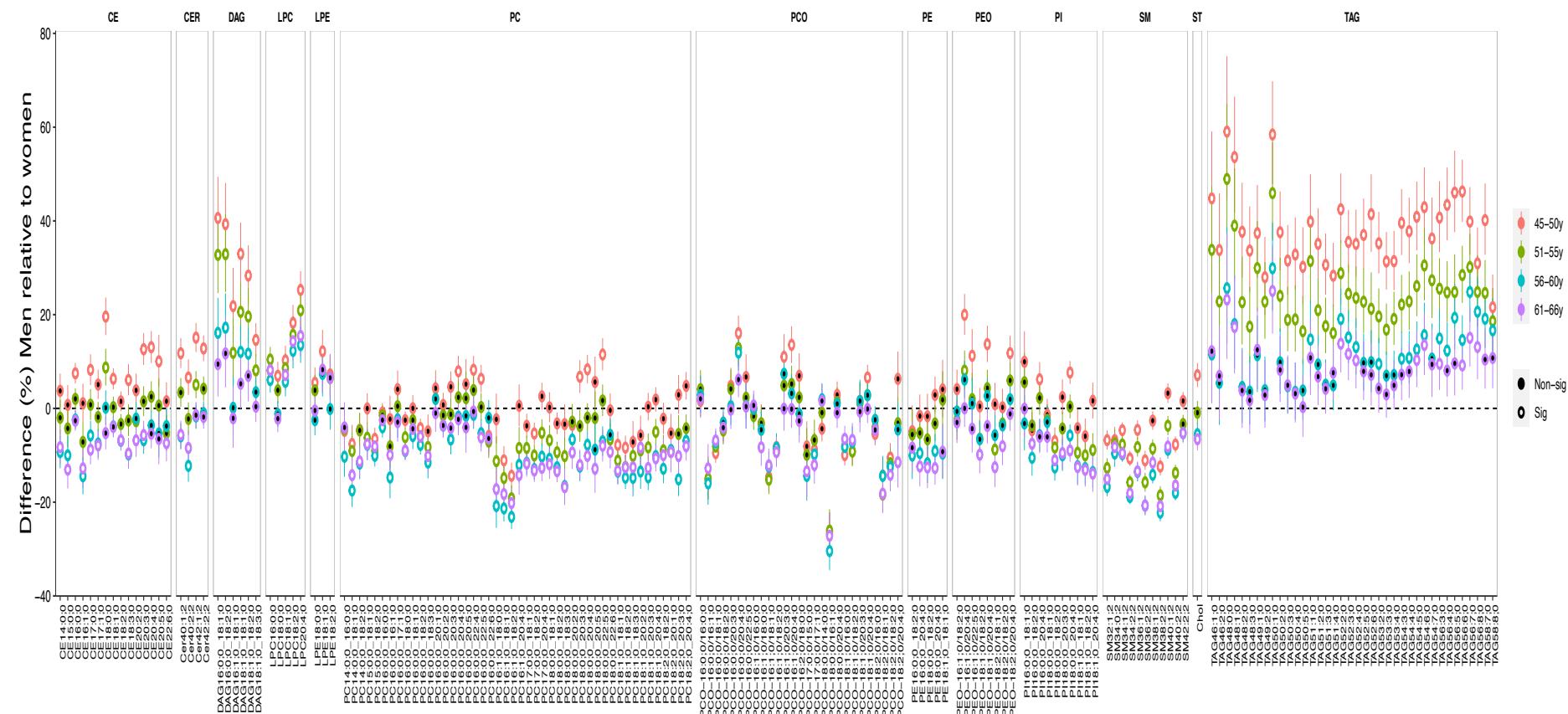
Figure S8: Age-dependent sex differences in plasma lipidome in the replication cohort. Percent difference in lipid levels (log10 transformed) in men relative to women are plotted on y-axis for age-groups - 45-50 years (red), 51-55 years (blue), 56-60 years (green) and 61-66 years (purple). The percent differences were calculated from beta coefficients obtained from linear regression analyses with lipid levels as dependent variable and age as independent variables along with covariates mentioned in the methods (difference (%) =100 x (10^β-1)). The error bars represent the 95% confidence interval. The significant associations in linear regression models adjusted for covariates are filled with white color.
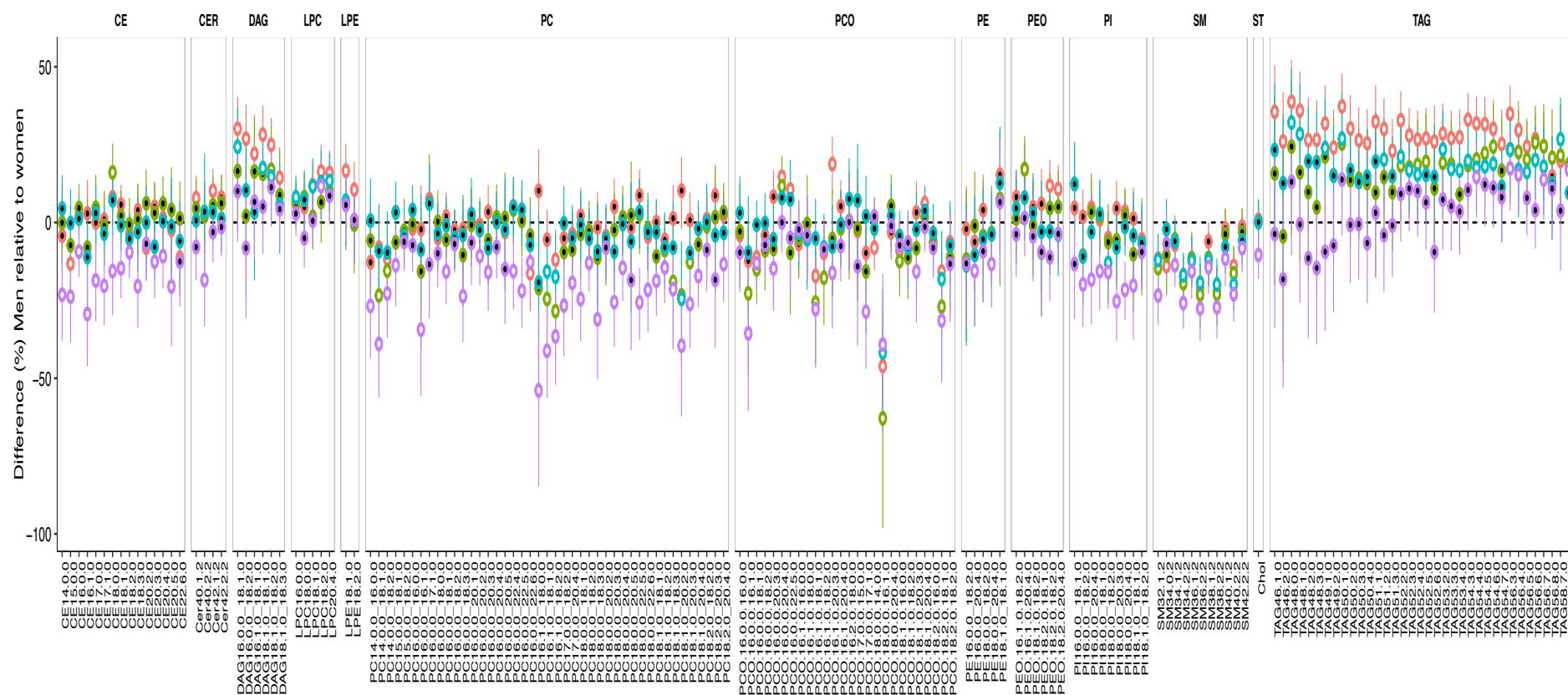
Figure S9: Comparison of effect size for association with age in the GeneRISK and replication cohort. The effect sizes for association of age on different lipid species are plotted on x-axes for the GeneRISK cohort and on y-axes for the replication cohort in different age groups.
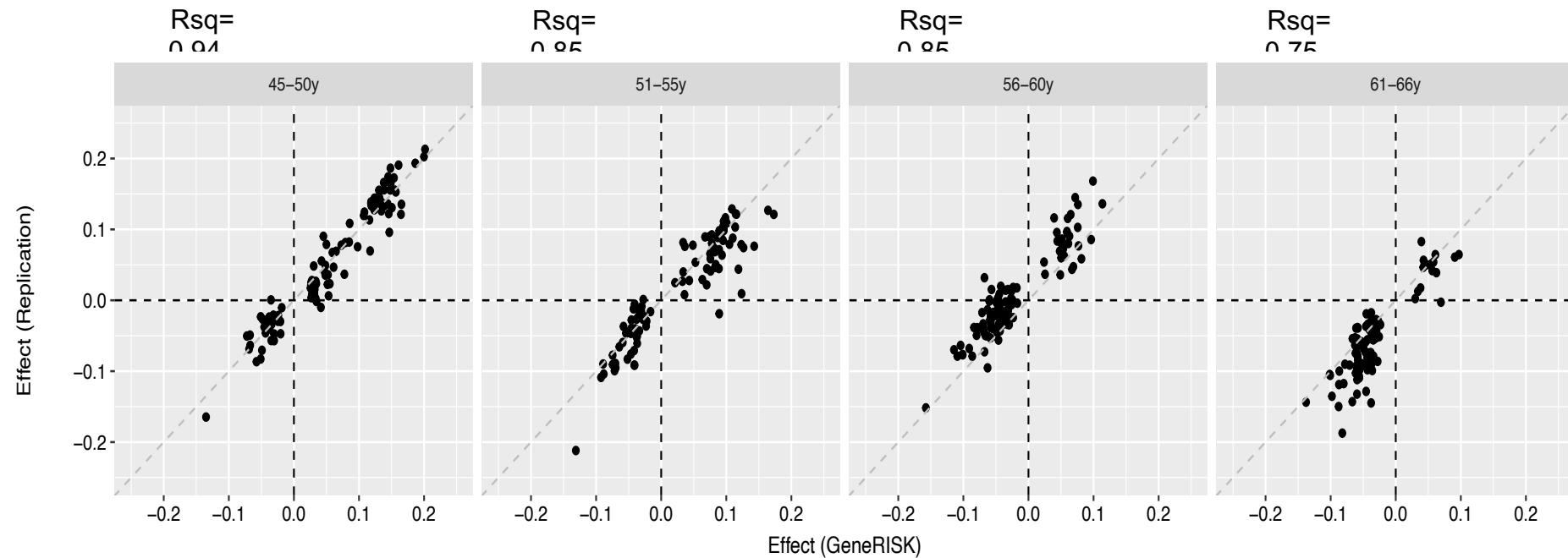
Figure S10: Effect of menopause on sex differences in lipidome. (A) Association between menopause and levels of lipid species. The percent difference in postmenopausal women relative to premenopausal women are plotted on x-axis with corresponding P values from linear regression analysis on y-axis. (B) Scatter plot showing comparison between the effect sizes for association with male gender in dataset including only premenopausal women (x-axis) and effect sizes for association with male gender in dataset including only postmenopausal women (y-axis).
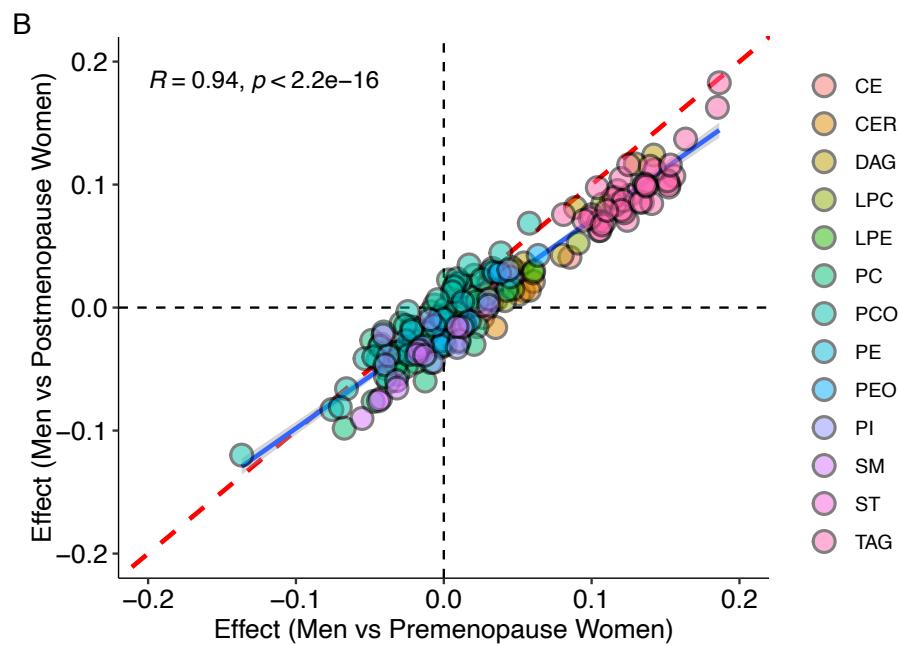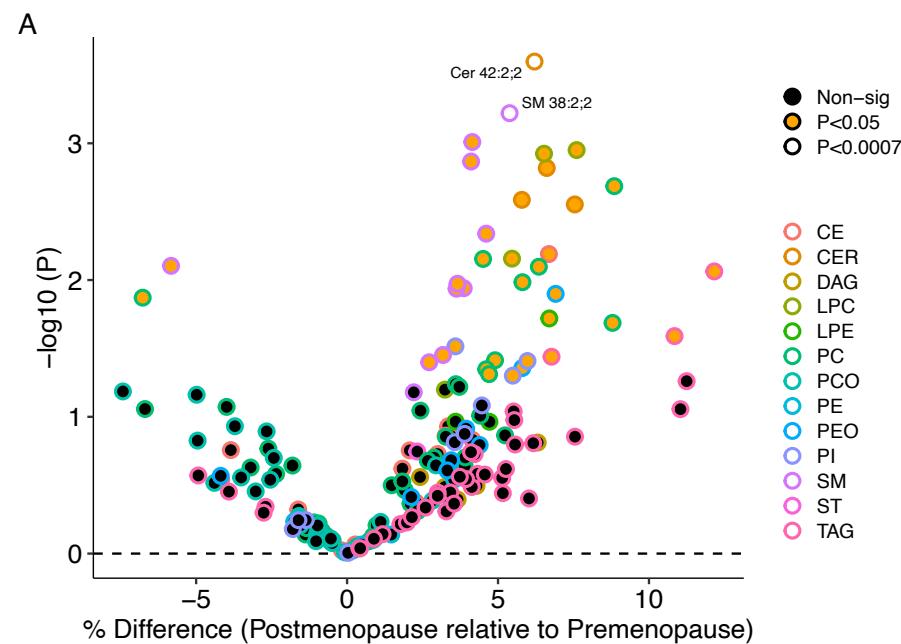
Figure S11: Association of rs35723406 in *TKFC* gene near FADS1-2-3 region with lipid index estimate for Δ6 desaturase in TAG (D6D in TAG). The boxplot shows the levels of D5D in TAG in men and women with different genotypes.