

Supplementary Table 1. Metabolite abbreviations and names, number of individuals analyzed and proportion of variance explained.

Abbreviation	Name	N	Proportion of variance explained
AcAce	Acetoacetate	19262	0.225 %
Ace	Acetate	24748	NA
Ala	Alanine	24796	1.326 %
Alb	Albumin	18960	0.984 %
ApoA1	ApoA1	20687	5.005 %
ApoB	ApoB	20690	8.609 %
Bis.DB.ratio	Ratio of bis-allylic bonds to double bonds in lipids	13524	7.392 %
Bis.FA.ratio	Ratio of bis-allylic bonds to total fatty acids in lipids	13171	6.324 %
bOHBut	3-hydroxybutyrate	24154	NA
CH2.in.FA	CH2 groups in fatty acids	19021	2.697 %
CH2.DB.ratio	CH2 groups to double bonds ratio	13532	5.122 %
Cit	Citrate	24770	1.197 %
Crea	Creatinine	24810	0.930 %
DB.in.FA	Double bonds in fatty acids	15728	3.066 %
DHA	22:6, docosahexaenoic acid (DHA)	13499	1.677 %
Est.C	Esterified cholesterol	13497	7.582 %
FALen	Fatty acid length	13476	NA
FAw3	Omega-3 fatty acids	13544	2.873 %
FAw6	Omega-6 fatty acids	13506	5.036 %
FAw79S	Omega-7 and -9 and saturated fatty acids	13506	2.500 %
Free.C	Free cholesterol	13497	8.347 %
Glc	Glucose	24679	1.182 %
Gln	Glutamine	24462	1.772 %
GloI	Glycerol	20235	NA
Gly	Glycine	18734	12.488 %
Gp	Glycoprotein acetyls, mainly α 1-acid glycoprotein	19270	2.410 %
HDL.C	Total cholesterol in HDL	21555	6.115 %
HDL.D	HDL diameter	19273	10.323 %
His	Histidine	19244	1.108 %
IDL.C	Total cholesterol in IDL	19273	10.892 %
IDL.FC	Free cholesterol in IDL	21559	10.894 %
IDL.L	Total lipids in IDL	19273	11.267 %
IDL.P	Concentration of IDL particles	19273	11.173 %
IDL.PL	Phospholipids in IDL	21559	11.205 %
IDL.TG	Triglycerides in IDL	19273	9.943 %
Ile	Isoleucine	24776	0.557 %
L.HDL.C	Total cholesterol in large HDL	21558	8.227 %
L.HDL.CE	Cholesterol esters in large HDL	19273	8.386 %
L.HDL.FC	Free cholesterol in large HDL	21559	7.686 %
L.HDL.L	Total lipids in large HDL	19273	8.425 %
L.HDL.P	Concentration of large HDL particles	19273	8.436 %
L.HDL.PL	Phospholipids in large HDL	19273	8.030 %
L.LDL.C	Total cholesterol in large LDL	21552	10.442 %
L.LDL.CE	Cholesterol esters in large LDL	19273	10.559 %
L.LDL.FC	Free cholesterol in large LDL	21555	11.078 %
L.LDL.L	Total lipids in large LDL	19273	10.715 %
L.LDL.P	Concentration of large LDL particles	19273	11.131 %
L.LDL.PL	Phospholipids in large LDL	21550	10.506 %
L.VLDL.C	Total cholesterol in large VLDL	21235	3.239 %
L.VLDL.CE	Cholesterol esters in large VLDL	18960	3.391 %
L.VLDL.FC	Free cholesterol in large VLDL	21238	2.907 %
L.VLDL.L	Total lipids in large VLDL	18960	2.441 %
L.VLDL.P	Concentration of large VLDL particles	18960	2.841 %
L.VLDL.PL	Phospholipids in large VLDL	21239	2.393 %
L.VLDL.TG	Triglycerides in large VLDL	21239	2.586 %
LA	18:2, linoleic acid (LA)	13527	6.584 %
Lac	Lactate	24871	NA
LDL.C	Total cholesterol in LDL	21559	10.720 %
LDL.D	LDL diameter	19273	3.124 %
Leu	Leucine	24728	0.797 %
M.HDL.C	Total cholesterol in medium HDL	21558	2.378 %
M.HDL.CE	Cholesterol esters in medium HDL	19273	2.066 %
M.HDL.FC	Free cholesterol in medium HDL	21559	2.380 %
M.HDL.L	Total lipids in medium HDL	19273	1.764 %
M.HDL.P	Concentration of medium HDL particles	19273	1.537 %

M.HDL.PL	Phospholipids in medium HDL	21558	1.901 %
M.LDL.C	Total cholesterol in medium LDL	21559	9.903 %
M.LDL.CE	Cholesterol esters in medium LDL	19273	10.090 %
M.LDL.L	Total lipids in medium LDL	19273	9.933 %
M.LDL.P	Concentration of medium LDL particles	19273	9.708 %
M.LDL.PL	Phospholipids in medium LDL	21558	8.684 %
M.VLDL.C	Total cholesterol in medium VLDL	21551	5.119 %
M.VLDL.CE	Cholesterol esters in medium VLDL	19273	5.926 %
M.VLDL.FC	Free cholesterol in medium VLDL	21240	4.285 %
M.VLDL.L	Total lipids in medium VLDL	19273	3.649 %
M.VLDL.P	Concentration of medium VLDL particles	19273	3.387 %
M.VLDL.PL	Phospholipids in medium VLDL	21240	4.283 %
M.VLDL.TG	Triglycerides in medium VLDL	21241	3.190 %
MUFA	Mono-unsaturated fatty acids	13535	2.067 %
otPUFA	Other polyunsaturated fatty acids than 18:2	13549	10.162 %
PC	Phosphatidylcholine and other cholines	13542	4.258 %
Phe	Phenylalanine	22663	1.105 %
Pyr	Pyruvate	24756	0.523 %
S.HDL.L	Total lipids in small HDL	19273	3.063 %
S.HDL.P	Concentration of small HDL particles	19273	2.494 %
S.HDL.TG	Triglycerides in small HDL	21558	4.242 %
S.LDL.C	Total cholesterol in small LDL	21556	8.964 %
S.LDL.L	Total lipids in small LDL	19273	8.689 %
S.LDL.P	Concentration of small LDL particles	19273	8.504 %
S.VLDL.C	Total cholesterol in small VLDL	21557	6.716 %
S.VLDL.FC	Free cholesterol in small VLDL	21559	6.426 %
S.VLDL.L	Total lipids in small VLDL	19273	6.258 %
S.VLDL.P	Concentration of small VLDL particles	19273	5.495 %
S.VLDL.PL	Phospholipids in small VLDL	21551	6.322 %
S.VLDL.TG	Triglycerides in small VLDL	21558	4.910 %
Serum.C	Serum total cholesterol	21491	8.671 %
Serum.TG	Serum total triglycerides	21545	4.331 %
SM	Sphingomyelins	13476	3.918 %
Tot.FA	Total fatty acids	13505	3.346 %
TotPG	Total phosphoglycerides	13519	4.242 %
Tyr	Tyrosine	24925	0.444 %
Urea	Urea	18814	NA
Val	Valine	24900	1.008 %
VLDL.D	VLDL diameter	19273	4.652 %
XL.HDL.C	Total cholesterol in very large HDL	21540	5.051 %
XL.HDL.CE	Cholesterol esters in very large HDL	19273	5.174 %
XL.HDL.FC	Free cholesterol in very large HDL	21542	6.875 %
XL.HDL.L	Total lipids in very large HDL	19273	7.718 %
XL.HDL.P	Concentration of very large HDL particles	19273	7.258 %
XL.HDL.PL	Phospholipids in very large HDL	19273	9.376 %
XL.HDL.TG	Triglycerides in very large HDL	21536	10.760 %
XL.VLDL.L	Total lipids in very large VLDL	19273	2.047 %
XL.VLDL.P	Concentration of very large VLDL particles	18960	2.009 %
XL.VLDL.PL	Phospholipids in very large VLDL	21237	2.109 %
XL.VLDL.TG	Triglycerides in very large VLDL	21548	2.409 %
XS.VLDL.L	Total lipids in very small VLDL	19273	9.862 %
XS.VLDL.P	Concentration of very small VLDL particles	19273	9.447 %
XS.VLDL.PL	Phospholipids in very small VLDL	19273	10.552 %
XS.VLDL.TG	Triglycerides in very small VLDL	19273	7.125 %
XXL.VLDL.L	Total lipids in chylomicrons and extremely large VLDL	18960	1.567 %
XXL.VLDL.P	Concentration of chylomicrons and extremely large VLDL particles	18960	1.401 %
XXL.VLDL.PL	Phospholipids in chylomicrons and extremely large VLDL	21542	1.572 %
XXL.VLDL.TG	Triglycerides in chylomicrons and extremely large VLDL	21540	1.710 %

NA Those metabolic measures where no genome-wide associations were found