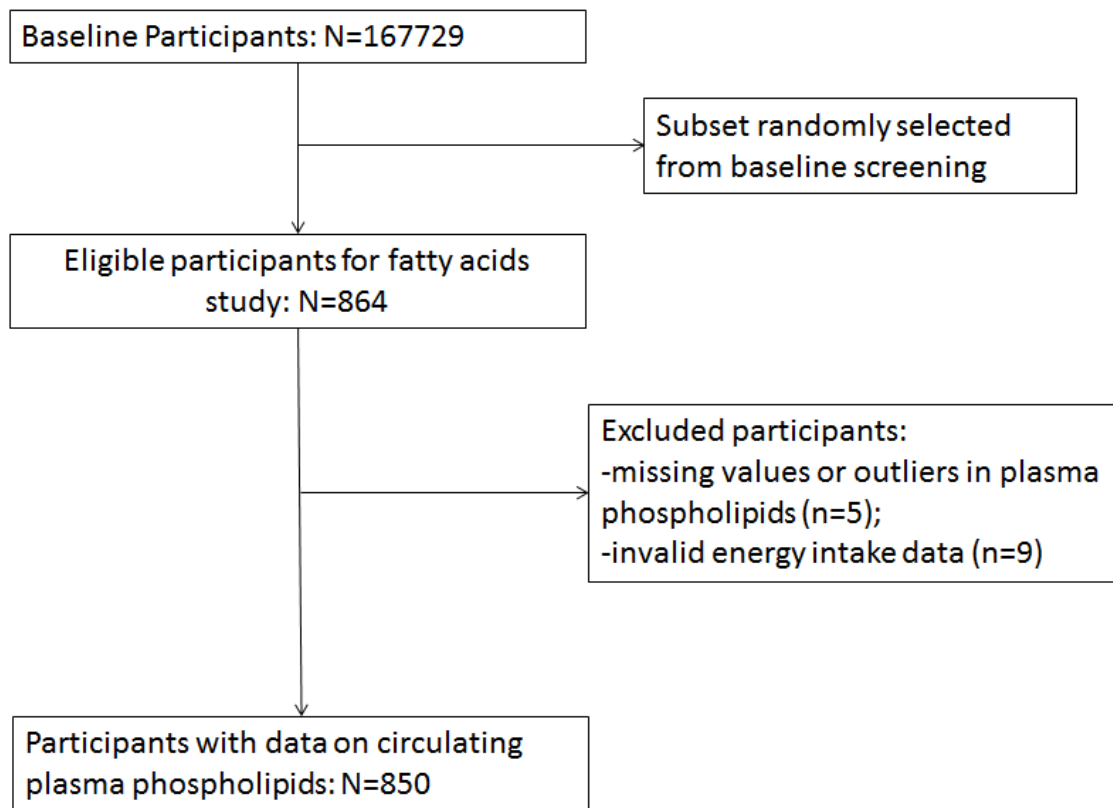


**Supplementary data**



**Supplementary Figure S1. Study flow chart**

**Supplementary Table S1.** Partial correlation coefficients between fatty acids, estimated desaturase activities and the metabolic risk factors in the plasma phospholipids fraction (n=850).

	WC	BMI	TC	HDL-C	LDL-C	TGL <sup>a</sup>	SBP	DBP	Glucose
C18:0 (Stearic acid)	0.18***	0.17***	0.03	<b>-0.18***</b>	0.04	<b>0.24***</b>	0.09*	0.10**	<b>0.21***</b>
C24:0 (Lignoceric acid)	0.03	0.01	<b>0.09*</b>	-0.009	<b>0.18***</b>	<b>-0.27***</b>	0.04	0.05	-0.02
C18:3n6 ( $\gamma$ -Linolenic acid)	<b>0.18***</b>	0.15***	<b>0.16***</b>	-0.06	0.09*	<b>0.34***</b>	0.10**	0.06	<b>0.13***</b>
C20:3n6 (Dihomo- $\gamma$ -linolenic acid)	0.24***	0.24***	<b>0.12**</b>	<b>-0.27***</b>	<b>0.15***</b>	<b>0.30***</b>	0.12**	0.09*	<b>0.16***</b>
C18:1n7 (cis-Vaccenic acid)	<b>-0.16***</b>	-0.14***	<b>-0.16***</b>	0.06	<b>-0.16***</b>	<b>-0.15***</b>	-0.07	<b>-0.13***</b>	-0.11**
C24:1n9 (Nervonic acid)	0.04	0.04	<b>-0.11**</b>	-0.03	-0.02	<b>-0.36***</b>	0.03	-0.02	<b>-0.10*</b>
SCD-18	-0.12**	-0.11**	0.06	<b>0.17***</b>	0.002	-0.03	-0.08*	-0.06	<b>-0.12**</b>
D6D	<b>0.20***</b>	0.18***	<b>0.13***</b>	-0.07	0.07	<b>0.33***</b>	0.12**	0.05	<b>0.14***</b>

SCD-18: stearoyl-CoA desaturase-18; D6D:  $\Delta 6$  desaturase; BMI: body mass index; WC: waist circumference; TC: total cholesterol; HDL-C; high density lipoprotein cholesterol; LDL-C: low density lipoprotein cholesterol; TGL: total triglycerides; SBP: systolic blood pressure; DBP: diastolic blood pressure. <sup>a</sup>log-transformed. Adjusted for age, sex, education, smoking status, medication use, energy intake, alcohol intake, and non-occupational moderate-to-vigorous physical activity (MVPA); \*p<0.05, \*\*p<0.01, \*\*\*p<0.001; when further adjusted for BMI, the partial coefficients still remained <0.05 were shadowed in bold.