

CORRIGENDUM

Association between erythrocyte membrane fatty acids and biomarkers of dyslipidemia in the EPIC-Potsdam study

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Since publication, the authors have found an SAS coding error in the LDL-cholesterol calculation. The other biomarker outcomes of the paper (HDL-cholesterol, non-HDL-cholesterol and triglycerides) are not affected by the error. The authors have corrected the error in the LDL-cholesterol calculation and have recalculated Tables including corrected LDL-cholesterol values.

Regarding Tables 2 and 3 and Online Supplementary Table 1 and 2, the statements in the results part of the paper are still correct for the corrected LDL-cholesterol.

Regarding the multivariable-adjusted models including LDL-cholesterol in Table 4, we previously reported a lack of associations between individual fatty acids and LDL-cholesterol concentrations and an inverse association between estimated D5D activity and LDL-cholesterol and positive associations between estimated SCD and D6D activity and LDL-cholesterol concentrations.

There is still no significant association between individual fatty acids and the corrected LDL-cholesterol; however, no associations between estimated desaturase activities and LDL-cholesterol despite of a very weak positive trend between estimated D5D activity and the corrected LDL-cholesterol concentrations in women only and a very weak inverse trend of estimated SCD activity with the corrected LDL-cholesterol concentrations in both sexes. Taken together the updated findings, our main conclusion is that triglyceride concentrations may be mediators that link intake and metabolism of fatty acids to metabolic risk whereas HDL-cholesterol, LDL-cholesterol and non-HDL-cholesterol concentrations do not seem to play an important role in linking intake and metabolism of fatty acids to metabolic risk.

Incorrect parts in the Abstract, results and discussion of the manuscript are indicated in the following text.

Abstract section results: 'Most notably, FA-ratios reflecting activity of $\Delta 6$ -desaturase (D6D) and stearoyl-coenzyme A-desaturase (SCD) were positively associated with triglyceride and LDL-cholesterol concentrations....'

'and LDL-cholesterol' is incorrect.

Section conclusion: 'Our findings suggest that triglyceride and LDL-cholesterol concentrations may be mediators that link intake and metabolism of FAs to metabolic risk.'

'and LDL-cholesterol' is incorrect.

Results section 'Associations between erythrocyte FAs and biomarkers of dyslipidemia':

'In contrast, higher FA-ratios reflecting higher SCD and D6D activities were associated with higher triglyceride and LDL-cholesterol concentrations in both sexes.'

'and LDL-cholesterol' is incorrect.

'These following results satisfy *P*-values for trend according to correction for multiple testing: associations of D6D and SCD with LDL-cholesterol and triglycerides and associations between D5D and triglycerides in both sexes.'

'LDL-cholesterol and' is incorrect.

In the first sentence of the discussion: 'In this cross-sectional study of middle-aged men and women, D6D and SCD activities calculated from erythrocyte FA-ratios were positively associated with triglyceride and LDL-cholesterol concentrations.'

'and LDL-cholesterol' is incorrect.

In the first paragraph of the discussion: 'Our results of strong associations of estimated desaturase activity with triglycerides and LDL-cholesterol do suggest an involvement of an unfavorable lipid profile in this context.'

'and LDL-cholesterol' is incorrect.

In the last sentence of the discussion: 'Our findings suggest that triglyceride and LDL-cholesterol concentrations may be mediators linking the intake and metabolism of FAs to metabolic risk.'

'and LDL-cholesterol' is incorrect.

Table 2. Characteristics by tertiles of HDL-cholesterol, LDL-cholesterol, non-HDL-cholesterol and triglycerides in men, EPIC-Potsdam study (n = 655)^a

	Tertile of HDL-cholesterol				Tertile of LDL-cholesterol				Tertile of non-HDL-cholesterol				Tertile of triglycerides			
	1	3	P		1	3	P		1	3	P		1	3	P	
Age (years)	51.9 (8.1)	51.3 (8.1)	0.49	51.1 (8.2)	52.9 (8.2)	0.02	50.6 (8.2)	53.0 (8.2)	51.6 (8.2)	51.8 (8.1)	0.002	51.6 (8.2)	51.8 (8.1)	51.8 (8.1)	0.88	
BMI (kg/m ²)	27.8 (3.7)	25.4 (3.1)	< 0.0001	26.4 (4.1)	27.1 (3.1)	0.04	25.9 (3.9)	27.4 (3.0)	25.4 (3.1)	27.7 (3.5)	< 0.0001	25.4 (3.1)	27.7 (3.5)	27.7 (3.5)	< 0.0001	
Waist circumference (cm)	96.8 (10.6)	91.0 (9.1)	< 0.0001	93.1 (11.5)	94.9 (8.6)	0.07	91.8 (11.1)	96.1 (8.4)	90.4 (9.4)	97.0 (9.8)	< 0.0001	90.4 (9.4)	97.0 (9.8)	97.0 (9.8)	< 0.0001	
Leisure time sports activity (h per week)	1.1 (2.0)	1.1 (2.0)	0.85	1.2 (2.1)	0.9 (1.7)	0.10	1.2 (2.0)	0.8 (1.6)	1.1 (1.9)	1.0 (1.7)	0.02	1.1 (1.9)	1.0 (1.7)	1.0 (1.7)	0.52	
Biking (h per week)	1.7 (2.5)	1.7 (2.4)	0.99	1.7 (2.3)	1.6 (2.6)	0.88	2.0 (2.7)	1.5 (2.4)	1.8 (2.9)	1.5 (2.3)	0.05	1.8 (2.9)	1.5 (2.3)	1.5 (2.3)	0.17	
Smoking			0.21			0.34					0.03				0.07	
Never smoker (%)	25.7	30.3	0.56	25.7	26.6	0.91	28.0	24.8	26.8	25.6	0.27	26.8	25.6	25.6	0.27	
Education																
In training, no certificate, part skilled worker (%)	1.38	1.83		2.29	1.38		2.75	0.46	2.73	0.46		2.73	0.46	0.46		
Professional school (%)	13.8	12.8		14.7	15.6		15.1	15.1	16.8	16.4		16.8	16.4	16.4		
Technical college, university (%)	56.0	50.5		52.3	52.3		51.4	55.1	50.5	54.3		50.5	54.3	54.3		
Prevalent diabetes (%)	4.13	1.38	0.08	3.67	0.92	0.05	3.21	1.83	2.73	3.20	0.36	2.73	3.20	3.20	0.77	
Prevalent CVD (%)	12.4	8.26	0.16	13.3	7.80	0.06	10.1	8.72	6.36	9.13	0.62	6.36	9.13	9.13	0.28	
Prevalent cancer (%)	2.75	3.21	0.78	3.21	2.75	0.78	3.21	2.29	3.64	3.20	0.56	3.64	3.20	3.20	0.80	
Alcohol intake (g per day)	20.2 (33.6)	29.3 (24.8)	0.001	25.0 (36.4)	23.9 (22.4)	0.69	24.6 (35.8)	25.0 (23.2)	24.9 (23.2)	24.1 (34.6)	0.91	24.9 (23.2)	24.1 (34.6)	24.1 (34.6)	0.77	
Carbohydrate intake (g/1000 kcal)	101 (14.8)	95.5 (13.6)	< 0.0001	99.3 (15.4)	96.8 (13.3)	0.07	99.0 (15.1)	97.0 (13.4)	98.9 (14.7)	98.1 (14.8)	0.13	98.9 (14.7)	98.1 (14.8)	98.1 (14.8)	0.55	
Fasting blood (%)	16.5	12.4	0.22	13.8	15.6	0.59	16.1	12.8	20.9	7.76	0.34	20.9	7.76	7.76	< 0.0001	
<i>Erythrocyte fatty acids^b</i>																
15:0	0.19 (0.10)	0.19 (0.11)	0.09	0.19 (0.10)	0.20 (0.09)	0.10	0.19 (0.10)	0.19 (0.09)	0.20 (0.10)	0.19 (0.09)	0.59	0.20 (0.10)	0.19 (0.09)	0.19 (0.09)	0.32	
17:0	0.31 (0.06)	0.31 (0.07)	0.11	0.30 (0.07)	0.31 (0.06)	0.12	0.31 (0.07)	0.30 (0.07)	0.32 (0.07)	0.30 (0.06)	0.38	0.32 (0.07)	0.30 (0.06)	0.30 (0.06)	0.01	
<i>trans</i> -16:1n-7	0.17 (0.06)	0.16 (0.05)	0.03	0.16 (0.06)	0.16 (0.05)	0.69	0.16 (0.05)	0.16 (0.06)	0.16 (0.05)	0.16 (0.07)	0.97	0.16 (0.05)	0.16 (0.07)	0.16 (0.07)	0.45	
<i>trans</i> -18:1n-9+ <i>trans</i> -18:1n-7	0.48 (0.14)	0.48 (0.14)	0.70	0.47 (0.14)	0.48 (0.11)	0.84	0.48 (0.14)	0.48 (0.12)	0.49 (0.14)	0.48 (0.13)	0.95	0.49 (0.14)	0.48 (0.13)	0.48 (0.13)	0.57	
18:2n-6	10.5 (1.66)	10.7 (1.87)	0.31	10.7 (1.90)	10.6 (1.66)	0.54	10.8 (1.90)	10.5 (1.74)	10.6 (1.81)	10.5 (1.59)	0.02	10.6 (1.81)	10.5 (1.59)	10.5 (1.59)	0.36	
20:5n-3	0.73 (0.32)	0.86 (0.37)	< 0.0001	0.77 (0.33)	0.81 (0.39)	0.04	0.79 (0.34)	0.81 (0.40)	0.81 (0.40)	0.79 (0.35)	0.11	0.81 (0.40)	0.79 (0.35)	0.79 (0.35)	0.17	
22:6n-3	4.64 (1.46)	4.66 (1.32)	0.96	4.64 (1.41)	4.51 (1.49)	0.56	4.66 (1.36)	4.58 (1.48)	4.68 (1.37)	4.58 (1.47)	0.78	4.68 (1.37)	4.58 (1.47)	4.58 (1.47)	0.33	
20:4n-6/20:3n-6 ratio (estimated D5D activity)	8.32 (2.40)	9.14 (2.54)	0.0007	8.55 (2.43)	8.55 (2.59)	0.99	8.82 (2.49)	8.47 (2.43)	9.19 (2.78)	8.42 (2.59)	0.009	9.19 (2.78)	8.42 (2.59)	8.42 (2.59)	< 0.0001	
18:3n-6/18:2n-6 ratio (estimated D6D activity)	0.006 (0.004)	0.005 (0.004)	0.46	0.005 (0.004)	0.005 (0.004)	0.48	0.005 (0.003)	0.006 (0.004)	0.004 (0.003)	0.006 (0.004)	< 0.0001	0.004 (0.003)	0.006 (0.004)	0.006 (0.004)	< 0.0001	
16:1n-7/16:0 ratio (estimated SCD activity)	0.0202 (0.01)	0.0201 (0.01)	0.91	0.020 (0.01)	0.019 (0.01)	0.10	0.019 (0.01)	0.021 (0.01)	0.018 (0.008)	0.023 (0.01)	0.002	0.018 (0.008)	0.023 (0.01)	0.023 (0.01)	< 0.0001	

Abbreviations: BMI, body mass index; CVD, cardiovascular disease; D5D, Δ 5-desaturase; D6D, Δ 6-desaturase; HDL, high-density lipoprotein; LDL, low-density lipoprotein; SCD, stearoyl-coenzyme A-desaturase. *P*-value reflects whether the values of the variables significantly differ between extreme biomarker tertiles (Wilcoxon's test for proportions of erythrocyte fatty acids, *t*-test for other quantitative variables and χ^2 test for categorical variables). ^aFor quantitative variables, values are arithmetic means (s.d.), for categorical variables, values are percentages (all such values). ^bFor proportions of erythrocyte fatty acids, values are medians (IQR; all such values).

Table 3. Characteristics by tertiles of HDL cholesterol, LDL cholesterol, non-HDL cholesterol and triglycerides in women, EPIC-Potsdam study (n = 1104)^a

	Tertile of HDL-cholesterol				Tertile of LDL-cholesterol				Tertile of non-HDL-cholesterol				Tertile of triglycerides			
	1	3	P		1	3	P		1	3	P		1	3	P	
Age (years)	49.1 (9.2)	47.8 (9.1)	0.07		45.0 (8.3)	52.4 (8.7)	< 0.0001		44.5 (8.1)	52.8 (8.7)	< 0.0001		46.4 (8.7)	51.5 (9.1)	< 0.0001	
BMI (kg/m ²)	27.5 (5.0)	23.9 (3.8)	< 0.0001		24.7 (4.4)	26.6 (4.4)	< 0.0001		24.1 (3.9)	27.3 (4.5)	< 0.0001		23.9 (3.7)	27.9 (4.8)	< 0.0001	
Waist circumference (cm)	85.4 (12.0)	75.8 (9.4)	< 0.0001		78.1 (11.4)	83.3 (11.3)	< 0.0001		76.1 (9.7)	85.3 (11.6)	< 0.0001		75.3 (8.8)	87.1 (12.1)	< 0.0001	
Leisure time sports activity (h per week)	0.9 (1.6)	1.2 (1.8)	0.02		1.1 (1.7)	0.8 (1.6)	0.03		1.3 (1.8)	0.8 (1.6)	0.001		1.2 (1.9)	0.8 (1.4)	0.0007	
Biking (h per week)	1.9 (3.0)	1.8 (2.9)	0.67		2.1 (3.2)	1.8 (2.7)	0.10		2.1 (3.2)	1.8 (2.8)	0.098		2.0 (2.7)	1.7 (2.9)	0.27	
Smoking			0.01				0.004				0.001				0.09	
Never smoker (%)	59.2	54.1			55.7	61.4			55.7	59.5			60.2	57.7		
Education			0.02				0.003								0.01	
In training, no certificate, part skilled worker (%)	4.62	3.53			4.08	5.43			2.99	6.25			3.30	6.50		
Professional school (%)	31.8	28.8			31.8	30.2			30.7	29.9			28.3	29.0		
Technical college, university (%)	24.7	35.3			34.8	24.2			35.1	21.5			34.9	25.5		
Oral contraceptive use (%)	13.3	19.8	0.02		23.9	9.51	< 0.0001		22.6	9.78	< 0.0001		14.8	15.2	0.90	
Hormone replacement therapy (%)	22.3	20.9	0.65		16.6	29.4	< 0.0001		17.1	28.0	0.0004		22.0	23.3	0.67	
Prevalent diabetes (%)	2.17	0.82	0.13		0.82	2.45	0.08		0.27	2.17	0.02		0.82	2.98	0.03	
Prevalent CVD (%)	5.43	3.80	0.29		1.90	8.15	0.0001		1.90	9.24	< 0.0001		2.47	8.67	0.0003	
Prevalent cancer (%)	7.61	7.07	0.78		4.62	8.97	0.02		5.16	8.70	0.06		4.95	7.86	0.11	
Alcohol intake (g per day)	7.0 (9.2)	9.8 (10.9)	0.0002		9.9 (10.8)	7.2 (9.1)	0.0002		10.2 (11.2)	7.2 (9.0)	< 0.0001		8.7 (10.5)	7.2 (8.7)	0.03	
Carbohydrate intake (g/1000 kcal)	103 (12.1)	101 (13.0)	0.01		101 (11.7)	103 (12.9)	0.01		101 (12.0)	103 (12.9)	0.03		102 (12.4)	102 (13.2)	0.70	
Fasting blood (%)	12.8	11.1	0.50		10.3	18.5	0.002		11.4	15.8	0.09		15.1	10.6	0.07	
<i>Erythrocyte fatty acids</i> ^b																
15:0	0.21 (0.09)	0.23 (0.10)	0.0009		0.21 (0.09)	0.22 (0.10)	0.06		0.22 (0.10)	0.21 (0.10)	0.79		0.22 (0.09)	0.21 (0.09)	0.02	
17:0	0.32 (0.06)	0.33 (0.07)	0.04		0.32 (0.06)	0.34 (0.06)	0.002		0.33 (0.06)	0.33 (0.06)	0.47		0.34 (0.06)	0.32 (0.07)	< 0.0001	
<i>trans</i> -16:1n-7	0.18 (0.06)	0.17 (0.06)	0.59		0.17 (0.06)	0.18 (0.07)	0.32		0.17 (0.06)	0.17 (0.07)	0.87		0.18 (0.06)	0.17 (0.07)	0.03	
<i>trans</i> -18:1n-9+ <i>trans</i> -18:1n-7	0.52 (0.16)	0.52 (0.14)	0.99		0.52 (0.15)	0.53 (0.16)	0.49		0.53 (0.15)	0.52 (0.15)	0.54		0.54 (0.14)	0.51 (0.16)	0.0002	
18:2n-6	10.7 (1.67)	10.8 (1.68)	0.24		10.8 (1.62)	10.7 (1.63)	0.20		10.9 (1.61)	10.7 (1.61)	0.03		11.0 (1.71)	10.7 (1.73)	0.03	
20:5n-3	0.74 (0.32)	0.78 (0.38)	0.06		0.75 (0.32)	0.78 (0.37)	0.02		0.75 (0.32)	0.78 (0.36)	0.02		0.77 (0.35)	0.76 (0.33)	0.62	
22:6n-3	4.94 (1.35)	4.95 (1.47)	0.72		4.99 (1.35)	4.88 (1.44)	0.06		4.92 (1.36)	4.89 (1.46)	0.24		4.84 (1.40)	5.00 (1.42)	0.17	
20:4n-6/20:3n-6 ratio (estimated D5D activity)	8.57 (2.31)	9.07 (2.53)	0.0003		8.70 (2.54)	8.84 (2.54)	0.72		9.04 (2.67)	8.64 (2.54)	0.03		9.45 (2.63)	8.24 (2.14)	< 0.0001	
18:3n-6/18:2n-6 ratio (estimated D6D activity)	0.0046 (0.003)	0.0044 (0.003)	0.11		0.004 (0.003)	0.005 (0.003)	0.0006		0.0041 (0.002)	0.0050 (0.003)	< 0.0001		0.0039 (0.002)	0.0053 (0.003)	< 0.0001	
16:1n-7/16:0 ratio (estimated SCD activity)	0.020 (0.008)	0.021 (0.009)	0.08		0.020 (0.009)	0.020 (0.009)	0.99		0.019 (0.009)	0.021 (0.01)	0.0002		0.018 (0.007)	0.022 (0.009)	< 0.0001	

Abbreviations: BMI, body mass index; CVD, cardiovascular disease; D5D, Δ5-desaturase; D6D, Δ6-desaturase; HDL, high-density lipoprotein; LDL, low-density lipoprotein; SCD, stearoyl-coenzyme A-desaturase. P-value reflects whether the values of the variables significantly differ between extreme biomarker tertiles (Wilcoxon's test for proportions of erythrocyte fatty acids, t-test for other quantitative variables and X² test for categorical variables). ^aFor quantitative variables, values are arithmetic means (s.d.), for categorical variables, values are percentages (all such values). ^bFor proportions of erythrocyte fatty acids, values are medians (IQR; all such values).

Table 4. Adjusted arithmetic means (95% CI) of plasma HDL-cholesterol, LDL-cholesterol, non-HDL-cholesterol and adjusted geometric means of plasma triglycerides (mg/dl) by tertiles of erythrocyte fatty acid proportions for men ($n = 655$) and women ($n = 1104$), EPIC-Potsdam study

	Men				Women			
	Tertile of fatty acid			P-value for trend	Tertile of fatty acid			P-value for trend
	1	2	3		1	2	3	
1:50								
HDL-cholesterol (mg/dl)	44.3 (42.8–45.7)	42.6 (41.2–44.1)	43.1 (41.7–44.6)	0.31	50.5 (49.3–51.7)	51.8 (50.6–53.0)	52.5 (51.3–53.7)	0.03
LDL-cholesterol (mg/dl)	103 (98.7–107)	108 (103–112)	109 (105–114)	0.05	100 (97.2–103)	100 (97.3–103)	103 (100–106)	0.15
Non-HDL-cholesterol (mg/dl)	132 (128–137)	136 (131–140)	136 (131–141)	0.31	120 (116–123)	120 (117–123)	122 (119–125)	0.26
Triglycerides (mg/dl)	120 (111–130)	118 (110–128)	116 (107–125)	0.48	83.9 (79.9–88.2)	83.1 (79.2–87.3)	82.2 (78.3–86.3)	0.55
1:70								
HDL-cholesterol (mg/dl)	44.5 (43.0–46.0)	43.4 (42.0–44.8)	42.1 (40.6–43.6)	0.04	52.4 (51.1–53.7)	50.7 (49.4–51.9)	51.7 (50.5–53.0)	0.59
LDL-cholesterol (mg/dl)	103 (98.1–107)	108 (104–112)	109 (105–114)	0.05	100 (97.1–103)	100 (97.4–103)	103 (99.8–106)	0.24
Non-HDL-cholesterol (mg/dl)	134 (129–139)	135 (131–140)	135 (130–140)	0.79	121 (117–124)	120 (116–123)	121 (118–125)	0.77
Triglycerides (mg/dl)	125 (115–136)	116 (107–125)	113 (105–123)	0.10	87.8 (83.4–92.4)	82.7 (78.8–86.8)	79.0 (75.1–83.1)	0.006
trans-16:1n-7								
HDL-cholesterol (mg/dl)	43.5 (42.0–45.0)	44.2 (42.8–45.7)	42.3 (40.8–43.7)	0.21	52.9 (51.7–54.2)	50.2 (48.9–51.4)	51.7 (50.4–52.9)	0.28
LDL-cholesterol (mg/dl)	107 (102–111)	107 (103–112)	106 (101–110)	0.72	102 (98.8–105)	97.7 (94.8–101)	104 (101–107)	0.21
Non-HDL-cholesterol (mg/dl)	135 (131–140)	133 (129–138)	136 (131–140)	0.90	122 (118–125)	116 (113–120)	124 (120–127)	0.24
Triglycerides (mg/dl)	118 (109–128)	111 (103–120)	125 (116–135)	0.26	84.5 (80.4–88.7)	80.6 (76.8–84.7)	84.2 (80.1–88.5)	0.96
trans-18:1n-9+trans-18:1n-7								
HDL-cholesterol (mg/dl)	43.5 (42.0–45.0)	43.1 (41.7–44.6)	43.4 (42.0–44.9)	0.96	52.2 (51.0–53.4)	51.1 (49.8–52.3)	51.5 (50.3–52.8)	0.50
LDL-cholesterol (mg/dl)	103 (98.8–107)	109 (105–114)	107 (103–112)	0.23	98.9 (96.0–102)	101 (98.4–104)	103 (100–106)	0.05
Non-HDL-cholesterol (mg/dl)	131 (126–136)	138 (134–143)	135 (130–140)	0.27	118 (115–122)	120 (117–124)	123 (119–126)	0.08
Triglycerides (mg/dl)	111 (102–119)	125 (115–134)	119 (110–129)	0.23	84.3 (80.3–88.6)	83.0 (79.0–87.1)	82.0 (78.0–86.1)	0.44
20:5n-3								
HDL-cholesterol (mg/dl)	42.3 (40.8–43.7)	43.2 (41.8–44.7)	44.5 (43.1–46.0)	0.03	51.0 (49.7–52.3)	51.9 (50.7–53.1)	51.9 (50.6–53.1)	0.40
LDL-cholesterol (mg/dl)	105 (101–110)	105 (101–109)	110 (105–114)	0.15	101 (98.1–104)	101 (98.2–104)	101 (98.1–104)	0.99
Non-HDL-cholesterol (mg/dl)	134 (129–138)	135 (130–139)	136 (131–140)	0.56	121 (117–124)	121 (118–125)	119 (116–123)	0.50
Triglycerides (mg/dl)	121 (112–131)	121 (112–131)	112 (104–121)	0.15	86.0 (81.7–90.4)	85.6 (81.5–89.9)	78.0 (74.1–82.0)	0.007
22:6n-3								
HDL-cholesterol (mg/dl)	43.0 (41.6–44.5)	44.0 (42.6–45.5)	43.0 (41.5–44.4)	0.99	53.2 (52.0–54.4)	51.2 (49.9–52.4)	50.4 (49.2–51.6)	0.002
LDL-cholesterol (mg/dl)	107 (103–111)	105 (101–109)	108 (103–112)	0.87	103 (100–106)	101 (98.5–104)	99.1 (96.2–102)	0.08
Non-HDL-cholesterol (mg/dl)	135 (131–140)	133 (128–138)	136 (131–141)	0.87	122 (119–126)	121 (117–124)	119 (115–122)	0.13
Triglycerides (mg/dl)	119 (111–129)	117 (108–126)	118 (109–127)	0.81	81.6 (77.7–85.8)	83.4 (79.4–87.6)	84.2 (80.2–88.5)	0.39
18:2n-6								
HDL-cholesterol (mg/dl)	43.1 (41.7–44.6)	43.6 (42.1–45.0)	43.3 (41.8–44.8)	0.89	51.9 (50.7–53.2)	51.8 (50.5–53.0)	51.1 (49.8–52.3)	0.36
LDL-cholesterol (mg/dl)	104 (99.7–108)	110 (106–114)	106 (102–110)	0.58	102 (99.1–105)	102 (98.7–105)	99.8 (96.8–103)	0.29
Non-HDL-cholesterol (mg/dl)	133 (128–138)	138 (134–143)	133 (128–138)	0.91	121 (118–124)	121 (117–124)	120 (117–123)	0.76
Triglycerides (mg/dl)	122 (112–131)	120 (111–129)	113 (105–122)	0.20	81.6 (77.7–85.8)	83.0 (79.1–87.2)	84.6 (80.5–88.9)	0.32
20:4n-6/20:3n-6 ratio (estimated D5D activity)								
HDL-cholesterol (mg/dl)	43.0 (41.5–44.4)	43.1 (41.6–44.5)	44.0 (42.5–45.4)	0.35	50.9 (49.6–52.1)	52.1 (50.9–53.3)	51.8 (50.5–53.1)	0.32
LDL-cholesterol (mg/dl)	107 (103–112)	106 (101–110)	107 (103–111)	0.90	98.4 (95.4–101)	102 (99.2–105)	103 (99.9–106)	0.04
Non-HDL-cholesterol (mg/dl)	138 (133–142)	134 (129–138)	133 (128–137)	0.13	120 (117–124)	121 (118–124)	120 (117–123)	0.83
Triglycerides (mg/dl)	128 (119–138)	121 (113–131)	106 (97.9–114)	0.0006	92.0 (87.6–96.6)	82.8 (78.9–86.9)	75.3 (71.6–79.1)	< 0.0001

Table 4. (Continued)

	Men			Women		
	Tertile of fatty acid			Tertile of fatty acid		
	1	2	3	1	2	3
18:3n-6/18:2n-6 ratio (estimated D6D activity)						
HDL-cholesterol (mg/dl)	43.5 (42.0–44.9)	43.0 (41.6–44.4)	43.6 (42.1–45.0)	50.0 (48.8–51.3)	52.0 (50.8–53.2)	52.7 (51.5–54.0)
LDL-cholesterol (mg/dl)	106 (102–111)	107 (103–112)	106 (102–111)	100 (97.3–103)	102 (99.2–105)	101 (98.0–104)
Non-HDL-cholesterol (mg/dl)	131 (126–135)	134 (129–138)	140 (135–145)	117 (114–121)	121 (118–124)	123 (120–127)
Triglycerides (mg/dl)	102 (94.7–110)	111 (104–120)	144 (134–156)	73.5 (70.0–77.2)	82.9 (79.0–86.9)	94.2 (89.7–98.9)
				P-value for trend		P-value for trend
				<0.0001		<0.0001
16:1n-7/16:0 ratio (estimated SCD activity)						
HDL-cholesterol (mg/dl)	42.9 (41.4–44.3)	42.8 (41.3–44.2)	44.4 (42.9–45.9)	50.2 (49.0–51.4)	51.2 (50.0–52.4)	53.4 (52.1–54.6)
LDL-cholesterol (mg/dl)	109 (105–113)	109 (105–113)	102 (97.8–107)	103 (100–106)	102 (99.1–105)	98.3 (95.3–101)
Non-HDL-cholesterol (mg/dl)	132 (127–137)	135 (131–140)	137 (132–142)	119 (116–123)	120 (117–124)	122 (119–125)
Triglycerides (mg/dl)	99.0 (91.8–107)	115 (107–124)	144 (134–156)	72.4 (69.0–76.0)	81.5 (77.8–85.5)	97.2 (92.6–102)
				P-value for trend		P-value for trend
				0.16		0.0005
				0.04		0.02
				0.19		0.31
				<0.0001		<0.0001

Abbreviations: D5D, Δ5-desaturase; D6D, Δ6-desaturase; HDL, high-density lipoprotein; LDL, low-density lipoprotein; SCD, stearoyl-coenzyme A-desaturase. The model was adjusted for age at recruitment, smoking status (never, past, current smoker < 20 units per day, current smoker ≥ 20 units per day), alcohol intake (> 0–6; > 6–12; > 12–24; > 24–60; > 60–96; > 96 g per day), leisure time sports activity (h per week), biking (h per week), education status (in training, no certificate, part skilled worker skilled worker, professional school; college of higher education, university), total carbohydrate intake (g per day), BMI (kg/m²) and waist circumference (cm). We estimated geometric means and 95% confidence intervals in case of triglycerides and arithmetic means and 95% confidence interval in case of HDL-cholesterol, LDL-cholesterol and non-HDL-cholesterol by fatty acid tertiles and tested for statistical significance of linear trends across tertiles by modeling the median value of the fatty acid within each tertile as a quantitative variable. P-value for trend value reflects whether the mean of the biomarker significantly decreases or increases across the FA tertiles.