

Supplementary Material

Maternal plasma n-3 and n-6 polyunsaturated fatty acid concentrations during pregnancy and subcutaneous fat mass in infancy.

Aleksandra Jelena Vidakovic MD, Susana Santos MSc, Michelle A. Williams PhD, Liesbeth Duijts MD PhD, Albert Hofman MD PhD, Hans Demmelmair PhD, Berthold Koletzko MD PhD

Dr h.c., Vincent WV Jaddoe MD PhD, Romy Gaillard PhD

Address reprint requests and correspondence to: Romy Gaillard, PhD. The Generation R Study Group (Na29-15). Erasmus MC, University Medical Center, PO Box 2040, 3000 CA Rotterdam, the Netherlands (r.gaillard@erasmusmc.nl). Phone: +31 (0) 10 7043405, Fax: +31 (0) 10 7044645

Figure S1 Flow chart of the participants

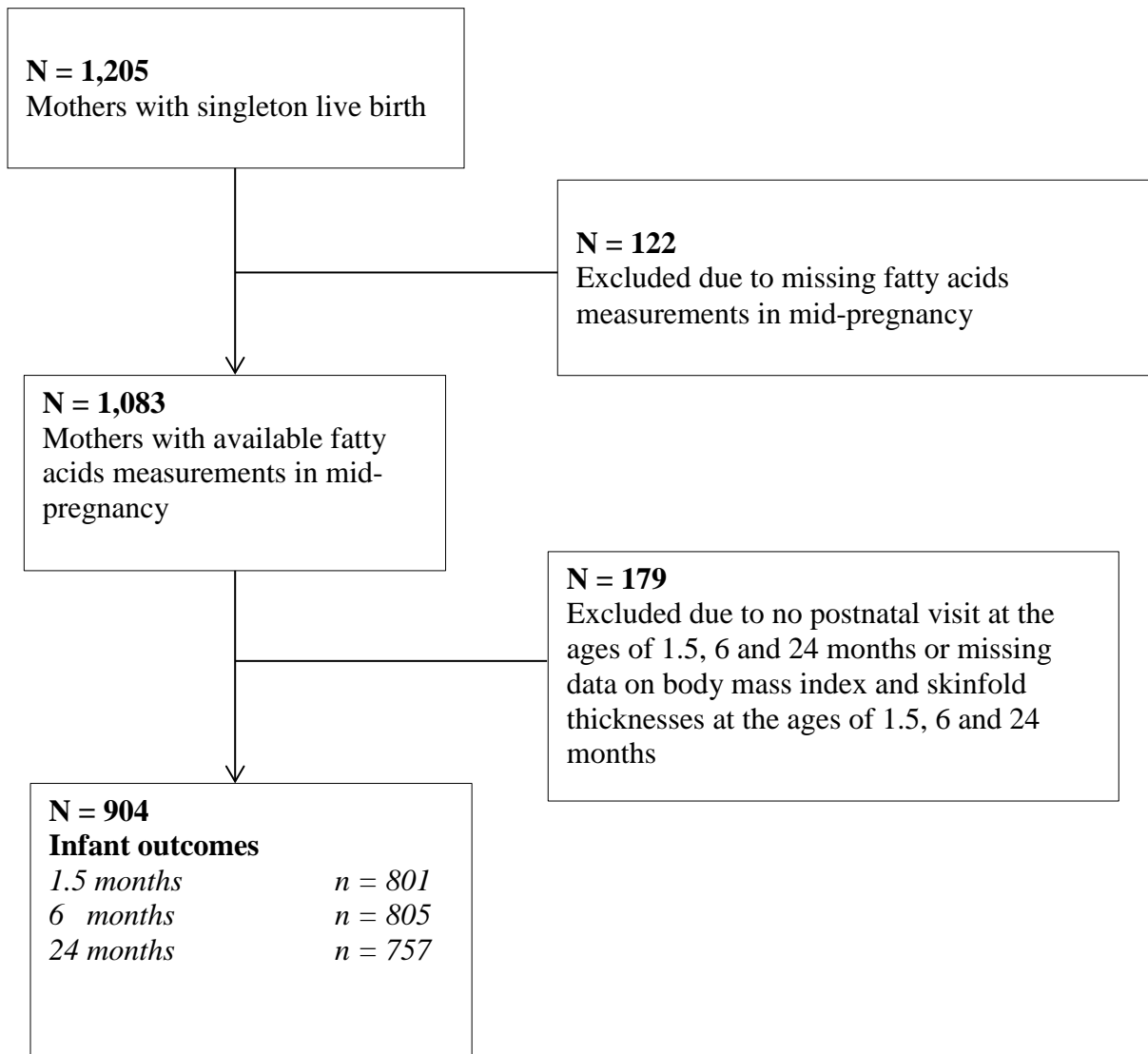


Table S1 Comparison of subject characteristics between those included and not included in the analyses (N = 1,083)¹

Characteristics	Participation in follow-up	No participation in follow-up	P-value
	N = 904	N = 179	
Maternal characteristics			
Age (years), mean (SD)	31.9 (4.0)	30.7 (4.1)	<0.01
Gestational age at PUFA measures (weeks), median (95% range)	20.5 (18.6, 22.7)	20.5 (18.6, 22.6)	0.56
Pre-pregnancy body mass index (kg/m ²), mean (SD)	23.4 (4.1)	23.5 (4.3)	0.73
Gestational weight gain, kg, mean (SD)	10.0 (4.5)	10.4 (4.7)	0.54
Education, n (%) higher education	574 (64.0)	102 (58.0)	0.13
Parity, n (%) nulliparous	555 (61.4)	98 (55.4)	0.07
Total energy intake, kcal, mean (SD)	2126 (486)	2167 (497)	0.41
Smoking during pregnancy, n yes (%)	198 (24.1)	45 (27.1)	0.22
Folic acid supplement use, n yes (%)	676 (90.7)	139 (90.2)	0.35
Gestational diabetes, n (%)	10 (1.1)	1 (0.6)	0.45
Gestational hypertensive disorders, n (%)	67 (7.6)	7 (4.1)	0.15
Infant characteristics			
Males, n (%)	464 (51.3)	98 (55.1)	0.34
Gestational age at birth (weeks), median (95% range)	40.3 (35.8, 42.4)	40.3 (34.8, 42.2)	0.66
Birth weight (g), mean (SD)	3509 (544)	3513 (591)	0.82
Breastfeeding duration (months), mean (SD)	4.5 (3.8)	3.5 (3.6)	0.01
Introduction of solid foods n (%) >6 months	147 (18.3)	11 (8.9)	0.07

¹Values represent mean (SD), median (95% range) or number of subjects (valid %). Differences were tested using Student's t-tests and Mann-Whitney tests for normally and non-normally distributed variables, respectively and χ^2 -test for dichotomous variables.

Abbreviations: PUFA; polyunsaturated fatty acid; SD: standard deviation.

Table S2 Comparison of maternal PUFA between those included and not included in the analyses (N = 1,083)¹

Maternal PUFA	Participation in follow-up N = 904	No participation in follow-up N = 179	P-value
Total PUFA			
Absolute values (mg/L)	704.1 (95.4)	702.3 (90.7)	0.86
Percentage by weight of total sum of fatty acids	42.5 (1.6)	42.3 (1.7)	0.10
Total n-3 PUFA			
Absolute values (mg/L)	111.4 (25.8)	107.5 (25.3)	0.07
Percentage by weight of total sum of fatty acids	6.8 (1.4)	6.6 (1.4)	0.01
ALA			
Absolute values (mg/L)	5.4 (1.6)	5.3 (1.7)	0.49
Percentage by weight of total sum of fatty acids	0.3 (0.1)	0.3 (0.1)	0.25
EPA			
Absolute values (mg/L)	10.1 (5.3)	9.8 (5.5)	0.45
Percentage by weight of total sum of fatty acids	0.6 (0.3)	0.6 (0.3)	0.33
DPA			
Absolute values (mg/L)	12.9 (3.9)	13.2 (4.3)	0.28
Percentage by weight of total sum of fatty acids	0.8 (0.2)	0.8 (0.2)	0.41
DHA			
Absolute values (mg/L)	81.5 (19.2)	77.9 (19.5)	0.02
Percentage by weight of total sum of fatty acids	5.0 (1.1)	4.7 (1.1)	<0.01
Total n-6 PUFA			
Absolute values (mg/L)	592.6 (86.0)	595.4 (80.8)	0.45
Percentage by weight of total sum of fatty acids	36.3 (2.0)	36.3 (2.0)	0.52
LA			
Absolute values (mg/L)	348.9 (59.6)	348.7 (55.2)	0.96
Percentage by weight of total sum of fatty acids	21.4 (2.5)	21.3 (2.5)	0.65
GLA			
Absolute values (mg/L)	1.5 (0.7)	1.5 (0.7)	0.38
Percentage by weight of total sum of fatty acids	0.1 (0.0)	0.1 (0.0)	0.46
EDA			
Absolute values (mg/L)	8.3 (1.7)	8.3 (1.7)	0.85
Percentage by weight of total sum of fatty acids	0.5 (0.1)	0.5 (0.1)	0.44
DGLA			
Absolute values (mg/L)	63.3 (16.3)	64.5 (17.0)	0.22
Percentage by weight of total sum of fatty acids	3.9 (0.7)	3.9 (0.7)	0.26
ARA			
Absolute values (mg/L)	155.9 (31.7)	157.1 (30.9)	0.37
Percentage by weight of total sum of fatty acids	9.5 (1.4)	9.6 (1.4)	0.53
DTA			
Absolute values (mg/L)	6.9 (2.0)	7.2 (2.3)	0.01
Percentage by weight of total sum of fatty acids	0.42 (0.1)	0.4 (0.1)	0.01

¹Values represent mean (SD). Differences were tested using Student's t-tests and Mann-Whitney tests for normally and non-normally distributed variables, respectively and χ^2 -test for dichotomous variables. Abbreviations: ALA: α -linolenic acid; AA: arachidonic acid; DGLA dihomogamma-linolenic acid; DHA: docosahexaenoic acid; DPA: docosapentaenoic acid; DTA: docosatetraenoic acid; EDA: eicosadienoic acid; EPA: eicosapentaenoic acid; GLA: γ -linolenic acid; LA: linoleic acid; PUFA: polyunsaturated fatty acid.

Table S3 Correlation between all maternal fatty acid concentrations¹

Maternal PUFA	Total PUFA	Total n-3 PUFA	ALA	EPA	DPA	DHA	Total n-6 PUFA	LA	GLA	EDA	DGLA	ARA	DTA
Total PUFA	1												
Total n-3 PUFA	0.11*	1											
ALA	-0.01	0.04	1										
EPA	0.02	0.73*	0.12*	1									
DPA	-0.08*	0.56*	0.11*	0.38*	1								
DHA	0.15*	0.96*	-0.09*	0.55*	0.40*	1							
Total n-6 PUFA	0.72*	-0.61*	-0.05	-0.50*	-0.44*	-0.55*	1						
LA	0.64*	-0.40*	0.21*	-0.31*	-0.35*	-0.37*	0.76*	1					
GLA	-0.44*	-0.06	0.01	0.03	0.15*	-0.12*	-0.29*	-0.42*	1				
EDA	0.10*	-0.23*	0.19*	-0.19*	-0.18*	-0.22*	0.23*	0.34*	-0.21*	1			
DGLA	-0.37*	-0.31*	-0.03	-0.16*	-0.09*	-0.33*	-0.07	-0.28*	0.29*	0.29*	1		
ARA	0.14*	0.04	-0.40*	-0.04	0.01	0.09*	0.12*	-0.46*	0.12*	-0.44*	-0.19*	1	
DTA	-0.33*	-0.21*	-0.14*	-0.20*	0.24*	-0.24**	-0.07*	-0.46*	0.37*	-0.09*	0.33*	0.38*	1

¹Values are Pearson correlation coefficients. *P- value <0.06.

Abbreviations: ALA: α -linolenic acid; AA: arachidonic acid; DGLA dihomogamma-linolenic acid; DHA: docosahexaenoic acid; DPA: docosapentaenoic acid; DTA: docosatetraenoic acid; EDA: eicosadienoic acid; EPA: eicosapentaenoic acid; GLA: γ -linolenic acid; LA: linoleic acid; PUFA; polyunsaturated fatty acid;

Table S4 Association of maternal n-3 PUFA levels and infant subcutaneous fat mass measures at 1.5, 6 and 24 (N =904)¹⁻²

Maternal n-3 PUFA in SDS	Adiposity measures at 1.5 months in SDS Difference (95% confidence interval)			Adiposity measures at 6 months in SDS Difference (95% confidence interval)			Adiposity measures at 24 months in SDS Difference (95% confidence interval)		
	Body mass index	Total subcutaneous fat mass	Central-to-total subcutaneous fat mass ratio	Body mass index	Total subcutaneous fat mass	Central-to-total subcutaneous fat mass ratio	Body mass index	Total subcutaneous fat mass	Central-to-total subcutaneous fat mass ratio
Total	-0.01 (-0.07, 0.07)	-0.04 (-0.12, 0.03)	0.10 (0.03, 0.17)*	-0.04 (-0.11, 0.04)	-0.03 (-0.10, 0.04)	-0.08 (-0.15, -0.01)*	0.02 (-0.05, 0.10)	0.06 (-0.02, 0.14)	-0.03 (-0.10, 0.05)
<i>ALA</i>	0.04 (-0.03, 0.11)	-0.05 (-0.12, 0.03)	0.03 (-0.05, 0.10)	-0.03 (-0.10, 0.04)	0.01 (-0.06, 0.08)	-0.01 (-0.08, 0.06)	-0.03 (-0.10, 0.04)	-0.01 (-0.08, 0.07)	-0.03 (-0.10, 0.04)
<i>EPA</i>	-0.01 (-0.07, 0.06)	-0.02 (-0.09, 0.05)	0.07 (0.01, 0.14)*	-0.02 (-0.09, 0.06)	-0.03 (-0.10, 0.04)	-0.07 (-0.14, 0)*	0.02 (-0.06, 0.10)	0.04 (-0.04, 0.12)	-0.01 (-0.09, 0.07)
<i>DPA</i>	0.01 (-0.06, 0.08)	-0.13 (-0.20, -0.06)*	0.11 (0.04, 0.19)*	-0.07 (-0.14, -0.01)*	-0.06 (-0.13, 0.01)	-0.01 (-0.07, 0.07)	-0.08 (-0.15, -0.01)*	0.02 (-0.06, 0.09)	-0.07 (-0.14, 0.01)
<i>DHA</i>	-0.01 (-0.08, 0.06)	-0.02 (-0.09, 0.05)	0.09 (0.02, 0.16)*	-0.02 (-0.09, 0.05)	-0.02 (-0.09, 0.06)	-0.08 (-0.15, -0.01)*	0.04 (-0.03, 0.12)	0.06 (-0.02, 0.14)	-0.02 (-0.10, 0.06)

¹Values are regression coefficients (95% Confidence Interval) that reflect the difference in SDS of infant body mass index and subcutaneous fat mass measures from 1.5 to 24 months per SD change in maternal n-3 PUFA levels. Body mass index = weight/height². Total subcutaneous fat mass = biceps + triceps + suprailiacal + subscapular skinfold thicknesses. Central-to-total subcutaneous fat mass ratio = (suprailiacal + subscapular skinfold thicknesses)/total subcutaneous fat mass.

²Models are unadjusted for potential confounders. * P-value<0.05.

Table S5 Association of maternal n-3 PUFA levels and change in fat mass measures from 1.5 to 24 months (N =904)¹⁻²

Maternal n-3 PUFA in SDS	Change in adiposity measures from 1.5 to 6 months in SDS			Change in adiposity measures from 1.5 to 24 months in SDS			Change in adiposity measures from 6 to 24 months in SDS		
	Difference (95% confidence interval)			Difference (95% confidence interval)			Difference (95% confidence interval)		
	Body mass index	Total subcutaneous fat mass	Central-to-total subcutaneous fat mass ratio	Body mass index	Total subcutaneous fat mass	Central-to-total subcutaneous fat mass ratio	Body mass index	Total subcutaneous fat mass	Central-to-total subcutaneous fat mass ratio
Total									
<i>Unadjusted</i>	-0.04 (-0.11, 0.04)	0.03 (-0.07, 0.13)	0.03 (-0.07, 0.13)	0.03 (-0.07, 0.13)	0.07 (-0.04, 0.18)	-0.15 (-0.27, -0.04)*	0.07 (-0.02, 0.15)	0.04 (-0.07, 0.14)	0.06 (-0.06, 0.17)
<i>Adjusted</i>	-0.04 (-0.12, 0.04)	0.01 (-0.10, 0.10)	0.01 (-0.10, 0.10)	0.01 (-0.10, 0.10)	0.05 (-0.06, 0.16)	-0.16 (-0.28, -0.04)*	0.05 (-0.04, 0.13)	0.02 (-0.09, 0.13)	0.08 (-0.04, 0.20)
ALA									
<i>Unadjusted</i>	-0.06 (-0.13, 0.02)	-0.05 (-0.15, 0.05)	-0.05 (-0.15, 0.05)	-0.05 (-0.15, 0.05)	0.03 (-0.08, 0.14)	-0.08 (-0.19, 0.03)	0.01 (-0.07, 0.09)	-0.04 (-0.13, 0.06)	-0.06 (-0.17, 0.05)
<i>Adjusted</i>	-0.05 (-0.13, 0.03)	-0.03 (-0.13, 0.07)	-0.03 (-0.13, 0.07)	-0.03 (-0.13, 0.07)	0.05 (-0.06, 0.16)	-0.07 (-0.18, 0.05)	0.02 (-0.06, 0.10)	-0.04 (-0.14, 0.07)	-0.04 (-0.15, 0.07)
EPA									
<i>Unadjusted</i>	-0.01 (-0.09, 0.07)	0.03 (-0.07, 0.13)	0.03 (-0.07, 0.13)	0.03 (-0.07, 0.13)	0.06 (-0.06, 0.18)	-0.11 (-0.23, 0.01)	0.04 (-0.04, 0.13)	0.04 (-0.06, 0.15)	0.09 (-0.03, 0.20)
<i>Adjusted</i>	-0.01 (-0.08, 0.07)	0.01 (-0.09, 0.11)	0.01 (-0.09, 0.11)	0.01 (-0.09, 0.11)	0.07 (-0.05, 0.19)	-0.11 (-0.23, 0.02)	0.03 (-0.06, 0.12)	0.05 (-0.06, 0.15)	0.10 (-0.02, 0.21)
DPA									
<i>Unadjusted</i>	-0.09 (-0.17, 0.01)*	-0.08 (-0.18, 0.01)	-0.08 (-0.18, 0.01)	-0.08 (-0.18, 0.01)	0.11 (0.01, 0.22)*	-0.18 (-0.29, -0.07)*	0.02 (-0.07, 0.10)	0.05 (-0.06, 0.15)	-0.06 (-0.17, 0.05)
<i>Adjusted</i>	-0.09 (-0.17, -0.02)*	-0.08 (-0.18, 0.02)	-0.08 (-0.18, 0.02)	-0.08 (-0.18, 0.02)	0.09 (-0.02, 0.19)	-0.17 (-0.29, -0.06)*	0.02 (-0.07, 0.10)	0.03 (-0.07, 0.14)	-0.03 (-0.15, 0.09)
DHA									
<i>Unadjusted</i>	-0.02 (-0.10, 0.06)	0.05 (-0.05, 0.15)	0.05 (-0.05, 0.15)	0.05 (-0.05, 0.15)	0.04 (-0.07, 0.15)	-0.12 (-0.24, -0.01)*	0.07 (-0.02, 0.15)	0.03 (-0.07, 0.13)	0.07 (-0.05, 0.18)
<i>Adjusted</i>	-0.03 (-0.11, 0.05)	0.02 (-0.08, 0.12)	0.02 (-0.08, 0.12)	0.02 (-0.08, 0.12)	0.02 (-0.10, 0.13)	-0.13 (-0.25, -0.01)*	0.05 (-0.04, 0.13)	0 (-0.11, 0.11)	0.08 (-0.04, 0.21)

¹Values are regression coefficients (95% Confidence Interval) that reflect the difference in SDS of infants body mass index and subcutaneous fat mass measures from 1.5 to 24 months per SD change in maternal n-3 PUFA levels. Body mass index = weight/height². Total subcutaneous fat mass = biceps + triceps + suprailiacal + subscapular skinfold thicknesses. Central-to-total subcutaneous fat mass ratio = (suprailiacal + subscapular skinfold thicknesses)/total subcutaneous fat mass.

²Adjusted model includes gestational age at blood sampling, maternal age, educational level, parity, pre-pregnancy body mass index, maternal total energy intake, smoking habits and weight gain during pregnancy, folic acid supplement use, gestational diabetes, gestational hypertensive disorders, infants' sex, gestational age-adjusted birth weight standard-deviation scores, breastfeeding duration and timing of introduction of solid foods. * P-value<0.05.

Table S6 Association of maternal n-6 PUFA levels and infant subcutaneous fat mass measures at 1.5, 6 and 24 months (N =904)^{1,2}

Maternal n-6 PUFA in SDS	Adiposity measures at 1.5 months in SDS Difference (95% confidence interval)			Adiposity measures at 6 months in SDS Difference (95% confidence interval)			Adiposity measures at 24 months in SDS Difference (95% confidence interval)		
	Body mass index	Total subcutaneous fat mass	Central-to-total subcutaneous fat mass ratio	Body mass index	Total subcutaneous fat mass	Central-to-total subcutaneous fat mass ratio	Body mass index	Total subcutaneous fat mass	Central-to-total subcutaneous fat mass ratio
Total	0.20 (-0.05, 0.09)	-0.07 (-0.14, 0.00)	-0.06 (-0.13, 0.01)	-0.01 (-0.08, 0.06)	0.01 (-0.06, 0.08)	0.04 (-0.03, 0.11)	-0.03 (-0.13, 0.06)	0.09 (-0.02, 0.20)	0.08 (-0.04, 0.19)
<i>LA</i>	-0.01 (-0.08, 0.06)	-0.05 (-0.12, 0.02)	-0.03 (-0.10, 0.04)	-0.03 (-0.10, 0.04)	0.03 (-0.04, 0.10)	0.03 (-0.04, 0.10)	0.03 (-0.06, 0.14)	0.08 (-0.03, 0.19)	0.03 (-0.09, 0.14)
<i>GLA</i>	0.02 (-0.05, 0.09)	0.03 (-0.04, 0.11)	-0.06 (-0.14, 0.01)	0.02 (-0.05, 0.09)	0.01 (-0.07, 0.07)	0.04 (-0.03, 0.11)	-0.07 (-0.17, 0.03)	-0.09 (-0.20, 0.03)	0.08 (-0.04, 0.20)
<i>EDA</i>	0.02 (-0.05, 0.09)	0.07 (-0.01, 0.14)	-0.02 (-0.09, 0.06)	-0.01 (-0.08, 0.06)	-0.01 (-0.08, 0.06)	0.05 (-0.02, 0.12)	0.03 (-0.07, 0.13)	-0.02 (-0.13, 0.09)	0.02 (-0.09, 0.13)
<i>DGLA</i>	0.06 (-0.01, 0.13)	0.08 (0.01, 0.15)*	-0.02 (-0.09, 0.05)	0.08 (0.01, 0.15)*	0.04 (-0.03, 0.11)	0.06 (-0.01, 0.13)	0.01 (-0.08, 0.11)	-0.03 (-0.14, 0.09)	0.06 (-0.06, 0.17)
<i>ARA</i>	0.01 (-0.06, 0.08)	-0.06 (-0.13, 0.01)	-0.01 (-0.08, 0.06)	-0.01 (-0.07, 0.07)	-0.05 (-0.12, 0.02)	-0.03 (-0.10, 0.04)	-0.11 (-0.21, -0.01)*	0.02 (-0.09, 0.12)	0.02 (-0.09, 0.13)
<i>DTA</i>	0.05 (-0.02, 0.12)	-0.02 (-0.09, 0.05)	-0.02 (-0.10, 0.05)	0.01 (-0.07, 0.07)	-0.01 (-0.08, 0.06)	0.01 (-0.06, 0.08)	-0.10 (-0.20, 0.01)	-0.09 (-0.20, 0.02)	0.04 (-0.07, 0.16)

¹Values are regression coefficients (95% Confidence Interval) that reflect the difference in SDS of infant body mass index and subcutaneous fat mass measures from 1.5 to 24 months per SD change in maternal n-6 PUFA levels. Body mass index = weight/height². Total subcutaneous fat mass = biceps + triceps + suprailiacal + subscapular skinfold thicknesses. Central-to-total subcutaneous fat mass ratio = (suprailiacal + subscapular skinfold thicknesses)/total subcutaneous fat mass.

²Models are unadjusted for potential confounders. *P-value<0.05.

Table S7 Association of maternal n-6 PUFA levels and change in fat mass measures from 1.5 to 24 months (N =904)¹⁻²

Maternal n-6 PUFA in SDS	Change in adiposity mass measures from 1.5 to 6 months in SDS			Change in adiposity measures from 1.5 to 24 months in SDS			Change in adiposity measures from 6 to 24 months in SDS		
	Difference (95% confidence interval)			Difference (95% confidence interval)			Difference (95% confidence interval)		
	Body mass index	Total subcutaneous fat mass	Central-to-total subcutaneous fat mass ratio	Body mass index	Total subcutaneous fat mass	Central-to-total subcutaneous fat mass ratio	Body mass index	Total subcutaneous fat mass	Central-to-total subcutaneous fat mass ratio
Total									
<i>Unadjusted</i>	-0.02 (-0.09, 0.06)	0.07 (-0.03, 0.17)	0.09 (-0.01, 0.19)	-0.03 (-0.13, 0.06)	0.09 (-0.02, 0.20)	0.08 (-0.04, 0.19)	-0.02 (-0.10, 0.07)	0.05 (-0.05, 0.15)	-0.04 (-0.16, 0.07)
<i>Adjusted</i>	-0.01 (-0.09, 0.07)	0.09 (-0.01, 0.19)	0.10 (-0.01, 0.20)	-0.02 (-0.12, 0.08)	0.10 (-0.01, 0.21)	0.08 (-0.04, 0.20)	-0.02 (-0.10, 0.07)	0.05 (-0.06, 0.15)	-0.05 (-0.17, 0.07)
LA									
<i>Unadjusted</i>	-0.01 (-0.09, 0.06)	0.09 (-0.01, 0.18)	0.05 (-0.04, 0.15)	0.03 (-0.06, 0.14)	0.08 (-0.03, 0.19)	0.03 (-0.09, 0.14)	0.04 (-0.05, 0.12)	0.04 (-0.07, 0.14)	-0.05 (-0.16, 0.06)
<i>Adjusted</i>	0 (-0.08, 0.08)	0.12 (0.02, 0.22)*	0.06 (-0.05, 0.16)	0.04 (-0.06, 0.14)	0.12 (0.01, 0.23)*	0.03 (-0.08, 0.15)	0.03 (-0.06, 0.11)	0.04 (-0.07, 0.14)	-0.03 (-0.15, 0.09)
GLA									
<i>Unadjusted</i>	-0.02 (-0.10, 0.05)	-0.06 (-0.16, 0.05)	0.11 (0.01, 0.21)*	-0.07 (-0.17, 0.03)	-0.09 (-0.20, 0.03)	0.08 (-0.04, 0.20)	-0.04 (-0.12, 0.04)	-0.06 (-0.16, 0.05)	-0.06 (-0.17, 0.05)
<i>Adjusted</i>	-0.04 (-0.12, 0.04)	-0.08 (-0.18, 0.03)	0.10 (-0.01, 0.21)	-0.06 (-0.16, 0.05)	-0.10 (-0.21, 0.02)	0.08 (-0.05, 0.20)	-0.01 (-0.10, 0.07)	-0.04 (-0.14, 0.07)	-0.06 (-0.17, 0.06)
EDA									
<i>Unadjusted</i>	-0.02 (-0.10, 0.06)	-0.08 (-0.18, 0.02)	0.05 (-0.05, 0.15)	0.03 (-0.07, 0.13)	-0.02 (-0.13, 0.09)	0.02 (-0.09, 0.13)	0.08 (-0.01, 0.16)	0.06 (-0.04, 0.16)	-0.12 (-0.23, -0.01)*
<i>Adjusted</i>	-0.01 (-0.08, 0.08)	-0.06 (-0.16, 0.03)	0.06 (-0.05, 0.16)	0.04 (-0.06, 0.14)	0.01 (-0.10, 0.12)	0.02 (-0.09, 0.14)	0.08 (-0.01, 0.16)	0.08 (-0.02, 0.18)	-0.12 (-0.23, -0.01)*
DGLA									
<i>Unadjusted</i>	0.01 (-0.07, 0.08)	-0.04 (-0.14, 0.06)	0.08 (-0.02, 0.18)	0.01 (-0.08, 0.11)	-0.03 (-0.14, 0.09)	0.06 (-0.06, 0.17)	0.01 (-0.07, 0.09)	0.04 (-0.06, 0.14)	-0.07 (-0.18, 0.04)
<i>Adjusted</i>	0.01 (-0.07, 0.08)	-0.05 (-0.15, 0.06)	0.10 (-0.01, 0.20)	0.02 (-0.09, 0.12)	-0.02 (-0.14, 0.09)	0.04 (-0.08, 0.17)	0.03 (-0.06, 0.11)	0.06 (-0.05, 0.17)	-0.13 (-0.25, -0.01)*
ARA									
<i>Unadjusted</i>	-0.01 (-0.08, 0.07)	-0.02 (-0.12, 0.07)	-0.02 (-0.12, 0.08)	-0.11 (-0.21, -0.01)*	0.02 (-0.09, 0.12)	0.02 (-0.09, 0.13)	-0.09 (-0.17, -0.01)*	-0.01 (-0.11, 0.09)	0.06 (-0.05, 0.17)

<i>Adjusted</i>	-0.03 (-0.11, 0.05)	-0.06 (-0.16, 0.04)	-0.03 (-0.13, 0.08)	-0.12 (-0.22, -0.02)*	-0.05 (-0.16, 0.07)	0.01 (-0.11, 0.14)	-0.09 (-0.18, -0.01)*	-0.02 (-0.13, 0.08)	0.05 (-0.07, 0.17)
DTA									
<i>Unadjusted</i>	-0.03 (-0.11, 0.04)	-0.02 (-0.12, 0.07)	0.05 (-0.05, 0.15)	-0.10 (-0.20, 0.01)	-0.09 (-0.20, 0.02)	0.04 (-0.07, 0.16)	-0.01 (-0.10, 0.07)	-0.09 (-0.19, 0.01)	-0.01 (-0.12, 0.11)
<i>Adjusted</i>	-0.03 (-0.11, 0.05)	-0.01 (-0.11, 0.09)	0.06 (-0.05, 0.16)	-0.03 (-0.14, 0.07)	-0.09 (-0.21, 0.02)	0.04 (-0.08, 0.16)	0.03 (-0.06, 0.11)	-0.08 (-0.19, 0.03)	-0.01 (-0.13, 0.11)

¹Values are regression coefficients (95% Confidence Interval) that reflect the difference in SDS of infants body mass index and subcutaneous fat mass measures from 1.5 to 24 months per SD change in maternal n-6 PUFA levels. Body mass index = weight/height². Total subcutaneous fat mass = biceps + triceps + suprailiacal + subscapular skinfold thicknesses. Central-to-total subcutaneous fat mass ratio = (suprailiacal + subscapular skinfold thicknesses)/total subcutaneous fat mass.

²Adjusted model includes gestational age at blood sampling, maternal age, educational level, parity, pre-pregnancy body mass index, maternal total energy intake, smoking habits and weight gain during pregnancy, folic acid supplement use, gestational diabetes, gestational hypertensive disorders, infants' sex, gestational age-adjusted birth weight standard-deviation scores, breastfeeding duration and timing of introduction of solid foods. * P-value<0.05.

Table S8 Association of maternal n-6 PUFA levels and change in fat mass measures from 1.5 to 24 months (N =904)¹⁻²

Maternal n-3 PUFA in SDS	Central-to-peripheral subcutaneous fat mass ratio in SDS Difference (95% confidence interval)					
	1.5 months	6 months	24 months	Change in fat mass measures from 1.5 to 6 months	Change in fat mass measures from 1.5 to 24 months	Change in fat mass measures from 6 to 24 months
Total	0.13 (0.05, 0.20)*	-0.06 (-0.14, 0.01)	0.01 (-0.08, 0.08)	-0.20 (-0.31, -0.09)*	-0.16 (-0.29, -0.04)*	0.08 (-0.05, 0.20)
<i>ALA</i>	0.02 (-0.06, 0.09)	-0.03 (-0.10, 0.04)	-0.03 (-0.11, 0.05)	-0.05 (-0.16, 0.06)	-0.08 (-0.19, 0.04)	-0.05 (-0.16, 0.07)
<i>EPA</i>	0.08 (0.01, 0.15)*	-0.06 (-0.13, 0.01)	0.01 (-0.07, 0.09)	-0.07 (-0.27, 0.14)	-0.07 (-0.30, 0.17)	0.09 (-0.15, 0.32)
<i>DPA</i>	0.12 (0.05, 0.19)*	-0.01 (-0.08, 0.06)	-0.05 (-0.13, 0.03)	-0.12 (-0.22, -0.02)*	-0.18 (-0.30, -0.07)*	-0.04 (-0.15, 0.08)
<i>DHA</i>	0.11 (0.04, 0.19)*	-0.06 (-0.13, 0.02)	0.01 (-0.07, 0.10)	-0.20 (-0.30, -0.08)*	-0.14 (-0.26, -0.01)*	0.09 (-0.04, 0.21)

¹Values are regression coefficients (95% Confidence Interval) that reflect the difference in SDS in central-to-peripheral subcutaneous fat mass ratio at 1.5, 6 and 24 months per SD change in maternal n-3 PUFA levels. Central-to-peripheral subcutaneous fat mass ratio = (suprailiacal + subscapular skinfold thicknesses)/peripheral subcutaneous fat mass.

²Models are adjusted for gestational age at blood sampling, maternal age, educational level, parity, pre-pregnancy body mass index, maternal total energy intake, smoking habits and weight gain during pregnancy, folic acid supplement use, gestational diabetes, gestational hypertensive disorders, infants' sex, gestational age-adjusted birth weight standard-deviation scores, breastfeeding duration and timing of introduction of solid foods (for 6 and 24 months). * P-value<0.05.

Table S9 Association of maternal n-6 PUFA levels and change in fat mass measures from 1.5 to 24 months (N =904)¹⁻²

Maternal n-6 PUFA in SDS	Central-to-peripheral subcutaneous fat mass ratio in SDS Difference (95% confidence interval)					
	1.5 months	6 months	24 months	Change in fat mass measures from 1.5 to 6	Change in fat mass measures from 1.5 to 24 months	Change in fat mass measures from 6 to 24 months
Total	-0.07 (-0.14, 0.01)	0.03 (-0.04, 0.10)	-0.01 (-0.09, 0.07)	0.11 (0.01, 0.21)*	0.09 (-0.04, 0.21)	-0.03 (-0.15, 0.08)
<i>LA</i>	-0.03 (-0.10, 0.05)	0.03 (-0.04, 0.10)	0.01 (-0.07, 0.09)	0.06 (-0.05, 0.16)	0.04 (-0.08, 0.16)	-0.02 (-0.14, 0.10)
<i>GLA</i>	-0.06 (-0.14, 0.01)	0.02 (-0.05, 0.09)	-0.02 (-0.10, 0.06)	0.09 (-0.01, 0.20)	0.07 (-0.05, 0.19)	-0.06 (-0.18, 0.06)
<i>EDA</i>	-0.02 (-0.10, 0.05)	0.05 (-0.03, 0.12)	-0.05 (-0.12, 0.03)	0.05 (-0.05, 0.16)	0.03 (-0.09, 0.14)	-0.12 (-0.23, -0.01)*
<i>DGLA</i>	-0.04 (-0.11, 0.04)	0.06 (-0.01, 0.14)	-0.06 (-0.14, 0.03)	0.10 (-0.01, 0.20)	0.04 (-0.08, 0.16)	-0.13 (-0.25, -0.01)*
<i>ARA</i>	-0.02 (-0.10, 0.05)	-0.04 (-0.11, 0.04)	0.01 (-0.08, 0.08)	-0.02 (-0.13, 0.09)	0.02 (-0.10, 0.14)	0.06 (-0.06, 0.18)
<i>DTA</i>	-0.04 (-0.12, 0.03)	-0.01, -0.08, 0.07)	-0.05 (-0.13, 0.03)	0.06 (-0.05, 0.17)	0.04 (-0.08, 0.17)	-0.10 (-0.13, 0.11)

¹Values are regression coefficients (95% Confidence Interval) that reflect the difference in SDS in central-to-peripheral subcutaneous fat mass ratio at 1.5, 6 and 24 months per SD change in maternal n-6 PUFA levels. Central-to-peripheral subcutaneous fat mass ratio = (suprailiacal + subscapular skinfold thicknesses)/peripheral subcutaneous fat mass.

²Models are adjusted for gestational age at blood sampling, maternal age, educational level, parity, pre-pregnancy body mass index, maternal total energy intake, smoking habits and weight gain during pregnancy, folic acid supplement use, gestational diabetes, gestational hypertensive disorders, infants' sex, gestational age-adjusted birth weight standard-deviation scores, breastfeeding duration and timing of introduction of solid foods (for 6 and 24 months). * P-value<0.05.

Table S10 Maternal n-6 PUFA levels and infant subcutaneous fat mass measures at 1.5, 6 and 24 months (N =904)¹⁻²

Maternal PUFAs in SDS	Overweight risk at 24 months Odds Ratio (95% CI)¹
Total n-3 PUFA	1.06 (0.84, 1.33)
<i>ALA</i>	1.12 (0.90, 1.39)
<i>EPA</i>	1.08 (0.86, 1.34)
<i>DPA</i>	0.86 (0.67, 1.09)
<i>DHA</i>	1.07 (0.85, 1.35)
Total n-6 PUFA	1.04 (0.83, 1.30)
<i>LA</i>	1.20 (0.10, 1.49)
<i>GLA</i>	0.89 (0.71, 1.14)
<i>EDA</i>	1.22 (0.10, 1.49)
<i>DGLA</i>	1.18 (0.94, 1.47)
<i>ARA</i>	0.74 (0.59, 0.92)*
<i>DTA</i>	0.82 (0.65, 1.05)

¹Values are odds ratio (95% Confidence Interval) that reflect the risk of overweight at 24 months per SD change in maternal n-3 and n-6 PUFA levels.

Models are adjusted for gestational age at blood sampling, maternal age, educational level, parity, pre-pregnancy body mass index, maternal total energy intake, smoking habits and weight gain during pregnancy, folic acid supplement use, gestational diabetes, gestational hypertensive disorders, infants' sex, gestational age-adjusted birth weight standard-deviation scores, breastfeeding duration and timing of introduction of solid foods. *P-value<0.05.