

Supplementary Materials

Table S1. Inclusion and exclusion criteria applied in participant selection.

Inclusion criteria	Exclusion criteria
Singleton pregnancy	Multiple pregnancy
Maternal age ≥ 18 years	Pre-existing diabetes mellitus
Availability of maternal serum sample	Chronic hypertension
Availability of umbilical cord blood sample	Liver disease unrelated to pregnancy
Availability of complete clinical data	Coexisting pregnancy complications
Written informed consent	Missing biological material
Delivery at study center	Incomplete clinical data

Table S2. Frequency of consumption of selected vegetable oils in healthy pregnancies and pregnancies complicated by gestational diabetes mellitus (GDM).

		Healthy pregnancies n = 104		GDM n = 35	
		n	%	n	%
olive	everyday	12	11.5	7	20.0
	4-6 times a week	6	5.8	1	2.9
	2-3 times a week	10	9.6	8	22.9
	once a week	14	13.5	2	5.7
	once a two weeks	13	12.5	4	11.4
	never	29	27.9	8	22.9
	no data	20	19.2	5	14.3
sunflower	everyday	2	1.9	3	8.6
	4-6 times a week	0	0.0	0	0.0
	2-3 times a week	13	12.5	2	5.7
	once a week	15	14.4	0	0.0
	once a two weeks	11	10.6	4	11.4
	never	43	41.3	21	60.0
	no data	20	19.2	5	14.3
rapeseed	everyday	5	4.8	5	14.3
	4-6 times a week	8	7.7	0	0.0
	2-3 times a week	12	11.5	3	8.6
	once a week	7	6.7	6	17.1
	once a two weeks	5	4.8	2	5.7
	never	47	45.2	14	40.0
	no data	20	19.2	5	14.3
linseed	everyday	1	1.0	0	0.0

	4-6 times a week	1	1.0	2	5.7
	2-3 times a week	0	0.0	1	2.9
	once a week	0	0.0	0	0.0
	once a two weeks	1	1.0	0	0.0
	never	81	77.9	27	77.1
	no data	20	19.2	5	14.3
grapeseed					
	everyday	0	0.0	1	2.9
	4-6 times a week	1	1.0	0	0.0
	2-3 times a week	1	1.0	0	0.0
	once a week	0	0.0	1	2.9
	once a two weeks	1	1.0	1	2.9
	never	81	77.9	27	77.1
	no data	20	19.2	5	14.3
sesame					
	everyday	0	0.0	0	0.0
	4-6 times a week	0	0.0	0	0.0
	2-3 times a week	0	0.0	0	0.0
	once a week	1	1.0	0	0.0
	once a two weeks	0	0.0	0	0.0
	never	83	79.8	30	85.7
	no data	20	19.2	5	14.3
soybean					
	everyday	0	0.0	0	0.0
	4-6 times a week	0	0.0	0	0.0
	2-3 times a week	0	0.0	0	0.0
	once a week	1	1.0	0	0.0
	once a two weeks	1	1.0	0	0.0
	never	81	77.9	30	85.7
	no data	21	20.2	5	14.3

Table S3. Frequency of fish consumption in healthy pregnancies and pregnancies complicated by gestational diabetes mellitus (GDM).

		Healthy pregnancies		GDM	
		n = 104		n = 35	
salmon	n	%	n	%	
everyday	0	0.0	0	0.0	
4-6 times a week	0	0.0	0	0.0	
2-3 times a week	5	4.8	3	8.6	
once a week	6	5.8	4	11.4	
once a two weeks	27	26.0	8	22.9	
never	47	45.2	15	42.9	
no data	19	18.3	5	14.3	
tuna					
everyday	0	0.0	0	0.0	
4-6 times a week	0	0.0	0	0.0	
2-3 times a week	2	1.9	0	0.0	

	once a week	4	3.8	2	5.7
	once a two weeks	8	7.7	5	14.3
	never	71	68.3	23	65.7
	no data	19	18.3	5	14.3
mackerel					
	everyday	0	0.0	0	0.0
	4-6 times a week	0	0.0	0	0.0
	2-3 times a week	2	1.9	0	0.0
	once a week	5	4.8	2	5.7
	once a two weeks	23	22.1	10	28.6
	never	55	52.9	18	51.4
	no data	19	18.3	5	14.3
trout					
	everyday	0	0.0	0	0.0
	4-6 times a week	0	0.0	0	0.0
	2-3 times a week	0	0.0	0	0.0
	once a week	1	1.0	0	0.0
	once a two weeks	8	7.7	5	14.3
	never	76	73.1	25	71.4
	no data	19	18.3	5	14.3
cod					
	everyday	0	0.0	0	0.0
	4-6 times a week	0	0.0	0	0.0
	2-3 times a week	0	0.0	1	2.9
	once a week	2	1.9	4	11.4
	once a two weeks	20	19.2	10	28.6
	never	63	60.6	15	42.9
	no data	19	18.3	5	14.3
herring					
	everyday	0	0.0	0	0.0
	4-6 times a week	2	1.9	0	0.0
	2-3 times a week	2	1.9	2	5.7
	once a week	4	3.8	2	5.7
	once a two weeks	17	16.3	4	11.4
	never	60	57.7	22	62.9
	no data	19	18.3	5	14.3
sardine					
	everyday	0	0.0	0	0.0
	4-6 times a week	0	0.0	0	0.0
	2-3 times a week	0	0.0	0	0.0
	once a week	0	0.0	0	0.0
	once a two weeks	1	1.0	0	0.0
	never	84	80.8	30	85.7
	no data	19	18.3	5	14.3
eel					
	everyday	0	0.0	0	0.0
	4-6 times a week	0	0.0	0	0.0
	2-3 times a week	0	0.0	0	0.0

halibut	once a week	0	0.0	0	0.0
	once a two weeks	0	0.0	0	0.0
	never	85	81.7	30	85.7
	no data	19	18.3	5	14.3
	everyday	0	0.0	0	0.0
	4-6 times a week	0	0.0	0	0.0
	2-3 times a week	0	0.0	0	0.0
	once a week	0	0.0	0	0.0
	once a two weeks	1	1.0	1	2.9
	never	84	80.8	29	82.9
sprat	no data	19	18.3	5	14.3
	everyday	0	0.0	0	0.0
	4-6 times a week	0	0.0	0	0.0
	2-3 times a week	0	0.0	0	0.0
	once a week	2	1.9	0	0.0
	once a two weeks	5	4.8	0	0.0
	never	78	75.0	30	85.7
	no data	19	18.3	5	14.3
pollock	everyday	0	0.0	0	0.0
	4-6 times a week	0	0.0	0	0.0
	2-3 times a week	0	0.0	0	0.0
	once a week	1	1.0	0	0.0
	once a two weeks	0	0.0	2	5.7
	never	84	80.8	28	80.0
	no data	19	18.3	5	14.3

Table S4. Frequency of consumption of nuts in healthy pregnancies and pregnancies complicated by gestational diabetes mellitus (GDM).

		Healthy pregnancies		GDM	
		n = 104		n = 35	
hazelnuts	n		%	n	%
	everyday	0	0.0	1	2.9
	4-6 times a week	3	2.9	0	0.0
	2-3 times a week	4	3.8	5	14.3
	once a week	4	3.8	3	8.6
	once a two weeks	17	16.3	7	20.0
	never	56	53.8	14	40.0
	no data	20	19.2	5	14.3
walnuts	everyday	2	1.9	3	8.6
	4-6 times a week	0	0.0	0	0.0
	2-3 times a week	7	6.7	1	2.9
	once a week	3	2.9	4	11.4
	once a two weeks	23	22.1	6	17.1
	never	49	47.1	16	45.7

	no data	20	19.2	5	14.3
cashews					
	everyday	0	0.0	0	0.0
	4-6 times a week	0	0.0	0	0.0
	2-3 times a week	4	3.8	2	5.7
	once a week	1	1.0	1	2.9
	once a two weeks	11	10.6	2	5.7
	never	68	65.4	25	71.4
	no data	20	19.2	5	14.3
pistachios					
	everyday	0	0.0	0	0.0
	4-6 times a week	0	0.0	0	0.0
	2-3 times a week	2	1.9	1	2.9
	once a week	3	2.9	1	2.9
	once a two weeks	8	7.7	2	5.7
	never	71	68.3	26	74.3
	no data	20	19.2	5	14.3
almonds					
	everyday	4	3.8	2	5.7
	4-6 times a week	2	1.9	1	2.9
	2-3 times a week	4	3.8	4	11.4
	once a week	3	2.9	4	11.4
	once a two weeks	16	15.4	6	17.1
	never	55	52.9	13	37.1
	no data	20	19.2	5	14.3
peanuts					
	everyday	1	1.0	0	0.0
	4-6 times a week	2	1.9	0	0.0
	2-3 times a week	1	1.0	1	2.9
	once a week	1	1.0	2	5.7
	once a two weeks	5	4.8	1	2.9
	never	74	71.2	26	74.3
	no data	20	19.2	5	14.3

Table S5. Frequency of consumption of fats and fat-containing products in healthy pregnancies and pregnancies complicated by gestational diabetes mellitus (GDM).

		Healthy pregnancies		GDM	
		n = 104		n = 35	
margarine		n	%	n	%
	everyday	17	16.3	10	28.6
	4-6 times a week	4	3.8	1	2.9
	2-3 times a week	2	1.9	2	5.7
	once a week	0	0.0	1	2.9
	once a two weeks	0	0.0	1	2.9
	never	61	58.7	15	42.9
	no data	20	19.2	5	14.3
soft margarine					
	everyday	4	3.8	2	5.7

	4-6 times a week	1	1.0	0	0.0
	2-3 times a week	1	1.0	0	0.0
	once a week	0	0.0	0	0.0
	once a two weeks	0	0.0	0	0.0
	never	78	75.0	28	80.0
	no data	20	19.2	5	14.3
butter					
	everyday	39	37.5	9	25.7
	4-6 times a week	10	9.6	1	2.9
	2-3 times a week	9	8.7	2	5.7
	once a week	0	0.0	1	2.9
	once a two weeks	1	1.0	2	5.7
	never	26	25.0	15	42.9
	no data	19	18.3	5	14.3
butter-margarine mix					
	everyday	2	1.9	0	0.0
	4-6 times a week	0	0.0	0	0.0
	2-3 times a week	2	1.9	0	0.0
	once a week	0	0.0	0	0.0
	once a two weeks	1	1.0	0	0.0
	never	79	76.0	30	85.7
	no data	20	19.2	5	14.3
lard					
	everyday	0	0.0	0	0.0
	4-6 times a week	0	0.0	0	0.0
	2-3 times a week	3	2.9	0	0.0
	once a week	0	0.0	0	0.0
	once a two weeks	1	1.0	0	0.0
	never	80	76.9	30	85.7
	no data	20	19.2	5	14.3
mayonnaise					
	everyday	1	1.0	0	0.0
	4-6 times a week	5	4.8	1	2.9
	2-3 times a week	8	7.7	1	2.9
	once a week	7	6.7	5	14.3
	once a two weeks	24	23.1	4	11.4
	never	39	37.5	19	54.3
	no data	20	19.2	5	14.3

Table S6. Frequency of consumption of eggs in healthy pregnancies and pregnancies complicated by gestational diabetes mellitus (GDM).

		Healthy pregnancies		GDM	
		n = 104		n = 35	
eggs		n	%	n	%
	everyday	7	6.7	2	5.7
	4-6 times a week	1	0.9	1	2.9
	2-3 times a week	27	26.0	13	37.1
	once a week	36	34.6	10	28.6
	once a two weeks	9	8.7	4	11.4
	never	5	4.8	0	0.0
	no data	19	18.3	5	14.3

Table S7. Frequency of consumption of cereals and seeds in healthy pregnancies and pregnancies complicated by gestational diabetes mellitus (GDM).

		Healthy pregnancies		GDM	
		n = 104		n = 35	
oatmeal		n	%	n	%
	everyday	5	4.8	1	2.9
	4-6 times a week	5	4.8	0	0.0
	2-3 times a week	12	11.5	6	17.1
	once a week	14	13.5	6	17.1
	once a two weeks	4	3.8	3	8.6
	never	44	42.3	14	40.0
	no data	20	19.2	5	14.3
cornflakes					
	everyday	7	6.7	1	2.9
	4-6 times a week	1	1.0	1	2.9
	2-3 times a week	10	9.6	0	0.0
	once a week	3	2.9	1	2.9
	once a two weeks	3	2.9	0	0.0
	never	60	57.7	27	77.1
	no data	20	19.2	5	14.3
rice flakes					
	everyday	0	0.0	0	0.0
	4-6 times a week	0	0.0	0	0.0
	2-3 times a week	0	0.0	0	0.0
	once a week	2	1.9	0	0.0
	once a two weeks	0	0.0	0	0.0
	never	82	78.8	30	85.7
	no data	20	19.2	5	14.3
sunflower seeds					
	everyday	2	1.9	1	2.9
	4-6 times a week	1	1.0	2	5.7
	2-3 times a week	3	2.9	1	2.9
	once a week	4	3.8	4	11.4
	once a two weeks	10	9.6	3	8.6
	never	64	61.5	19	54.3

	no data	20	19.2	5	14.3
pumpkin seeds					
	everyday	1	1.0	1	2.9
	4-6 times a week	2	1.9	0	0.0
	2-3 times a week	0	0.0	0	0.0
	once a week	3	2.9	3	8.6
	once a two weeks	7	6.7	0	0.0
	never	71	68.3	0	0.0
	no data	20	19.2	5	14.3
wheat bread					
	everyday	6	5.8	1	2.9
	4-6 times a week	1	1.0	0	0.0
	2-3 times a week	1	1.0	0	0.0
	once a week	0	0.0	0	0.0
	once a two weeks	0	0.0	0	0.0
	never	75	72.1	29	82.9
	no data	21	20.2	5	14.3
rye bread					
	everyday	22	21.2	13	37.1
	4-6 times a week	7	6.7	2	5.7
	2-3 times a week	2	1.9	1	2.9
	once a week	2	1.9	0	0.0
	once a two weeks	0	0.0	1	2.9
	never	51	49.0	13	37.1
	no data	20	19.2	5	14.3
whole wheat bread					
	everyday	18	17.3	8	22.9
	4-6 times a week	12	11.5	2	5.7
	2-3 times a week	4	3.8	2	5.7
	once a week	7	6.7	1	2.9
	once a two weeks	4	3.8	0	0.0
	never	39	37.5	17	48.6
	no data	20	19.2	5	14.3

Table S8. Frequency of consumption of selected food products not included in previous categories in healthy pregnancies and pregnancies complicated by gestational diabetes mellitus (GDM).

		Healthy pregnancies n = 104		GDM n = 35	
		n	%	n	%
avocado	everyday	1	1.0	0	0.0
	4-6 times a week	0	0.0	0	0.0
	2-3 times a week	1	1.0	1	2.9
	once a week	3	2.9	1	2.9
	once a two weeks	4	3.8	3	8.6
	never	75	72.1	25	71.4
	no data	20	19.2	5	14.3
lettuce	everyday	8	7.7	6	17.1

	4-6 times a week	2	1.9	0	0.0
	2-3 times a week	17	16.3	6	17.1
	once a week	14	13.5	7	20.0
	once a two weeks	13	12.5	1	2.9
	never	30	28.8	10	28.6
	no data	20	19.2	5	14.3
spinach					
	everyday	0	0.0	0	0.0
	4-6 times a week	0	0.0	1	2.9
	2-3 times a week	4	3.8	0	0.0
	once a week	10	9.6	7	20.0
	once a two weeks	13	12.5	6	17.1
	never	57	54.8	16	45.7
	no data	20	19.2	5	14.3
tofu					
	everyday	0	0.0	0	0.0
	4-6 times a week	0	0.0	0	0.0
	2-3 times a week	0	0.0	0	0.0
	once a week	0	0.0	0	0.0
	once a two weeks	0	0.0	1	2.9
	never	84	80.8	29	82.9
	no data	20	19.2	5	14.3
vitamin supplementation					
	yes	66	63.5	21	60.0
	no	34	32.7	14	40.0
	no data	4	3.8	0	0.0
potato fries					
	yes	37	35.6	8	22.9
	no	53	51.0	24	68.6
	no data	14	13.5	3	8.6
chips					
	yes	24	23.1	4	11.4
	no	66	63.5	28	80.0
	no data	14	13.5	3	8.6

Table S9. PCA loadings for fatty acid composition of maternal serum lipids.

Variable	PC1 loading	PC2 loading
n6 PUFA	0.334	0.147
LA	0.325	0.087
C16:1	-0.322	-0.101
C14:0	-0.303	0.054
PUFA	0.3	0.233
C17:1	-0.278	-0.074
n6/n3 PUFA	0.26	-0.241
SFA	-0.25	-0.052
C14:1	-0.233	0.064
C16:0	-0.231	-0.137
t9,t12 C18:2	-0.193	0.076

C15:0	-0.182	0.161
GLA	-0.146	0.137
C20:1	-0.109	0.151
DHA	-0.107	0.366
n3 PUFA	-0.105	0.383
C20:2	0.098	0.074
MUFA	-0.093	-0.289
AA	0.092	0.205
C12:0	-0.092	0.079
EPA	-0.073	0.345
C17:0	-0.068	0.179
C22:0	-0.058	0.112
C23:0	0.056	0.168
C22:1	-0.054	0.038
C24:0	-0.034	0.016
C20:0	-0.033	-0.06
ALA	-0.033	0.062
Oleic acid (C18:1n9)	0.002	-0.267
C18:0	0.002	0.226

PC1 explained 19.8% of variance and PC2 explained 15.0%.