Online-Only Supplemental Material

Supplementary Table 1. Baseline characteristics of absolute dietary intake in all participants and by frequency of total fish* intake

		Categories of total fish consumption				
	All	**Never/rarely (<5 g/day)**	**<1 times/week (>5-20 g/day)**	**1-2 times/week (>20-40 g/day)**	**2-3 times/week (>40-60 g/day)**	**≥3 times/week (>60 g/day)**
N	60,831	2,545	11,053	25,117	15,136	6,980
Daily dietary intake						
Energy, kcal	2,216 (1,870, 2,634)	2,088 (1,713, 2,524)	2,118 (1,776, 2,531)	2,190 (1,861, 2,585)	2,259 (1,920, 2,667)	2,434 (2,037, 2,890)
Total fish, g	33.3 (21.4, 46.9)	0.00 (0.00, 2.8)	14.7 (11.1, 17.5)	30.1 (25.2, 34.9)	47.7 (43.6, 52.8)	71.8 (64.9, 84.7)
Lean fish, g	18.4 (10.6, 27.2)	0.00 (0.00, 0.00)	8.0 (4.9, 11.2)	17.8 (13.0, 22.7)	27.8 (21.2, 34.6)	35.1 (24.6, 46.0)
Fatty fish, g	7.5 (3.2, 13.9)	0.00 (0.00, 0.00)	3.2 (0.83, 5.3)	7.0 (4.0, 10.7)	12.7 (7.4, 19.2)	27.9 (15.1, 42.4)
Shellfish, g	2.3 (0.00, 5.1)	0.00 (0.00, 0.00)	1.0 (0.0, 3.1)	2.6 (0.00, 5.0)	3.2 (0.00, 6.4)	3.8 (0.00, 7.9)
Fish spread, g	2.1 (0.00, 5.4)	0.00 (0.00, 0.00)	0.0 (0.00, 2.1)	2.0 (0.00, 4.4)	4.1 (1.0, 10.8)	17.8 (4.6, 32.0)
Fish liver/roe as dinner/spreads, g	0.00 (0.00, 1.4)	0.00 (0.00, 0.00)	0.00 (0.00, 0.55)	0.00 (0.00, 1.1)	0.62 (0.00, 2.3)	1.0 (0.00, 5.5)
Total meat, g	152 (129, 176)	183 (149, 209)	174 (154, 195)	155 (137, 175)	138 (118, 158)	128 (103, 152)
Red meat, g	124 (99, 150)	150 (113, 183)	145 (119, 170)	128 (106, 150)	112 (91, 134)	102 (78, 127)
Beef g	11.9 (6.5, 18.0)	11.9 (2.9, 21.7)	12.9 (6.8, 20.0)	12.6 (7.3, 18.5)	11.1 (6.3, 16.4)	9.7 (4.6, 15.2)
Pork, g	18.8 (11.3, 27.9)	19.2 (7.9, 31.6)	20.5 (12.3, 30.9)	19.7 (12.3, 28.5)	17.6 (10.8, 25.9)	15.5 (8.1, 24.0)
Mutton, g	11.8 (5.0, 21.7)	6.4 (1.1, 18.1)	9.5 (3.7, 19.9)	11.7 (5.3, 21.1)	13.2 (6.3, 22.6)	14.6 (6.3, 25.9)
Poultry, g	20.3 (12.8, 34.2)	18.5 (5.0, 37.5)	21.5 (13.0, 37.3)	21.0 (14.1, 34.6)	20.0 (12.6, 32.0)	18.2 (9.8, 30.7)
Game, g	0.00 (0.00, 3.8)	0.00 (0.00, 2.3)	0.00 (0.00, 3.4)	0.00 (0.00, 3.9)	0.00 (0.00, 4.1)	0.00 (0.00, 3.8)
Processed red meat, g	73.0 (55.8, 92.7)	97.6 (67.7, 125)	91.8 (72.7, 112)	76.1 (61.1, 92.8)	63.3 (49.9, 78.0)	54.6 (40.7, 70.4)
Milk/dairy, g	466 (252, 666)	355 (173, 585)	426 (224, 615)	459 (251, 649)	489 (277, 693)	509 (288, 757)
Bread/cereals/pasta, g	297 (233, 371)	271 (201, 349)	280 (215, 353)	293 (231, 362)	307 (242, 277)	332 (263, 413)
Eggs, g	19.5 (12.7, 32.6)	14.4 (8.9, 28.9)	16.9 (11.1, 29.7)	19.6 (13.0, 32.2)	21.2 (13.9, 34.2)	22.5 (13.6, 36.9)
Vegetables/fruits/nuts, g	748 (529, 1,018)	649 (417, 969)	658 (452, 922)	742 (531, 1,001)	789 (569, 1,058)	849 (614, 1,140)
Fibre, E%	5.4 (4.6, 6.2)	5.0 (4.2, 6.0)	5.1 (4.4, 5.9)	5.3 (4.6, 6.1)	5.6 (4.8, 6.4)	5.7 (5.0, 6.6)
Added sugar, E%	9.5 (7.0, 12.5)	10.9 (7.6, 15.0)	10.2 (7.5, 13.6)	9.7 (7.3, 12.6)	9.0 (6.8, 11.8)	8.3 (6.2, 11.0)
Protein, E%	15.5 (14.2, 16.9)	14.6 (13.0, 16.1)	15.2 (13.8, 16.6)	15.4 (14.1, 16.8)	15.7 (14.5, 17.1)	15.9 (14.7, 17.3)
Carbohydrate, E%	53.5 (50.5, 56.5)	54.9 (51.1, 58.4)	53.6 (50.5, 56.8)	53.6 (50.6, 56.5)	53.4 (50.6, 56.3)	52.9 (50.0, 55.9)
Total fat, E%	30.6 (27.8, 33.6)	30.2 (27.1, 33.7)	30.9 (27.8, 33.8)	30.6 (27.8, 33.5)	30.5 (27.6, 33.4)	30.7 (27.9, 33.8)

Saturated fat, E%	11.7 (10.5, 13.1)	12.0 (11.5, 13.6)	12.0 (10.7, 13.5)	11.8 (10.6, 13.1)	11.5 (10.3, 12.8)	11.2 (10.0, 12.5)
Monounsaturated fat, E%	9.8 (8.7, 11.0)	9.7 (8.6, 11.1)	9.9 (8.8, 11.0)	9.8 (8.8, 11.0)	9.7 (8.6, 10.8)	9.7 (8.5, 10.9)
Polyunsaturated fat, E%	5.5 (4.7, 6.6)	5.1 (4.3, 6.2)	5.3 (4.5, 6.4)	5.4 (4.6, 6.5)	5.6 (4.8, 6.7)	5.9 (5.0, 7.0)
LC*n*-3PUFA from food, g	0.32 (0.20, 0.51)	0.07 (0.05, 0.10)	0.17 (0.12, 0.24)	0.30 (0.22, 0.40)	0.48 (0.35, 0.67)	0.97 (0.61, 1.3)
LC*n*-3PUFA from supplements, g	0.20 (0.00, 0.60)	0.10 (0.00, 0.40)	0.14 (0.00, 0.40)	0.20 (0.00, 0.60)	0.20 (0.00, 0.69)	0.20 (0.00, 0.80)

Values are median (IQR) unless otherwise indicated. *Total fish includes lean and fatty fish (salt and freshwater fish, fish-based spread), liver, roe, and shellfish.
LC*n*-3PUFA, long chain *n*-3 polyunsaturated fatty acid.

Supplementary Table 2. Baseline characteristics by frequency of long chain *n*-3 polyunsaturated fatty acids (LC*n*-3PUFA) from supplements

	Categories of LC*n*-3PUFA supplement use		
	No use	**<median (<0.40 g/day)**	**≥median (≥0.40 g/day)**
N	19,786	21,004	20,041
Follow-up, years	7.5 (6.5, 8.5)	6.5 (5.5, 8.5)	7.5 (5.5, 8.5)
Age at delivery, years	30 (27, 34)	30 (27, 33)	31 (28, 34)
Height, cm	168 (164, 172)	168 (164, 172)	168 (164, 172)
Pre-pregnancy variables			
Weight, kg	67 (60, 77)	65 (59, 74)	65 (59, 72)
BMI, kg/m^2	23.7 (21.4, 27.1)	23.0 (21.0, 25.9)	22.7 (20.9, 25.3)
Married/partner	96.3	97.6	96.9
Daily smoking	21.3	13.2	13.5
Physical activity ≥3 times/week	40.3	49.4	54.0
Education ≥17 years	20.9	30.8	32.5
Pregnancy variables			
Gestational diabetes mellitus	0.9	1.0	1.0
Gestational hypertension	1.8	2.4	2.1
Preeclampsia	3.6	3.7	3.7
Daily dietary intake			
Energy, kcal	2,205 (1,847, 2,643)	2,206 (1,876, 2,613)	2,240 (1,888, 2,648)
Total fish*, g/1,000 kcal	14.4 (8.8, 21.1)	14.6 (9.4, 20.8)	15.6 (10.3, 22.3)
Lean fish, g/1,000 kcal	7.9 (4.3, 12.4)	8.0 (4.6, 12.1)	8.4 (5.0, 12.7)
Fatty fish, g/1,000 kcal	3.0 (1.1, 6.1)	3.3 (1.5, 6.3)	3.7 (1.8, 7.0)
Shellfish, g/1,000 kcal	0.85 (0.00, 2.27)	1.1 (0.00, 2.3)	1.1 (0.00, 2.3)
Fish spread, g/1,000 kcal	0.80 (0.00, 2.3)	0.94 (0.00, 2.5)	1.2 (0.00, 3.0)
Fish liver/roe as dinner/spreads, g/1,000 kcal	0.00 (0.00, 0.52)	0.00 (0.00, 0.57)	0.10 (0.00, 0.66)
Total meat, g/1,000 kcal	69.2 (54.8, 85.8)	68.9 (55.4, 84.9)	66.2 (52.6, 81.8)
Red meat, g/1,000 kcal	57.2 (44.0, 72.7)	55.7 (43.3, 70.8)	53.2 (40.5, 67.9)
Beef, g/1,000 kcal	5.4 (2.9, 8.5)	5.2 (2.8, 8.1)	5.0 (2.6, 7.9)
Pork, g/1,000 kcal	8.7 (5.2, 13.1)	8.4 (5.2, 12.6)	8.0 (4.7, 12.2)
Mutton, g/1,000 kcal	5.2 (2.2, 9.6)	5.4 (2.4, 9.6)	5.4 (2.4, 9.5)

Poultry, g/1,000 kcal	8.5 (4.7, 14.5)	9.7 (5.9, 16.0)	9.6 (5.7, 15.8)
Game, g/1,000 kcal	0.00 (0.00, 1.6)	0.00 (0.00, 1.7)	0.00 (0.00, 1.8)
Processed red meat, g/1,000 kcal	33.6 (24.3, 45.5)	32.9 (23.9, 44.6)	30.9 (21.9, 42.4)
Milk/dairy, g/1,000 kcal	192 (105, 285)	204 (123, 290)	214 (132, 298)
Bread/cereals/pasta, g/1,000 kcal	131 (109, 153)	134 (112, 155)	134 (113, 156)
Eggs, g/1,000 kcal	8.9 (5.7, 14.3)	8.9 (5.9, 14.2)	9.3 (6.0, 14.6)
Vegetables/fruits/nuts, g/1,000 kcal	319 (229, 435)	338 (251, 445)	348 (259, 455)
Fibre, E%	5.2 (4.5, 6.0)	5.4 (4.7, 6.2)	5.5 (4.8, 6.4)
Added sugar, E%	10.0 (7.3, 13.3)	9.5 (7.1, 12.3)	9.1 (6.8, 11.9)
Protein, E%	15.2 (13.9, 16.7)	15.5 (14.3, 16.9)	15.6 (14.4, 17.0)
Carbohydrate, E%	53.5 (50.4, 56.6)	53.6 (50.7, 56.5)	53.4 (50.4, 56.4)
Total fat, E%	30.8 (27.9, 33.8)	30.5 (27.7, 33.4)	30.6 (27.7, 33.6)
Saturated fat, E%	11.8 (10.6, 13.2)	11.7 (10.5, 13.0)	11.6 (10.3, 13.0)
Monounsaturated fat, E%	9.8 (8.7, 10.9)	9.8 (8.7, 10.9)	9.8 (8.7, 11.0)
Polyunsaturated fat, E%	5.5 (4.7, 6.7)	5.4 (4.6, 6.5)	5.5 (4.7, 6.5)
LC*n*-3PUFA from food, g	0.30 (0.18, 0.49)	0.32 (0.20, 0.50)	0.35 (0.22, 0.56)
LC*n*-3PUFA from supplements, g	0.00 (0.00, 0.00)	0.19 (0.10, 0.20)	0.84 (0.60, 1.3)
Contaminant exposures			
PCB-153, ng/kg bw/day	0.69 (0.45, 1.1)	0.72 (0.48, 1.1)	0.81 (0.54, 1.3)
Total TEQ[†], pg/kg bw/week	3.7 (2.6, 5.2)	3.8 (2.8, 5.3)	4.2 (3.0, 5.7)
MeHg, µg/kg bw/week	0.12 (0.07, 0.19)	0.13 (0.08, 0.20)	0.15 (0.09, 0.22)

Values are median (IQR) or percentages unless otherwise indicated. [*]Total fish includes lean and fatty fish (salt and freshwater fish, fish-based spread), liver, roe, and shellfish. [†]Total TEQ includes dioxins and dioxin-like polychlorinated biphenyls.
MeHg, methylmercury; PCB, polychlorinated biphenyl; TEQ, Toxic Equivalents.

Supplementary Table 3. Baseline characteristics of absolute dietary intake by frequency of long chain *n*-3 polyunsaturated fatty acids (LC*n*-3PUFA) from supplements

	Categories of LC*n*-3PUFA supplement use		
	No use	**<median (<0.40 g/day)**	**≥median (≥0.40 g/day)**
N	19,786	21,004	20,041
Daily dietary intake			
Energy, kcal	2,205 (1,847, 2,643)	2,206 (1,876, 2,613)	2,240 (1,888, 2,648)
Total fish*, g	32.1 (19.9, 45.9)	32.5 (21.0, 45.5)	35.3 (23.2, 49.4)
Lean fish, g	17.8 (9.8, 27.3)	18.0 (10.6, 26.5)	19.3 (11.5, 28.0)
Fatty fish, g	6.7 (2.5, 13.1)	7.4 (3.3, 13.7)	8.3 (4.0, 15.3)
Shellfish, g	2.0 (0.00, 5.0)	2.4 (0.00, 5.1)	2.5 (0.00, 5.1)
Fish spread, g	1.9 (0.00, 4.6)	2.1 (0.00, 5.0)	2.7 (0.00, 6.5)
Fish liver/roe as dinner/spreads, g	0.00 (0.00, 1.2)	0.00 (0.00, 1.3)	0.23 (0.0, 1.4)
Total meat, g	154 (131, 178)	153 (131, 176)	149 (126, 173)
Red meat, g	127 (102, 154)	125 (101, 150)	120 (95, 146)
Beef, g	12.3 (6.8, 18.6)	11.8 (6.5, 17.8)	11.4 (6.1, 17.4)
Pork, g	19.4 (11.8, 28.7)	18.8 (11.5, 27.8)	18.0 (10.6, 27.3)
Mutton, g	11.5 (4.7, 21.7)	11.7 (5.1, 21.6)	12.1 (5.3, 21.8)
Poultry, g	18.7 (11.2, 32.0)	21.0 (13.8, 34.8)	21.1 (13.5, 35.2)
Game, g	0.00 (0.00, 3.6)	0.00 (0.00, 3.8)	0.00 (0.00, 4.0)
Processed red meat, g	75.1 (58.0, 94.9)	73.9 (56.7, 93.3)	70.2 (53.0, 89.5)
Milk/dairy, g	446 (222, 641)	465 (258, 661)	485 (276, 689)
Bread/cereals/pasta, g	291 (225, 366)	298 (235, 369)	302 (238, 377)
Eggs, g	19.1 (12.2, 32.3)	19.2 (12.8, 32.0)	20.2 (13.2, 33.5)
Vegetables/fruits/nuts, g	711 (489, 988)	751 (538, 1,012)	779 (561, 1,051)
Fibre, E%	5.2 (4.5, 6.0)	5.4 (4.7, 6.2)	5.5 (4.8, 6.4)
Added sugar, E%	10.0 (7.3, 13.3)	9.5 (7.1, 12.3)	9.1 (6.8, 11.9)
Protein, E%	15.2 (13.9, 16.7)	15.5 (14.3, 16.9)	15.6 (14.4, 17.0)
Carbohydrate, E%	53.5 (50.4, 56.6)	53.6 (50.7, 56.5)	53.4 (50.4, 56.4)
Total fat, E%	30.8 (27.9, 33.8)	30.5 (27.7, 33.4)	30.6 (27.7, 33.6)
Saturated fat, E%	11.8 (10.6, 13.2)	11.7 (10.5, 13.0)	11.6 (10.3, 13.0)
Monounsaturated fat, E%	9.8 (8.7, 10.9)	9.8 (8.7, 10.9)	9.8 (8.7, 11.0)
Polyunsaturated fat, E%	5.5 (4.7, 6.7)	5.4 (4.6, 6.5)	5.5 (4.7, 6.5)
LC*n*-3PUFA from food, g	0.30 (0.18, 0.49)	0.32 (0.20, 0.50)	0.35 (0.22, 0.56)
LC*n*-3PUFA from supplements, g	0.00 (0.00, 0.00)	0.19 (0.10, 0.20)	0.84 (0.60, 1.37)

Values are median (IQR) unless otherwise indicated. *Total fish includes lean and fatty fish (salt and freshwater fish, fish-based spread), liver, roe, and shellfish.

Supplementary Table 4. HRs and 95% CIs for incident type 2 diabetes by absolute fish intake and long chain *n*-3 polyunsaturated fatty acids (LC*n*-3PUFA) from supplements in 60,831 women with 683 type 2 diabetes events

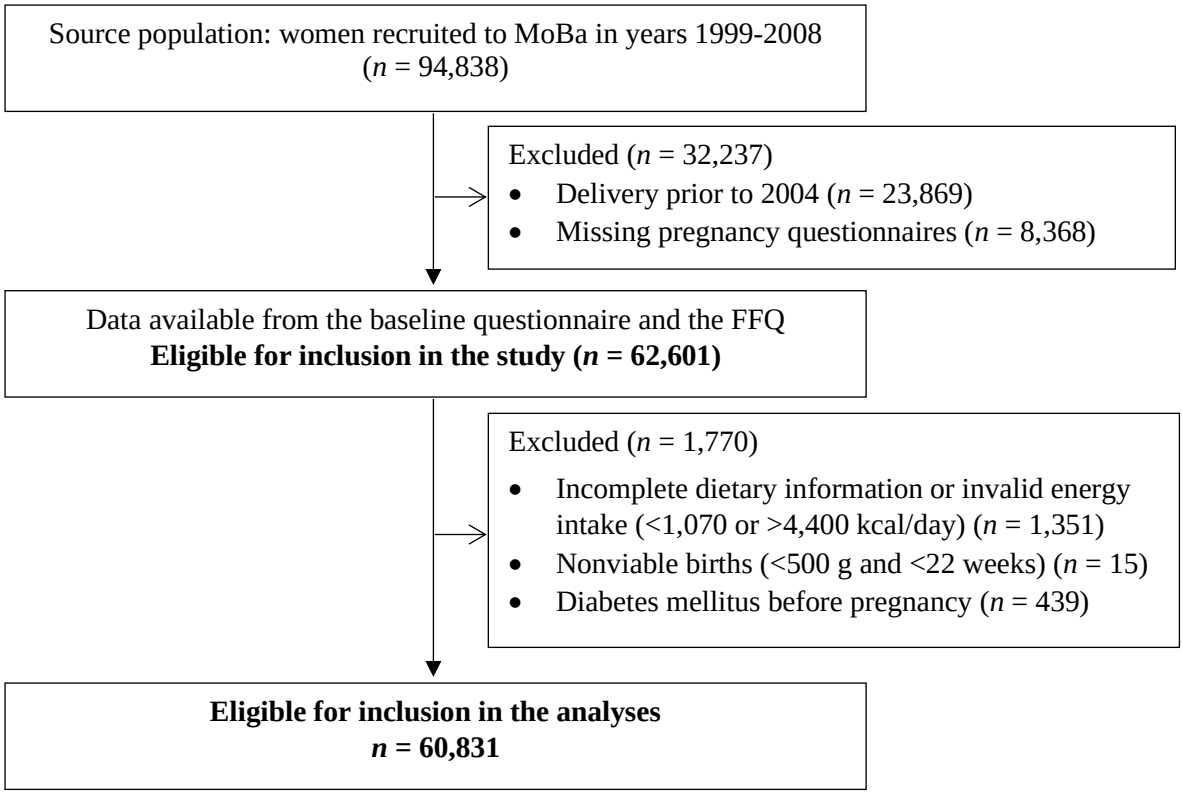
	Model 1*	**Model 2†**	**Model 3‡**
Total fish§ (25 g/day)	0.94 (0.86-1.03); *P* = 0.168	0.96 (0.88-1.05); *P* = 0.416	0.96 (0.88-1.05); *P* = 0.370
Lean fish (25 g/day)	0.83 (0.71-0.96); *P* = 0.013	0.86 (0.75-0.99); *P* = 0.043	0.85 (0.74-0.98); *P* = 0.027
Fatty fish (25 g/day)	0.94 (0.80-1.10); *P* = 0.424	0.98 (0.84-1.13); *P* = 0.741	0.98 (0.85-1.14); *P* = 0.816
LC*n*-3PUFA supplements (g/day)	0.95 (0.83-1.09); *P* = 0.439	1.08 (0.95-1.23); *P* = 0.263	1.08 (0.95-1.23); *P* = 0.250

*Adjusted for energy intake and age. †Adjusted for energy intake, age, pre-pregnancy BMI, gestational diabetes mellitus, gestational hypertension including preeclampsia. ‡Adjusted for energy intake, age, pre-pregnancy BMI, gestational diabetes mellitus, gestational hypertension including preeclampsia, maternal pre-pregnancy education and smoking, and dietary fibre. §Total fish includes lean and fatty fish (salt and freshwater fish, fish-based spread), liver, roe, and shellfish.

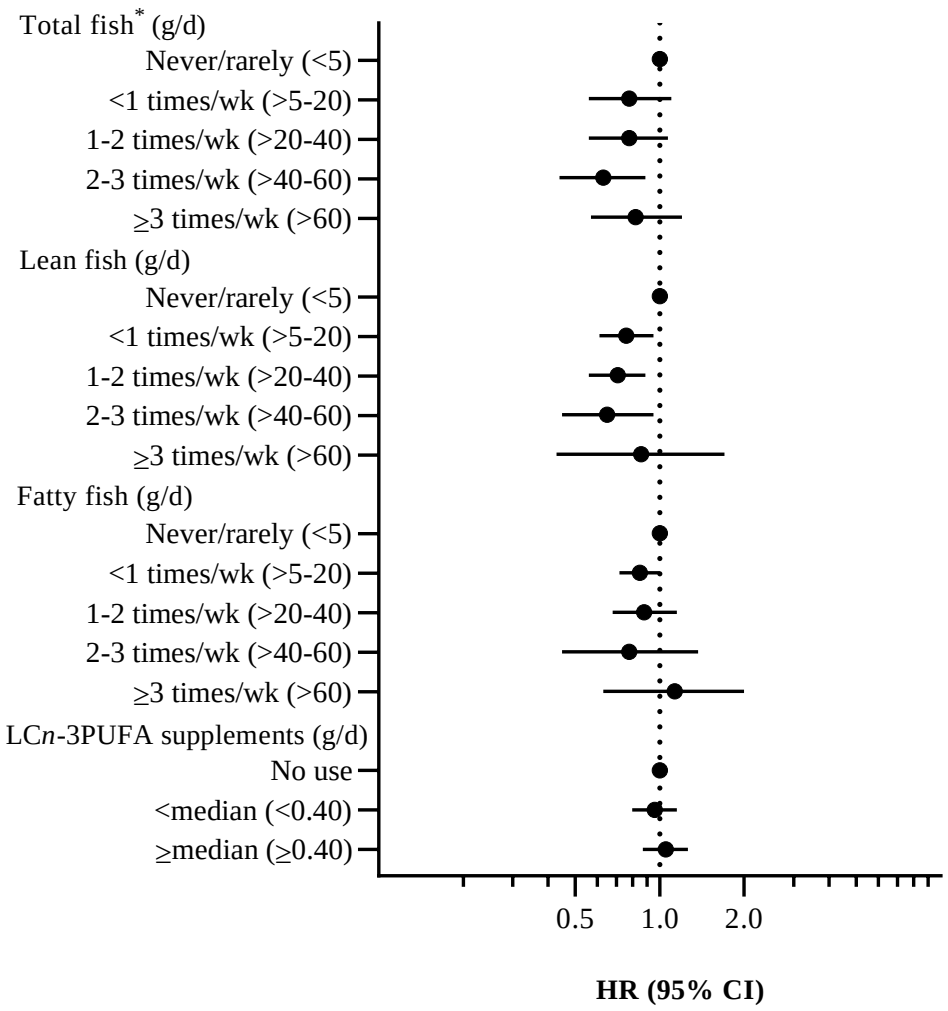
Supplementary Table 5. HRs and 95% CIs for incident type 2 diabetes by absolute fish intake and long chain *n*-3 polyunsaturated fatty acids (LC*n*-3PUFA) from supplements stratified by pre-pregnancy BMI <25 vs ≥25 kg/m^2 in 60,831 women with 683 type 2 diabetes events

	Model 1*		Model 2†		Model 3‡	
	BMI <25 kg/m^2	**BMI ≥25 kg/m^2**	**BMI <25 kg/m^2**	**BMI ≥25 kg/m^2**	**BMI <25 kg/m^2**	**BMI ≥25 kg/m^2**
N	41,417	19,414	41,417	19,414	41,417	19,414
n with type 2 diabetes	157	526	157	526	157	526
Total fish§ (25 g/day)	1.05 (0.89-1.26); *P* = 0.552	0.94 (0.85-1.04); *P* = 0.242	1.07 (0.90-1.28); *P* = 0.438	0.93 (0.84-1.03); *P* = 0.182	1.06 (0.89-1.27); *P* = 0.528	0.93 (0.84-1.04); *P* = 0.190
Lean fish (25 g/day)	1.05 (0.78-1.41); *P* = 0.740	0.81 (0.68-0.96); *P* = 0.015	1.09 (0.81-1.47); *P* = 0.554	0.79 (0.67-0.94); *P* = 0.008	1.05 (0.79-1.41); *P* = 0.726	0.79 (0.66-0.93); *P* = 0.006
Fatty fish (25 g/day)	0.92 (0.67-1.26); *P* = 0.599	0.99 (0.84-1.18); *P* = 0.925	0.95 (0.69-1.30); *P* = 0.730	0.99 (0.84-1.18); *P* = 0.926	0.95 (0.69-1.31); *P* = 0.744	1.01 (0.85-1.19); *P* = 0.949
LC*n*-3PUFA supplements (g/day)	1.09 (0.85-1.41); *P* = 0.487	1.08 (0.92-1.25); *P* = 0.356	1.11 (0.87-1.43); *P* = 0.406	1.11 (0.95-1.29); *P* = 0.184	1.09 (0.85-1.41); *P* = 0.485	1.11 (0.96-1.30); *P* = 0.165

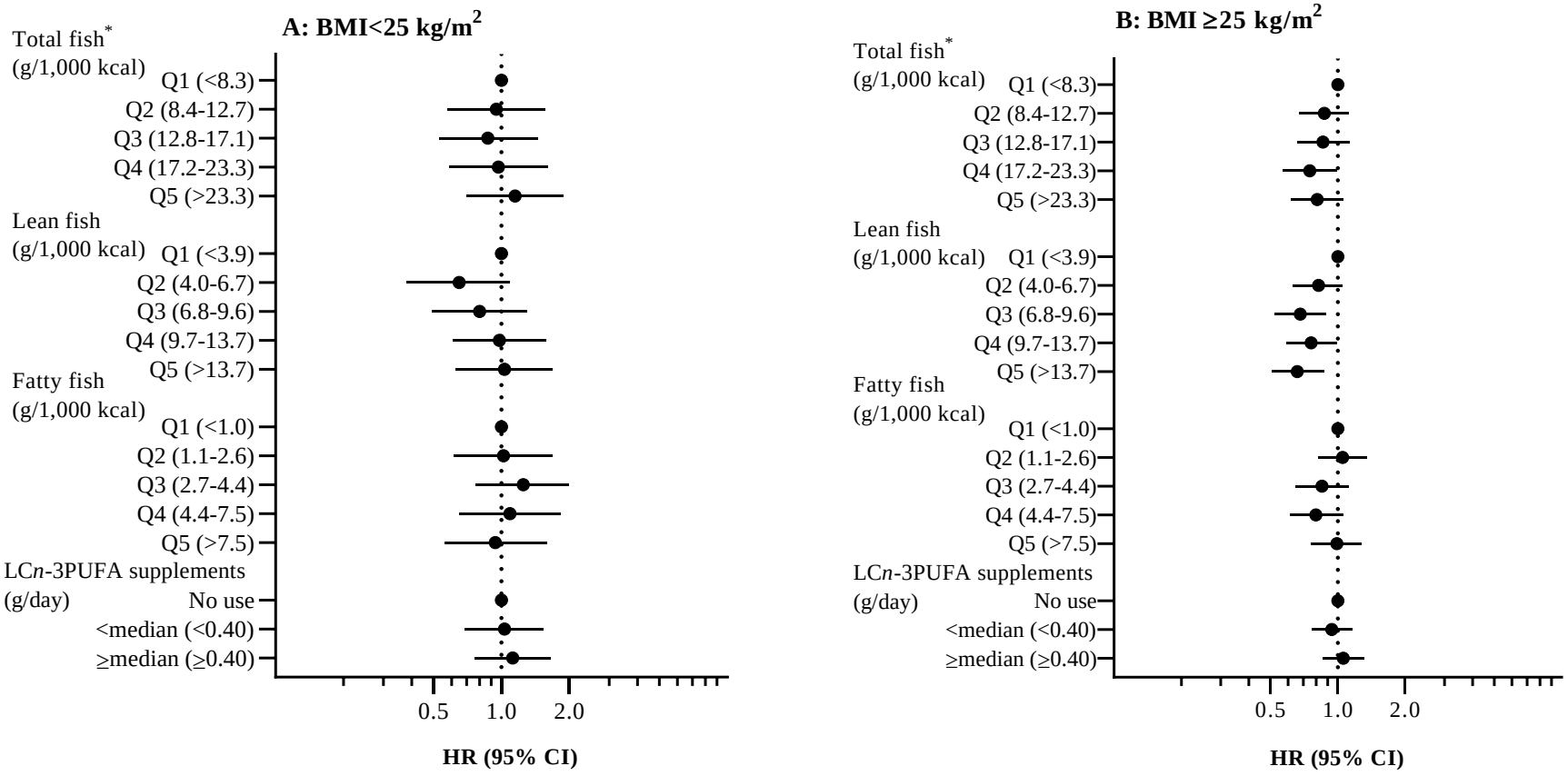
*Adjusted for energy intake and age. †Adjusted for energy intake, age, gestational diabetes mellitus, gestational hypertension including preeclampsia. ‡Adjusted for energy intake, age, gestational diabetes mellitus, gestational hypertension including preeclampsia, maternal pre-pregnancy education and smoking, and dietary fibre. §Total fish includes lean and fatty fish (salt and freshwater fish, fish-based spread), liver, roe, and shellfish.



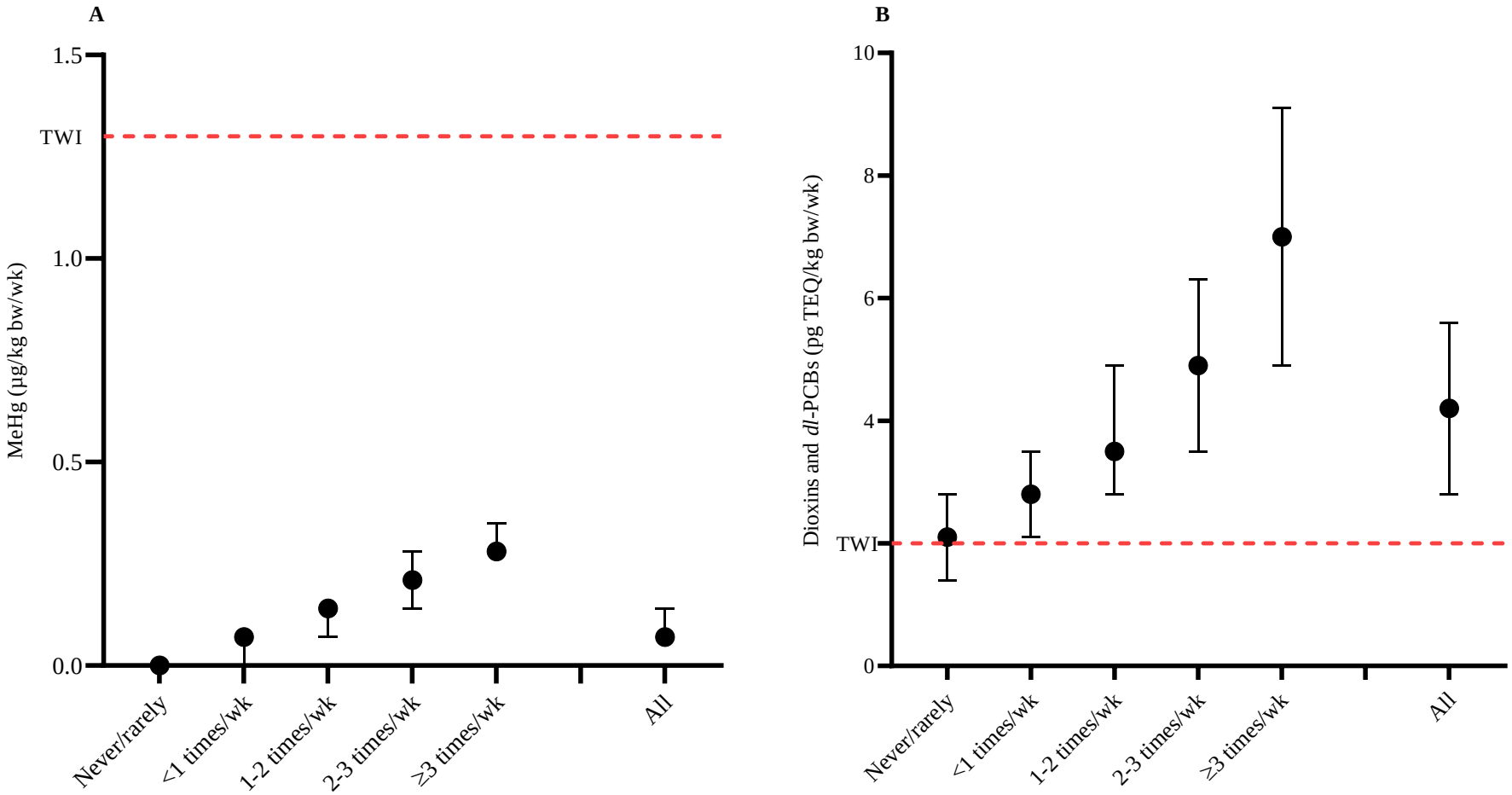
Supplementary Figure 1. Flow chart showing selection of the participants from the Norwegian Mother, Father and Child Cohort Study (MoBa) of women who delivered between 2004 and 2009.



Supplementary Figure 2. Forest plot showing the associations (HR and 95% CI) between frequency of absolute fish intake (g/day) and categories of long chain *n*-3 polyunsaturated fatty acids (LC*n*-3PUFA) from supplements (g/day) and incident type 2 diabetes in 60,831 women with 683 type 2 diabetes events. Adjusted for energy intake, age, pre-pregnancy BMI, gestational diabetes mellitus, gestational hypertension including preeclampsia, maternal pre-pregnancy education and smoking, and dietary fibre. *Total fish includes lean and fatty fish (salt and freshwater fish, fish-based spread), liver, roe, and shellfish. d, day; wk, week.



Supplementary Figure 3. Forest plot showing the associations (HR and 95% CI) between quintiles of energy-adjusted fish intake (g/1,000 kcal) and categories of long chain *n*-3 polyunsaturated fatty acids (LC*n*-3PUFA) from supplements (g/day) and incident type 2 diabetes stratified on pre-pregnancy BMI (A) <25 vs (B) ≥25 kg/m^2 in 60,831 women with 683 type 2 diabetes events. Adjusted for energy intake, age, gestational diabetes mellitus, gestational hypertension including preeclampsia, maternal pre-pregnancy education and smoking, and dietary fibre. *Total fish includes lean and fatty fish (salt and freshwater fish, fish-based spread), liver, roe, and shellfish.



Supplementary Figure 4. (A) Intake of methylmercury (MeHg) and (B) dioxins and dioxin-like polychlorinated biphenyls (*dl*-PCBs) (total Toxic Equivalents (TEQ)) related to tolerable weekly intake (TWI). Intake of contaminants is estimated based on reported fish intake and a contaminant database. The dotted line is the TWI for each contaminant group (1.3 µg/kg bw/week for MeHg and 2 pg TEQ/kg bw/week for dioxins and *dl*-PCBs). Intakes are median (IQR). wk, week.