

Additional File 1

Table S1. Dioxin contamination and lipids proportion of food items from the E3N diet history questionnaire of 1993.

Food groups	Food items	Dioxin contamination level (pg I-TEQ/g lipid weight or <i>fresh weight</i>)^a	Lipids proportion (%)^c
Meat	Beef	0.80	8.86
	Horse	0.60 ^b	4.60
	Lamb	0.74	14.09
	Calf	0.48	5.12
	Pork	0.16	11.04
	Offal	3.32	15.42
	Charcuterie	0.25	16.41
	Poultry	0.60	6.76
	Rabbit	0.60 ^b	8.70
Cereal products	Pasta	0.01	-
	Rice	0.01	-
	Cereals	0.02	-
	Bread	0.01	-
	Biscuits/cakes	0.0125	-
Eggs	Eggs	1.51	10.50
Fish and Seafood	Trout	9.36	4.20
	Sardines	2.70	12.30
	Colin/hake	2.24	1.00
	Ling	4.64 ^b	1.00
	Mackerel	3.23	20.90
	Flounder	4.64 ^b	1.00
	Haddock	4.64 ^b	1.00
	Sole	4.64 ^b	1.00
	Saithe	3.38	1.00
	Whiting	34.16	0.90
	Cod	8.45	0.95
	Salmon	5.15	10.78
	Saumonette	4.64 ^b	16.30
	Other fish	5.13	4.18
	Canned fish	4.64 ^b	8.50
	Seafood	30.22	2.77
Dairy products	Milk	0.65	2.32
	Butter	0.92	68.67
	Pressed cheese	0.64	29.25
	Other cheese	0.77	30.10
	Cream	0.68	27.00
	Fromage blanc	1.16	3.35

	Dairy dessert	1.16	5.04
	Yogurt	1.16	1.80
Fruit and vegetables	Fruits	0.01	-
	Leafy vegetables	0.055	-
	Root vegetables	0.01	-
	Other vegetables	0.032	-
	Soup	0.034 ^b	-
Added fats	Animal fats	0.88	99.75
	Peanut oil	0.03	83.25
	Olive oil	0.04	83.25
	Margarine	0.04	61.99
	Sunflower oil	0.04 ^b	83.25
	Corn oil	0.04 ^b	83.25
	Other vegetable fats	0.04 ^b	70.75
	Mayonnaise	0.04 ^b	78.60

^a Dioxin contamination data of 1996-1998 provided by the French High Council for Public

5 Health (Conseil Supérieur d'Hygiène Publique de France).

^b The average dioxin contamination of the food group was assigned to the food item.

^c Lipids proportion provided by the food composition table developed by the E3N team.

Table S2. Hazards ratios (HR) for invasive breast cancer in subgroups defined by body mass

10 index, weight change, dietary patterns and breastfeeding (N=63,830), 1993-2008.

Stratifications	Dietary dioxin exposure (pg/kg body weight/day)					p-trend
	/0.43	<0.98 (ref)	[0.98,1.23[[1.23,1.52[≥1.52	
Body Mass Index (BMI)						
BMI<25 kg/m²						
N cases	2778	600	684	706	788	
HR (95% CI) ^a	1.01 (0.97, 1.05)	1.00	0.99 (0.89, 1.11)	0.96 (0.86, 1.07)	1.01 (0.91, 1.13)	0.5931
HR (95% CI) ^b	0.98 (0.93, 1.03)	1.00	0.96 (0.86, 1.07)	0.90 (0.80, 1.02)	0.93 (0.81, 1.06)	0.4682
BMI≥25 kg/m²						
N cases	687	280	169	142	96	
HR (95% CI) ^a	1.01 (0.93, 1.10)	1.00	0.87 (0.72, 1.06)	0.99 (0.81, 1.21)	0.99 (0.78, 1.25)	0.7633
HR (95% CI) ^b	1.00 (0.89, 1.12)	1.00	0.85 (0.69, 1.04)	0.94 (0.75, 1.18)	0.94 (0.70, 1.26)	0.9875
Weight change^c						
Weight loss						
(>-2 kg/5 years)						
N cases	211	56	59	47	49	
HR (95% CI) ^a	1.03 (0.91, 1.18)	1.00	1.19 (0.83, 1.72)	1.06 (0.72, 1.57)	1.12 (0.77, 1.65)	0.6288
HR (95% CI) ^b	1.00 (0.84, 1.19)	1.00	1.11 (0.76, 1.63)	1.00 (0.65, 1.54)	1.01 (0.62, 1.64)	0.9796
Stable weight						
([-2;2] kg/5 years)						
N cases	2014	501	482	498	533	
HR (95% CI) ^a	1.00 (0.95, 1.04)	1.00	0.90 (0.80, 1.02)	0.89 (0.79, 1.01)	0.95 (0.84, 1.07)	0.9628
HR (95% CI) ^b	1.00 (0.94, 1.07)	1.00	0.89 (0.78, 1.01)	0.88 (0.76, 1.01)	0.92 (0.79, 1.08)	0.9213
Weight gain						
(>2 kg/5 years)						
N cases	1234	320	310	303	301	
HR (95% CI) ^a	1.04 (0.99, 1.10)	1.00	1.04 (0.89, 1.22)	1.09 (0.93, 1.27)	1.13 (0.96, 1.32)	0.1350
HR (95% CI) ^b	1.00 (0.93, 1.08)	1.00	1.00 (0.85, 1.18)	1.00 (0.84, 1.19)	1.02 (0.83, 1.25)	0.9893
Western Pattern						
Low intake						
N cases	1059	483	299	198	79	
HR (95% CI) ^a	0.99 (0.91, 1.07)	1.00	1.03 (0.89, 1.19)	1.12 (0.95, 1.33)	0.96 (0.75, 1.22)	0.7361
HR (95% CI) ^b	0.98 (0.88, 1.08)	1.00	1.03 (0.89, 1.20)	1.12 (0.94, 1.34)	0.97 (0.76, 1.24)	0.6586
Medium intake						

N cases	1163	274	321	349	219	
HR (95% CI) ^a	0.96 (0.89, 1.03)	1.00	0.87 (0.74, 1.02)	0.95 (0.81, 1.11)	0.81 (0.67, 0.96)	0.2150
HR (95% CI) ^b	0.94 (0.86, 1.02)	1.00	0.85 (0.73, 1.01)	0.93 (0.79, 1.09)	0.78 (0.65, 0.95)	0.1438
High intake						
N cases	1243	110	222	386	525	
HR (95% CI) ^a	0.98 (0.93, 1.03)	1.00	0.92 (0.73, 1.15)	0.94 (0.76, 1.16)	0.85 (0.69, 1.05)	0.4446
HR (95% CI) ^b	1.02 (0.96, 1.09)	1.00	0.94 (0.74, 1.18)	0.98 (0.78, 1.21)	0.89 (0.72, 1.11)	0.4666
Healthy pattern						
Low intake						
N cases	1166	375	292	287	212	
HR (95% CI) ^a	1.01 (0.94, 1.08)	1.00	0.96 (0.82, 1.12)	1.06 (0.91, 1.24)	0.88 (0.74, 1.05)	0.8799
HR (95% CI) ^b	1.00 (0.91, 1.10)	1.00	0.93 (0.80, 1.09)	1.02 (0.86, 1.20)	0.83 (0.69, 1.01)	0.9751
Medium intake						
N cases	1164	290	292	319	263	
HR (95% CI) ^a	0.98 (0.92, 1.05)	1.00	1.00 (0.85, 1.18)	1.05 (0.90, 1.23)	0.92 (0.78, 1.10)	0.6134
HR (95% CI) ^b	1.00 (0.91, 1.09)	1.00	1.00 (0.85, 1.18)	1.04 (0.87, 1.23)	0.90 (0.74, 1.09)	0.9096
High intake						
N cases	1135	202	258	327	348	
HR (95% CI) ^a	1.06 (1.01, 1.12)	1.00	1.08 (0.90, 1.30)	1.24 (1.04, 1.48)	1.23 (1.03, 1.46)	0.0248
HR (95% CI) ^b	1.05 (0.98, 1.13)	1.00	1.06 (0.88, 1.28)	1.21 (1.00, 1.46)	1.17 (0.95, 1.43)	0.1574
Breastfeeding						
No breastfeeding						
N cases	1483	382	366	371	364	
HR (95% CI) ^a	1.02 (0.97, 1.07)	1.00	1.00 (0.87, 1.15)	1.03 (0.89, 1.19)	1.02 (0.88, 1.18)	0.4492
HR (95% CI) ^b	1.02 (0.95, 1.09)	1.00	0.97 (0.84, 1.13)	0.99 (0.84, 1.16)	0.99 (0.82, 1.19)	0.6577
Breastfeeding						
N cases	1982	497	488	477	520	
HR (95% CI) ^a	1.01 (0.97, 1.06)	1.00	0.95 (0.84, 1.07)	0.92 (0.81, 1.04)	1.01 (0.89, 1.14)	0.6589
HR (95% CI) ^b	0.99 (0.93, 1.05)	1.00	0.92 (0.81, 1.05)	0.88 (0.76, 1.01)	0.94 (0.80, 1.11)	0.7427
Smoking Status						
Non-smoker						
N cases	1861	492	469	431	469	
HR (95% CI) ^a	1.00 (0.96, 1.05)	1.00	0.96 (0.84, 1.09)	0.88 (0.77, 1.00)	0.99 (0.87, 1.12)	0.9040
HR (95% CI) ^b	0.99 (0.92, 1.05)	1.00	0.93 (0.81, 1.06)	0.83 (0.72, 0.96)	0.92 (0.78, 1.09)	0.6414
Former smoker						
N cases	1158	278	273	309	298	
HR (95% CI) ^a	1.03 (0.97, 1.09)	1.00	0.95 (0.81, 1.13)	1.09 (0.92, 1.28)	1.05 (0.89, 1.23)	0.2918

	HR (95% CI) ^b	1.03 (0.95, 1.11)	1.00	0.94 (0.79, 1.12)	1.07 (0.89, 1.28)	1.03 (0.84, 1.27)	0.4625
Smoker							
	N cases	446	109	112	108	117	
	HR (95% CI) ^a	1.01 (0.93, 1.11)	1.00	1.07 (0.82, 1.39)	1.03 (0.79, 1.34)	1.05 (0.81, 1.36)	0.7549
	HR (95% CI) ^b	1.00 (0.88, 1.13)	1.00	1.03 (0.78, 1.36)	0.97 (0.72, 1.30)	0.98 (0.70, 1.37)	0.9852
Alcohol intake							
0 g/day							
	N cases	375	134	90	68	83	
	HR (95% CI) ^a	1.08 (0.98, 1.19)	1.00	0.86 (0.66, 1.13)	0.78 (0.58, 1.05)	1.21 (0.92, 1.59)	0.1448
	HR (95% CI) ^b	1.02 (0.89, 1.17)	1.00	0.79 (0.60, 1.04)	0.68 (0.49, 0.94)	0.99 (0.69, 1.42)	0.7708
<6.9 g/day							
	N cases	1234	348	338	294	254	
	HR (95% CI) ^a	0.99 (0.93, 1.05)	1.00	1.02 (0.88, 1.19)	0.96 (0.82, 1.12)	0.96 (0.81, 1.12)	0.6697
	HR (95% CI) ^b	1.00 (0.92, 1.08)	1.00	1.03 (0.88, 1.20)	0.96 (0.81, 1.14)	0.96 (0.78, 1.19)	0.9285
≥6.9 g/day							
	N cases	1856	397	426	486	547	
	HR (95% CI) ^a	1.00 (0.96, 1.05)	1.00	0.94 (0.82, 1.07)	0.96 (0.84, 1.10)	0.97 (0.86, 1.11)	1.0000
	HR (95% CI) ^b	1.01 (0.95, 1.07)	1.00	0.92 (0.80, 1.06)	0.95 (0.82, 1.11)	0.97 (0.82, 1.15)	0.8817

^a age-adjusted models.

^b adjusted for age, height, body mass index, energy intake, education, physical activity, smoking status combined with use of menopausal hormone treatment, alcohol intake, age at menarche, use of oral contraceptives, use of progestin, age at menopause, age at first full-term pregnancy and number of live births, breastfeeding, family history of breast cancer, history of personal benign breast disease and mammography.

^c n=6 breast cancer cases with missing data for weight change during follow-up.