Supplementary Figure 1: Eigenvalues for the identified principal components.
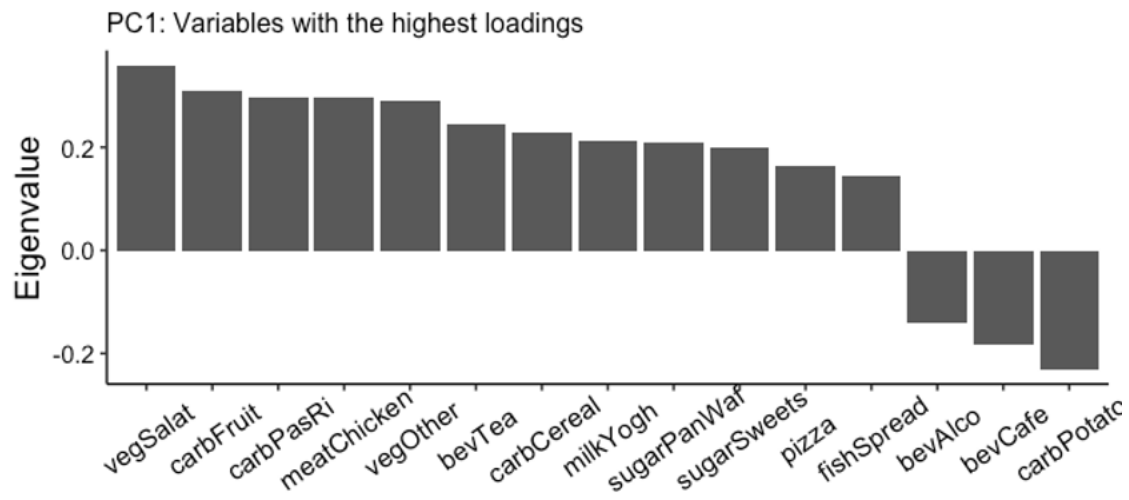

Eigenvalues of identified PCs
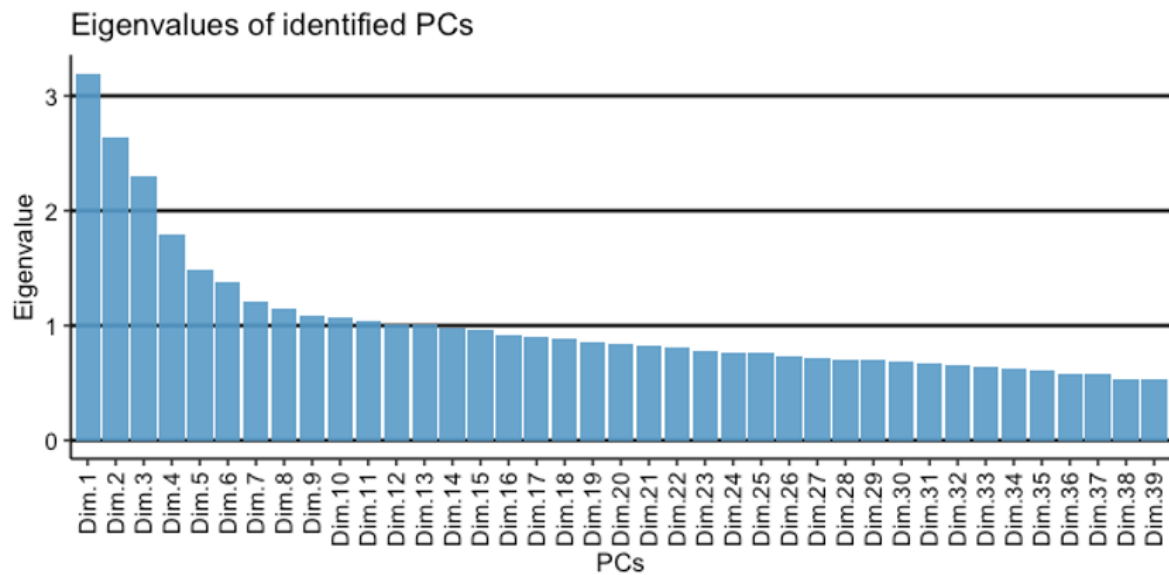
Supplementary Figure 2: Scree plot for the identified principal components.
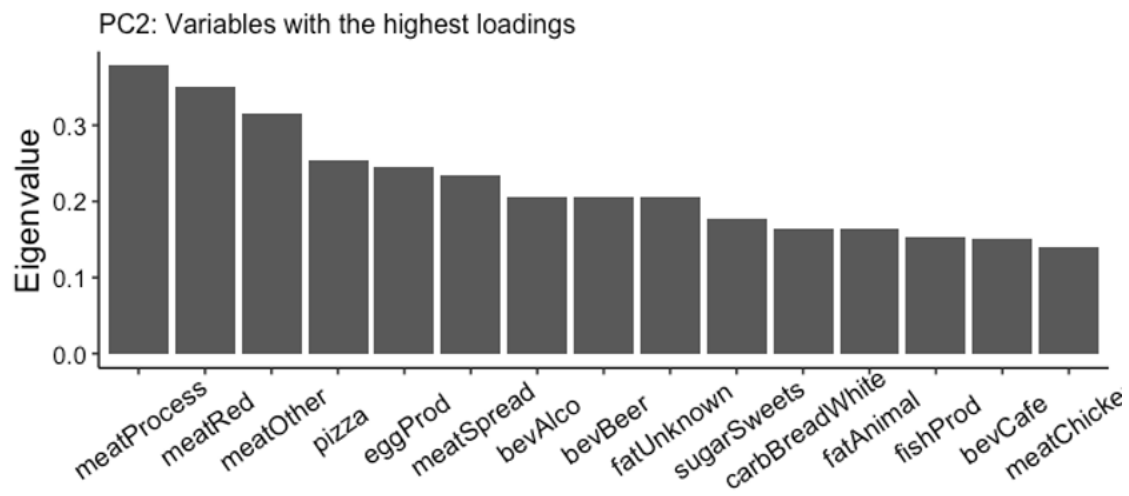

Scree plot
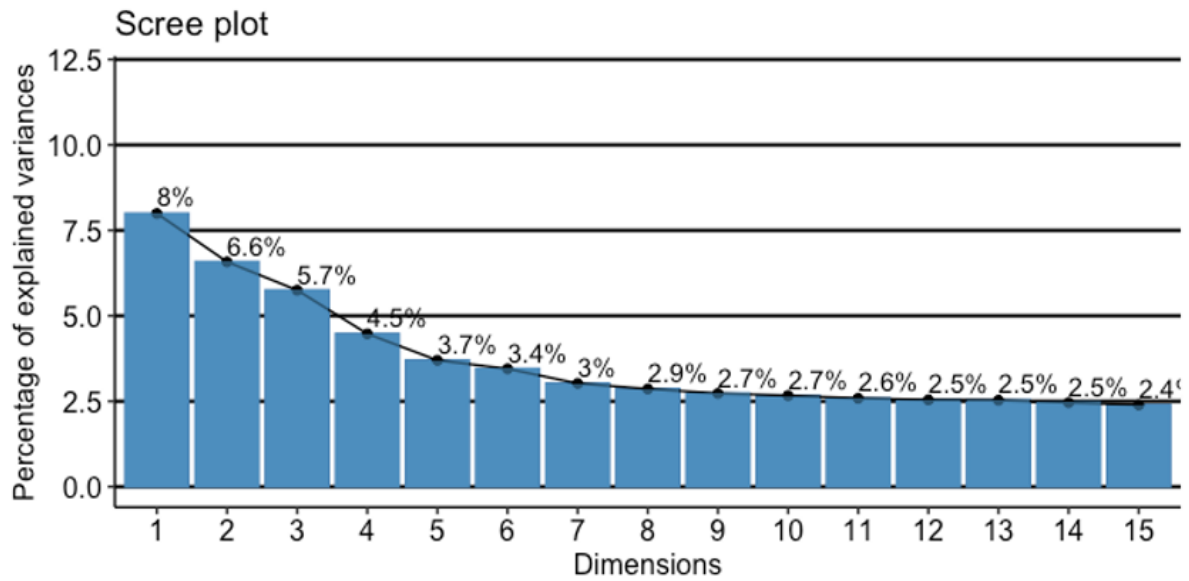
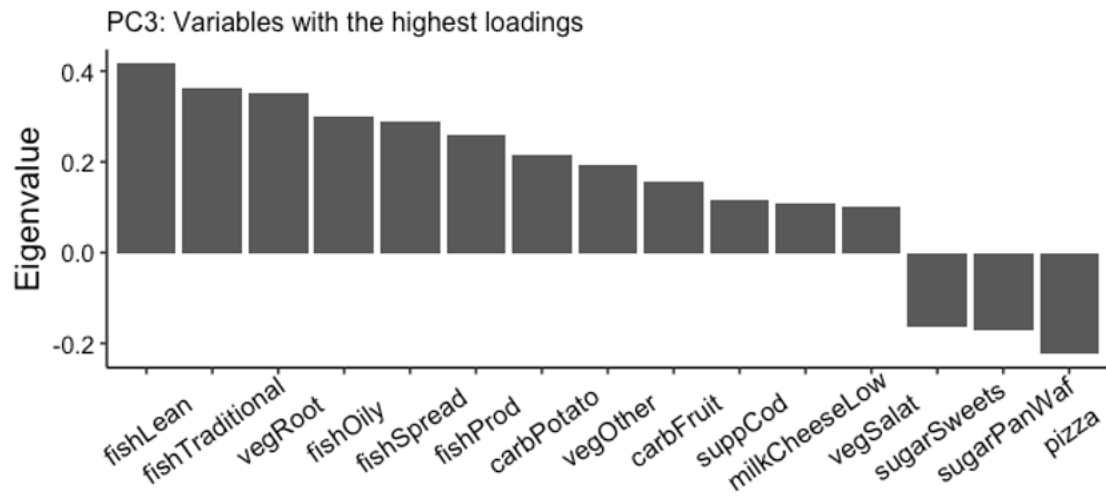**Supplementary Figure 3: Most prominent food variables for the main dietary patterns.**
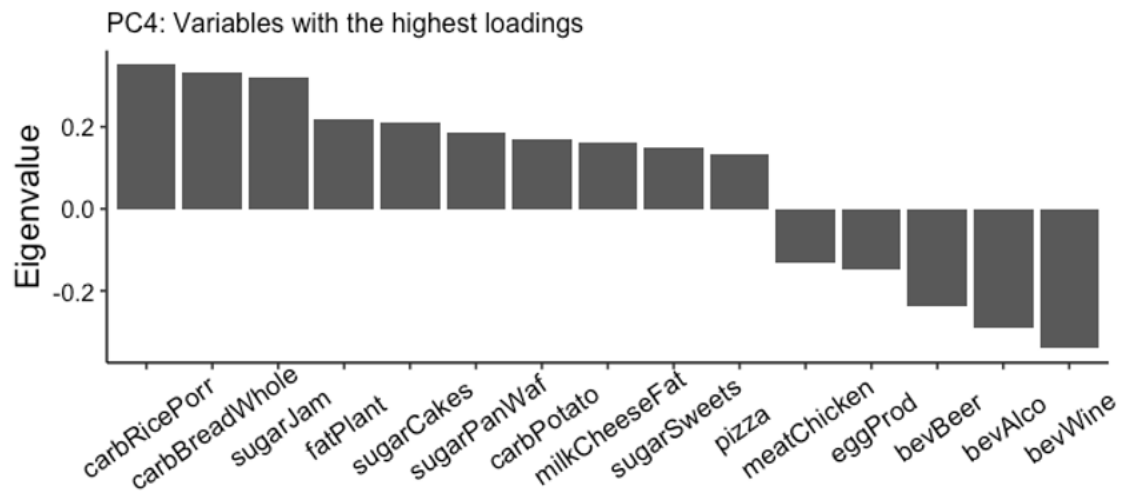
PC1: European diet

PC2:Animal food consumers

PC3: Traditional Norwegian diet

PC3: Variables with the highest loadings

PC4: Abstainers

PC4: Variables with the highest loadings

Supplementary Table 1: Detailed content of grouped variables used in principal component analysis.

Variable name	Food groups
Alcohol – Wine	Wine
Alcohol – Beer	Beer
Alcohol - Liquor	Liquor, spirits, or drinks based on liquor/spirit
Beverages Coffee	Coffee, boiled coffee, instant coffee, filter coffee, espresso
Beverages Tea	Green tea, black tea
Carbohydrate – Wholemeal bread	Whole grain bread types, crispbread
Carbohydrate – White bread	White bread, rolls
Carbohydrate – Pasta and rice	Pasta, rice
Carbohydrate – Fruit	Oranges, bananas, apples and pears and other kinds of fruit or fruit desserts
Carbohydrate – Potatoes	Potatoes
Carbohydrate – Cereals	Cereals and muesli
Carbohydrate – Porridge	Rice porridge, other kinds of porridge
Carbohydrate - Vegetables, root	Carrot, rutabaga, cabbage
Carbohydrate - Vegetables, salad	Salad, tomato
Carbohydrate - Vegetables, other	Broccoli and cauliflower and other kinds of vegetables
Eggs	Eggs
Fat of animal origins	Bacon fat/lard, butter, mayonnaise
Fat of plant origin (by majority)	Margarine, margarine and butter mixture of different fat contents and brands
Fat of unknown origin	Sauce containing fat
Fish Lean and shellfish	Cod (boiled, fried), general lean fish, wolffish and similar, shellfish
Fish Oily	Salmon, mackerel, tuna
Fish spreads and fish eaten on bread	Fish spreads, caviar spread, roe, salmon spread on bread, pickled herrings for bread, sardines for bread
Fish products, composite dishes with fish	Fish au gratin, fish cakes, fish soup, and deep-fried cod and similar
Meat Processed	Meatballs, sausage, added meat and meat products
Meat Red	Beef, chops, reindeer
Meat Dishes with meat	Stew and other kind of meat dishes
Meat Chicken	Chicken
Meat spread	Meat on bread
Milk - Cheese, high fat	Brown cheese (general + fatty variant), white cheese
Milk - Cheese, low fat	Brown cheese light variant, white cheese fat reduced variant

Milk - High fat dairy	Full cream milk, sour cream full fat, sour cream reduced fat
Milk - Low fat dairy	Skimmed milk, semi skimmed milk
Milk – Yoghurt	Yoghurt
Pizza	Pizza
Sugar - Cakes, and baked goods	Danish pastries, cakes, buns, cookies
Sugar – Sweets	Ice cream, chocolate, sugar in milk and coffee, desserts
Sugar – Jam	Jam
Sugar – Pancakes and waffles	Waffles and pancakes
Supplement - Cod liver oil	Cod liver oil

Supplementary Table 2. Baseline characteristics in tertiles of individual scores for the four main dietary patterns.

Variable	Dietary pattern		1st tertile	2nd tertile	3rd tertile	p-value
Age at baseline	PC1: European	Mean (SD)	53.4 (7.2)	50.5 (5.9)	50.7 (5.2)	< 0.001
	PC2: Animal food consumers	Mean (SD)	52.0 (6.3)	51.4 (6.3)	51.2 (6.2)	<0.001
	PC3: Traditional Norwegian	Mean (SD)	48.9 (5.2)	51.6 (6.0)	54.2 (6.5)	<0.001
	PC4: Abstainers	Mean (SD)	51.9 (6.1)	51.8 (6.5)	50.9 (6.2)	<0.001
Mean BMI	PC1: European	Mean (SD)	24.8 (4.0)	24.7 (3.9)	24.7 (3.9)	<0.001
	PC2: Animal food consumers	Mean (SD)	24.7 (3.9)	24.7 (3.9)	24.8 (4.1)	<0.001
	PC3: Traditional Norwegian	Mean (SD)	24.5 (4.0)	24.7 (3.9)	25.0 (4.0)	<0.001
	PC4: Abstainers	Mean (SD)	24.8 (4.0)	24.9 (4.0)	24.5 (3.8)	<0.001
Number of children N (column proportion)	PC1: European	No children	2430 (8.2)	2423 (8.2)	2777(9.3)	< 0001
		1-2 children	12900 (43.4)	16104 (54.2)	17720 (59.6)	
		More than 2 children	14389 (48.34	11191 (37.7)	9222 (31.0)	
	PC2: Animal food consumers	No children	3053 (10.3)	2420 (8.1)	2157 (7.2)	<0.001
		1-2 children	16460 (55.4)	15633 (52.6)	14631 (49.2)	
		More than 2 children	10320 (34.7)	11606 (39.1)	12876 (43.3)	
	PC3: Traditional Norwegian	No children	2285 (7.7)	2510 (8.4)	2835 (9.5)	<0.001
		1-2 children	16508 (55.5)	15778 (53.1)	14438 (48.6)	
		More than 2 children	10926 (36.8)	11430 (38.5)	12446 (41.9)	
	PC4: Abstainers	No children	2874 (9.7)	2379 (8.0)	2377 (8.0)	<0.001
		1-2 children	16525 (55.6)	15733 (52.9)	14466 (48.7)	
		More than 2 children	10373 (34.9)	11578 (39.0)	12851 (43.2)	
Education level N (column proportion)	PC1: European	0-9 years of school	12015 (43.9)	6421 (22.7)	3280 (11.4)	< 0.001
		10-12 years of school	8981 (32.8)	10594 (37.4)	9350 (32.5)	

		More than 12 years	6348 (23.2)	11300 (39.9)	16125 (56.1)	
	PC2: Animal food consumers	0-9 years of school	6712 (24.2)	7052 (24.9)	7952 (28.0)	<0.001
		10-12 years of school	9317 (33.6)	9690 (34.2)	9918 (34.9)	
		More than 12 years	11659 (42.1)	11550 (40.8)	10564 (37.2)	
	PC3: Traditional Norwegian	0-9 years of school	5878 (20.4)	7140 (25.3)	8698 (31.8)	<0.001
		10-12 years of school	10630 (36.9)	9752 (34.5)	8543 (31.3)	
		More than 12 years	12309 (42.7)	11371 (40.2)	10093 (36.9)	
	PC4: Abstainers	0-9 years of school	8075 (28.8)	7728 (27.6)	5913 (20.9)	<0.001
		10-12 years of school	10024 (35.7)	9676 (34.5)	9225 (32.6)	
		More than 12 years	9979 (35.5)	10636 (37.9)	13158 (46.5)	
Smoking status N (column proportion)	PC1: European	Non-smokers	109788 (37.0)	10412 (35.0)	10187 (34.3)	< 0.001
		Previous smokers	8326 (28.0)	10209 (34.4)	12317 (41.4)	
		Current smokers	10405 (35.0)	9097 (30.6)	7215 (24.3)	
	PC2: Animal food consumers	Non smokers	10777 (36.3)	10825 (36.4)	9985 (33.6)	<0.001
		Previous smokers	10930 (36.8)	10422 (35.1)	9500 (32.0)	
		Current smokers	8012 (27.0)	8471 (28.5)	10234 (34.4)	
	PC3: Traditional Norwegian	Non smokers	9911 (33.3)	10648 (35.8)	11028 (37.1)	<0.001
		Previous smokers	9833 (33.1)	10389 (35.0)	10630 (35.8)	
		Current smokers	9975 (33.6)	8681 (29.2)	8061 (27.1)	
	PC4: Abstainers	Non smokers	6695 (22.5)	10790 (36.3)	14102 (47.5)	<0.001

		Previous smokers	9856 (33.2)	10640 (35.8)	10356 (34.8)	
		Current smokers	13168 (44.3)	8288 (27.9)	5261 (17.7)	

Supplementary Table 3. Principal component analysis: Main components loadings for four most prominent dietary patterns identified. All values, reported after varimax rotation.

		PC1: European	PC2: Animal food consumers	PC3: Traditional Norwegian	PC4: Abstainers
Beverages	Wine		0.135		-0.341
	Beer		0.206		-0.237
	Liquor	-0.141	0.206		-0.291
	Coffee	-0.184	0.1851		
	Tea	0.245			
Fat	Animal origin		0.163		
	Plant origin				0.220
	Other fat		0.205		0.101
Carbohydrates	Bread Wholemeal		0.108		0.331
	Bread White		0.164		
	Pasta and rice	0.298	0.109		
	Fruit	0.308	-0.116	0.157	
	Potatoes	-0.230	0.118	0.215	0.170
	Cereals	0.229	-0.12 32		
	Vegetable - root			0.350	0.103
	Vegetable - salad	0.359		0.100	-0.114
	Vegetable - other	0.290		0.194	
	Porridge				0.352
Eggs	Eggs		0.246		-0.147

Pizza	Pizza	0.163	0.255	-0.222	0.135
Fish and fish products	Cod liver	-0.166		0.364	
	Fish spread	0.144		0.288	
	Lean fish	-0.120		0.416	
	Oily fish	0.113		0.298	
	Fish products	0.114	0.152	0.261	0.110
Sugars and sugary food	Desserts and cakes				0.211
	Sweets	0.201	0.177	-0.164	0.151
	Jam				0.321
	Pancakes and waffles	0.208	0.128	-0.173	0.185
Meat and processed meat	Processed meat		0.378		0.112
	Red meat		0.351		
	Meat spread		0.235		
	Chicken	0.297	0.141		-0.130
	Stew and others	0.112	0.316		
Milk and dairy	High fat cheese	0.138			0.162
	Low fat cheese		-0.104	0.109	
	High fat dairy				
	Low fat dairy				0.128
	Yoghurt	0.211			
Cod liver oil	Cod liver oil			0.117	