Table S1. Food groups included in the provegetarian food patterns and food items from the SUN cohort FFQ .

Plant Food Groups	Food items from the SUN Project FFQ
Vegetables	Swiss chard, spinach, cabbage, cauliflower, broccoli, lettuce, chicory, tomatoes, carrot, pumpkin, green beans, eggplant, zucchini, cucumber, pepper, asparagus, others
Fruits	Citrus, grapes, banana, apple, pear, strawberry, peach, apricot, nectarine, cherries, plums, figs, melon, watermelon, grapes, mango, papaya, kiwi
Legumes	Lentils, chickpeas, beans, peas
Nuts	Almonds, peanuts, hazelnuts, walnuts
Olive oil	Olive oil
Cereal grains	Breakfast cereals, white bread, white rice, pasta, whole-grain bread
Whole grains	Whole-grain bread
Refined grains	Breakfast cereals, white bread, white rice, pasta
Potatoes	Potato chips, baked potatoes
Coffee	Coffee, decaffeinated coffee
Fruit juices	Fresh orange juice, other natural fruit juices
Pastries	cookies, home-baked and ready-made cakes, muffins, donuts, croissant, cakes, churros, chocolates, nougat, marzipan
Sugary beverages	Sugar-sweetened beverages, bottled fruit or vegetable juices
Animal Food Groups	
Dairy	Whole milk, skim or low-fat milk, condensed milk, cream, milk shake, yogurt, custard, cheese, ice cream
Eggs	Eggs
Meat	Beef, veal, pork, lamb, liver, other viscera, chicken, turkey, serrano ham, cooked ham, spicy pork sausage, salami, mortadella, foie gras, black pudding, bacon, other cured or smoked meats, hamburger, hot dog
Fish and seafood	White fish, blue fish, salted or smoked fish, clams, mussels, shrimp, squid, octopus
Animal fat	Butter, lard
Miscellaneous food	Pizza, instant soups, mayonnaise

Table S2. Age- and sex-adjusted baseline characteristics (means [SDs] for continuous variables and percentages for dichotomous variables) by quintiles (Q) of the provegetarian food pattern in the SUN cohort.

	Provegetarian Food Pattern (n=11,554)				
	Q1	**Q2**	**Q3**	**Q4**	**Q5**
N (frequency)	2,939	2,458	1,781	2,131	2,245
Provegetarian FP range	13 – 32	33 – 35	36 – 37	38 – 40	41 – 55
Provegetarian FP score	29 (2.5)	34 (0.8)	37 (0.5)	39 (0.8)	44 (2.5)
Age (years)	35 (11)	35 (11)	35 (11)	35 (11)	35 (11)
Female (%)	73	73	73	73	74
Unemployed (%)	6.1	6.7	6.3	5.4	6.1
Married (%)	44	44	43	41	41
Living alone (%)	6.8	7.4	6.7	7.0	7.0
Special diet (%)	5.3	5.4	4.0	6.3	8.6
Between meal snacking (%)	35	34	33	32	31
Smoking status (%)					
Never	50	52	54	55	55
Current	25	23	23	21	20
Former	24	25	23	23	24
Years of university education	5.0 (1.5)	5.0 (1.4)	5.0 (1.5)	5.0 (1.5)	5.0 (1.5)
BMI (kg/m^2)	22 (1.9)	22 (1.9)	22 (1.9)	22 (1.9)	22 (2.0)
Family history of obesity (%)	19	19	20	22	22
Physical activity (METs-h/wk)	21 (21)	22 (22)	23 (22)	24 (22)	26 (25)
Television viewing (h/d)	1.6 (1.2)	1.6 (1.2)	1.6 (1.2)	1.6 (1.2)	1.5 (1.2)
Sleeping siesta (min/d)	18 (51)	18 (48)	18 (52)	17 (44)	16 (41)
Energy intake (kcal/d)	2399 (577)	2317 (579)	2334 (597)	2332 (616)	2408 (631)
Macronutrients (% E)					
Carbohydrates	40 (7.0)	42 (6.5)	44 (6.6)	45 (6.6)	48 (6.7)
CQI	10 (2.9)	10.8 (3.1)	11 (3.1)	12 (3.1)	13 (3.1)
Protein	19 (3.4)	18 (3.2)	18 (2.9)	18 (2.9)	16 (2.7)
Fat	39 (6.2)	37 (6.0)	36 (6.3)	36 (6.5)	34 (6.5)
SFA	15 (3.3)	13 (2.7)	12 (2.6)	12 (2.6)	10 (2.6)
MUFA	16 (3.4)	16 (3.6)	16 (3.7)	16 (4.0)	15 (3.9)
PUFA	5.2 (1.5)	5.2 (1.6)	5.2 (1.5)	5.2 (1.6)	5.2 (1.6)
FQI	1.5 (0.3)	1.6 (0.3)	1.7 (0.4)	1.8 (0.4)	2.0 (0.6)
Plant food groups[1], g/d					
Vegetables	418 (272)	486 (288)	519 (312)	589 (343)	678 (355)
Potatoes	44 (38)	50 (40)	55 (39)	57 (41)	65 (46)
Fruits	258 (209)	326 (227)	371 (271)	426 (308)	487 (314)
Fruit juices	59 (94)	64 (94)	63 (91)	71 (95)	72 (113)
Nuts	4.0 (7.3)	5.8 (8.6)	7.3 (12)	8.2 (11.8)	12.3 (15)
Legumes	18 (15)	22 (16)	23 (20)	25 (19)	27 (18)

Cereal grains	79 (57)	97.6 (61.6)	106 (64)	111 (61)	129 (65)
Whole grains	7.1 (21)	11 (28)	13 (31)	17 (34)	22 (40)
Refined grains	72 (55)	87 (59)	93 (62)	95 (61)	106 (65)
Olive oil	14 (12)	17 (13)	19 (14)	21 (14)	24 (15)
Pastries/sweets	58 (44)	55 (41.7)	52 (39)	47 (36)	43 (36)
Sugary beverages	73 (111)	68 (99)	66 (114)	59.(88)	50 (86)
Coffee	65 (64)	59 (60)	61 (61)	57 (60)	54 (59)
Animal food groups[1], g/d					
Dairy	529 (264)	457 (240)	423 (222)	386 (210)	316 (202)
Eggs	29 (18)	25 (14)	23 (14)	21 (13)	17 (11)
Meat	208 (73)	184 (65)	171 (61)	160 (61)	133 (61)
Fish and seafood	101 (57)	96 (55)	93 (53)	94 (54)	86 (60)
Animal fat	1.8 (3.4)	1.3 (2.6)	1.1 (2.9)	0.8 (2.1)	0.5 (1.7)
Miscellaneous food*	24 (36)	22 (35)	21 (36)	22 (35)	18 (32)
Micronutrients, mg/d					
Vitamin C	218 (121)	249 (139)	269 (147)	303 (160)	346 (172)
Vitamin D	4.0 (2.7)	3.6 (2.2)	3.6 (2.3)	3.6 (2.3)	3.4 (2.3)
Ca	1347 (501)	1227 (457)	1207 (443)	1188 (448)	1155 (423)
Na	4135 (2191)	3899 (2175)	3823 (2174)	3844 (2165)	3741 (2024)
K	4413 (1349)	4537 (1400)	4706 (1515)	4962 (1649)	5363 (1699)
Mg	388 (107)	397 (109)	411 (119)	428 (127)	463 (134)
Folate, μg/d	354 (151)	382 (151)	404 (167)	439 (176)	492 (189)
Total dietary fiber (g/d)	22 (9.4)	25 (9.5)	28 (11)	31 (12)	36 (13)
Total alcohol intake (g/d)	5.6 (8.7)	5.4 (7.8)	5.4 (8.3)	5.0 (6.9)	5.3 (7.5)

[1] Adjusted for energy intake using the residuals method

*Miscellaneous food: pizza, instant soups, mayonnaise.

CQI Carbohydrate Quality Index (4 – 20 index range): based on dietary fibre intake, glycemic index, whole grains:total grains ratio, solid carbohydrates: total carbohydrates ratio.

FQI Fat Quality Index (0.62 – 5.92 index range): [Monounsaturated fatty acids (MFA) + Polyunsaturated fatty acids (PUFA)] / [Saturated fatty acids (SFA) + Trans fatty acids (TFA)]

Table S3. Age- and sex-adjusted baseline characteristics (means [SDs] for continuous variables and percentages for dichotomous variables) by quintiles (Q) of the healthful provegetarian food pattern (PFP) in the SUN cohort.

	Healthful Provegetarian Food Pattern (n=11,554)				
	Q1	**Q2**	**Q3**	**Q4**	**Q5**
N (frequency)	2,460	2,543	2,022	2,582	1,947
Healthful PFP range	32 – 48	49 – 52	53 – 55	56 – 60	61 – 81
Healthful PFP score	45 (2.6)	51 (1.1)	54 (0.8)	58 (1.4)	65 (3.5)
Age (years)	35 (12)	35 (11)	35 (11)	35 (11)	35 (11)
Female (%)	72	73	73	73	73
Unemployed (%)	5.9	5.9	6.3	6.7	5.7
Married (%)	42	43	43	44	41
Living alone (%)	5.5	6.8	6.9	7.0	8.7
Special diet (%)	3.8	4.5	5.2	6.6	10.7
Between meal snacking (%)	37	33	32	31	30
Smoking status (%)					
Never	54	54	52	52	53
Current	24	23	24	23	19
Former	21	23	23	25	28
Years of university education	5.1 (1.6)	5.0 (1.5)	5.0 (1.5)	5.0 (1.5)	4.9 (1.4)
BMI (kg/m^2)	22 (1.9)	22 (1.9)	22 (1.9)	22 (1.9)	22 (1.9)
Family history of obesity (%)	19	17	21	21	25
Physical activity (METs-h/wk)	20 (19)	22 (21)	23 (22)	25 (24)	28 (27)
Television viewing (h/d)	1.6 (1.2)	1.6 (1.2)	1.6 (1.1)	1.6 (1.2)	1.5 (1.2)
Sleeping siesta (min/d)	20 (56)	17 (45)	17 (49)	17 (44)	16 (43)
Energy intake (kcal/d)	2366 (609)	2268 (595)	2304 (612)	2379 (605)	2525 (554)
Macronutrients (% E)					
Carbohydrates	43 (6.9)	43 (6.8)	44 (7.2)	44 (7.4)	46 (7.8)
CQI	9.0 (2.3)	10 (2.6)	11 (2.7)	12 (2.8)	15 (2.6)
Protein	18 (3.2)	18 (3.2)	18 (3.2)	18 (3.1)	18 (3.2)
Fat	38 (5.9)	37 (6.1)	37 (6.5)	37 (7.0)	35 (7.2)
SFA	14 (3.1)	13 (3.0)	13 (3.0)	12 (3.0)	11 (3.0)
MUFA	15 (3.1)	16 (3.3)	16 (3.8)	16 (4.1)	16 (4.2)
PUFA	5.4 (1.5)	5.2 (1.6)	5.1 (1.6)	5.1 (1.6)	5.0 (1.5)
FQI	1.5 (0.3)	1.6 (0.3)	1.7 (0.4)	1.8 (0.5)	2.0 (0.6)
Plant food groups[1], g/d					
Vegetables	361 (191)	461 (241)	524 (270)	601 (305)	759 (454)
Potatoes	65 (41)	59 (40)	54 (42)	48 (41)	39 (39)
Fruits	229 (155)	309 (206)	350 (230)	411 (269)	578 (395)
Fruit juices	64 (85)	65 (96)	65 (91)	65 (93)	66 (122)
Nuts	3.8 (5.6)	5.5 (7.3)	6.3 (8.5)	8.3 (12.1)	14 (18)
Legumes	17 (12)	21 (14)	23 (16)	25 (21)	28 (23)

Cereal grains	101 (63)	101 (58)	102 (62)	106 (68)	108 (72)
Whole grains	3.2 (13)	6.8 (17)	11 (25)	17 (35)	35 (50)
Refined grains	98 (62)	94 (57)	91 (60)	89 (66)	73 (63)
Olive oil	13 (11)	16 (11)	19 (13)	22 (15)	25 (16)
Pastries/sweets	61 (36)	55 (37)	53 (39)	48 (44)	37 (42)
Sugary beverages	86 (102)	75 (109)	67 (107)	50 (89)	33 (85)
Coffee	44 (54)	54 (56)	61 (61)	68 (64)	74 (65)
Animal food groups[1], g/d					
Dairy	453 (227)	442 (229)	434 (246)	415 (241)	404 (278)
Eggs	29 (17)	25 (15)	23 (14)	21 (13)	18 (14)
Meat	195 (64)	186 (66)	175 (67)	163 (67)	143 (74)
Fish and seafood	93 (53)	93 (50)	94 (57)	95 (55)	100 (71)
Animal fat	1.9 (3.3)	1.4 (2.9)	1.1 (2.6)	0.9 (2.4)	0.4 (2.0)
Miscellaneous food*	34 (43)	24 (33)	23 (37)	17 (33)	10 (24)
Micronutrients, mg/d					
Vitamin C	196 (100)	233 (117)	266 (133)	304 (147)	395 (199)
Vitamin D	3.7 (2.4)	3.5 (2.1)	3.6 (2.4)	3.7 (2.6)	3.9 (2.7)
Ca	1173 (425)	1178 (425)	1209 (457)	1261 (481)	1384 (508)
Na	4555 (2614)	3884 (2065)	3874 (2225)	3703 (2109)	3508 (1627)
K	4164 (1203)	4384 (1292)	4630 (1406)	4997 (1479)	5961 (1851)
Mg	369 (99)	381 (101)	402 (110)	434 (116)	513 (135)
Folate, μg/d	322 (120)	363 (133)	399 (152)	448 (163)	552 (207)
Total dietary fiber (g/d)	21 (7.7)	24 (8.3)	27 (9.3)	31 (11)	41 (14)
Total alcohol intake (g/d)	4.8 (7.1)	5.1 (7.8)	5.6 (7.6)	5.7 (8.1)	5.7 (8.3)

[1] Adjusted for energy intake using the residuals method

*Miscellaneous food: pizza, instant soups, mayonnaise.

CQI Carbohydrate Quality Index (4 – 20 index range): based on dietary fibre intake, glycemic index, whole grains:total grains ratio, solid carbohydrates: total carbohydrates ratio.

FQI Fat Quality Index (0.62 – 5.92 index range): [Monounsaturated fatty acids (MFA) + Polyunsaturated fatty acids (PUFA)] / [Saturated fatty acids (SFA) + Trans fatty acids (TFA)]

Table S4. Age- and sex-adjusted baseline characteristics (means [SDs] for continuous variables and percentages for dichotomous variables) by quintiles (Q) of the unhealthful provegetarian food pattern (PFP) in the SUN cohort.

	Unhealthful Provegetarian Food Pattern (n=11,554)				
	Q1	**Q2**	**Q3**	**Q4**	**Q5**
N (frequency)	2,492	2,508	2,525	2,053	1,976
Unhealthful PFP range	28 – 48	49 – 52	53 – 56	57 – 60	61 – 80
Unhealthful PFP score	45 (2.8)	51 (1.1)	55 (1.1)	58 (1.1)	64 (3.2)
Age (years)	35 (11)	35 (11)	35 (11)	35 (11)	35 (11)
Female (%)	73	73	73	73	73
Unemployed (%)	7.2	5.7	5.9	6.6	5.7
Married (%)	44	43	42	43	42
Living alone (%)	7.9	7.1	8.1	6.	5.2
Special diet (%)	9.6	7.1	5.0	3.6	3.3
Between meal snacking (%)	27	31	33	34	40
Smoking status (%)					
Never	51	52	53	55	55
Current	20	24	23	22	24
Former	28	23	23	22	21
Years of university education	5.0 (1.4)	5.0 (1.5)	5.0 (1.5)	5.0 (1.5)	5.0 (1.5)
BMI (kg/m^2)	22 (1.9)	22 (1.9)	22 (1.9)	22 (1.9)	22 (1.9)
Family history of obesity (%)	23	20	21	19	18
Physical activity (METs-h/wk)	27 (25)	24 (23)	23 (23)	22 (20)	21 (20)
Television viewing (h/d)	1.5 (1.1)	1.6 (1.2)	1.6 (1.2)	1.6 (1.2)	1.6 (1.3)
Sleeping siesta (min/d)	16 (40)	18 (51)	18 (50)	17 (44)	19 (54)
Energy intake (kcal/d)	2195 (545)	2220 (589)	2331 (582)	2469 (586)	2706 (549)
Macronutrients (% E)					
Carbohydrates	41 (7.0)	43 (7.2)	44 (7.1)	45 (6.8)	47 (7.1)
CQI	13 (3.1)	12 (3.1)	11 (3.0)	11 (3.0)	9.5 (2.6)
Protein	20 (2.9)	19 (2.9)	18 (2.8)	17 (2.4)	15 (2.7)
Fat	37 (6.5)	37 (6.8)	37 (6.5)	36 (6.3)	36 (6.8)
SFA	12 (3.3)	13 (3.3)	13 (3.2)	13 (3.1)	13 (3.0)
MUFA	16 (3.7)	16 (3.8)	16 (3.7)	16 (3.5)	15 (3.9)
PUFA	4.9 (1.2)	5.0 (1.4)	5.2 (1.6)	5.3 (1.6)	5.6 (2.0)
FQI	1.8 (0.5)	1.7 (0.5)	1.7 (0.5)	1.7 (0.4)	1.7 (0.5)
Plant food groups[1], g/d					
Vegetables	692 (329)	586 (342)	517 (291)	450 (290)	358 (284)
Potatoes	39 (29)	49 (35)	54 (39)	61 (44)	70 (55)
Fruits	458 (271)	396 (266)	358 (279)	333 (273)	265 (277)
Fruit juices	59 (84)	62 (88)	70 (101)	69 (104)	69 (113)
Nuts	9.6 (13)	8.2 (12)	7.6 (12)	5.9 (10)	4.6 (10)
Legumes	27 (18)	24 (16)	23 (17)	21 (18)	18 (18)

Cereal grains	89 (48)	99 (57)	102 (60)	108 (69)	123 (84)
Whole grains	23 (36)	17 (35)	13 (30)	7.9 (25)	3.4 (21)
Refined grains	65 (40)	17 (14)	89 (57)	100 (66)	120 (82)
Olive oil	22 (13)	20 (14)	19 (14)	17 (14)	15 (16)
Pastries/sweets	36 (24)	43 (28)	50 (34)	59 (43)	75 (58)
Sugary beverages	37 (60)	54 (82)	63 (90)	74 (106)	99 (149)
Coffee	75 (63)	64 (59)	58 (60)	51 (58)	45 (56)
Animal food groups[1], g/d					
Dairy	496 (250)	451 (243)	433 (240)	392 (228)	346 (225)
Eggs	26 (13)	24 (15)	23 (15)	22 (15)	20 (16)
Meat	186 (66)	177 (68)	175 (71)	169 (69)	154 (71)
Fish and seafood	118 (53)	103 (54)	92 (56)	83 (55)	67 (45)
Animal fat	1.2 (2.4)	1.3 (3.0)	1.1 (2.6)	1.2 (2.8)	0.9 (2.9)
Miscellaneous food*	23 (30)	23 (34)	22 (36)	22 (39)	18 (38)
Micronutrients, mg/d					
Vitamin C	322 (158)	281 (157)	266 (149)	256 (144)	233 (150)
Vitamin D	4.2 (2.6)	3.7 (2.4)	3.6 (2.6)	3.4 (2.2)	3.1 (2.0)
Ca	1330 (463)	1231 (485)	1225 (462)	1188 (443)	1174 (435)
Na	3662 (1891)	3745 (2136)	3887 (2166)	4076 (2365)	4301 (2222)
K	5190 (1562)	4761 (1627)	4685 (1535)	4630 (1499)	4578 (1493)
Mg	440 (124)	410 (130)	408 (121)	408 (117)	414 (113)
Folate, µg/d	473 (170)	421 (183)	402 (166)	384 (157)	360 (167)
Total dietary fiber (g/d)	32 (12)	29 (13)	27 (12)	27 (11)	26 (12)
Total alcohol intake (g/d)	5.2 (7.1)	5.1 (7.1)	5.5 (8.4)	5.6 (8.0)	5.5 (8.5)

[1] Adjusted for energy intake using the residuals method

*Miscellaneous food: pizza, instant soups, mayonnaise.

CQI Carbohydrate Quality Index (4 – 20 index range): based on dietary fibre intake, glycemic index, whole grains:total grains ratio, solid carbohydrates: total carbohydrates ratio.

FQI Fat Quality Index (0.62 – 5.92 index range): [Monounsaturated fatty acids (MFA) + Polyunsaturated fatty acids (PUFA)] / [Saturated fatty acids (SFA) + Trans fatty acids (TFA)]

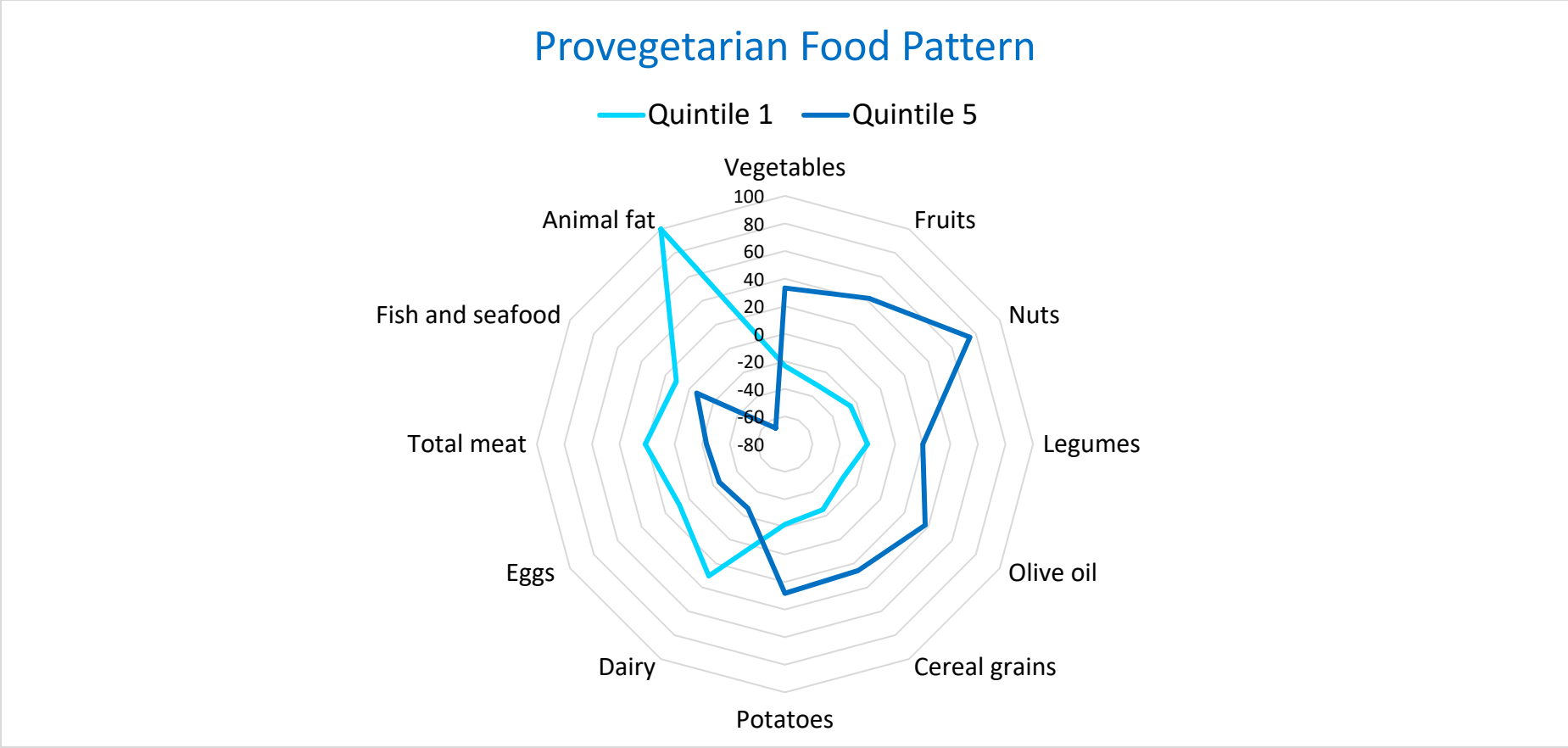
Table S5. Sensitivity Analyses. Hazard Ratios (95% confidence intervals) of incident overweight/obesity for extreme quintiles (Q5 vs. Q1) of adherence to the different provegetarian food patterns.

			Provegetarian		*Healthful*		*Unhealthful*	
	Cases	**N**	**Q5 vs. Q1 (ref)**	***p* trend**	**Q5 vs. Q1 (ref)**	***p* trend**	**Q5 vs. Q1 (ref)**	***p* trend**
Overall	2320	11,554	0.85 (0.75, 0.96)	0.014	0.78 (0.67, 0.90)	<0.001	1.07 (0.92, 1.23)	0.551
Energy limits: Percentiles 5-95	2301	11,637	0.82 (0.72, 0.94)	0.005	0.76 (0.66, 0.89)	<0.001	1.04 (0.89, 1.21)	0.633
Excluding participants with no answer in >12 items out of 136 in the baseline FFQ	2116	10,613	0.90 (0.79, 1.04)	0.094	0.82 (0.70, 0.95)	0.002	1.02 (0.87, 1.19)	0.910
Including participants with weight change >10kg over the past 5 years before entering the study	2449	11,874	0.87 (0.76, 0.98)	0.023	0.79 (0.69, 0.91)	0.001	1.02 (0.88, 1.18)	0.824
Additionally adjusted for weight gain ≥3kg over the past 5 years before entering the cohort	2320	11,554	0.85 (0.75, 0.97)	0.014	0.78 (0.67, 0.90)	<0.001	1.06 (0.92, 1.23)	0.565
Excluding participants with BMI>24.5 kg/m^2 at baseline	1739	10,754	0.79 (0.68, 0.92)	0.002	0.74 (0.62, 0.87)	<0.001	0.99 (0.83, 1.17)	0.915
Excluding early cases of overweight/obesity (first 2 y)	1547	10,780	0.81 (0.69, 0.95)	0.005	0.75 (0.63, 0.90)	0.001	0.96 (0.80, 1.15)	0.901
Considering obesity as outcome (BMI ≥ 30 kg/m^2)	759	15,489	0.79 (0.62, 1.01)	0.051	0.78 (0.60, 1.02)	0.037	0.97 (0.75, 1.25)	0.800
Truncating follow-up at 10 years	1884	11,554	0.85 (0.74, 0.98)	0.030	0.74 (0.63, 0.86)	<0.001	1.15 (0.98, 1.35)	0.227

Age was the underlying time variable in all models.

Adjusted for sex, baseline BMI, physical activity, hours of TV watching, smoking status, marital status, years of university education, total energy intake, snacking between meals, following a special diet at baseline, parental family history of obesity, hours of siesta. Stratified by age groups and year of recruitment.

Figure S1. Percentage differences[1] between extreme quintiles (quintile 1 and 5) and median scores (quintile 3) for the consumption of each food category of the provegetarian food pattern: overall study population (The SUN Project, 1999-2015).



[1] For example, the median vegetable intake (g/day) in the provegetarian score was 467 in the overall study population. The vegetable intake in the lowest provegetarian quintile was 358 (77% of median intake), whereas the vegetable intake in the highest provegetarian quintile was 622 (133% of median intake). We conceptualized the median as 100% and plotted the percent differences from the median.

Figure S2. Percentage differences between extreme quintiles (quintile 1 and 5) and median scores (quintile 3) for the consumption of each food category of the healthful provegetarian food pattern: overall study population (The SUN Project, 1999-2015).

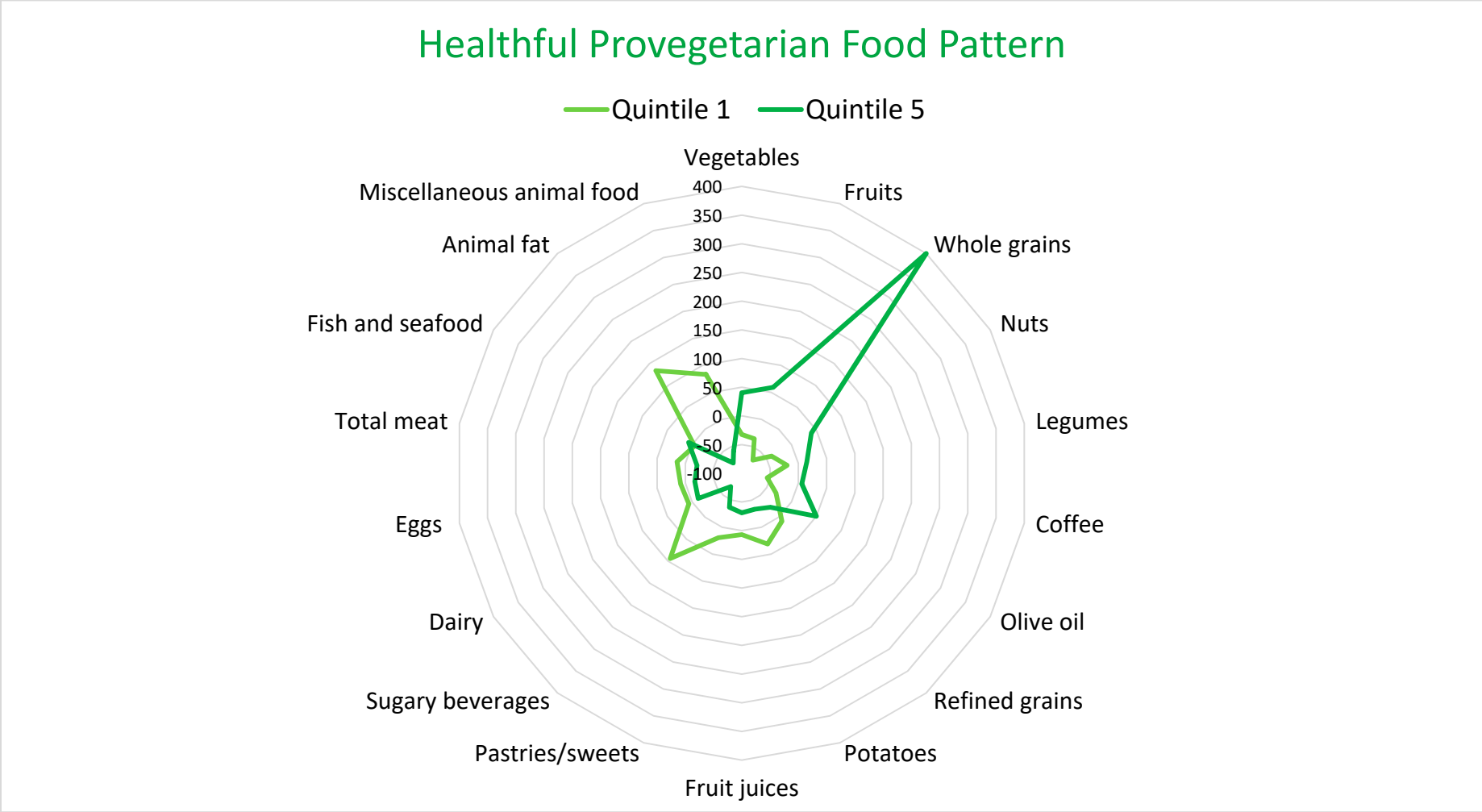


Figure S3. Percentage differences between extreme quintiles (quintile 1 and 5) and median scores (quintile 3) for the consumption of each food category of the unhealthful provegetarian food pattern: overall study population (The SUN Project, 1999-2015).