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Supplemental Table 1. Components and scoring criteria of the Alternate Mediterranean Diet (AMED) score.

Component	Food	1 point for individuals who meet each standard
1. Vegetables	Coleslaw, Side salad, Avocado, Beetroot, Broccoli, Butternut squash, Cabbage/kale, Carrot, Cauliflower, Celery, Courgette, Cucumber, Garlic, Leek, Lettuce, Mushroom, Onion, Parsnip, Sweet pepper, Spinach, Other vegetables	Above or equal to the sex-specific median
2. Legumes	Baked bean, Pulses, Broad bean, Tofu	Above or equal to the sex-specific median
3. Fruits	Fruit juice, Stewed fruit, Prune, Dried fruit, Mixed fruit, Apple, Banana, Berry, Cherry, Grape, Mango, Melon, Orange, Satsuma, Other fruit	Above or equal to the sex-specific median
4. Nuts	Salted peanuts, Unsalted peanuts, Salted nuts, Unsalted nuts, Seeds	Above or equal to the sex-specific median
5. Whole grains	Muesli, Oat crunch, Sweetened cereal, Plain cereal, Bran cereal, Whole-wheat cereal, Other cereal, Oatcakes, Wholemeal pasta, Brown rice, Couscous, Cereal bar	Above or equal to the sex-specific median
6. Fish	Tinned tuna, Oily fish, Breaded fish, Battered fish, White fish, Prawns, Lobster/crab, Shellfish, Other fish	Above or equal to the sex-specific median
7. MUFA/SFA ratio	Monounsaturated fatty acids, Saturated fatty acids	Above or equal to the sex-specific median
8. Red and processed meat	Sausage, Beef, Pork, Lamb, Bacon, Ham, Liver	Below the sex-specific median
9. Alcohol	Alcohol	5-15 g/d for women and 10-25 g/d for men
Total score		0-9 points total

Supplemental Table 2. Definitions and classifications of covariates included in the multivariable Cox proportional hazards models.

Variables	Categorization	UK Biobank variable description and data-field ID
Age, Age at diagnosis	Continuous: age at diagnosis was computed as age when attended assessment centre minus years since lung cancer diagnosis	Age when attended assessment centre (ID: 21003)
Sex	Female; Male	Sex (ID: 31)
Ethnicity	White; Non-White; Unknown	Ethnic background (ID: 21000)
Townsend deprivation index	Continuous	Townsend deprivation index (ID: 189)
Education level	College or above: college or university degree; High school or equivalent: A-levels, AS-levels or equivalent, O-levels, GCSEs or equivalent, CSEs or equivalent, NVQ, HND, HNC or equivalent, other professional qualifications; Less than high school: none of the above	Qualifications (ID: 6138)
Smoking status	Never smokers: individuals who have never smoked or have smoked fewer than 100 cigarettes in their lifetime; Ever smokers: individuals who have smoked at least 100 cigarettes in their lifetime; Unknown	Current tobacco smoking (ID: 1239); Past tobacco smoking (ID: 1249); Light smokers, at least 100 smokes in lifetime (ID: 2644)
Alcohol consumption	Never or moderate: up to 1 drink/day (14g/day) for women, or up to 2 drinks/day (28g/day) for men; Excessive: more than 1 drink/day (14g/day) for women, or more than 2 drinks/day (28g/day) for men; Unknown	Alcohol intake frequency (ID:1558); Average weekly/monthly red wine intake (ID:1568/ID:4407); Average weekly/monthly white wine intake (ID:1578/ID:4418); Average weekly/monthly beer intake (ID: 1588/ID:4429); Average weekly/monthly spirits intake (ID: 4440/ ID:1598); Average weekly/monthly fortified wine intake (ID:1608/ ID:4451)
Physical activity level ¹	Insufficiently active: < 600 MET-min/week; Sufficiently active: ≥ 600 MET-min/week; Unknown	Summed MET minutes per week for all activity (ID: 22040)
Body mass index	Continuous	Body mass index(ID: 21001)
Family history of lung cancer	No: either mother, father, or one of the siblings have a history of lung cancer; Yes: neither parents nor siblings have a history of lung cancer	Illness of mother (ID: 20110); Illness of Father (ID: 20107)
Histological type	Small cell lung cancer; Non-small cell lung cancer; Unknown	Histology of cancer tumour (ID: 40011)
Energy intake	Continuous: energy intake (kcal/day) of mean value across dietary assessments 1-5; energy intake (kcal/day) = energy intake (kJ/day) * 0.2389	Energy (ID: 26002)

Reference

1. World Health Organization. WHO guidelines on physical activity and sedentary behaviour. Geneva: WHO; 2020.

Supplemental Table 3. Assessment of multicollinearity.

(A) Alternate Mediterranean Diet (AMED) score

	Lung cancer risk			Lung cancer mortality			Lung cancer survival		
	GVIF	Df	GVIF^(1/2Df)	GVIF	Df	GVIF^(1/2Df)	GVIF	Df	GVIF^(1/2Df)
AMED	1.076044	1	1.037326	1.076601	1	1.037594	1.086808	1	1.042501
Age	1.076236	1	1.037418	1.071947	1	1.035349	1.079315	1	1.038901
Sex	1.144420	1	1.069776	1.144760	1	1.069934	1.149153	1	1.071986
Ethnicity	1.028604	1	1.014201	1.023599	1	1.011731	1.058301	1	1.028738
Education	1.105618	2	1.025419	1.103697	2	1.024973	1.122867	2	1.029395
TDI	1.050347	1	1.024865	1.048323	1	1.023876	1.101975	1	1.049750
Smoking	1.035239	1	1.017467	1.026599	1	1.013212	1.076962	1	1.037768
Physical activities	1.027448	1	1.013631	1.026964	1	1.013392	1.036706	1	1.018187
BMI	1.058216	1	1.028696	1.055372	1	1.027313	1.053746	1	1.026521
Family cancer	1.012560	1	1.006260	1.013272	1	1.006614	1.029752	1	1.014767
Energy	1.149025	1	1.071926	1.151621	1	1.073136	1.133533	1	1.064675
Histological type	-	-	-	-	-	-	1.029501	1	1.014643

(B) Isocaloric substitution of saturated fatty acids with unsaturated fatty acids

	Lung cancer risk			Lung cancer mortality			Lung cancer survival		
	GVIF	Df	GVIF^(1/2Df)	GVIF	Df	GVIF^(1/2Df)	GVIF	Df	GVIF^(1/2Df)
PUFA energy%	2.007499	1	1.416862	1.999834	1	1.414155	2.097030	1	1.448113
MUFA energy%	8.162007	1	2.856923	8.169328	1	2.858204	8.495296	1	2.914669
Trans energy%	2.529621	1	1.590478	2.541118	1	1.594089	2.687422	1	1.639336
Carbohydrate energy%	16.974358	1	4.119995	17.034048	1	4.127233	17.805490	1	4.219655
Protein energy%	3.838605	1	1.959236	3.699929	1	1.923520	3.836012	1	1.958574
Alcohol energy%	13.348910	1	3.653616	13.870183	1	3.724269	14.484223	1	3.805814
Age	1.079452	1	1.038967	1.075366	1	1.036999	1.090756	1	1.044393
Sex	1.179126	1	1.085876	1.179730	1	1.086154	1.168259	1	1.080860
Ethnicity	1.036896	1	1.018281	1.030927	1	1.015346	1.063273	1	1.031152
Education	1.099384	2	1.02397	1.098507	2	1.023766	1.132091	2	1.031503
TDI	1.051218	1	1.025289	1.049170	1	1.024290	1.108582	1	1.052892
Smoking	1.061360	1	1.030223	1.045339	1	1.022418	1.106343	1	1.051829
Drinking	1.420465	1	1.191833	1.424063	1	1.193341	1.501713	1	1.225444
Physical activities	1.027472	1	1.013643	1.027231	1	1.013524	1.041175	1	1.020380
BMI	1.069413	1	1.034124	1.066865	1	1.032891	1.079547	1	1.039012
Family cancer	1.012615	1	1.006288	1.013308	1	1.006632	1.039055	1	1.019341
Energy	1.264752	1	1.124612	1.261346	1	1.123097	1.291396	1	1.136396
Histological type	-	-	-	-	-	-	1.035419	1	1.017556

(C) Cross classification of Mediterranean diet and PUFAs intake

	Lung cancer risk			Lung cancer mortality			Lung cancer survival		
	GVIF	Df	GVIF^(1/2Df)	GVIF	Df	GVIF^(1/2Df)	GVIF	Df	GVIF^(1/2Df)
AMED_PUFA	1.092905	7	1.006366	1.090259	7	1.006192	1.186163	7	1.012269

Age	1.076168	1	1.037385	1.071721	1	1.035239	1.077261	1	1.037912
Sex	1.159183	1	1.076653	1.160550	1	1.077288	1.167994	1	1.080738
Ethnicity	1.028927	1	1.01436	1.023909	1	1.011884	1.060899	1	1.029999
Education	1.104324	2	1.025119	1.101820	2	1.024537	1.159856	2	1.03777
TDI	1.050009	1	1.024699	1.047793	1	1.023618	1.107977	1	1.052605
Smoking	1.035093	1	1.017395	1.026464	1	1.013146	1.077536	1	1.038044
Physical activities	1.027797	1	1.013803	1.027149	1	1.013484	1.048007	1	1.023722
BMI	1.059275	1	1.029211	1.056487	1	1.027855	1.057712	1	1.028451
Family cancer	1.012714	1	1.006337	1.013433	1	1.006694	1.037882	1	1.018765
Energy	1.159785	1	1.076933	1.160848	1	1.077427	1.157629	1	1.075932
Histological type	-	-	-	-	-	-	1.037189	1	1.018425

For the lung cancer survival analysis, age was defined as age at diagnosis, and additionally adjusted for histological type.

$\text{GVIF}^{(1/2\text{Df})} < 5$ was considered indicative of no severe multicollinearity.

Abbreviations: GVIF, generalized variance inflation factor.

Supplemental Table 4. Schoenfeld residuals test for the proportional hazards assumption.

(A) Alternate Mediterranean Diet (AMED) score

	Lung cancer risk	Lung cancer mortality	Lung cancer survival
	<i>P</i> value		
AMED	0.11	0.90	0.31
Age	0.99	0.64	0.42
Sex	0.77	0.11	0.56
Ethnicity	0.17	0.39	0.09
Education	0.58	0.72	0.22
TDI	0.60	0.83	0.18
Smoking	0.11	0.67	0.13
Physical activities	0.22	0.46	0.83
BMI	0.32	0.24	0.20
Family cancer	0.49	0.96	0.39
Energy	0.27	0.33	0.42
Histological type	-	-	0.12
Global	0.28	0.64	0.28

(B) Isocaloric substitution of saturated fatty acids with unsaturated fatty acids

	Lung cancer risk	Lung cancer mortality	Lung cancer survival
	<i>P</i> value		
PUFA energy%	0.39	0.27	0.60
MUFA energy%	0.69	0.49	0.87
Trans energy%	0.06	0.13	0.71
Carbohydrate energy%	0.88	0.21	0.08
Protein energy%	0.71	0.55	0.3
Alcohol energy%	0.37	0.7	0.23
Age	1.00	0.64	0.48
Sex	0.77	0.11	0.53

Ethnicity	0.17	0.4	0.09
Education	0.58	0.71	0.19
TDI	0.59	0.83	0.21
Smoking	0.11	0.67	0.13
Drinking	0.71	0.87	0.48
Physical activities	0.22	0.45	0.82
BMI	0.32	0.24	0.21
Family cancer	0.49	0.96	0.43
Energy	0.29	0.34	0.43
Histological type	-	-	0.09
Global	0.37	0.35	0.15

(C) Cross classification of Mediterranean diet and PUFAs intake

	Lung cancer risk	Lung cancer mortality	Lung cancer survival
	<i>P</i> value		
AMED_PUFA	0.67	0.84	0.05
Age	0.99	0.64	0.47
Sex	0.77	0.11	0.50
Ethnicity	0.17	0.39	0.10
Education	0.58	0.72	0.20
TDI	0.60	0.83	0.20
Smoking	0.11	0.67	0.14
Physical activities	0.22	0.46	0.83
BMI	0.32	0.24	0.21
Family cancer	0.49	0.96	0.42
Energy	0.27	0.33	0.42
Histological type	-	-	0.13
Global	0.56	0.82	0.09

For the lung cancer survival analysis, age was defined as age at diagnosis, and additionally adjusted for histological type.

P value < 0.05 indicates a violation of the proportional hazards assumption.

Supplemental Table 5. Baseline characteristics of incident lung cancer cases according to quartiles of Alternate Mediterranean Diet (AMED) score.

Variable/Subgroups	Overall n = 1,520	Q1 n = 669	Q2 n = 307	Q3 n = 256	Q4 n = 288	P value
Age at diagnosis, years	68.47 (6.88)	67.95 (7.07)	68.48 (6.56)	69.03 (7.03)	69.15 (6.53)	0.038
Sex						0.997
Male	757 (49.80)	333 (49.78)	152 (49.51)	127 (49.61)	145 (50.35)	
Female	763 (50.20)	336 (50.22)	155 (50.49)	129 (50.39)	143 (49.65)	
Ethnicity						0.865
White	1,466 (96.45)	650 (97.16)	294 (95.77)	245 (95.70)	277 (96.18)	
Non-White	43 (2.83)	16 (2.39)	10 (3.26)	9 (3.52)	8 (2.78)	
Unknown	11 (0.72)	3 (0.45)	3 (0.98)	2 (0.78)	3 (1.04)	
Townsend Deprivation Index	-0.87 (3.23)	-0.68 (3.22)	-1.01 (3.22)	-1.27 (3.12)	-0.81 (3.35)	0.071
Education level						<0.001
Less than high school	298 (19.61)	151 (22.57)	58 (18.89)	41 (16.02)	48 (16.67)	
High school or equivalent	769 (50.59)	362 (54.11)	150 (48.86)	120 (46.88)	137 (47.57)	
College or above	440 (28.95)	149 (22.27)	96 (31.27)	94 (36.72)	101 (35.07)	
Unknown	13 (0.86)	7 (1.05)	3 (0.98)	1 (0.39)	2 (0.69)	
Smoking status						0.004
Never smokers	303 (19.93)	109 (16.29)	55 (17.92)	70 (27.34)	69 (23.96)	
Ever smokers	1,200 (78.95)	553 (82.66)	248 (80.78)	182 (71.09)	217 (75.35)	
Unknown	17 (1.12)	7 (1.05)	4 (1.30)	4 (1.56)	2 (0.69)	
Alcohol consumption						0.181
Never or moderate	864 (56.84)	361 (53.96)	167 (54.40)	160 (62.50)	176 (61.11)	
Excessive	491 (32.30)	231 (34.53)	107 (34.85)	71 (27.73)	82 (28.47)	
Unknown	165 (10.86)	77 (11.51)	33 (10.75)	25 (9.77)	30 (10.42)	
Physical activity level						0.015
Insufficiently active	261 (17.17)	137 (20.48)	44 (14.33)	39 (15.23)	41 (14.24)	
Sufficiently active	928 (61.05)	374 (55.90)	203 (66.12)	160 (62.50)	191 (66.32)	
Unknown	331 (21.78)	158 (23.62)	60 (19.54)	57 (22.27)	56 (19.44)	
Body mass index, kg/m²	27.30 (4.84)	27.41 (5.22)	27.50 (4.86)	27.06 (4.36)	27.02 (4.29)	0.490
Histological type						0.847
Small cell lung cancer	96 (6.32)	45 (6.73)	20 (6.51)	16 (6.25)	15 (5.21)	
Non-small cell lung cancer	1424 (93.68)	624 (93.27)	287 (93.49)	240 (93.75)	273 (94.79)	
Family history of lung cancer						0.827
No	1,036 (68.16)	448 (66.97)	211 (68.73)	171 (66.80)	206 (71.53)	
Yes	286 (18.82)	130 (19.43)	54 (17.59)	51 (19.92)	51 (17.71)	
Unknown	198 (13.03)	91 (13.60)	42 (13.68)	34 (13.28)	31 (10.76)	
Energy intake, kcal/day	2,025.74 (553.43)	2,120.56 (532.12)	1,967.65 (542.80)	1,963.58 (557.58)	1,922.64 (577.05)	<0.001

Data are presented as means (standard deviations) for continuous variables and numbers (percentages) for categorical variables.

Supplemental Table 6. Interaction analyses of Mediterranean diet adherence and polyunsaturated fatty acid intake.

	<i>P</i> for interaction
Lung cancer risk	0.055
Lung cancer mortality	0.710
Lung cancer survival	0.338

Supplemental Table 7. Association of Mediterranean diet and PUFAs intake with lung cancer outcomes (including participants with moderate AMED adherence).

	Low AMED score		Moderate AMED score		High AMED score	
	Low PUFAs	High PUFAs	Low PUFAs	High PUFAs	Low PUFAs	High PUFAs
Whole population						
Lung cancer risk						
Cases/Total	459/42,324	210/26,072	287/37,731	276/40,062	105/15,515	183/29,435
Model 1 (HR 95%CI)	Reference	0.79 (0.67-0.93)	0.63 (0.54-0.73)	0.62 (0.54-0.72)	0.52 (0.42-0.64)	0.52 (0.44-0.62)
Model 2 (HR 95%CI)	Reference	0.80 (0.68-0.94)	0.70 (0.60-0.81)	0.68 (0.58-0.79)	0.61 (0.49-0.76)	0.62 (0.52-0.74)
Lung cancer mortality						
Cases/Total	266/42,324	113/26,072	156/37,731	156/40,062	51/15,515	93/29,435
Model 1 (HR 95%CI)	Reference	0.74 (0.60-0.93)	0.59 (0.48-0.72)	0.61 (0.50-0.75)	0.44 (0.32-0.59)	0.46 (0.36-0.58)
Model 2 (HR 95%CI)	Reference	0.75 (0.60-0.93)	0.67 (0.55-0.82)	0.68 (0.56-0.83)	0.54 (0.39-0.73)	0.57 (0.45-0.72)
Lung cancer survival						
Cases/Total	287/422	155/247	161/253	192/310	53/85	111/203
Model 1 (HR 95%CI)	Reference	0.86 (0.71-1.04)	0.96 (0.79-1.17)	0.94 (0.78-1.13)	0.92 (0.68-1.23)	0.73 (0.58-0.91)
Model 2 (HR 95%CI)	Reference	0.84 (0.69-1.02)	1.04 (0.85-1.27)	0.99 (0.82-1.19)	0.98 (0.73-1.33)	0.77 (0.62-0.96)
Ever-smokers						
Lung cancer risk						
Cases/Total	384/19,468	175/11,290	228/15,987	209/16,575	79/6,494	140/11,706
Model 1 (HR 95%CI)	Reference	0.83 (0.70-1.00)	0.64 (0.54-0.75)	0.62 (0.52-0.73)	0.51 (0.40-0.65)	0.55 (0.46-0.67)
Model 2 (HR 95%CI)	Reference	0.81 (0.68-0.97)	0.68 (0.58-0.81)	0.64 (0.54-0.76)	0.57 (0.45-0.73)	0.61 (0.50-0.74)
Lung cancer mortality						
Cases/Total	242/19,468	103/11,290	130/15,987	132/16,575	42/6,494	72/11,706
Model 1 (HR 95%CI)	Reference	0.78 (0.62-0.99)	0.58 (0.47-0.72)	0.63 (0.51-0.77)	0.43 (0.31-0.60)	0.45 (0.35-0.59)
Model 2 (HR 95%CI)	Reference	0.76 (0.61-0.96)	0.63 (0.51-0.78)	0.66 (0.53-0.81)	0.49 (0.35-0.69)	0.51 (0.39-0.66)
Lung cancer survival						
Cases/Total	253/356	136/204	130/199	161/238	45/64	82/154
Model 1 (HR 95%CI)	Reference	0.87 (0.70-1.07)	0.95 (0.77-1.18)	0.99 (0.81-1.20)	1.04 (0.75-1.43)	0.66 (0.52-0.85)
Model 2 (HR 95%CI)	Reference	0.84 (0.68-1.04)	1.00 (0.81-1.25)	1.02 (0.83-1.24)	1.03 (0.74-1.42)	0.69 (0.53-0.89)

Abbreviations: AMED, Alternate Mediterranean Diet; PUFA, polyunsaturated fatty acid; HR, hazard ratio; CI, confidence interval.

Model 1 (minimally adjusted) was adjusted for age, sex, and total energy intake; model 2 (fully adjusted) was additionally adjusted for ethnicity, Townsend Deprivation Index, education level, smoking status, physical activity level, body mass index, and family history of lung cancer.

For the lung cancer survival analysis, age was defined as age at diagnosis, and model 2 was additionally adjusted for histological type.

Data with *P* values below 0.05 are shown in bold type.

Supplemental Table 8. Association between Mediterranean diet and lung cancer outcomes (restricting the dataset to participants who provided at least two 24-hour dietary recalls).

	AMED score				<i>P</i> trend
	Q1 (0-3)	Q2 (4)	Q3 (5)	Q4 (6-9)	
Lung cancer risk					
Cases/Total	331/33,919	165/23,893	157/23,575	203/33,007	
Model 1 (HR 95%CI)	Reference	0.66 (0.55,0.80)	0.60 (0.51,0.70)	0.51 (0.41,0.65)	< 0.001
Model 2 (HR 95%CI)	Reference	0.71 (0.59,0.86)	0.67 (0.57,0.79)	0.60 (0.48,0.77)	< 0.001
Lung cancer mortality					
Cases/Total	184/33,919	90/23,893	84/23,575	95/33,007	
Model 1 (HR 95%CI)	Reference	0.65 (0.50,0.83)	0.57 (0.45,0.70)	0.35 (0.24,0.51)	< 0.001
Model 2 (HR 95%CI)	Reference	0.70 (0.54,0.90)	0.65 (0.52,0.81)	0.43 (0.30,0.62)	< 0.001
Lung cancer survival					
Cases/Total	218/331	101/165	92/157	110/203	
Model 1 (HR 95%CI)	Reference	0.96 (0.75,1.21)	0.95 (0.74,1.21)	0.76 (0.60,0.96)	0.041
Model 2 (HR 95%CI)	Reference	0.98 (0.77,1.25)	1.04 (0.81,1.34)	0.82 (0.65,1.04)	0.222

Abbreviations: AMED, Alternate Mediterranean Diet; HR, hazard ratio; CI, confidence interval.

Model 1 (minimally adjusted) was adjusted for age, sex, and total energy intake; model 2 (fully adjusted) was additionally adjusted for ethnicity, Townsend Deprivation Index, education level, smoking status, physical activity level, body mass index, and family history of lung cancer.

For the lung cancer survival analysis, age was defined as age at diagnosis, and model 2 was additionally adjusted for histological type.

Data with *P* values below 0.05 are shown in bold type.

Supplemental Table 9. Associations between isocaloric substitution of saturated fatty acids with unsaturated fatty acids and lung cancer outcomes (restricting the dataset to participants who provided at least two 24-hour dietary recalls).

	HR 95%CI		<i>P</i> value
	Substitution of 1% energy	Substitution of 5% energy	
Lung cancer risk			
PUFAs for SFAs	0.89 (0.84,0.95)	0.56 (0.41,0.78)	< 0.001
MUFAs for SFAs	0.97 (0.89,1.05)	0.85 (0.57,1.28)	0.444
Lung cancer mortality			
PUFAs for SFAs	0.89 (0.81,0.97)	0.54 (0.35,0.85)	0.008
MUFAs for SFAs	1.00 (0.89,1.12)	0.99 (0.56,1.73)	0.965
Lung cancer survival			
PUFAs for SFAs	0.94 (0.87,1.02)	0.74 (0.49,1.11)	0.146
MUFAs for SFAs	1.01 (0.91,1.12)	1.05 (0.63,1.75)	0.855

Abbreviations: AMED, Alternate Mediterranean Diet; MUFA, monounsaturated fatty acid; PUFA, polyunsaturated fatty acid; SFA, saturated fatty acid; HR, hazard ratio; CI, confidence interval.

Models were adjusted for age, sex, total energy intake, ethnicity, Townsend Deprivation Index, education level, smoking status, alcohol consumption, physical activity level, body mass index, and family history of lung cancer.

For the lung cancer survival analysis, age was defined as age at diagnosis, and the models were additionally adjusted for histological type.

Data with *P* values below 0.05 are shown in bold type.

Supplemental Table 10. Association of Mediterranean diet and PUFAs intake with lung cancer outcomes (restricting the dataset to participants who provided at least two 24-hour dietary recalls).

	Low AMED score and low PUFAs	Low AMED score and high PUFAs	High AMED score and low PUFAs	High AMED score and high PUFAs
Lung cancer risk				
Cases/Total	224/21,484	107/12,435	73/11,695	130/21,312
Model 1 (HR 95%CI)	Reference	0.88 (0.70,1.10)	0.52 (0.40,0.67)	0.53 (0.43,0.66)
Model 2 (HR 95%CI)	Reference	0.90 (0.71,1.13)	0.61 (0.47,0.80)	0.63 (0.51,0.79)
Lung cancer mortality				
Cases/Total	125/21,484	59/12,435	32/11,695	63/21,312
Model 1 (HR 95%CI)	Reference	0.87 (0.64,1.19)	0.42 (0.28,0.61)	0.45 (0.33,0.62)
Model 2 (HR 95%CI)	Reference	0.89 (0.65,1.22)	0.51 (0.35,0.76)	0.57 (0.41,0.77)
Lung cancer survival				
Cases/Total	142/210	76/121	35/61	75/142
Model 1 (HR 95%CI)	Reference	0.83 (0.63,1.10)	0.82 (0.56,1.20)	0.67 (0.51,0.89)
Model 2 (HR 95%CI)	Reference	0.76 (0.57,1.02)	0.91 (0.62,1.33)	0.70 (0.52,0.93)

Abbreviations: AMED, Alternate Mediterranean Diet; PUFA, polyunsaturated fatty acid; HR, hazard ratio; CI, confidence interval.

Model 1 (minimally adjusted) was adjusted for age, sex, and total energy intake; model 2 (fully adjusted) was additionally adjusted for ethnicity, Townsend Deprivation Index, education level, smoking status, physical activity level, body mass index, and family history of lung cancer.

For the lung cancer survival analysis, age was defined as age at diagnosis, and model 2 was additionally adjusted for histological type.

Data with *P* values below 0.05 are shown in bold type.

Supplemental Table 11. Association between Mediterranean diet and lung cancer outcomes (excluding participants with missing covariate data).

	AMED score				<i>P</i> trend
	Q1 (0-3)	Q2 (4)	Q3 (5)	Q4 (6-9)	
Lung cancer risk					
Cases/Total	393/42,263	186/26,076	157/23,753	184/30,050	
Model 1 (HR 95%CI)	Reference	0.71 (0.60,0.85)	0.64 (0.53,0.77)	0.56 (0.47,0.67)	< 0.001
Model 2 (HR 95%CI)	Reference	0.76 (0.64,0.91)	0.71 (0.59,0.85)	0.65 (0.55,0.78)	< 0.001
Lung cancer mortality					
Cases/Total	225/42,263	102/26,076	79/23,753	98/30,050	
Model 1 (HR 95%CI)	Reference	0.68 (0.54,0.86)	0.56 (0.43,0.73)	0.52 (0.41,0.66)	< 0.001
Model 2 (HR 95%CI)	Reference	0.75 (0.59,0.95)	0.64 (0.50,0.83)	0.64 (0.50, 0.81)	< 0.001
Lung cancer survival					
Cases/Total	262/393	121/186	88/157	113/184	
Model 1 (HR 95%CI)	Reference	1.05 (0.85,1.31)	0.80 (0.63,1.03)	0.91 (0.73,1.14)	0.196
Model 2 (HR 95%CI)	Reference	1.12 (0.90,1.40)	0.90 (0.70,1.16)	0.98 (0.78,1.23)	0.743

Abbreviations: AMED, Alternate Mediterranean Diet; HR, hazard ratio; CI, confidence interval.

Model 1 (minimally adjusted) was adjusted for age, sex, and total energy intake; model 2 (fully adjusted) was additionally adjusted for ethnicity, Townsend Deprivation Index, education level, smoking status, physical activity level, body mass index, and family history of lung cancer.

For the lung cancer survival analysis, age was defined as age at diagnosis, and model 2 was additionally adjusted for histological type.

Data with *P* values below 0.05 are shown in bold type.

Supplemental Table 12. Associations between isocaloric substitution of saturated fatty acids with unsaturated fatty acids and lung cancer outcomes (excluding participants with missing covariate data).

	HR 95%CI		P value
	Substitution of 1% energy	Substitution of 5% energy	
Lung cancer risk			
PUFAs for SFAs	0.89 (0.85,0.94)	0.57 (0.43,0.75)	< 0.001
MUFAs for SFAs	1.02 (0.95,1.09)	1.09 (0.79,1.51)	0.594
Lung cancer mortality			
PUFAs for SFAs	0.90 (0.83,0.96)	0.58 (0.40,0.83)	0.003
MUFAs for SFAs	0.98 (0.90,1.07)	0.91 (0.58,1.42)	0.687
Lung cancer survival			
PUFAs for SFAs	1.02 (0.95,1.09)	1.09 (0.78,1.53)	0.595
MUFAs for SFAs	0.97 (0.90,1.05)	0.87 (0.59,1.29)	0.491

Abbreviations: AMED, Alternate Mediterranean Diet; MUFA, monounsaturated fatty acid; PUFA, polyunsaturated fatty acid; SFA, saturated fatty acid; HR, hazard ratio; CI, confidence interval.

Models were adjusted for age, sex, total energy intake, ethnicity, Townsend Deprivation Index, education level, smoking status, alcohol consumption, physical activity level, body mass index, and family history of lung cancer.

For the lung cancer survival analysis, age was defined as age at diagnosis, and the models were additionally adjusted for histological type.

Data with *P* values below 0.05 are shown in bold type.

Supplemental Table 13. Association of Mediterranean diet and PUFAs intake with lung cancer outcomes (excluding participants with missing covariate data).

	Low AMED score and low PUFAs	Low AMED score and high PUFAs	High AMED score and low PUFAs	High AMED score and high PUFAs
Lung cancer risk				
Cases/Total	275/26,382	118/15,881	72/10,416	112/19,634
Model 1 (HR 95%CI)	Reference	0.76 (0.61,0.94)	0.56 (0.43,0.73)	0.50 (0.40,0.62)
Model 2 (HR 95%CI)	Reference	0.77 (0.62,0.96)	0.67 (0.52,0.88)	0.60 (0.48,0.75)
Lung cancer mortality				
Cases/Total	162/26,382	63/15,881	39/10,416	59/19,634
Model 1 (HR 95%CI)	Reference	0.69 (0.51,0.92)	0.52 (0.37,0.75)	0.45 (0.33,0.60)
Model 2 (HR 95%CI)	Reference	0.71 (0.53,0.94)	0.65 (0.45,0.93)	0.56 (0.41,0.76)
Lung cancer survival				
Cases/Total	175/249	87/144	40/57	73/127
Model 1 (HR 95%CI)	Reference	0.76 (0.58,0.98)	1.05 (0.73,1.49)	0.75 (0.57,0.99)
Model 2 (HR 95%CI)	Reference	0.79 (0.61,1.03)	1.09 (0.76,1.57)	0.81 (0.61,1.07)

Abbreviations: AMED, Alternate Mediterranean Diet; PUFA, polyunsaturated fatty acid; HR, hazard ratio; CI, confidence interval.

Model 1 (minimally adjusted) was adjusted for age, sex, and total energy intake; model 2 (fully adjusted) was additionally adjusted for ethnicity, Townsend Deprivation Index, education level, smoking status, physical activity level, body mass index, and family history of lung cancer.

For the lung cancer survival analysis, age was defined as age at diagnosis, and model 2 was additionally adjusted for histological type.

Data with *P* values below 0.05 are shown in bold type.

Supplemental Table 14. Association between Mediterranean diet and lung cancer outcomes (excluding participants with less than one year of follow-up).

	AMED score				<i>P</i> trend
	Q1 (0-3)	Q2 (4)	Q3 (5)	Q4 (6-9)	
Lung cancer risk					
Cases/Total	645/68,349	303/40,956	250/36,801	281/44,938	
Model 1 (HR 95%CI)	Reference	0.73 (0.64,0.84)	0.65 (0.56,0.75)	0.57 (0.49,0.66)	< 0.001
Model 2 (HR 95%CI)	Reference	0.79 (0.68,0.90)	0.73 (0.63,0.84)	0.67 (0.58,0.78)	< 0.001
Lung cancer mortality					
Cases/Total	364/68,349	165/40,956	142/36,801	140/44,938	
Model 1 (HR 95%CI)	Reference	0.71 (0.59,0.85)	0.65 (0.54,0.79)	0.50 (0.41,0.61)	< 0.001
Model 2 (HR 95%CI)	Reference	0.78 (0.65,0.93)	0.76 (0.62,0.92)	0.62 (0.51,0.76)	< 0.001
Lung cancer survival					
Cases/Total	424/645	191/303	155/250	158/281	
Model 1 (HR 95%CI)	Reference	1.01 (0.85,1.20)	0.99 (0.82,1.19)	0.82 (0.68,0.99)	0.102
Model 2 (HR 95%CI)	Reference	1.07 (0.90,1.27)	1.09 (0.90,1.31)	0.89 (0.74,1.07)	0.600

Abbreviations: AMED, Alternate Mediterranean Diet; HR, hazard ratio; CI, confidence interval.

Model 1 (minimally adjusted) was adjusted for age, sex, and total energy intake; model 2 (fully adjusted) was additionally adjusted for ethnicity, Townsend Deprivation Index, education level, smoking status, physical activity level, body mass index, and family history of lung cancer.

For the lung cancer survival analysis, age was defined as age at diagnosis, and model 2 was additionally adjusted for histological type.

Data with *P* values below 0.05 are shown in bold type.

Supplemental Table 15. Associations between isocaloric substitution of saturated fatty acids with unsaturated fatty acids and lung cancer outcomes (excluding participants with less than one year of follow-up).

	HR 95%CI		<i>P</i> value
	Substitution of 1% energy	Substitution of 5% energy	
Lung cancer risk			
PUFAs for SFAs	0.90 (0.87,0.94)	0.61 (0.49,0.75)	< 0.001
MUFAs for SFAs	1.01 (0.96,1.06)	1.03 (0.80,1.32)	0.843
Lung cancer mortality			
PUFAs for SFAs	0.91 (0.86,0.96)	0.61 (0.46,0.81)	< 0.001
MUFAs for SFAs	1.01 (0.94,1.08)	1.04 (0.74,1.48)	0.806
Lung cancer survival			
PUFAs for SFAs	1.00 (0.95,1.05)	0.99 (0.76,1.29)	0.955
MUFAs for SFAs	1.00 (0.94,1.06)	1.00 (0.74,1.36)	0.986

Abbreviations: AMED, Alternate Mediterranean Diet; MUFA, monounsaturated fatty acid; PUFA, polyunsaturated fatty acid; SFA, saturated fatty acid; HR, hazard ratio; CI, confidence interval.

Models were adjusted for age, sex, total energy intake, ethnicity, Townsend Deprivation Index, education level, smoking status, alcohol consumption, physical activity level, body mass index, and family history of lung cancer.

For the lung cancer survival analysis, age was defined as age at diagnosis, and the models were additionally adjusted for histological type.

Data with *P* values below 0.05 are shown in bold type.

Supplemental Table 16. Association of Mediterranean diet and PUFAs intake with lung cancer outcomes (excluding participants with less than one year of follow-up).

	Low AMED score and low PUFAs	Low AMED score and high PUFAs	High AMED score and low PUFAs	High AMED score and high PUFAs
Lung cancer risk				
Cases/Total	440/42,293	205/26,056	100/15,513	181/29,425
Model 1 (HR 95%CI)	Reference	0.82 (0.69,0.96)	0.52 (0.41,0.65)	0.54 (0.46,0.65)
Model 2 (HR 95%CI)	Reference	0.82 (0.70,0.97)	0.62 (0.50,0.78)	0.66 (0.55,0.79)
Lung cancer mortality				
Cases/Total	254/42,293	110/26,056	48/15,513	92/29,425
Model 1 (HR 95%CI)	Reference	0.78 (0.62,0.97)	0.45 (0.33,0.61)	0.48 (0.38,0.61)
Model 2 (HR 95%CI)	Reference	0.78 (0.63,0.98)	0.56 (0.41,0.77)	0.61 (0.48,0.78)
Lung cancer survival				
Cases/Total	275/407	149/238	49/82	109/199
Model 1 (HR 95%CI)	Reference	0.81 (0.67,0.99)	0.91 (0.66,1.24)	0.71 (0.57,0.89)
Model 2 (HR 95%CI)	Reference	0.81 (0.66,0.98)	0.98 (0.71,1.34)	0.76 (0.61,0.96)

Abbreviations: AMED, Alternate Mediterranean Diet; PUFA, polyunsaturated fatty acid; HR, hazard ratio; CI, confidence interval.

Model 1 (minimally adjusted) was adjusted for age, sex, and total energy intake; model 2 (fully adjusted) was additionally adjusted for ethnicity, Townsend Deprivation Index, education level, smoking status, physical activity level, body mass index, and family history of lung cancer.

For the lung cancer survival analysis, age was defined as age at diagnosis, and model 2 was additionally adjusted for histological type.

Data with *P* values below 0.05 are shown in bold type.

Supplemental Table 17. Baseline characteristics of the analytic cohort compared with excluded participants.

Variable/Subgroups	Analytic cohort n = 191,139	Excluded participants n = 311,217	SMD
Age, years	55.82 (7.95)	56.97 (8.15)	0.143
Sex			0.006
Male	87,536 (45.80)	141,526 (45.5)	
Female	103,603 (54.20)	169,691 (54.5)	
Ethnicity			0.081
White	182,251 (95.7)	290,310 (93.9)	
Non-White	8,188 (4.3)	18,829 (6.1)	
Townsend Deprivation Index	-1.58 (2.87)	-1.12 (3.21)	0.150
Education level			0.479
Less than high school	15,925 (8.4)	69,329 (23.0)	
High school or equivalent	92,534 (48.6)	153,337 (50.8)	
College or above	81,755 (43.0)	79,344 (26.3)	
Smoking status			0.069
Never smokers	108,058 (57.3)	164,020 (53.9)	
Ever smokers	80,434 (42.7)	140,163 (46.1)	
Alcohol consumption			0.038
Never or moderate	120,249 (70.3)	170,978 (68.6)	
Excessive	50,807 (29.7)	78,374 (31.4)	
Physical activity level			0.019

Insufficiently active	28,434 (18.0)	42,541 (18.7)	
Sufficiently active	129,513 (82.0)	184,689 (81.3)	
Body mass index, kg/m²	26.95 (4.64)	27.73 (4.88)	0.165
Family history of lung cancer			0.059
No	144,544 (86.7)	229,041 (84.6)	
Yes	22,252 (13.3)	41,668 (15.4)	

Data are presented as means (standard deviations) for continuous variables and numbers (percentages) for categorical variables. SMD > 0.1 was considered indicative of a meaningful imbalance.

Abbreviations: SMD, standardized mean difference.

Supplemental Table 18. Association between Mediterranean diet and lung cancer outcomes (inverse probability weighting-adjusted for selection bias between included and excluded participants).

	AMED score				<i>P</i> trend
	Q1 (0-3)	Q2 (4)	Q3 (5)	Q4 (6-9)	
Lung cancer risk					
Model 1 (HR 95%CI)	Reference	0.70 (0.60, 0.80)	0.61 (0.53, 0.71)	0.57 (0.49, 0.66)	< 0.001
Model 2 (HR 95%CI)	Reference	0.76 (0.65, 0.87)	0.70 (0.60, 0.82)	0.69 (0.60, 0.81)	< 0.001
Lung cancer mortality					
Model 1 (HR 95%CI)	Reference	0.67 (0.56, 0.82)	0.62 (0.51, 0.77)	0.52 (0.43, 0.64)	< 0.001
Model 2 (HR 95%CI)	Reference	0.75 (0.62, 0.91)	0.73 (0.60, 0.90)	0.66 (0.53, 0.82)	< 0.001
Lung cancer survival					
Model 1 (HR 95%CI)	Reference	1.06 (0.88, 1.27)	1.04 (0.87, 1.25)	0.90 (0.75, 1.09)	0.557
Model 2 (HR 95%CI)	Reference	1.12 (0.93, 1.35)	1.14 (0.95, 1.37)	0.96 (0.79, 1.16)	0.963

Abbreviations: AMED, Alternate Mediterranean Diet; HR, hazard ratio; CI, confidence interval.

Model 1 (minimally adjusted) was adjusted for age, sex, and total energy intake; model 2 (fully adjusted) was additionally adjusted for ethnicity, Townsend Deprivation Index, education level, smoking status, physical activity level, body mass index, and family history of lung cancer.

For the lung cancer survival analysis, age was defined as age at diagnosis, and model 2 was additionally adjusted for histological type.

Data with *P* values below 0.05 are shown in bold type.

Supplemental Table 19. Associations between isocaloric substitution of saturated fatty acids with unsaturated fatty acids and lung cancer outcomes (inverse probability weighting-adjusted for selection bias between included and excluded participants).

	HR 95%CI		<i>P</i> value
	Substitution of 1% energy	Substitution of 5% energy	
Lung cancer risk			
PUFAs for SFAs	0.90 (0.86, 0.94)	0.59 (0.46, 0.73)	< 0.001
MUFAs for SFAs	1.00 (0.94, 1.05)	0.98 (0.74, 1.30)	0.874
Lung cancer mortality			
PUFAs for SFAs	0.90 (0.85, 0.96)	0.59 (0.44, 0.81)	0.001
MUFAs for SFAs	0.98 (0.91, 1.06)	0.90 (0.62, 1.31)	0.596
Lung cancer survival			
PUFAs for SFAs	1.01 (0.95, 1.06)	1.04 (0.79, 1.36)	0.794
MUFAs for SFAs	0.98 (0.93, 1.04)	0.92 (0.69, 1.24)	0.604

Abbreviations: AMED, Alternate Mediterranean Diet; MUFA, monounsaturated fatty acid; PUFA, polyunsaturated fatty acid; SFA, saturated fatty acid; HR, hazard ratio; CI, confidence interval.

Models were adjusted for age, sex, total energy intake, ethnicity, Townsend Deprivation Index, education level, smoking status, alcohol consumption, physical activity level, body mass index, and family history of lung cancer.

For the lung cancer survival analysis, age was defined as age at diagnosis, and the models were additionally adjusted for histological type.

Data with *P* values below 0.05 are shown in bold type.

Supplemental Table 20. Association of Mediterranean diet and PUFAs intake with lung cancer outcomes (inverse probability weighting-adjusted for selection bias between included and excluded participants).

	Low AMED score and low PUFAs	Low AMED score and high PUFAs	High AMED score and low PUFAs	High AMED score and high PUFAs
Lung cancer risk				
Model 1 (HR 95%CI)	Reference	0.84 (0.71, 1.00)	0.56 (0.44, 0.70)	0.53 (0.45, 0.64)
Model 2 (HR 95%CI)	Reference	0.84 (0.71, 1.00)	0.69 (0.54, 0.87)	0.67 (0.55, 0.80)
Lung cancer mortality				
Model 1 (HR 95%CI)	Reference	0.77 (0.61, 0.97)	0.48 (0.35, 0.67)	0.48 (0.37, 0.62)
Model 2 (HR 95%CI)	Reference	0.77 (0.61, 0.97)	0.62 (0.45, 0.87)	0.63 (0.48, 0.81)
Lung cancer survival				
Model 1 (HR 95%CI)	Reference	0.84 (0.69, 1.03)	0.97 (0.72, 1.32)	0.80 (0.63, 1.01)
Model 2 (HR 95%CI)	Reference	0.82 (0.64, 1.03)	0.97 (0.71, 1.33)	0.81 (0.67, 0.99)

Abbreviations: AMED, Alternate Mediterranean Diet; PUFA, polyunsaturated fatty acid; HR, hazard ratio; CI, confidence interval.

Model 1 (minimally adjusted) was adjusted for age, sex, and total energy intake; model 2 (fully adjusted) was additionally adjusted for ethnicity, Townsend Deprivation Index, education level, smoking status, physical activity level, body mass index, and family history of lung cancer.

For the lung cancer survival analysis, age was defined as age at diagnosis, and model 2 was additionally adjusted for histological type.

Data with *P* values below 0.05 are shown in bold type.

Supplemental Table 21. Association between Mediterranean diet and lung cancer outcomes (competing risk analyses utilizing the Fine-Gray subdistribution hazard model).

	AMED score				<i>P</i> trend
	Q1 (0-3)	Q2 (4)	Q3 (5)	Q4 (6-9)	
Lung cancer risk					
Cases/Total	331/33,919	165/23,893	157/23,575	203/33,007	
Model 1 (HR 95%CI)	Reference	0.71 (0.62, 0.82)	0.64 (0.55, 0.74)	0.57 (0.49, 0.65)	< 0.001
Model 2 (HR 95%CI)	Reference	0.77 (0.67, 0.88)	0.72 (0.62, 0.83)	0.67 (0.58, 0.78)	< 0.001
Lung cancer mortality					
Cases/Total	184/33,919	90/23,893	84/23,575	95/33,007	
Model 1 (HR 95%CI)	Reference	0.69 (0.58, 0.83)	0.64 (0.53, 0.78)	0.50 (0.41, 0.61)	< 0.001
Model 2 (HR 95%CI)	Reference	0.77 (0.64, 0.92)	0.74 (0.61, 0.90)	0.62 (0.51, 0.76)	< 0.001

Abbreviations: AMED, Alternate Mediterranean Diet; HR, hazard ratio; CI, confidence interval.

Model 1 (minimally adjusted) was adjusted for age, sex, and total energy intake; model 2 (fully adjusted) was additionally adjusted for ethnicity, Townsend Deprivation Index, education level, smoking status, physical activity level, body mass index, and family history of lung cancer.

Data with *P* values below 0.05 are shown in bold type.

Supplemental Table 22. Associations between isocaloric substitution of saturated fatty acids with unsaturated fatty acids and lung cancer outcomes (competing risk analyses utilizing the Fine-Gray subdistribution hazard model).

	HR 95%CI		P value
	Substitution of 1% energy	Substitution of 5% energy	
Lung cancer risk			
PUFAs for SFAs	0.91 (0.87, 0.95)	0.62 (0.50, 0.77)	< 0.001
MUFAs for SFAs	1.00 (0.95, 1.06)	1.00 (0.77, 1.34)	0.990
Lung cancer mortality			
PUFAs for SFAs	0.91 (0.85, 0.96)	0.62 (0.44, 0.82)	0.002
MUFAs for SFAs	1.00 (0.93, 1.07)	1.00 (0.70, 1.40)	0.960

Abbreviations: AMED, Alternate Mediterranean Diet; MUFA, monounsaturated fatty acid; PUFA, polyunsaturated fatty acid; SFA, saturated fatty acid; HR, hazard ratio; CI, confidence interval.

Models were adjusted for age, sex, total energy intake, ethnicity, Townsend Deprivation Index, education level, smoking status, alcohol consumption, physical activity level, body mass index, and family history of lung cancer.

Data with *P* values below 0.05 are shown in bold type.

Supplemental Table 23. Association of Mediterranean diet and PUFAs intake with lung cancer outcomes (competing risk analyses utilizing the Fine-Gray subdistribution hazard model).

	Low AMED score and low PUFAs	Low AMED score and high PUFAs	High AMED score and low PUFAs	High AMED score and high PUFAs
Lung cancer risk				
Cases/Total	224/21,484	107/12,435	73/11,695	130/21,312
Model 1 (HR 95%CI)	Reference	0.80 (0.68, 0.94)	0.53 (0.43, 0.66)	0.53 (0.45, 0.63)
Model 2 (HR 95%CI)	Reference	0.80 (0.68, 0.94)	0.64 (0.51, 0.80)	0.65 (0.54, 0.77)
Lung cancer mortality				
Cases/Total	125/21,484	59/12,435	32/11,695	63/21,312
Model 1 (HR 95%CI)	Reference	0.74 (0.60, 0.92)	0.45 (0.33, 0.61)	0.47 (0.37, 0.59)
Model 2 (HR 95%CI)	Reference	0.75 (0.60, 0.93)	0.57 (0.42, 0.77)	0.60 (0.47, 0.76)

Abbreviations: AMED, Alternate Mediterranean Diet; PUFA, polyunsaturated fatty acid; HR, hazard ratio; CI, confidence interval.

Model 1 (minimally adjusted) was adjusted for age, sex, and total energy intake; model 2 (fully adjusted) was additionally adjusted for ethnicity, Townsend Deprivation Index, education level, smoking status, physical activity level, body mass index, and family history of lung cancer.

Data with *P* values below 0.05 are shown in bold type.

Supplemental Table 24. Associations between total fat and fat subtypes and lung cancer outcomes (further adjusted for other dietary components).

	Total fat	SFAs %E	PUFAs %E	MUFAs %E	TFAs %E
Lung cancer risk					
Q1	Reference	Reference	Reference	Reference	Reference
Q2	0.98 (0.85, 1.13)	0.97 (0.84, 1.13)	0.98 (0.85, 1.12)	0.95 (0.82, 1.09)	1.03 (0.89, 1.19)

Q3	0.96 (0.82, 1.11)	0.97 (0.84, 1.13)	0.86 (0.74, 0.99)	0.98 (0.85, 1.14)	1.09 (0.94, 1.26)
Q4	1.05 (0.90, 1.22)	1.17 (1.01, 1.36)	0.80 (0.69, 0.92)	0.94 (0.81, 1.09)	1.11 (0.96, 1.28)
q for trend	0.590	0.076	0.004	0.590	0.196
Lung cancer mortality					
Q1	Reference	Reference	Reference	Reference	Reference
Q2	0.97 (0.80, 1.17)	0.94 (0.77, 1.15)	0.94 (0.79, 1.13)	0.90 (0.74, 1.08)	0.97 (0.80, 1.18)
Q3	0.92 (0.75, 1.13)	0.94 (0.76, 1.15)	0.85 (0.70, 1.03)	0.97 (0.80, 1.18)	1.07 (0.88, 1.30)
Q4	1.00 (0.82, 1.23)	1.14 (0.94, 1.39)	0.75 (0.62, 0.92)	0.87 (0.71, 1.07)	1.05 (0.86, 1.27)
q for trend	0.938	0.405	0.017	0.458	0.620
Lung cancer survival					
Q1	Reference	Reference	Reference	Reference	Reference
Q2	1.01 (0.85, 1.22)	1.02 (0.85, 1.23)	1.02 (0.86, 1.23)	1.02 (0.85, 1.22)	1.00 (0.83, 1.20)
Q3	0.99 (0.82, 1.20)	1.03 (0.85, 1.24)	0.90 (0.75, 1.08)	0.95 (0.78, 1.14)	1.06 (0.88, 1.27)
Q4	0.96 (0.79, 1.16)	1.02 (0.84, 1.23)	0.84 (0.70, 1.01)	0.91 (0.76, 1.11)	1.05 (0.88, 1.26)
q for trend	0.760	0.876	0.142	0.671	0.760

Abbreviations: SFA, saturated fatty acid; MUFA, monounsaturated fatty acid; PUFA, polyunsaturated fatty acid; TFA, trans-fatty acid; %E, percentage of total energy.

Models were adjusted for age, sex, total energy intake, ethnicity, Townsend Deprivation Index, education level, smoking status, alcohol consumption, physical activity level, body mass index, and family history of lung cancer.

For the lung cancer survival analysis, age was defined as age at diagnosis, and the models were additionally adjusted for histological type.

Data with P values below 0.05 are shown in bold type.

q for trend were calculated using the Benjamini-Hochberg procedure across the five specific dietary fats to account for multiple comparisons.

Supplemental Table 25. Associations between isocaloric substitution of saturated fatty acids with unsaturated fatty acids and lung cancer outcomes (further adjusted for other dietary components).

	HR 95%CI		P value
	Substitution of 1% energy	Substitution of 5% energy	
Lung cancer risk			
PUFAs for SFAs	0.92 (0.88, 0.96)	0.66 (0.54, 0.82)	< 0.001
MUFAs for SFAs	0.98 (0.93, 1.03)	0.90 (0.69, 1.16)	0.411
Lung cancer mortality			
PUFAs for SFAs	0.92 (0.87, 0.98)	0.66 (0.50, 0.89)	0.006
MUFAs for SFAs	0.97 (0.91, 1.04)	0.87 (0.62, 1.25)	0.460
Lung cancer survival			
PUFAs for SFAs	0.99 (0.93, 1.04)	0.93 (0.71, 1.23)	0.626
MUFAs for SFAs	1.01 (0.95, 1.07)	1.04 (0.76, 1.41)	0.827

Abbreviations: AMED, Alternate Mediterranean Diet; MUFA, monounsaturated fatty acid; PUFA, polyunsaturated fatty acid; SFA, saturated fatty acid; HR, hazard ratio; CI, confidence interval.

Models were adjusted for age, sex, total energy intake, ethnicity, Townsend Deprivation Index, education level, smoking status, alcohol consumption, physical activity level, body mass index, and family history of lung cancer.

For the lung cancer survival analysis, age was defined as age at diagnosis, and the models were additionally adjusted for histological type.

Data with *P* values below 0.05 are shown in bold type.

Supplemental Table 26. Stratified analyses by key factors.

(A) Alternate Mediterranean Diet (AMED) score

	Lung cancer risk		Lung cancer mortality		Lung cancer survival	
	HR (95% CI)	<i>P</i> for interaction	HR (95% CI)	<i>P</i> for interaction	HR (95% CI)	<i>P</i> for interaction
Sex		0.751		0.991		0.464
Female	0.90 (0.87, 0.94)		0.89 (0.84, 0.94)		0.97 (0.92, 1.02)	
Male	0.89 (0.85, 0.93)		0.89 (0.84, 0.94)		0.99 (0.94, 1.05)	
Age		0.401		0.315		0.393
<= median	0.89 (0.84, 0.95)		0.87 (0.80, 0.95)		0.93 (0.79, 1.10)	
> median	0.91 (0.88, 0.94)		0.90 (0.86, 0.94)		0.99 (0.95, 1.03)	
Ethnicity		0.878		0.132		0.060
White	0.90 (0.87, 0.92)		0.88 (0.85, 0.92)		0.98 (0.94, 1.01)	
Non-White	0.91 (0.76, 1.09)		1.13 (0.88, 1.46)		1.84 (1.13, 2.97)	
Education level		0.727		0.346		0.065
Less than high school	0.91 (0.85, 0.98)		0.92 (0.84, 1.01)		1.05 (0.97, 1.14)	
High school or equivalent	0.89 (0.86, 0.93)		0.89 (0.84, 0.94)		0.97 (0.92, 1.02)	
College or above	0.89 (0.84, 0.94)		0.85 (0.79, 0.92)		0.95 (0.88, 1.01)	
TDI		0.207		0.529		0.361
<= median	0.94 (0.89, 0.98)		0.92 (0.86, 0.98)		0.96 (0.91, 1.03)	
> median	0.92 (0.88, 0.95)		0.91 (0.87, 0.96)		1.00 (0.96, 1.05)	
Alcohol consumption		0.275		0.241		0.513
Never or moderate	0.91 (0.88, 0.95)		0.90 (0.86, 0.95)		0.99 (0.95, 1.04)	
Excessive	0.87 (0.83, 0.92)		0.86 (0.80, 0.92)		0.97 (0.91, 1.03)	
Physical activity level		0.655		0.570		0.271
Insufficiently active	0.90 (0.84, 0.97)		0.88 (0.80, 0.96)		0.92 (0.84, 1.01)	
Sufficiently active	0.90 (0.87, 0.93)		0.89 (0.85, 0.93)		0.99 (0.95, 1.03)	
BMI		0.057		0.054		0.333
< 25	0.87 (0.82, 0.91)		0.81 (0.76, 0.87)		0.94 (0.88, 1.00)	
25-<30	0.90 (0.86, 0.94)		0.89 (0.84, 0.95)		0.98 (0.93, 1.04)	
>=30	0.95 (0.89, 1.01)		0.97 (0.89, 1.06)		1.08 (0.99, 1.18)	

(B) PUFAs intake

	Lung cancer risk		Lung cancer mortality		Lung cancer survival	
	HR (95% CI)	<i>P</i> for interaction	HR (95% CI)	<i>P</i> for interaction	HR (95% CI)	<i>P</i> for interaction
Sex		0.456		0.818		0.412
Female	0.95 (0.91, 0.99)		0.93 (0.88, 0.98)		0.98 (0.93, 1.04)	
Male	0.94 (0.90, 0.98)		0.93 (0.88, 0.99)		0.96 (0.91, 1.01)	
Age		0.582		0.057		0.235

<= median	0.94 (0.89, 1.00)	0.98 (0.91, 1.06)	1.12 (0.95, 1.31)
> median	0.94 (0.91, 0.97)	0.91 (0.87, 0.95)	0.97 (0.93, 1.01)
Ethnicity	0.296	0.672	0.473
White	0.95 (0.92, 0.98)	0.93 (0.90, 0.97)	0.97 (0.94, 1.01)
Non-White	0.86 (0.72, 1.01)	0.87 (0.68, 1.12)	0.87 (0.59, 1.29)
Education level	0.802	0.276	0.929
Less than high school	0.95 (0.89, 1.01)	0.90 (0.83, 0.99)	1.00 (0.93, 1.08)
High school or equivalent	0.95 (0.91, 0.99)	0.96 (0.91, 1.02)	0.97 (0.92, 1.02)
College or above	0.92 (0.87, 0.98)	0.89 (0.82, 0.97)	0.97 (0.90, 1.04)
TDI	0.933	0.950	0.183
<= median	0.93 (0.89, 0.98)	0.92 (0.86, 0.98)	0.94 (0.88, 1.00)
> median	0.94 (0.90, 0.98)	0.93 (0.88, 0.98)	1.00 (0.95, 1.04)
Alcohol consumption	0.666	0.791	0.251
Never or moderate	0.95 (0.91, 0.98)	0.93 (0.89, 0.98)	0.99 (0.94, 1.03)
Excessive	0.94 (0.89, 0.99)	0.93 (0.87, 1.00)	0.95 (0.89, 1.01)
Physical activity level	0.913	0.891	0.629
Insufficiently active	0.94 (0.88, 1.00)	0.92 (0.84, 1.01)	0.95 (0.87, 1.04)
Sufficiently active	0.94 (0.91, 0.98)	0.93 (0.89, 0.97)	0.98 (0.94, 1.02)
BMI	0.430	0.281	0.600
< 25	0.92 (0.88, 0.97)	0.90 (0.84, 0.97)	0.97 (0.91, 1.03)
25-<30	0.94 (0.90, 0.99)	0.92 (0.84, 0.98)	0.93 (0.87, 0.98)
>=30	0.97 (0.91, 1.03)	0.98 (0.91, 1.06)	1.04 (0.97, 1.11)

(C) Cross classification of Mediterranean diet and PUFAs intake

	Lung cancer risk	Lung cancer mortality	Lung cancer survival
	<i>P</i> for interaction	<i>P</i> for interaction	<i>P</i> for interaction
Sex	0.063	0.065	0.348
Age	0.655	0.129	0.691
Ethnicity	0.426	0.418	0.174
Education level	0.334	0.257	0.458
TDI	0.815	0.392	0.211
Alcohol consumption	0.916	0.696	0.510
Physical activity level	0.480	0.584	0.308
BMI	0.117	0.102	0.065

Abbreviations: AMED, Alternate Mediterranean Diet; PUFA, polyunsaturated fatty acid; TDI, Townsend Deprivation Index; HR, hazard ratio; CI, confidence interval.

Models were adjusted for age, sex, total energy intake, ethnicity, Townsend Deprivation Index, education level, smoking status, alcohol consumption, physical activity level, body mass index, and family history of lung cancer.

For the lung cancer survival analysis, age was defined as age at diagnosis, and the models were additionally adjusted for histological type.

The median of age is 57 years, and the median of TDI is -2.32.

NA, not available. The subdistribution hazard ratio could not be reliably estimated for this subgroup due to the limited number of events.

Supplemental Figure 1. Flowchart of study participants from the UK Biobank.

