Supplementary Table S1 Food groups for the dietary inflammatory potential score among participants with one 24-h dietary assessment.

Products	Spearman correlation coefficients[a]	Weights[b]
Foods with anti-inflammatory potential		
Nut	-0.265161	-0.003010
Vegetarianalter	-0.176740	-0.000829
Starchy	-0.293699	-0.000784
Breakfast	-0.283399	-0.000768
Cheese	-0.132606	-0.000675
Dessert	-0.019741	-0.000364
Fish	-0.151265	-0.000319
Wine	-0.147819	-0.000269
Bread	-0.000368	-0.000240
Fruit	-0.248116	-0.000181
Pastry	-0.006983	-0.000170
Vegetable	-0.177558	-0.000120
Soup	-0.046181	0.000076
Tea	-0.122876	-0.000034
Juice	-0.022787	-0.000033
Coffee	-0.026673	-0.000020
Foods with pro-inflammatory potential		
Butter	0.109284	0.002350
Organ	0.072014	0.002040
Other alcohol	0.171705	0.002030
Processed meat	0.298466	0.002000
Red meat	0.304597	0.001310
Other meat	0.034884	0.000938
Ice cream	0.129346	0.000690
Poultry	0.111422	0.000643
Chocolate drink	0.061311	0.000369
Low-calorie drink	0.347624	0.000353
Milk	0.106044	0.000318
Egg	0.067756	0.000315
Potato	0.238159	0.000311
Snack	0.067147	0.000280
Sweets	0.066560	0.000271
High energy drink	0.220717	0.000242
Smoothie	0.011800	0.000141
Beer	0.135685	0.000026

[a] Derived by reduced rank regression analysis with C reactive protein as the response variable. [b] Weights are regression coefficients derived from the final step of the stepwise linear regression models. Each weight represents the contribution of the food groups to the dietary inflammatory potential score.

Supplementary Table S2 Hazards ratios (HRs) and 95% confidence interval (CIs) of chronic obstructive pulmonary disease and lung cancer by joint exposures of the dietary inflammatory index and smoking status: results from Cox regression models.

Inflammatory Diet Index	Smoking Status	COPD		Lung cancer	
		HR (95% CI)[a]	HR (95% CI)[b]	HR (95% CI)[a]	HR (95% CI)[b]
Highest	Yes	Ref.	Ref.		Ref.
Lowest+Middle	Yes	0.54 (0.51, 0.58)	0.63 (0.58, 0.67)	0.62 (0.54, 0.71)	0.65 (0.57, 0.75)
Highest	No	0.21 (0.19, 0.24)	0.23 (0.21, 0.26)	0.15 (0.11, 0.20)	0.16 (0.12, 0.21)
Lowest+Middle	No	0.15 (0.14, 0.17)	0.19 (0.17, 0.21)	0.17 (0.14, 0.21)	0.19 (0.16, 0.23)

Abbreviation: HR, hazard ratio; 95% CI, 95% confidence interval; COPD, chronic obstructive pulmonary disease.

[a] Cox Model adjusted for age and sex;

[b] Cox Model adjusted for age, sex, education, ethnicity, Townsend deprivation index, energy intake, body mass index, total physical activity, PM2.5, hypertension, hyperglycemia, CVD, and asthma.

Measures of additive interaction for COPD:

Relative excess risk due to interaction: 1.736, 95% CI 1.397–2.101; Attributable proportion: 0.331, 95% CI 0.274–0.383; Synergy index: 1.692, 95% CI 1.510–1.896.

Measures of additive interaction for lung cancer:

Relative excess risk due to interaction: 0.263, 95% CI -0.013–0.575; Attributable proportion: 0.082, 95% CI -0.004–0.156; Synergy index: 1.135, 95% CI 0.998–1.292.

Supplementary Table S3 Hazards ratios (HRs) and 95% confidence interval (CIs) of chronic obstructive pulmonary disease and lung cancer by joint exposures of the dietary inflammatory index and smoking status by age.

Inflammatory Diet Index	Smoking Status	COPD		Lung cancer	
		HR (95% CI)[a]	HR (95% CI)[b]	HR (95% CI)[a]	HR (95% CI)[b]
< 60 years old					
Highest	Yes	Ref.	Ref.	Ref.	Ref.
Lowest+Middle	Yes	0.53 (0.47, 0.60)	0.65 (0.58, 0.74)	0.59 (0.46, 0.75)	0.61 (0.48, 0.78)
Highest	No	0.19 (0.15, 0.22)	0.21 (0.17, 0.25)	0.12 (0.08, 0.19)	0.13 (0.08, 0.20)
Lowest+Middle	No	0.15 (0.12, 0.17)	0.20 (0.17, 0.24)	0.18 (0.14, 0.25)	0.20 (0.15, 0.27)
≥ 60 years old					
Highest	Yes	Ref.	Ref.	Ref.	Ref.
Lowest+Middle	Yes	0.56 (0.52, 0.61)	0.63 (0.58, 0.69)	0.65 (0.55, 0.77)	0.70 (0.59, 0.83)
Highest	No	0.22 (0.19, 0.25)	0.24 (0.21, 0.28)	0.16 (0.12, 0.23)	0.18 (0.13, 0.25)
Lowest+Middle	No	0.15 (0.13, 0.17)	0.19 (0.16, 0.21)	0.16 (0.13, 0.20)	0.18 (0.14, 0.24)

Abbreviation: COPD, chronic obstructive pulmonary disease.

[a] Cox Model adjusted for sex;

[b] Cox Model adjusted for sex, education, ethnicity, Townsend deprivation index, energy intake, smoking status, body mass index, total physical activity, PM2.5, hypertension, hyperglycemia, CVD, and asthma.

Supplementary Table S4 Hazards ratios (HRs) and 95% confidence interval (CIs) of chronic obstructive pulmonary disease and lung cancer by joint exposures of the dietary inflammatory index and smoking status by sex.

Inflammatory Diet Index	Smoking Status	COPD		Lung cancer	
		HR (95% CI)[a]	HR (95% CI)[b]	HR (95% CI)[a]	HR (95% CI)[b]
Women					
Highest	Yes	Ref.	Ref.	Ref.	Ref.
Lowest+Middle	Yes	0.56 (0.50, 0.62)	0.66 (0.59, 0.74)	0.74 (0.60, 0.91)	0.77 (0.62, 0.95)
Highest	No	0.23 (0.19, 0.27)	0.25 (0.21, 0.30)	0.16 (0.11, 0.23)	0.16 (0.11, 0.24)
Lowest+Middle	No	0.17 (0.15, 0.19)	0.21 (0.18, 0.24)	0.21 (0.16, 0.27)	0.22 (0.17, 0.29)
Men					
Highest	Yes	Ref.	Ref.	Ref.	Ref.
Lowest+Middle	Yes	0.54 (0.49, 0.59)	0.61 (0.55, 0.67)	0.54 (0.45, 0.65)	0.58 (0.48, 0.70)
Highest	No	0.20 (0.17, 0.23)	0.22 (0.19, 0.26)	0.15 (0.11, 0.22)	0.17 (0.12, 0.25)
Lowest+Middle	No	0.13 (0.12, 0.15)	0.17 (0.15, 0.20)	0.14 (0.10, 0.19)	0.16 (0.12, 0.22)

Abbreviation: COPD, chronic obstructive pulmonary disease.

[a] Cox Model adjusted for age;

[b] Cox Model adjusted for age, education, ethnicity, Townsend deprivation index, energy intake, smoking status, body mass index, total physical activity, PM2.5, hypertension, hyperglycemia, CVD, and asthma.

Supplementary Table S5 Hazards ratios (HRs) and 95% confidence interval (CIs) of chronic obstructive pulmonary disease and lung cancer by joint exposures of the dietary inflammatory index and smoking status after excluding missing values for covariates.

Inflammatory Diet Index	Smoking Status	COPD		Lung cancer	
		HR (95% CI)[a]	HR (95% CI)[b]	HR (95% CI)[a]	HR (95% CI)[b]
Highest	Yes	Ref.	Ref.	Ref.	Ref.
Lowest+Middle	Yes	0.56 (0.52, 0.60)	0.64 (0.59, 0.69)	0.62 (0.54, 0.72)	0.66 (0.57, 0.76)
Highest	No	0.22 (0.19, 0.25)	0.24 (0.21, 0.27)	0.14 (0.11, 0.19)	0.15 (0.11, 0.21)
Lowest+Middle	No	0.15 (0.14, 0.17)	0.19 (0.17, 0.21)	0.17 (0.14, 0.21)	0.19 (0.16, 0.23)

Abbreviation: COPD, chronic obstructive pulmonary disease.

[a] Cox Model adjusted for age and sex;

[b] Cox Model adjusted for age, sex, education, ethnicity, Townsend deprivation index, energy intake, smoking status, body mass index, total physical activity, PM2.5, hypertension, hyperglycemia, CVD, and asthma.

Supplementary Table S6 Hazards ratios (HRs) and 95% confidence interval (CIs) of chronic obstructive pulmonary disease and lung cancer by joint exposures of the dietary inflammatory index and smoking status after exclusion of diseases outcome occurring during the first 2 years of follow-up in the UK Biobank cohort.

Inflammatory Diet Index	Smoking Status	COPD		Lung cancer	
		HR (95% CI)[a]	HR (95% CI)[b]	HR (95% CI)[a]	HR (95% CI)[b]
Highest	Yes	Ref.	Ref.	Ref.	Ref.
Lowest+Middle	Yes	0.55 (0.51, 0.59)	0.63 (0.58, 0.68)	0.60 (0.52, 0.69)	0.63 (0.55, 0.73)
Highest	No	0.21 (0.19, 0.24)	0.23 (0.21, 0.26)	0.15 (0.11, 0.19)	0.16 (0.12, 0.21)
Lowest+Middle	No	0.15 (0.14, 0.17)	0.19 (0.17, 0.21)	0.16 (0.14, 0.20)	0.18 (0.15, 0.22)

Abbreviation: COPD, chronic obstructive pulmonary disease.

[a] Cox Model adjusted for age and sex;

[b] Cox Model adjusted for age, sex, education, ethnicity, Townsend deprivation index, energy intake, smoking status, body mass index, total physical activity, PM2.5, hypertension, hyperglycemia, CVD, and asthma.

Supplementary Table S7 Hazards ratios (HRs) and 95% confidence interval (CIs) of chronic obstructive pulmonary disease and lung cancer by joint exposures of the dietary inflammatory index and smoking status after excluding participants with FEV_1/FVC ratio < 0.7 at baseline.

Inflammatory Diet Index	Smoking Status	COPD		Lung cancer	
		HR (95% CI)[a]	HR (95% CI)[b]	HR (95% CI)[a]	HR (95% CI)[b]
Highest	Yes	Ref.	Ref.	Ref.	Ref.
Lowest+Middle	Yes	0.52 (0.46, 0.58)	0.64 (0.57, 0.73)	0.63 (0.51, 0.78)	0.68 (0.55, 0.84)
Highest	No	0.27 (0.23, 0.32)	0.31 (0.26, 0.36)	0.19 (0.14, 0.28)	0.21 (0.15, 0.30)
Lowest+Middle	No	0.19 (0.16, 0.22)	0.27 (0.23, 0.32)	0.23 (0.18, 0.30)	0.26 (0.20, 0.34)

Abbreviation: COPD, chronic obstructive pulmonary disease.

[a] Cox Model adjusted for age and sex;

[b] Cox Model adjusted for age, sex, education, ethnicity, Townsend deprivation index, energy intake, smoking status, body mass index, total physical activity, PM2.5, hypertension, hyperglycemia, CVD, and asthma.

Supplementary Table S8 Food groups for the dietary inflammatory potential score among participants with at least two 24-h dietary assessments (n=103,482).

Products	Spearman correlation coefficients	Weights
Foods with anti-inflammatory potential		
Nut	-0.298750	-0.001600
Vegetarianalter	-0.214305	-0.000522
Breakfast	-0.282494	-0.000409
Starchy	-0.345552	-0.000370
Cheese	-0.166188	-0.000281
Fish	-0.193180	-0.000186
Wine	-0.225753	-0.000176
Dessert	-0.075847	-0.000164
Fruit	-0.287302	-0.000108
Pastry	-0.061430	-0.000097
Vegetable	-0.254480	-0.000091
Bread	-0.055622	-0.000079
Other drink	-0.043699	-0.000074
Bean	-0.071777	-0.000068
Tea	-0.147130	-0.000034
Juice	-0.065465	-0.000029
Coffee	-0.016277	-0.000024
Foods with pro-inflammatory potential		
Other alcohol	0.130749	0.001070
Organ	0.061166	0.000887
Processed meat	0.216724	0.000772
Butter	0.086403	0.000648
Red meat	0.215542	0.000540
Ice cream	0.085049	0.000305
Egg	0.067436	0.000289
Other meat	0.004167	0.000255
Poultry	0.059581	0.000255
Sweet	0.037575	0.000229
Chocolater drink	0.054653	0.000223
Low calorie drink	0.316223	0.000215
Snack	0.005649	0.000204
Milk	0.104605	0.000195
High energy drink	0.191558	0.000130
Potato	0.118269	0.000126
Smoothie	-0.004418	0.000055

Supplementary Table S9 Hazards ratios (HRs) and 95% confidence interval (CIs) of chronic obstructive pulmonary disease and lung cancer by joint exposures of dietary inflammatory index and smoking status via mean intakes using at least two 24-h dietary assessments.

Inflammatory Diet Index	Smoking Status	COPD		Lung cancer	
		HR (95% CI)[a]	HR (95% CI)[b]	HR (95% CI)[a]	HR (95% CI)[b]
Highest	Yes	Ref.	Ref.	Ref.	Ref.
Lowest+Middle	Yes	0.58 (0.52, 0.63)	0.65 (0.59, 0.71)	0.71 (0.59, 0.85)	0.74 (0.62, 0.90)
Highest	No	0.25 (0.22, 0.29)	0.27 (0.24, 0.32)	0.17 (0.12, 0.24)	0.18 (0.12, 0.25)
Lowest+Middle	No	0.15 (0.13, 0.17)	0.19 (0.16, 0.21)	0.19 (0.15, 0.24)	0.21 (0.16, 0.27)

Abbreviation: COPD, chronic obstructive pulmonary disease.

[a] Cox Model adjusted for age and sex;

[b] Cox Model adjusted for age, sex, education, ethnicity, Townsend deprivation index, energy intake, smoking status, body mass index, total physical activity, PM2.5, hypertension, hyperglycemia, CVD, and asthma.

Supplementary Table S10 Hazards ratios (HRs) and 95% confidence interval (CIs) of chronic obstructive pulmonary disease and lung cancer by the dietary inflammatory index stratified by the number of cigarettes per day.

Inflammatory Diet Index	COPD		Lung cancer	
	HR (95% CI)	*P* Value	HR (95% CI)	*P* Value
0 cigarette/day				
Highest	Ref.	Ref.	Ref.	Ref.
Middle	1.09 (0.92, 1.29)	0.327	1.06 (0.77, 1.45)	0.737
Lowest	1.23 (1.04, 1.45)	0.018	0.84 (0.59, 1.19)	0.322
0-10 cigarettes/day				
Highest	Ref.	Ref.	Ref.	Ref.
Middle	1.24 (0.89, 1.72)	0.215	1.67 (0.95, 2.94)	0.075
Lowest	1.65 (1.20, 2.27)	0.002	1.78 (1.01, 3.15)	0.048
≥10 cigarettes/day				
Highest	Ref.	Ref.	Ref.	Ref.
Middle	1.25 (1.12, 1.39)	<0.001	1.16 (0.95, 1.43)	0.140
Lowest	1.84 (1.67, 2.03)	<0.001	1.71 (1.42, 2.07)	<0.001

Abbreviation: COPD, chronic obstructive pulmonary disease. All participants were divided into three groups based on the tertile distribution of the number of cigarettes per day. Cox Model adjusted for age, education, ethnicity, Townsend deprivation index, energy intake, body mass index, total physical activity, $PM_{2.5}$, hypertension, hyperglycemia, CVD, and asthma.

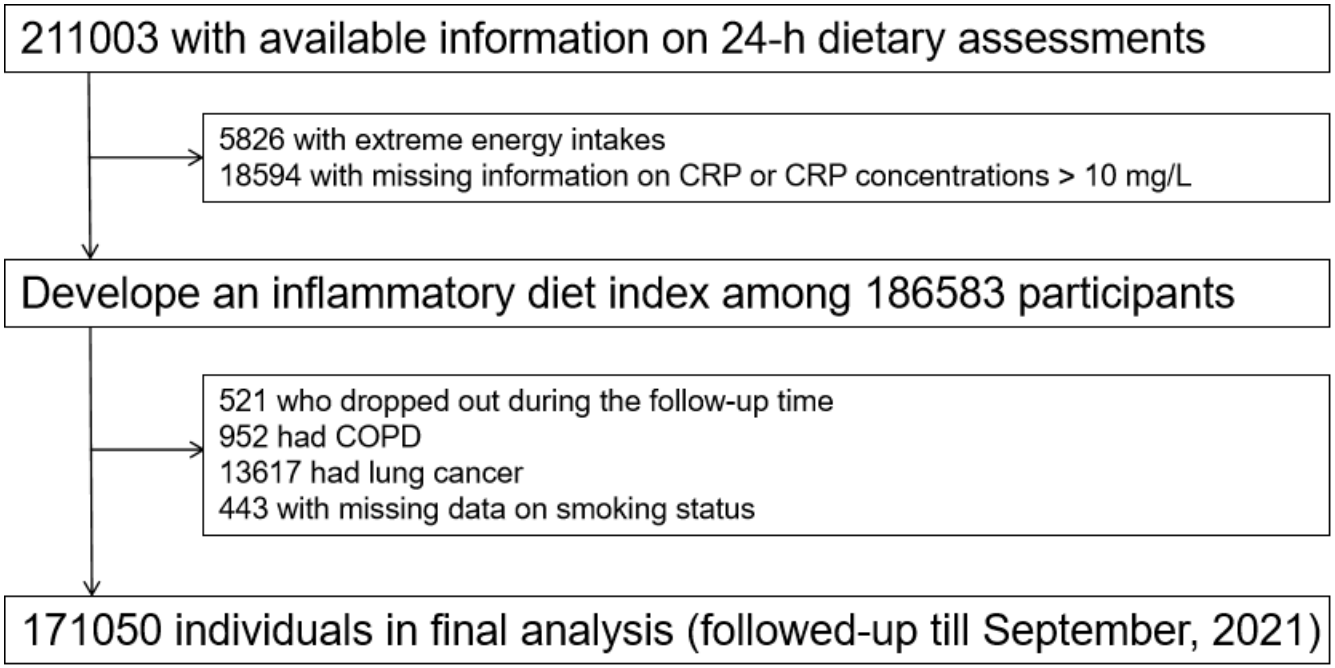

Figure S1. Flowchart of the study population.
Abbreviation: CRP, C reactive protein; COPD, chronic obstructive pulmonary disease