

Table S1. Definition of variables in touchscreen questionnaire, verbal interview and inpatient records of diagnosis.

Variable	Data category	Data filed	Data code
Age at recruitment	Population characteristics	21022	
Sex	Population characteristics	31	
UK Biobank assessment center	Recruitment	54	
Average total household income before tax	Touchscreen questionnaire	738	
Townsend deprivation index	Population characteristics	189	
Smoking status	Touchscreen questionnaire	20116	
Alcohol drinker status	Touchscreen questionnaire	20117	
Ethnic background	Touchscreen questionnaire	21000	
Qualifications	Touchscreen questionnaire	6138	
BMI (Body mass index)	Physical measures	21001	
MET minutes per week for moderate activity	Touchscreen questionnaire	22038	
MET minutes per week for vigorous activity	Touchscreen questionnaire	22039	
Sleep duration	Touchscreen questionnaire	1160	
Cooked vegetable intake *	Touchscreen questionnaire	1289	
Salad / raw vegetable intake *	Touchscreen questionnaire	1299	
Fresh fruit intake *	Touchscreen questionnaire	1309	
Dried fruit intake *	Touchscreen questionnaire	1319	
Oily fish intake *	Touchscreen questionnaire	1329	
Non-oily fish intake *	Touchscreen questionnaire	1339	
Processed meat intake *	Touchscreen questionnaire	1349	
Poultry intake *	Touchscreen questionnaire	1359	
Beef intake *	Touchscreen questionnaire	1369	
Lamb/mutton intake *	Touchscreen questionnaire	1379	
Pork intake *	Touchscreen questionnaire	1389	
Never eat eggs, dairy, wheat, sugar	Touchscreen questionnaire	6144	
Bread intake *	Touchscreen questionnaire	1438	
Bread type *	Touchscreen questionnaire	1448	
Cereal intake *	Touchscreen questionnaire	1458	
Cereal type *	Touchscreen questionnaire	1468	
Tea intake	Touchscreen questionnaire	1488	
Coffee intake	Touchscreen questionnaire	1498	
Coffee type	Touchscreen questionnaire	1508	
HDL cholesterol	Blood assays	30760	
LDL direct	Blood assays	30780	
logMAR, final (left)	Eye measures	5208	
logMAR, final (right)	Eye measures	5201	
Cylindrical power (left)	Eye measures	5086	
Cylindrical power (right)	Eye measures	5087	
Spherical power (left)	Eye measures	5085	
Spherical power (right)	Eye measures	5084	
Intra-ocular pressure,	Eye measures	5262	

corneal-compensated (left)			
Intra-ocular pressure,	Eye measures	5254	
corneal-compensated (right)			
Average retinal nerve fibre layer thickness (left)	Eye measures	28500	
Average retinal nerve fibre layer thickness (right)	Eye measures	28501	
	Hospital inpatients (ICD-10)	41270	E11-E14
Diabetes	Touchscreen questionnaire	6148	1
	Touchscreen questionnaire	2443	1
	Verbal interview	20002	1276, 1220, 1222, 1223, 1468, 1521, 1607
	Hospital inpatients (ICD-10)	41270	I20-I25, I50, I60-I64
Cardiovascular diseases	Touchscreen questionnaire	6150	1, 2, 3
	Verbal interview	20002	1074, 1075, 1076, 1081, 1082, 1086, 1491, 1583
	Hospital inpatients (ICD-10)	41270	I10, I15
Hypertension	Touchscreen questionnaire	6150	4
	Verbal interview	20002	1065, 1072
	Hospital inpatients (ICD-10)	41270	H40, H42
Glaucoma	Touchscreen questionnaire	6148	2
	Verbal interview	20002	1277
	Hospital inpatients (ICD-10)	41270	H30-H36
Retinal diseases	Touchscreen questionnaire	6148	1, 5
	Verbal interview	20002	1275, 1281, 1282, 1528
Multiple sclerosis	Hospital inpatients (ICD-10)	41270	G35
	Verbal interview	20002	1261
Neurodegenerative diseases	Hospital inpatients (ICD-10)	41270	F00-F03, G20, G21, G30, G31, G122, G231-G233, G238, G239
	Verbal interview	20002	1262, 1263

* Health diet was determined based on previous literatures.

Reference:

1. Mozaffarian D. Dietary and Policy Priorities for Cardiovascular Disease, Diabetes, and Obesity: A Comprehensive Review. *Circulation*. 2016;133(2):187-225.
2. Zhang Y, Yang H, Li S, Li WD, Wang Y. Consumption of coffee and tea and risk of developing stroke, dementia, and poststroke dementia: A cohort study in the UK Biobank. *PLoS Med*. 2021;18(11): e1003830.

Table S2. Baseline characteristics in participants with different daily amounts of coffee and tea consumption.

Never	12368 (34%)	2374 (31%)	3574 (35%)	3996 (36%)	2424 (37%)	1730 (34%)	1516 (35%)	3681 (35%)	5441 (35%)
Ever/Current	3426 (9%)	680 (9%)	758 (7%)	951 (9%)	1037 (16%)	594 (12%)	463 (11%)	870 (8%)	1499 (1%)
Missing	19763 (55%)	4641 (6%)	5936 (58%)	6087 (55%)	3099 (47%)	2758 (54%)	2330 (54%)	5952 (57%)	8723 (56%)
Drinking status § † ‡									
Never	1194 (3%)	429 (6%)	271 (3%)	269 (2%)	225 (3%)	239 (5%)	120 (3%)	320 (3%)	515 (3%)
Ever/Current	32848 (92%)	6599 (86%)	9607 (94%)	10485 (95%)	6157 (94%)	4554 (9%)	3988 (93%)	9714 (92%)	14592 (93%)
Missing	1515 (4%)	667 (9%)	390 (4%)	280 (3%)	178 (3%)	289 (6%)	201 (5%)	469 (4%)	556 (4%)
Ethnic background § † ‡									
White	32470 (91%)	6496 (84%)	9265 (9%)	10391 (94%)	6318 (96%)	4677 (92%)	3766 (87%)	9194 (88%)	14833 (95%)
Others	2940 (8%)	1156 (15%)	961 (9%)	608 (6%)	215 (3%)	385 (8%)	520 (12%)	1269 (12%)	766 (5%)
Missing	147 (<1%)	43 (1%)	42 (<1%)	35 (<1%)	27 (<1%)	20 (<1%)	23 (1%)	40 (<1%)	64 (<1%)
Education achievement § † ‡									
O level or equivalent	10213 (28%)	2522 (33%)	2833 (28%)	2884 (26%)	1974 (3%)	1517 (3%)	999 (23%)	2823 (27%)	4874 (31%)
A level or equivalent	2210 (6%)	464 (6%)	695 (7%)	657 (6%)	394 (6%)	331 (7%)	317 (7%)	671 (6%)	891 (6%)
University	22823 (64%)	4608 (6%)	6660 (65%)	7414 (67%)	4141 (63%)	3185 (63%)	2951 (68%)	6917 (66%)	9770 (62%)
Missing	311 (<1%)	101 (1%)	80 (1%)	79 (1%)	51 (1%)	49 (1%)	42 (1%)	92 (1%)	128 (1%)
Body mass index (BMI; kg/m²) § † ‡									
Normal (<25)	12041 (33%)	2675 (35%)	3799 (37%)	3784 (34%)	1783 (27%)	1541 (3%)	1581 (37%)	3706 (35%)	5213 (33%)
Overweight (25-30)	15150 (42%)	3128 (41%)	4323 (42%)	4785 (43%)	2914 (44%)	2098 (41%)	1763 (41%)	4453 (42%)	6836 (44%)
Obesity (>30)	8200 (23%)	1846 (24%)	2105 (21%)	2414 (22%)	1835 (28%)	1421 (28%)	948 (22%)	2287 (22%)	3544 (23%)
Missing	166 (<1%)	46 (1%)	41 (<1%)	51 (<1%)	28 (<1%)	22 (<1%)	17 (<1%)	57 (1%)	70 (<1%)
Moderate to vigorous physical activity (MVPA; minutes/week) § † ‡									
Quantile 1 (<240)	7609 (21%)	1754 (23%)	2024 (2%)	2269 (21%)	1562 (24%)	1222 (24%)	951 (22%)	2180 (21%)	3256 (21%)
Quantile 2 (240-960)	7718 (21%)	1608 (21%)	2301 (22%)	2432 (22%)	1377 (21%)	1014 (2%)	948 (22%)	2456 (23%)	3300 (21%)
Quantile 3 (960-2160)	6884 (19%)	1418 (18%)	2028 (2%)	2241 (2%)	1197 (18%)	910 (18%)	883 (2%)	2146 (2%)	2945 (19%)
Quantile 4 (>2160)	7379 (20%)	1565 (2%)	2185 (21%)	2313 (21%)	1316 (2%)	1042 (21%)	855 (2%)	2052 (2%)	3430 (22%)
Missing	5967 (16%)	1350 (18%)	1730 (17%)	1779 (16%)	1108 (17%)	894 (18%)	672 (16%)	1669 (16%)	2732 (17%)
Sleep duration (hour) § † ‡									
≤6h	9035 (25%)	2027 (26%)	2509 (24%)	2592 (23%)	1907 (29%)	1474 (29%)	1100 (26%)	2587 (25%)	3874 (25%)
7h	14326 (40%)	2916 (38%)	4164 (41%)	4722 (43%)	2524 (38%)	1930 (38%)	1777 (41%)	4333 (41%)	6286 (4%)
8h	9879 (27%)	2168 (28%)	2895 (28%)	3095 (28%)	1721 (26%)	1342 (26%)	1177 (27%)	2933 (28%)	4427 (28%)
≥9h	2317 (6%)	584 (8%)	700 (7%)	625 (6%)	408 (6%)	336 (7%)	255 (6%)	650 (6%)	1076 (7%)

Diabetes at baseline § ‡									
No	34104 (95%)	7342 (95%)	9862 (96%)	10614 (96%)	6286 (96%)	4861 (96%)	4108 (95%)	10063 (96%)	15072 (96%)
Yes	1453 (4%)	353 (5%)	406 (4%)	420 (4%)	274 (4%)	221 (4%)	201 (5%)	440 (4%)	591 (4%)
Cardiovascular diseases at baseline § ‡									
No	33486 (94%)	7229 (94%)	9673 (94%)	10429 (95%)	6155 (94%)	4788 (94%)	4090 (95%)	9938 (95%)	14670 (94%)
Yes	2071 (5%)	466 (6%)	595 (6%)	605 (5%)	405 (6%)	294 (6%)	219 (5%)	565 (5%)	993 (6%)
Hypertension at baseline §									
No	26519 (74%)	5668 (74%)	7650 (75%)	8301 (75%)	4900 (75%)	3835 (75%)	3236 (75%)	7794 (74%)	11654 (74%)
Yes	9038 (25%)	2027 (26%)	2618 (25%)	2733 (25%)	1660 (25%)	1247 (25%)	1073 (25%)	2709 (26%)	4009 (26%)
Healthy diet § †‡									
No	7662 (21%)	1774 (23%)	1972 (19%)	2211 (2%)	1705 (26%)	1242 (24%)	922 (21%)	2011 (19%)	3487 (22%)
Yes	27895 (78%)	5921 (77%)	8296 (81%)	8823 (8%)	4855 (74%)	3840 (76%)	3387 (79%)	8492 (81%)	12176 (78%)
Habitual intake of sweeten beverages or foods § †‡									
No	886 (2%)	284 (4%)	223 (2%)	257 (2%)	122 (2%)	161 (3%)	106 (2%)	238 (2%)	381 (2%)
Yes	34671 (97%)	7411 (96%)		10045 (98%)	10777 (98%)	6438 (98%)	4921 (97%)	4203 (98%)	10265 (98%)
Serum high density liptein (HDL) cholesterol level § †‡									
Abnormal	3379 (9%)	764 (1%)	876 (9%)	1010 (9%)	729 (11%)	562 (11%)	395 (9%)	975 (9%)	1447 (9%)
Normal	27872 (78%)	5946 (77%)	8185 (8%)	8674 (79%)	5067 (77%)	3907 (77%)	3385 (79%)	8259 (79%)	12321 (79%)
Missing	4306 (12%)	985 (13%)	1207 (12%)	1350 (12%)	764 (12%)	613 (12%)	529 (12%)	1269 (12%)	1895 (12%)
Serum low density liptein (LDL) cholesterol level § †									
Abnormal	14181 (39%)	3276 (43%)	4210 (41%)	4253 (39%)	2442 (37%)	1982 (39%)	1730 (4%)	4166 (4%)	6303 (4%)
Normal	18507 (52%)	3759 (49%)	5245 (51%)	5892 (53%)	3611 (55%)	2684 (53%)	2221 (52%)	5467 (52%)	8135 (52%)
Missing	2869 (8%)	660 (9%)	813 (8%)	889 (8%)	507 (8%)	416 (8%)	358 (8%)	870 (8%)	1225 (8%)
Spherical equivalent (SE) (Diopters) # †‡									
	-0.06 (1.91)	-0.07 (1.87)	-0.06 (1.93)	-0.09 (1.93)	0.01 (1.90)	-0.08 (1.90)	-0.18 (1.94)	-0.08 (1.89)	-0.01 (1.92)
Intraocular pressure (IOP) (mmHg) # †									
	15.20 (2.93)	15.09 (2.98)	15.27 (2.91)	15.28 (2.92)	15.09 (2.94)	15.15 (2.95)	15.21 (2.99)	15.24 (2.93)	15.19 (2.92)

§ Categorical variables were presented in the form of “number (percentage)” and tested by the Chi-square test;

Continuous variables were presented in the form of “mean (standard deviation)” and tested by the analysis of variance;

† P<0.05 among participants with different amounts of coffee consumption;

‡ P<0.05 among participants with different amounts of tea consumption;

Table S3. Association between coffee and tea consumption with the average thickness of macular retinal fiber never layer according to age subgroups

Age at baseline ≤ 60 years old §				Age at baseline > 60 years old §			
Categories (cups/day)	Number (No.)	Coefficient (β)	95% confidence intervals (95% CI)	Categories (cups/day)	Number (No.)	Coefficient (β)	95% confidence intervals (95% CI)
Coffee ‡ (P for trend = 0.03)				Coffee ‡ (P for trend = 0.88)			
0	5205	Reference	Reference	0	2490	Reference	Reference
0.5-1	6036	0.14	(-0.03 ~ 0.30)	0.5-1	4232	0.08	(-0.14 ~ 0.31)
2-3 †	6439	0.20	(0.03 ~ 0.36)	2-3	4595	0.09	(-0.14 ~ 0.32)
≥4	3991	0.20	(-0.01 ~ 0.40)	≥4	2569	0.03	(-0.24 ~ 0.30)
All	27,862	0.17	(0.03 ~ 0.32)	All	27,862	0.05	(-0.15 ~ 0.26)
Tea ‡ (P for trend = 0.17)				Tea ‡ (P for trend = 0.12)			
0	3325	Reference	Reference	0	1757	Reference	Reference
0.5-1	2793	0.20	(-0.01 ~ 0.40)	0.5-1	1516	0.02	(-0.27 ~ 0.31)
2-3 †	6388	0.13	(-0.04 ~ 0.31)	2-3	4115	0.07	(-0.18 ~ 0.31)
≥4 †	9165	0.14	(-0.03 ~ 0.32)	≥4	6498	0.15	(-0.09 ~ 0.39)
All	30,475	0.14	(-0.02 ~ 0.29)	All †	30,475	0.12	(-0.09 ~ 0.33)

§ Adjusted for age at baseline, sex, assessment center, average total household income before tax, Townsend deprivation index, smoking status, drinking status, ethnic background, education achievement, body mass index, moderate to vigorous physical activity time, sleep duration, diabetes, cardiovascular diseases, hypertension, healthy diet, habitual intake of sweetened beverages or foods, serum high density lipoprotein cholesterol level, serum low density lipoprotein cholesterol level, spherical equivalent and intraocular pressure. Both coffee and tea consumption were included in the multivariable model.

‡ P for interaction > 0.05.

Table S4. Association between coffee and tea consumption with the average thickness of macular retinal fiber never layer in different gender subgroups

Female §				Male §			
Categories (cups/day)	Number (No.)	Coefficient (β)	95% confidence intervals (95% CI)	Categories (cups/day)	Number (No.)	Coefficient (β)	95% confidence intervals (95% CI)
Coffee ‡ (P for trend = 0.03)				Coffee ‡ (P for trend = 0.65)			
0	4405	Reference	Reference	0	3290	Reference	Reference
0.5-1	5774	0.19	(0.01 ~ 0.37)	0.5-1	4494	0.04	(-0.16 ~ 0.24)
2-3	5701	0.19	(0.01 ~ 0.37)	2-3	5333	0.13	(-0.08 ~ 0.33)
≥4 †	3072	0.27	(0.05 ~ 0.49)	≥4	3488	0.01	(-0.21 ~ 0.24)
All	27,862	0.19	(0.03 ~ 0.35)	All	27,862	0.07	(-0.11 ~ 0.25)
Tea ‡ (P for trend = 0.09)				Tea ‡ (P for trend = 0.18)			
0	2761	Reference	Reference	0	2321	Reference	Reference
0.5-1	2265	0.13	(-0.10 ~ 0.37)	0.5-1	2044	0.16	(-0.08 ~ 0.41)
2-3	5648	0.11	(-0.09 ~ 0.31)	2-3	4855	0.13	(-0.08 ~ 0.33)
≥4	8278	0.17	(-0.03 ~ 0.36)	≥4	7385	0.15	(-0.05 ~ 0.36)
All	30,475	0.12	(-0.05 ~ 0.29)	All †	30,475	0.16	(-0.02 ~ 0.34)

§ Adjusted for age at baseline, sex, assessment center, average total household income before tax, Townsend deprivation index, smoking status, drinking status, ethnic background, education achievement, body mass index, moderate to vigorous physical activity time, sleep duration, diabetes, cardiovascular diseases, hypertension, healthy diet, habitual intake of sweetened beverages or foods, serum high density lipoprotein cholesterol level, serum low density lipoprotein cholesterol level, spherical equivalent and intraocular pressure. Both coffee and tea consumption were included in the multivariable model.

‡ P for interaction > 0.05.

Table S5. Baseline characteristics in participants who drank and did not drank instant coffee.

Variables	Total	Instant coffee drinker	Non-instant coffee drinker
	35557 (100%)	21057(100%)	14500 (100%)
Average thickness of macular retinal nerve fiber layer (µm) # †			
	28.52 (4.25)	28.36 (4.25)	28.63 (4.24)
Age at baseline § †			
<49	9844 (27%)	6119 (29%)	3725 (25%)
50-54	5615 (15%)	3351 (15%)	2264 (15%)
55-59	6212 (17%)	3726 (17%)	2486 (17%)
60-64	8146 (22%)	4683 (22%)	3463 (23%)
>64	5740 (16%)	3178 (15%)	2562 (17%)
Sex § †			
Female	18952 (53%)	11773 (55%)	7179 (49%)
Male	16605 (46%)	9284 (44%)	7321 (50%)
Assessment center § †			
Sheffield	9571 (26%)	5082 (24%)	4489 (30%)
Liverpool	2628 (7%)	1382 (6%)	1246 (8%)
Hounslow	6867 (19%)	4567 (21%)	2300 (15%)
Croydon	8935 (25%)	5890 (27%)	3045 (21%)
Birmingham	7476 (21%)	4099 (19%)	3377 (23%)
Swansea	80 (<1%)	37 (<1%)	43 (<1%)
Average total household income before tax (£) § †			
< 18k	5614 (15%)	3087 (14%)	2527 (17%)
18k~30k	7309 (20%)	4122 (19%)	3187 (21%)
31k~51k	8281 (23%)	4815 (22%)	3466 (23%)
52k~100k	7365 (20%)	4587 (21%)	2778 (19%)
> 100k	2459 (6%)	1786 (8%)	673 (4%)
Missing	4529 (12%)	2660 (12%)	1869 (12%)
Townsend deprivation index § †			
Quantile 1 (<-3.6)	7549 (21%)	4291 (20%)	3258 (22%)
Quantile 2 (-3.6~-2.1)	8351 (23%)	4729 (22%)	3622 (24%)
Quantile 3 (-2.1~-0.6)	9934 (27%)	5890 (27%)	4044 (27%)
Quantile 4 (>0.6)	9684 (27%)	6125 (29%)	3559 (24%)
Missing	39 (<1%)	22 (<1%)	17 (<1%)
Smoking status § †			
Never	12368 (34%)	7209 (34%)	5159 (35%)
Ever/Current	3426 (9%)	1751 (8%)	1675 (11%)
Missing	19763 (55%)	12097 (57%)	7666 (52%)
Alcohol intake status § †			
Never	1194 (3%)	825 (3%)	369 (2%)
Ever/Current	32848 (92%)	19133 (90%)	13715 (94%)
Missing	1515 (4%)	1099 (5%)	416 (2%)

Ethnic background § †			
White	32470 (91%)	18997 (90%)	13473 (92%)
Others	2940 (8%)	1960 (9%)	980 (6%)
Missing	147 (<1%)	100 (<1%)	47 (<1%)
Education achievement § †			
O level or equivalent	10213 (28%)	5481 (26%)	4732 (32%)
A level or equivalent	2210 (6%)	1300 (6%)	910 (6%)
University	22823 (64%)	14085 (66%)	8738 (60%)
Missing	311 (<1%)	191 (<1%)	120 (<1%)
Body mass index (BMI; kg/m²) § †			
Normal (<25)	12041 (33%)	7653 (36%)	4388 (30%)
Overweight (25-30)	15150 (42%)	8667 (41%)	6483 (44%)
Obesity (>30)	8200 (23%)	4636 (22%)	3564 (24%)
Missing	166 (<1%)	101 (<1%)	65 (<1%)
Moderate to vigorous physical activity (MVPA; minutes/week) § †			
Quantile 1 (<240)	7609 (21%)	4451 (21%)	3158 (21%)
Quantile 2 (240-960)	7718 (21%)	4601 (21%)	3117 (21%)
Quantile 3 (960-2160)	6884 (19%)	4208 (19%)	2676 (18%)
Quantile 4 (>2160)	7379 (20%)	4383 (20%)	2996 (20%)
Missing	5967 (16%)	3414 (16%)	2553 (17%)
Sleep duration (hour) §			
≤6h	9035 (25%)	5305 (25%)	3730 (25%)
7h	14326 (40%)	8482 (40%)	5844 (40%)
8h	9879 (27%)	5887 (27%)	3992 (27%)
≥9h	2317 (6%)	1383 (6%)	934 (6%)
Diabetes at baseline §			
No	34104 (95%)	20214 (95%)	13890 (95%)
Yes	1453 (4%)	843 (4%)	610 (4%)
Cardiovascular diseases at baseline §			
No	33486 (94%)	19873 (94%)	13613 (93%)
Yes	2071 (5%)	1184 (5%)	887 (6%)
Hypertension at baseline § †			
No	26519 (74%)	15863 (75%)	10656 (73%)
Yes	9038 (25%)	5194 (24%)	3844 (26%)
Healthy diet § †			
No	7662 (21%)	3983 (18%)	3679 (25%)
Yes	27895 (78%)	17074 (81%)	10821 (74%)
Habitual intake of sweeten beverages or foods § †			
No	886 (2%)	594 (2%)	292 (2%)
Yes	34671 (97%)	20463 (97%)	14208 (97%)
Serum high density liptein (HDL) cholesterol level § †			
Abnormal	3379 (9%)	1860 (8%)	1519 (10%)
Normal	27872 (78%)	16619 (78%)	11253 (77%)

Missing	4306 (12%)	2578 (12%)	1728 (11%)
Serum low density lipoprotein (LDL) cholesterol level § †			
Abnormal	14181 (39%)	8512 (40%)	5669 (39%)
Normal	18507 (52%)	10835 (51%)	7672 (52%)
Missing	2869 (8%)	1710 (8%)	1159 (7%)
Spherical equivalent (SE) (Diopters) # †			
	-0.06 (1.91)	0.01 (1.90)	-0.11 (1.92)
Intraocular pressure (IOP) (mmHg) #			
	15.20 (2.93)	15.21 (2.93)	15.19 (2.93)

§ Categorical variables were presented in the form of “number (percentage)” and tested by the Chi-square test;

Continuous variables were presented in the form of “mean (standard deviation)” and tested by the analysis of variance;

† P<0.05 between instant coffee drinkers and those who did not drink instant coffee;