

Supplementary Table S1. Variable risk factors for ulcerative colitis.

Exposure	SNPs	Inverse Variance Weighted		Weighted Median		MR-Egger			MR-PRESSO		<i>P</i> heterogeneity	<i>P</i> pleiotropy
		OR (95% CI)	<i>P</i>	OR (95% CI)	<i>P</i>	OR (95% CI)	<i>P</i>	SNPs	OR (95% CI)	<i>P</i>		
Exposure to drugs												
Antibiotics	50	1.068 (0.676 to 1.460)	0.055	1.451 (1.317 to 1.901)	0.115	1.430 (1.186 to 1.489)	0.078	50	1.466 (1.276 to 1.460)	0.202	0.189	0.142
Isotretinoin	17	1.447 (0.937 to 1.957)	0.107	1.411 (0.799 to 2.203)	0.24	1.336 (0.203 to 7.532)	0.831	17	1.455 (0.937 to 1.957)	0.108	0.138	0.094
Lifestyle												
Smoking	102	1.342 (1.035 to 1.649)	0.021	1.112 (0.712 to 1.624)	0.201	1.463 (0.447 to 4.157)	0.599	102	1.415 (1.144 to 1.758)	0.022	0.948	0.919
Cigarettes per day	33	0.974 (0.776 to 1.118)	0.446	0.925 (0.729 to 1.183)	0.165	0.813 (0.618 to 1.083)	0.059	33	1.032 (0.776 to 1.118)	0.447	0.521	0.521
Breastfeeding	42	0.791 (0.671 to 0.912)	0.002	0.547 (0.413 to 0.695)	0.001	0.430 (0.287 to 0.590)	0.011	42	0.466 (0.377 to 0.561)	0.001	0.189	0.142
Alcoholic drink	42	1.596 (0.706 to 2.487)	0.380	2.140 (0.891 to 3.363)	0.143	1.524 (0.434 to 2.721)	0.402	42	1.426 (0.706 to 2.487)	0.381	0.408	0.413
Fruit intake	71	0.726 (0.492 to 0.961)	0.001	0.184 (0.110 to 0.262)	0.028	0.164 (0.953 to 1.185)	0.283	71	0.164 (0.117 to 0.212)	0.009	0.396	0.411
Vegetables intake	32	0.731 (0.581 to 0.882)	0.001	0.620 (0.443 to 0.890)	0.004	0.235 (0.142 to 0.537)	0.012	32	0.661 (0.519 to 0.851)	0.001	0.092	0.040
Coffee intake	33	1.351 (0.613 to 2.089)	0.693	1.236 (0.489 to 2.744)	0.771	0.844 (0.211 to 2.617)	0.657	33	1.222 (0.613 to 2.089)	0.694	0.438	0.356
Tea intake	23	1.301 (1.081 to 1.522)	0.015	0.925 (0.729 to 1.193)	0.165	1.156 (0.851 to 1.310)	0.637	23	1.301 (0.869 to 1.155)	0.982	0.051	0.059
High vitamin D level	87	0.490 (0.225 to 0.755)	0.001	1.198 (0.890 to 1.627)	0.283	1.542 (0.587 to 3.538)	0.221	87	0.312 (0.209 to 1.450)	0.047	0.344	0.246
Cesarean delivery	46	1.121 (0.893 to 1.218)	0.414	1.144 (0.895 to 1.201)	0.514	1.207 (0.876 to 1.403)	0.566	46	1.203 (0.863 to 1.418)	0.295	0.311	0.233
Physical activity	56	0.478 (0.250 to 0.701)	0.001	0.646 (0.374 to 1.190)	0.088	0.265 (0.011 to 2.363)	0.202	56	0.519 (0.351 to 0.802)	0.002	0.053	0.135
Surgeries												
Appendectomy	65	1.368 (1.276 to 1.460)	0.000	1.547 (1.413 to 1.695)	0.001	1.430 (1.287 to 1.590)	0.011	65	1.466 (1.377 to 1.571)	0.001	0.189	0.142
Tonsillectomy	50	0.915 (0.705 to 1.189)	0.508	0.807 (0.476 to 1.047)	0.085	0.955 (0.579 to 1.261)	0.442	50	1.915 (1.705 to 2.189)	0.509	0.044	0.057
Related diseases												
Type 2 diabetes	88	1.042 (0.963 to 1.128)	0.304	1.135 (0.905 to 1.182)	0.624	1.147 (0.865 to 1.263)	0.656	88	1.143 (0.963 to 1.128)	0.305	0.241	0.203
Chronic kidney disease	14	1.210 (0.987 to 1.484)	0.067	1.311 (0.951 to 1.540)	0.123	1.993 (0.954 to 3.752)	0.22	14	1.311 (0.987 to 1.484)	0.068	0.529	0.527
Autoimmune	81	0.985 (0.915 to 1.060)	0.682	1.059 (0.862 to 1.066)	0.434	0.979 (0.775 to 0.995)	0.056	81	0.899 (0.915 to 1.060)	0.683	0.063	0.071
Celiac disease	14	0.999 (0.971 to 1.028)	0.937	1.007 (0.954 to 1.040)	0.858	1.076 (0.930 to 1.022)	0.308	14	1.003 (0.971 to 1.028)	0.938	0.354	0.344

Systemic lupus erythematosus	23	1.008 (0.980 to 1.036)	0.990	1.102 (0.956 to 1.048)	0.963	1.077 (0.906 to 1.052)	0.541	23	0.956 (0.967 to 1.034)	0.991	0.121	0.097
Blood parameters												
Blood calcium	11	1.092 (0.720 to 1.657)	0.679	1.413 (0.806 to 2.138)	0.099	1.725 (0.752 to 3.516)	0.283	11	0.992 (0.720 to 1.657)	0.681	0.702	0.805
Blood glucose	12	1.080 (0.988 to 1.181)	0.091	1.186 (0.985 to 1.196)	0.992	1.211 (0.815 to 1.506)	0.572	12	1.191 (0.988 to 1.181)	0.092	0.951	0.931
C-reactive protein	11	1.002 (0.869 to 1.155)	0.981	1.009 (0.804 to 1.241)	0.054	1.156 (0.851 to 1.310)	0.637	11	1.205 (0.869 to 1.155)	0.982	0.051	0.059
Blood zinc	117	1.082 (0.725 to 1.614)	0.699	1.940 (1.125 to 2.756)	0.002	1.977 (1.203 to 2.751)	0.038	117	1.405 (0.725 to 1.614)	0.711	0.061	0.062
Lipid metabolism												
n-3 PUFA	103	0.200 (0.033 to 0.368)	0.001	0.261 (0.933 to 1.441)	0.273	1.166 (0.845 to 1.342)	0.607	103	0.290 (0.134 to 0.469)	0.017	0.025	0.035
Triglycerides	114	0.951 (0.840 to 1.078)	0.435	1.223 (0.914 to 1.377)	0.055	1.236 (0.835 to 1.272)	0.792	114	1.001 (0.840 to 1.078)	0.436	0.351	0.398
n-6 PUFA	84	0.854 (0.718 to 0.991)	0.038	0.908 (0.748 to 1.069)	0.042	0.678 (0.402 to 0.955)	0.114	84	0.785 (0.626 to 0.944)	0.017	0.005	0.002
Apolipoprotein A-I	36	1.013 (0.872 to 1.177)	0.867	1.444 (1.001 to 1.887)	0.043	1.350 (0.962 to 1.622)	0.111	36	1.224 (0.872 to 1.177)	0.868	0.052	0.077
Total cholesterol	42	0.859 (0.752 to 0.966)	0.017	0.903 (0.643 to 1.001)	0.062	0.564 (0.311 to 0.817)	0.022	42	0.685 (0.516 to 0.854)	0.111	0.144	0.137
Glucose metabolism												
Fasting glucose	42	1.283 (0.943 to 1.745)	0.113	1.178 (0.669 to 1.733)	0.762	1.131 (0.584 to 1.781)	0.955	42	1.391 (0.943 to 1.745)	0.114	0.407	0.372
HbA1c	33	1.103 (0.649 to 1.876)	0.716	1.604 (0.712 to 3.137)	0.29	1.542 (0.508 to 4.086)	0.505	33	1.316 (0.842 to 2.088)	0.224	0.016	0.004
Fasting insulin	54	1.925 (0.961 to 3.858)	0.065	1.826 (0.723 to 4.169)	0.219	0.456 (0.042 to 2.816)	0.338	54	1.899 (0.961 to 3.858)	0.066	0.067	0.066
Obesity traits												
Body mass index	523	1.392 (1.144 to 1.641)	0.006	1.225 (0.899 to 1.498)	0.189	1.077 (0.606 to 1.571)	0.93	523	1.452 (1.242 to 1.662)	0.091	0.119	0.067
Whole body fat mass	412	1.363 (1.106 to 1.621)	0.004	1.295 (0.918 to 1.553)	0.071	0.971 (0.508 to 1.490)	0.624	412	1.336 (1.161 to 1.512)	0.102	0.001	0.001
Waist circumference	67	2.466 (2.093 to 2.968)	0.111	1.456 (1.001 to 2.183)	0.212	1.363 (0.331 to 4.732)	0.753	67	1.567 (1.093 to 1.968)	0.156	0.157	0.125
Hip circumference	55	1.280 (0.631 to 1.863)	0.121	0.817 (0.697 to 1.222)	0.241	1.622 (0.676 to 3.417)	0.325	55	1.881 (1.631 to 1.963)	0.122	0.618	0.591
Waist-to-hip ratio	36	1.354 (0.937 to 1.957)	0.107	1.436 (0.826 to 2.157)	0.115	1.336 (0.311 to 2.302)	0.831	36	1.455 (1.038 to 2.058)	0.108	0.138	0.094

Supplementary Table S2. Variable risk factors for Crohn's disease.

Exposure	SNPs	Inverse Variance Weighted		Weighted Median		MR-Egger			MR-PRESSO		P	P pleiotropy
		OR (95% CI)	P	OR (95% CI)	P	OR (95% CI)	P	SNPs	OR (95% CI)	P		
Exposure to drugs												
Antibiotics	50	1.745 (1.356 to 2.230)	0.005	1.547 (1.312 to 1.594)	0.112	1.430 (1.186 to 1.489)	0.078	50	1.368 (1.276 to 1.460)	0.003	0.188	0.143
Isotretinoin	17	1.354 (0.937 to 1.957)	0.107	1.436 (0.826 to 2.157)	0.237	1.336 (0.203 to 7.532)	0.831	17	1.454 (0.937 to 1.957)	0.109	0.137	0.095
Lifestyle												
Smoking	102	1.595 (1.155 to 2.204)	0.005	1.635 (0.975 to 2.413)	0.063	2.602 (0.760 to 4.084)	0.121	102	1.783 (1.256 to 2.311)	0.007	0.196	0.18
Cigarettes per day	33	1.249 (0.972 to 1.604)	0.082	1.223 (0.787 to 1.598)	0.525	1.069 (0.629 to 1.492)	0.897	33	1.360 (0.972 to 1.604)	0.084	0.391	0.338
Breastfeeding	42	0.710 (0.591 to 0.839)	0.002	0.416 (0.202 to 0.631)	0.001	1.430 (1.187 to 1.590)	0.011	42	1.531 (1.202 to 1.860)	0.052	0.188	0.143
Alcoholic drink	42	1.728 (1.195 to 2.261)	0.020	2.986 (0.899 to 4.954)	0.071	1.559 (0.146 to 14.544)	0.761	42	1.683 (1.105 to 2.261)	0.072	0.049	0.149
Fruit intake	71	0.571 (0.441 to 0.739)	0.001	0.117 (0.010 to 0.225)	0.025	1.164 (0.953 to 1.185)	0.283	71	0.164 (0.117 to 0.121)	0.001	0.401	0.401
Vegetables intake	32	0.660 (0.401 to 0.108)	0.011	0.497 (0.295 to 0.699)	0.001	0.434 (0.241 to 0.636)	0.012	32	0.630 (0.418 to 0.842)	0.002	0.039	0.093
Coffee intake	33	1.052 (0.482 to 2.295)	0.898	1.222 (0.388 to 3.195)	0.841	1.870 (0.218 to 5.250)	0.946	33	0.999 (0.482 to 2.295)	0.900	0.994	0.992
Tea intake	23	1.281 (1.081 to 1.521)	0.115	0.911 (0.628 to 1.082)	0.162	1.156 (0.851 to 1.310)	0.637	23	0.998 (0.869 to 1.155)	0.983	0.149	0.050
High vitamin D level	87	0.620 (0.465 to 0.835)	0.001	0.790 (0.024 to 0.556)	0.041	0.941 (0.102 to 0.781)	0.038	87	0.304 (0.125 to 0.614)	0.021	0.061	0.063
Cesarean delivery	46	1.301 (1.093 to 1.521)	0.002	1.231 (0.795 to 1.131)	0.114	1.311 (0.776 to 1.330)	0.196	46	1.165 (1.003 to 1.328)	0.055	0.211	0.313
Physical activity	56	0.536 (0.397 to 0.723)	0.006	0.504 (0.298 to 0.711)	0.001	0.334 (0.241 to 0.636)	0.022	56	0.694 (0.528 to 0.860)	0.013	0.039	0.093
Surgeries												
Appendectomy	65	1.180 (1.075 to 1.296)	0.001	1.262 (1.001 to 1.524)	0.000	1.373 (1.190 to 1.587)	0.015	65	1.281 (1.176 to 1.397)	0.003	0.039	0.089
Tonsillectomy	50	1.370 (1.159 to 1.621)	0.041	0.911 (0.628 to 1.082)	0.172	1.221 (0.851 to 1.310)	0.537	50	0.998 (0.869 to 1.155)	0.893	0.059	0.061
Related diseases												
Type 2 diabetes	88	1.121 (1.012 to 1.241)	0.029	1.221 (0.951 to 1.355)	0.158	1.140 (0.814 to 1.326)	0.773	88	1.217 (1.022 to 1.413)	0.051	0.283	0.289
Chronic kidney disease	14	1.110 (0.849 to 1.450)	0.446	1.211 (0.789 to 1.526)	0.581	1.399 (0.587 to 3.538)	0.522	14	1.212 (0.849 to 1.450)	0.448	0.643	0.547
Autoimmune	81	1.123 (1.031 to 1.224)	0.008	1.121 (0.948 to 1.228)	0.248	1.101 (0.892 to 1.203)	0.653	81	1.167 (1.001 to 1.334)	0.071	0.597	0.598
Celiac disease	14	0.972 (0.938 to 1.007)	0.117	1.003 (0.926 to 1.022)	0.273	1.007 (0.930 to 1.048)	0.682	14	1.002 (0.938 to 1.007)	0.119	0.581	0.545

Systemic lupus erythematosus	23	0.998 (0.958 to 1.041)	0.942	1.007 (0.930 to 1.047)	0.658	1.008 (0.908 to 1.093)	0.952	23	1.008 (0.958 to 1.041)	0.944	0.275	0.236
Blood parameters												
Blood calcium	11	1.933 (0.779 to 3.339)	0.118	1.815 (0.999 to 2.516)	0.053	1.687 (0.578 to 4.354)	0.423	11	2.024 (0.998 to 2.819)	0.071	0.889	0.896
Blood Lactose	12	1.024 (0.911 to 1.151)	0.032	1.008 (0.891 to 1.152)	0.839	1.110 (0.675 to 1.508)	0.978	12	1.125 (0.911 to 1.151)	0.688	0.705	0.738
C-reactive protein	11	1.048 (0.880 to 1.248)	0.601	1.204 (0.900 to 1.495)	0.251	1.186 (0.832 to 1.414)	0.56	11	1.149 (0.880 to 1.248)	0.603	0.117	0.208
Blood zinc	117	0.538 (0.324 to 0.893)	0.017	1.011 (0.425 to 2.397)	0.982	0.959 (0.353 to 2.037)	0.724	117	0.637 (0.294 to 0.983)	0.019	0.216	0.166
Lipid metabolism												
n-3 PUFA	103	0.222 (0.130 to 0.450)	0.021	0.301 (0.939 to 1.640)	0.128	1.381 (0.959 to 1.683)	0.111	103	0.316 (0.110 to 0.523)	0.023	0.816	0.747
Triglycerides	114	0.907 (0.771 to 1.066)	0.235	0.798 (0.645 to 1.163)	0.338	0.901 (0.660 to 1.138)	0.315	114	1.007 (0.771 to 1.066)	0.237	0.802	0.833
n-6 PUFA	84	0.994 (0.819 to 1.205)	0.051	1.062 (0.744 to 1.245)	0.769	1.008 (0.697 to 1.235)	0.619	84	1.004 (0.819 to 1.205)	0.952	0.075	0.069
Apolipoprotein A-I	36	0.977 (0.814 to 1.172)	0.802	1.058 (0.713 to 1.287)	0.776	1.159 (0.758 to 1.448)	0.789	36	1.077 (0.814 to 1.172)	0.804	0.282	0.371
Total cholesterol	42	1.030 (0.839 to 1.264)	0.776	1.073 (0.731 to 1.295)	0.849	0.901 (0.590 to 1.130)	0.237	42	1.131 (0.839 to 1.264)	0.778	0.071	0.082
Glucose metabolism												
Fasting glucose	42	1.328 (0.872 to 2.023)	0.186	1.311 (0.684 to 2.328)	0.455	1.911 (0.853 to 3.911)	0.136	42	1.429 (0.872 to 2.023)	0.188	0.195	0.192
HbA1c	33	1.430 (0.915 to 1.945)	0.097	1.745 (0.662 to 4.154)	0.279	1.629 (0.772 to 2.644)	0.144	33	1.742 (0.915 to 2.945)	0.099	0.468	0.472
Fasting insulin	54	1.310 (0.568 to 2.052)	0.559	1.742 (0.540 to 5.136)	0.373	0.223 (0.010 to 1.235)	0.092	54	1.119 (0.568 to 2.852)	0.561	0.381	0.375
Obesity traits												
Body mass index	523	1.103 (0.906 to 1.341)	0.328	1.112 (0.740 to 1.470)	0.808	1.008 (0.550 to 1.814)	1.007	523	1.110 (0.906 to 1.341)	0.331	0.416	0.471
Whole body fat mass	412	1.101 (0.891 to 1.362)	0.374	1.114 (0.721 to 1.423)	0.939	1.008 (0.512 to 1.946)	1.007	412	1.212 (0.891 to 1.362)	0.376	0.127	0.149
Waist circumference	67	1.365 (0.959 to 1.943)	0.084	1.258 (0.755 to 2.094)	0.376	1.600 (0.304 to 7.408)	0.632	67	1.456 (0.959 to 1.943)	0.086	0.517	0.472
Hip circumference	55	0.813 (0.616 to 1.074)	0.144	0.723 (0.462 to 1.033)	0.07	0.862 (0.263 to 2.203)	0.626	55	0.793 (0.616 to 1.074)	0.146	0.916	0.894
Waist-to-hip ratio	36	1.632 (1.069 to 1.493)	0.023	1.917 (1.111 to 2.724)	0.019	1.293 (0.254 to 2.278)	0.879	36	1.941 (1.099 to 2.783)	0.075	0.841	0.776

Supplementary Table S3. Variable risk factors for non-infective colitis.

Exposure	SNPs	IVW		WM		MR-Egger			MR-PRESSO			P	P pleiotropy
		OR (95% CI)	P	OR (95% CI)	P	OR (95% CI)	P	SNPs	OR (95% CI)	P	heterogeneity		
Exposure to drugs													
Antibiotics	50	1.388 (0.482 to 2.295)	0.898	1.211 (0.288 to 2.195)	0.831	1.170 (0.218 to 5.250)	0.924	50	1.153 (0.482 to 2.295)	0.888	0.995	1.004	
Isotretinoin	17	1.518 (0.922 to 2.115)	0.107	1.436 (0.826 to 2.157)	0.227	1.336 (0.203 to 2.532)	0.809	17	1.455 (0.937 to 1.957)	0.097	0.138	0.107	
Lifestyle													
Smoking	102	1.884 (1.130 to 2.638)	0.018	2.002 (1.201 to 2.803)	0.002	1.643 (0.218 to 2.876)	0.359	102	1.884 (1.130 to 2.638)	0.008	0.648	0.711	
Cigarettes per day	33	0.845 (0.529 to 1.351)	0.482	0.911 (0.477 to 1.719)	0.751	1.233 (0.495 to 2.589)	0.760	33	0.946 (0.529 to 1.351)	0.472	0.458	0.431	
Breastfeeding	42	0.675 (0.442 to 0.809)	0.014	0.696 (0.370 to 0.822)	0.010	2.049 (0.995 to 2.812)	0.401	42	0.304 (0.232 to 0.457)	0.001	0.005	0.015	
Alcoholic drink	42	1.545 (1.155 to 2.035)	0.001	1.751 (0.409 to 2.903)	0.000	1.821 (0.735 to 2.490)	0.070	42	1.786 (1.236 to 2.336)	0.002	0.583	0.569	
Fruit intake	71	0.497 (0.339 to 0.729)	0.001	0.507 (0.328 to 0.829)	0.000	0.271 (0.217 to 0.518)	0.010	71	0.598 (0.440 to 0.830)	0.001	0.821	0.828	
Vegetables intake	32	0.266 (0.110 to 0.640)	0.003	0.396 (0.192 to 1.054)	0.030	0.445 (0.023 to 1.895)	0.165	32	0.367 (0.211 to 0.741)	0.002	0.215	0.211	
Coffee intake	33	1.580 (0.432 to 2.728)	0.386	1.721 (0.195 to 13.462)	0.644	2.281 (0.452 to 4.012)	0.595	33	1.821 (0.432 to 8.728)	0.376	0.572	0.478	
Tea intake	23	1.051 (0.481 to 1.921)	0.115	0.925 (0.628 to 1.082)	0.152	1.156 (0.851 to 1.310)	0.615	23	1.012 (0.970 to 1.256)	0.971	0.042	0.051	
High vitamin D level	87	0.435 (0.220 to 0.862)	0.017	1.011 (0.293 to 2.830)	0.861	1.006 (0.279 to 2.940)	0.859	87	0.536 (0.321 to 0.963)	0.007	0.153	0.129	
Cesarean delivery	46	1.001 (0.753 to 1.308)	0.221	1.103 (0.888 to 1.276)	0.514	1.098 (0.799 to 1.393)	0.406	46	1.113 (0.793 to 1.405)	0.112	0.236	0.402	
Physical activity	56	0.275 (0.173 to 1.033)	0.056	0.206 (0.019 to 0.578)	0.001	0.243 (0.101 to 1.009)	0.570	56	0.376 (0.073 to 1.033)	0.066	0.075	0.118	
Surgeries													
Appendectomy	65	1.876 (1.259 to 2.795)	0.002	1.692 (0.821 to 3.082)	0.158	1.171 (0.318 to 3.598)	0.902	65	1.939 (1.340 to 2.826)	0.001	0.035	0.046	
Tonsillectomy	50	1.070 (1.059 to 1.601)	0.121	0.935 (0.628 to 1.082)	0.162	1.146 (0.851 to 1.310)	0.515	50	1.023 (0.869 to 1.155)	0.881	0.060	0.072	
Related diseases													
Type 2 diabetes	88	1.004 (0.823 to 1.226)	0.968	0.924 (0.592 to 1.145)	0.237	1.215 (0.692 to 1.795)	0.645	88	1.112 (0.823 to 1.226)	0.958	0.210	0.229	
Chronic kidney disease	14	0.813 (0.486 to 1.362)	0.432	0.957 (0.466 to 1.571)	0.604	0.945 (0.150 to 4.756)	0.855	14	0.914 (0.486 to 1.362)	0.422	0.861	0.853	
Autoimmune	81	0.880 (0.738 to 1.050)	0.156	0.885 (0.602 to 1.020)	0.059	0.863 (0.561 to 1.035)	0.075	81	0.981 (0.738 to 1.050)	0.146	0.213	0.214	
Celiac disease	14	0.998 (0.932 to 1.069)	0.958	1.112 (0.918 to 1.114)	0.815	1.066 (0.861 to 1.085)	0.554	14	1.098 (0.932 to 1.069)	0.948	0.961	0.970	

Systemic lupus erythematosus	23	0.958 (0.890 to 1.032)	0.262	1.027 (0.831 to 1.035)	0.168	1.068 (0.821 to 1.142)	0.690	23	1.058 (0.890 to 1.032)	0.252	0.755	0.705
Blood parameters												
Blood calcium	11	0.888 (0.311 to 2.538)	0.825	1.275 (0.343 to 4.017)	0.787	1.097 (0.330 to 2.983)	0.428	11	0.989 (0.311 to 2.538)	0.815	0.708	0.724
Blood Lactose	12	1.000 (0.792 to 1.264)	0.998	1.145 (0.815 to 1.336)	0.724	1.001 (0.779 to 2.698)	0.264	12	0.998 (0.792 to 1.264)	0.988	0.450	0.381
C-reactive protein	11	0.775 (0.565 to 1.062)	0.113	0.750 (0.461 to 1.218)	0.233	0.908 (0.501 to 1.299)	0.369	11	0.876 (0.565 to 1.062)	0.103	0.992	0.997
Blood zinc	117	0.087 (0.434 to 2.721)	0.859	1.247 (0.472 to 2.768)	0.312	1.339 (0.478 to 2.458)	0.286	117	1.188 (0.434 to 2.721)	0.849	0.747	0.853
Lipid metabolism												
n-3 PUFA	103	0.476 (0.259 to 0.795)	0.042	1.692 (0.821 to 3.082)	0.158	1.171 (0.318 to 3.598)	0.902	103	0.639 (0.340 to 0.826)	0.002	0.035	0.036
Triglycerides	114	0.862 (0.624 to 1.192)	0.369	1.177 (0.607 to 1.908)	0.792	1.090 (0.573 to 1.710)	0.959	114	0.963 (0.624 to 1.192)	0.359	0.241	0.273
n-6 PUFA	84	1.091 (0.749 to 1.589)	0.649	1.140 (0.637 to 1.696)	0.866	1.325 (0.701 to 2.136)	0.469	84	0.991 (0.749 to 1.589)	0.639	0.047	0.063
Apolipoprotein A-I	36	1.061 (0.747 to 1.506)	0.742	1.221 (0.595 to 2.110)	0.714	1.212 (0.595 to 2.071)	0.732	36	0.961 (0.747 to 1.506)	0.732	0.438	0.387
Total cholesterol	42	1.085 (0.748 to 1.574)	0.668	1.148 (0.606 to 1.810)	0.858	1.218 (0.610 to 2.043)	0.711	42	0.985 (0.748 to 1.574)	0.658	0.166	0.265
Glucose metabolism												
Fasting glucose	42	0.794 (0.371 to 1.699)	0.552	0.499 (0.146 to 1.708)	0.257	0.356 (0.064 to 1.008)	0.144	42	0.895 (0.371 to 1.699)	0.542	0.691	0.789
HbA1c	33	0.760 (0.236 to 2.448)	0.646	1.144 (0.184 to 7.120)	0.874	0.619 (0.052 to 5.169)	0.566	33	0.861 (0.236 to 2.448)	0.636	0.205	0.295
Fasting insulin	54	1.763 (0.374 to 2.153)	0.394	4.837 (0.459 to 50.922)	0.178	1.574 (0.627 to 2.344)	0.234	54	2.232 (0.374 to 12.153)	0.384	0.002	0.084
Obesity traits												
Body mass index	523	1.106 (0.848 to 1.442)	0.458	1.046 (0.629 to 1.424)	0.780	0.644 (0.242 to 1.215)	0.127	523	1.207 (0.848 to 1.442)	0.448	0.245	0.298
Whole body fat mass	412	1.358 (0.904 to 2.039)	0.140	1.459 (0.707 to 2.607)	0.347	0.788 (0.192 to 2.461)	0.554	412	1.459 (0.904 to 2.039)	0.130	0.189	0.198
Waist circumference	67	0.929 (0.794 to 1.086)	0.355	1.033 (0.790 to 1.103)	0.407	0.995 (0.589 to 1.717)	0.975	67	1.009 (0.794 to 1.086)	0.345	0.998	1.009
Hip circumference	55	0.972 (0.781 to 1.210)	0.801	1.195 (0.794 to 1.508)	0.572	1.003 (0.714 to 1.380)	0.954	55	1.072 (0.781 to 1.210)	0.791	0.848	0.899
Waist-to-hip ratio	36	1.836 (0.813 to 4.148)	0.144	1.420 (0.490 to 4.567)	0.646	1.562 (0.128 to 2.151)	0.842	36	1.937 (0.914 to 4.249)	0.134	0.494	0.485