

## Supplementary Materials

**Supplementary Table 1. Extracted SNPs for the exposure relative dietary carbohydrate intake based on the genome-wide significance threshold of 5E-08**

SNP	A1	A2	EAF	BETA	SE	P	R <sup>2</sup> (%)	F statistics
rs10206338	A	G	0.572	-0.016	0.003	9.64E-08	0.013%	33.712
rs10433500	A	G	0.63	0.016	0.003	9.64E-08	0.012%	32.099
rs10510554	T	C	0.436	0.019	0.003	2.4E-10	0.018%	47.753
rs10962121	T	G	0.479	-0.015	0.003	5.73E-07	0.011%	30.204
rs1104608	C	G	0.418	0.018	0.003	1.97E-09	0.016%	42.400
rs2472297	T	C	0.206	-0.018	0.003	1.97E-09	0.011%	28.506
rs36123991	T	G	0.186	0.021	0.004	1.52E-07	0.013%	35.916
rs4420638	A	G	0.822	-0.024	0.004	1.97E-09	0.017%	45.336
rs7012637	A	G	0.492	0.017	0.003	1.46E-08	0.014%	38.855
rs7190396	T	G	0.599	0.018	0.003	1.97E-09	0.016%	41.864
rs8097672	A	T	0.847	0.023	0.004	8.92E-09	0.014%	36.876
rs838144	T	C	0.534	-0.023	0.003	1.77E-14	0.026%	70.819

SNP: Single-nucleotide polymorphism; A1: effect allele; A2: non-effect allele; EAF: effect allele frequency; BETA: beta estimate for the association of SNP with exposure; SE: standard error of the Beta; P: two-sided *P*-value from the meta-analysis for exposure; R<sup>2</sup> (%): explained variance given in percent.

**Supplementary Table 2. Extracted SNPs for the exposure relative dietary fat intake based on the genome-wide significance threshold of 5E-08**

SNP	A1	A2	EAF	BETA	SE	P	R <sup>2</sup> (%)	F statistics
rs1229984	T	C	0.048	0.098	0.009	1.3E-27	0.088%	236.246
rs33988101	T	G	0.499	-0.029	0.003	4.18E-22	0.042%	113.128
rs10468280	A	G	0.611	-0.019	0.003	2.4E-10	0.017%	46.156
rs7012814	A	G	0.492	-0.019	0.003	2.4E-10	0.018%	48.536
rs57193069	A	G	0.553	-0.016	0.003	9.64E-08	0.013%	34.039

SNP: Single-nucleotide polymorphism; A1: effect allele; A2: non-effect allele; EAF: effect allele frequency; BETA: beta estimate for the association of SNP with exposure; SE: standard error of the Beta; P: two-sided *P*-value from the meta-analysis for

exposure; R<sup>2</sup> (%): explained variance given in percent.

**Supplementary Table 3. Extracted SNPs for the exposure relative dietary protein intake based on the genome-wide significance threshold of 5E-08**

SNP	A1	A2	EAF	BETA	SE	P	R <sup>2</sup> (%)	F statistics
rs838133	A	G	0.425	-0.032	0.003	1.46E-26	0.050%	134.522
rs13146907	A	G	0.625	-0.022	0.003	2.24E-13	0.023%	60.997
rs1461729	A	G	0.098	0.032	0.005	1.55E-10	0.018%	48.675
rs1603978	A	C	0.694	0.019	0.003	2.40E-10	0.015%	41.226
rs55872725	T	C	0.4	0.018	0.003	1.97E-09	0.016%	41.816
rs780094	T	C	0.398	0.018	0.003	1.97E-09	0.016%	41.746
rs445551	A	G	0.317	0.019	0.003	2.40E-10	0.016%	42.031

SNP: Single-nucleotide polymorphism; A1: effect allele; A2: non-effect allele; EAF: effect allele frequency; BETA: beta estimate for the association of SNP with exposure; SE: standard error of the Beta; P: two-sided *P*-value from the meta-analysis for exposure; R<sup>2</sup> (%): explained variance given in percent.

**Supplementary Table 4. Extracted SNPs for the exposure AD based on the genome-wide significance threshold of 5E-08**

SNP	A1	A2	EAF	BETA	SE	P	R <sup>2</sup> (%)	F statistics
				-				
rs679515	C	T	0.1715	0.1508	0.0183	1.72E-16	0.646%	415.785
rs6733839	T	C	0.382	0.1693	0.0154	4.11E-28	1.353%	876.955
rs114812713	C	G	0.0189	0.298	0.0431	4.71E-12	0.329%	211.220
				-				
rs34665982	C	T	0.3012	0.0967	0.0166	5.7E-09	0.394%	252.620
				-				
rs9381563	T	C	0.6443	0.0821	0.0148	2.9E-08	0.309%	198.105
				-				
rs11767557	C	T	0.8033	0.1028	0.0182	1.62E-08	0.334%	214.198
rs867230	A	C	0.6065	0.1333	0.0158	3.26E-17	0.848%	546.800
rs73223431	T	C	0.3665	0.0936	0.0153	9.5E-10	0.407%	261.118

rs11257242	G	C	0.3673	0.0841	0.0154	4.73E-08	0.329%	210.831
								-
rs1582763	A	G	0.3511	0.1232	0.0149	1.36E-16	0.692%	445.182
rs3851179	C	T	0.3607	0.1198	0.0148	5.75E-16	0.662%	425.934
rs3740688	T	G	0.5532	0.0935	0.0144	8.41E-11	0.432%	277.456
								-
rs12590654	A	G	0.3365	0.0906	0.0157	7.89E-09	0.367%	235.164
								-
rs72654445	A	G	0.0104	0.5425	0.0811	2.24E-11	0.606%	389.606
								-
rs7412	T	C	0.0721	0.4673	0.0305	5.51E-53	2.922%	1923.980
rs1081105	C	A	0.9739	0.942	0.0436	1.6E-103	4.511%	3019.937
								-
rs12151021	G	A	0.3192	0.1071	0.0169	2.34E-10	0.499%	320.277
								-
rs111278137	A	G	0.0211	0.4735	0.0713	3.12E-11	0.926%	597.580
rs147711004	A	G	0.028	1.1354	0.0366	2.7E-211	7.017%	4824.058
								-
rs139136389	T	C	0.0197	0.4938	0.0851	6.53E-09	0.942%	607.758
rs150685845	G	A	0.9875	0.5561	0.0645	6.6E-18	0.763%	491.785

SNP: Single-nucleotide polymorphism; A1: effect allele; A2: non-effect allele; EAF: effect allele frequency; BETA: beta estimate for the association of SNP with exposure; SE: standard error of the Beta; P: two-sided *P*-value from the meta-analysis for exposure; R<sup>2</sup> (%): explained variance given in percent; AD: Alzheimer's disease.

**Supplementary Table 5. Extracted SNPs for the exposure PD based on the genome-wide significance threshold of 5E-08**

SNP	A1	A2	EAF	BETA	SE	P	R <sup>2</sup> (%)	F statistics
								-
rs10221156	A	G	0.0932	0.1156	0.0179	10	0.226%	3282.020
								1.27E-
rs10513789	T	G	0.8112	0.1485	0.0121	34	0.675%	9770.562

rs10748818	A	G	0.8514	-0.079	0.013	09	1.23E-	0.158%	2296.151
				-			3.82E-		
rs10756907	A	G	0.7666	0.0926	0.011	17		0.307%	4454.892
							5.48E-		
rs10797576	T	C	0.1403	0.1114	0.0133	17		0.299%	4346.635
							8.36E-		
rs10847864	T	G	0.364	0.1478	0.0115	38		1.011%	14580.508
							5.11E-		
rs11150601	A	G	0.6442	0.0907	0.0099	20		0.377%	5471.175
				-			1.52E-		
rs11158026	T	C	0.3245	0.0842	0.0102	16		0.311%	4512.244
							4.03E-		
rs114138760	C	G	0.0112	0.2812	0.0478	09		0.175%	2546.104
							2.02E-		
rs11557080	A	G	0.1389	0.1315	0.0135	22		0.414%	5999.118
				-			4.45E-		
rs11578699	T	C	0.1949	0.0704	0.012	09		0.156%	2261.576
							1.62E-		
rs11610045	A	G	0.4896	0.0601	0.0094	10		0.181%	2624.198
				-			3.35E-		
rs11658976	A	G	0.5802	0.0624	0.0113	08		0.190%	2757.053
rs11683001	A	T	0.337	0.0705	0.0098	6.3E-13		0.222%	3227.277
				-			1.02E-		
rs11707416	A	T	0.3672	0.0627	0.0097	10		0.183%	2655.769
				-			7.06E-		
rs117615688	A	G	0.067	0.2324	0.0288	16		0.675%	9767.119
							2.17E-		
rs117896735	A	G	0.0166	0.4354	0.0394	28		0.619%	8957.752
				-			6.73E-		
rs11950533	A	C	0.102	0.0916	0.0158	09		0.154%	2235.011
				-			3.58E-		
rs12147950	T	C	0.4376	0.0529	0.0096	08		0.138%	2003.160

				-		2.56E-		
rs12283611	A	C	0.4148	0.0645	0.0102	10	0.202%	2935.382
				-				
rs12456492	A	G	0.6816	0.0983	0.0099	3.1E-23	0.419%	6082.255
						1.33E-		
rs12497850	T	G	0.6476	0.0636	0.0099	10	0.185%	2683.704
						1.79E-		
rs12528068	T	C	0.2844	0.0657	0.0103	10	0.176%	2554.155
				-		1.15E-		
rs12600861	A	C	0.6484	0.0565	0.0099	08	0.146%	2116.588
						3.41E-		
rs1293298	A	C	0.7444	0.093	0.0114	16	0.329%	4777.290
						1.39E-		
rs12951632	T	C	0.7349	0.0642	0.0106	09	0.161%	2335.018
						1.13E-		
rs13117519	T	C	0.1744	0.0875	0.0123	12	0.220%	3203.716
				-				
rs13294100	T	G	0.3422	0.0859	0.01	8.7E-18	0.332%	4821.646
				-				
rs1450522	A	G	0.6742	0.0616	0.0099	4.9E-10	0.167%	2423.578
						2.91E-		
rs1474055	T	C	0.1312	0.1796	0.0137	39	0.735%	10630.193
				-		2.25E-		
rs1867598	A	G	0.9019	0.1554	0.0156	23	0.427%	6196.548
						1.61E-		
rs1941685	T	G	0.4983	0.0531	0.0094	08	0.141%	2050.178
						3.56E-		
rs199351	A	C	0.5939	0.1016	0.0096	26	0.498%	7215.163
				-		1.48E-		
rs2042477	A	T	0.2422	0.0657	0.0116	08	0.158%	2303.833
				-		1.57E-		
rs2086641	T	C	0.7225	0.0605	0.0107	08	0.147%	2134.293
rs2248244	A	G	0.2828	0.0714	0.0107	2.51E-	0.207%	3005.366

						11		
						-	4.85E-	
rs2251086	T	C	0.1417	0.1186	0.0137	18	0.342%	4965.582
							6.16E-	
rs2269906	A	C	0.6531	0.0631	0.0102	10	0.180%	2622.640
rs2280104	T	C	0.3604	0.0556	0.0098	1.4E-08	0.143%	2072.544
							1.65E-	
rs26431	C	G	0.7025	0.0621	0.0103	09	0.161%	2343.668
							8.67E-	
rs2904880	C	G	0.3094	-0.065	0.0106	10	0.181%	2624.636
							1.19E-	
rs3104783	A	C	0.4343	0.0668	0.0094	12	0.219%	3186.074
							2.82E-	
rs34025766	A	T	0.1589	0.0839	0.0133	10	0.188%	2735.003
							3.12E-	
rs34311866	T	C	0.8065	0.2126	0.012	70	1.411%	20254.512
							8.3E-	
rs356182	A	G	0.6278	0.2774	0.0105	154	3.596%	50487.645
							1.96E-	
rs35749011	A	G	0.0169	0.6068	0.0342	70	1.224%	17599.868
							2.08E-	
rs3742785	A	C	0.7866	0.0707	0.0118	09	0.168%	2439.709
							4.69E-	
rs3802920	T	G	0.2054	0.1073	0.0117	20	0.376%	5452.472
							3.85E-	
rs4101061	A	G	0.7107	0.0912	0.0102	19	0.342%	4963.828
							5.81E-	
rs4140646	A	G	0.2081	0.0833	0.0121	12	0.229%	3322.908
							1.15E-	
rs4653767	T	C	0.7196	0.0833	0.0104	15	0.280%	4066.508
rs4698412	A	G	0.5529	0.1035	0.0094	3.4E-28	0.530%	7671.954
							1.67E-	
rs4771268	T	C	0.2295	0.0675	0.0112	09	0.161%	2342.841

				-		1.62E-		
rs5019538	A	G	0.6792	0.1565	0.0124	36	1.067%	15377.325
				-				
rs55818311	T	C	0.6937	0.0696	0.0111	3.6E-10	0.206%	2991.731
rs55961674	T	C	0.1722	0.0861	0.0126	8.3E-12	0.211%	3071.329
						4.63E-		
rs57891859	A	G	0.7185	0.0807	0.0107	14	0.263%	3826.369
						9.39E-		
rs61169879	T	C	0.1641	0.082	0.0134	10	0.184%	2681.446
				-		2.26E-		
rs620513	T	G	0.2682	0.0856	0.0108	15	0.288%	4176.649
						5.88E-		
rs62053943	T	C	0.1552	-0.27	0.0155	68	1.912%	27306.808
				-		1.77E-		
rs62333164	A	G	0.3264	0.0638	0.01	10	0.179%	2601.931
				-		6.56E-		
rs6476434	T	C	0.7336	0.0615	0.0106	09	0.148%	2149.718
						1.53E-		
rs6500328	A	G	0.5985	0.0586	0.0097	09	0.165%	2399.429
						2.89E-		
rs666463	A	T	0.8328	0.076	0.0128	09	0.161%	2338.758
						7.17E-		
rs6808178	T	C	0.3794	0.0658	0.0096	12	0.204%	2963.158
						1.07E-		
rs6825004	C	G	0.6912	0.0622	0.0102	09	0.165%	2401.177
				-		5.35E-		
rs6854006	T	C	0.3632	0.0912	0.0097	21	0.385%	5581.420
				-				
rs7134559	T	C	0.404	0.0539	0.0098	3.8E-08	0.140%	2034.592
						1.46E-		
rs72840788	A	G	0.2155	0.0763	0.0113	11	0.197%	2860.973
				-		5.84E-		
rs73038319	A	C	0.9592	0.1693	0.0235	13	0.224%	3259.779

				-		9.66E-		
rs75859381	T	C	0.9673	0.2207	0.0341	11	0.308%	4473.563
						1.27E-		
rs76116224	A	T	0.9042	0.1104	0.0194	08	0.211%	3068.530
						1.77E-		
rs76904798	T	C	0.1444	0.1439	0.013	28	0.512%	7413.306
				-		1.51E-		
rs76949143	A	T	0.0507	0.1432	0.0253	08	0.197%	2868.928
						7.94E-		
rs77351827	T	C	0.1275	0.0802	0.0139	09	0.143%	2081.051
						1.97E-		
rs7938782	A	G	0.8776	0.087	0.0145	09	0.163%	2364.232
				-		1.46E-		
rs8087969	T	G	0.5496	0.0578	0.0102	08	0.165%	2404.707
						8.27E-		
rs823118	T	C	0.566	0.1066	0.0094	30	0.558%	8084.803
						1.36E-		
rs850738	A	G	0.6056	-0.071	0.0105	11	0.241%	3498.426
				-		1.89E-		
rs873786	T	C	0.0988	0.1731	0.0182	21	0.534%	7729.101
						3.41E-		
rs896435	T	C	0.6892	0.0735	0.0101	13	0.231%	3362.598
				-		1.43E-		
rs9261484	T	C	0.2451	0.0635	0.0112	08	0.149%	2169.761
						1.11E-		
rs9568188	T	C	0.7397	0.0617	0.0108	08	0.147%	2131.784
						5.41E-		
rs979812	T	G	0.4421	0.061	0.0093	11	0.184%	2668.203
						1.97E-		
rs997368	A	G	0.8049	0.0714	0.0119	09	0.160%	2327.984
				-		6.34E-		
rs112485576	A	C	0.163	0.1676	0.0153	28	0.766%	11076.430
rs6497339	A	T	0.4536	0.063	0.0095	3.32E-	0.197%	2859.498



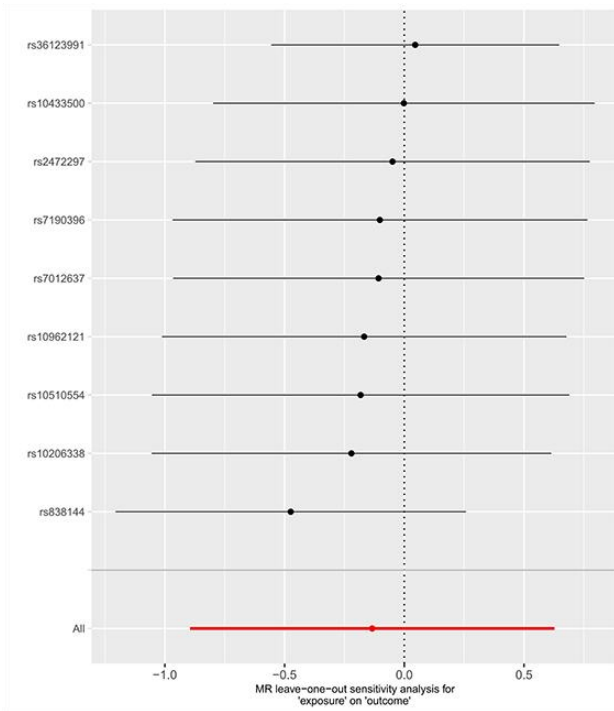
rs6658353	C	G	0.5011	0.065	0.0094	12	0.211%	3069.916
-----------	---	---	--------	-------	--------	----	--------	----------

SNP: Single-nucleotide polymorphism; A1: effect allele; A2: non-effect allele; EAF: effect allele frequency; BETA: beta estimate for the association of SNP with exposure; SE: standard error of the Beta; P: two-sided *P*-value from the meta-analysis for exposure; R<sup>2</sup> (%): explained variance given in percent; PD: Parkinson's disease.

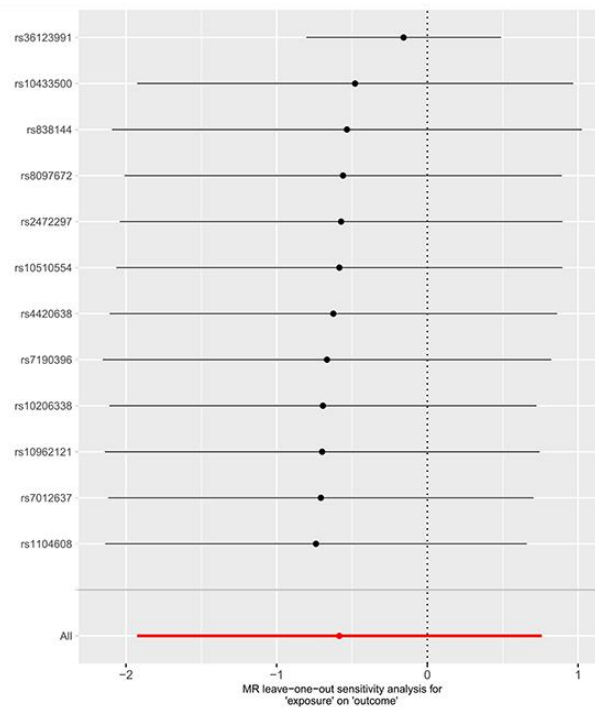
**Supplementary Table 6. Extracted SNPs for the exposure ALS based on the genome-wide significance threshold of 5E-08**

SNP	A1	A2	EAF	BETA	SE	P	R <sup>2</sup> (%)	F statistics
rs10463311	T	C	0.7441	0.0156	0.0854	08	0.278%	223.263
rs3849943	T	C	0.7518	0.0155	0.1764	30	1.161%	925.202
rs74654358	A	G	0.0473	0.0337	0.1976	09	0.352%	282.663
rs12973192	G	C	0.3247	0.0153	0.1205	15	0.637%	510.020
rs75087725	A	C	0.0153	0.0672	0.5145	14	0.798%	637.817
rs142321490	C	G	0.0183	0.0513	0.3172	10	0.362%	290.356

SNP: Single-nucleotide polymorphism; A1: effect allele; A2: non-effect allele; EAF: effect allele frequency; BETA: beta estimate for the association of SNP with exposure; SE: standard error of the Beta; P: two-sided *P*-value from the meta-analysis for exposure; R<sup>2</sup> (%): explained variance given in percent; ALS: amyotrophic lateral sclerosis.

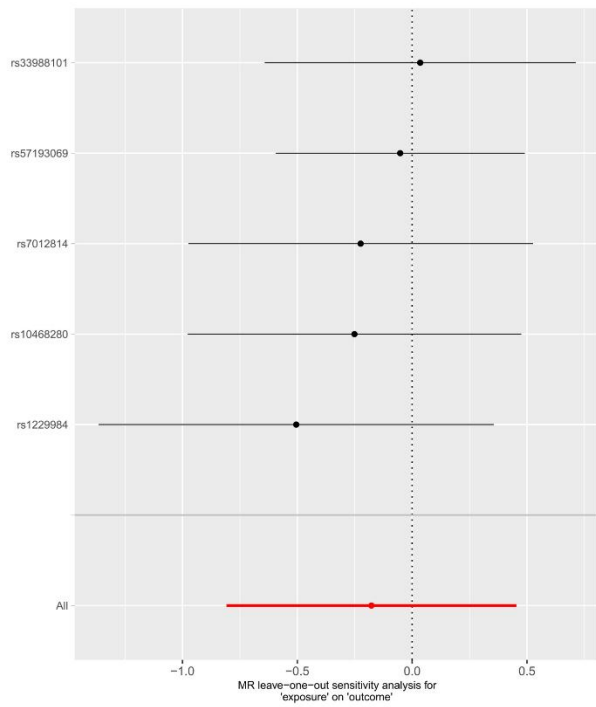


A. Carbohydrate intake (%) vs. AD

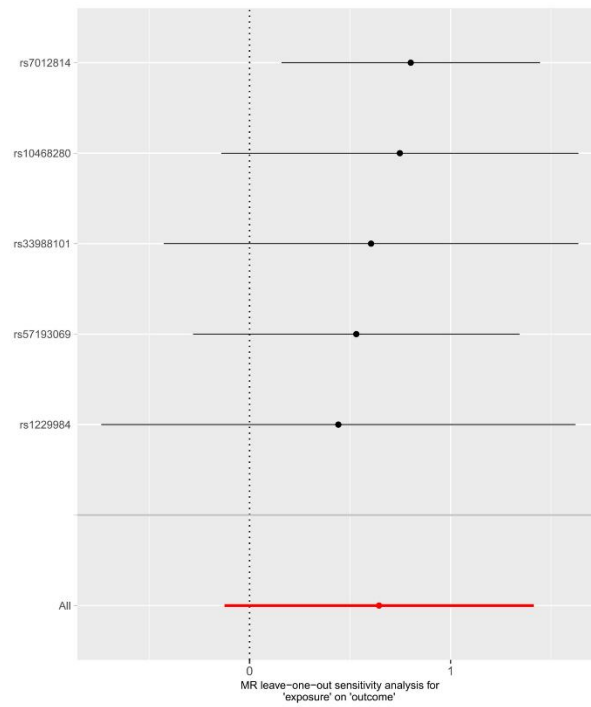


B. Carbohydrate intake (%) vs. PD

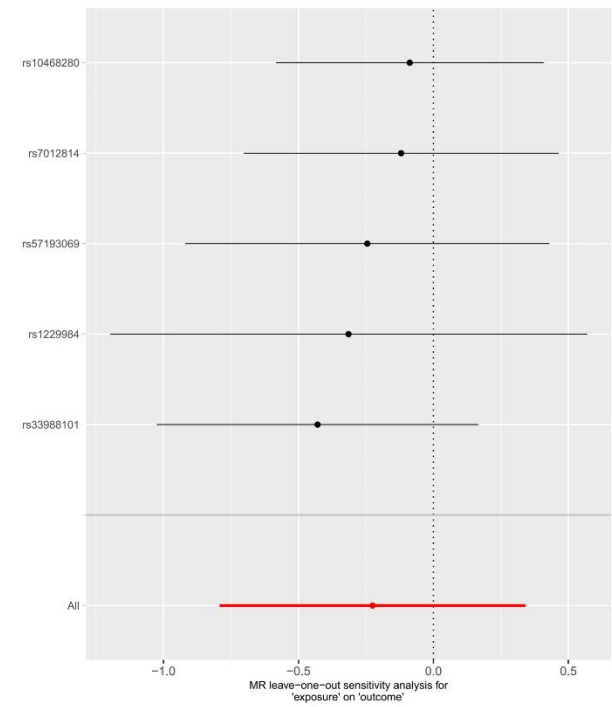
**Supplementary Figure 1.** The leave-one-out analysis for relative dietary carbohydrate intake on the NDDs. NDDs: Neurodegenerative diseases; AD: Alzheimer's disease; PD: Parkinson's disease.



A. Fat intake (%) vs. AD

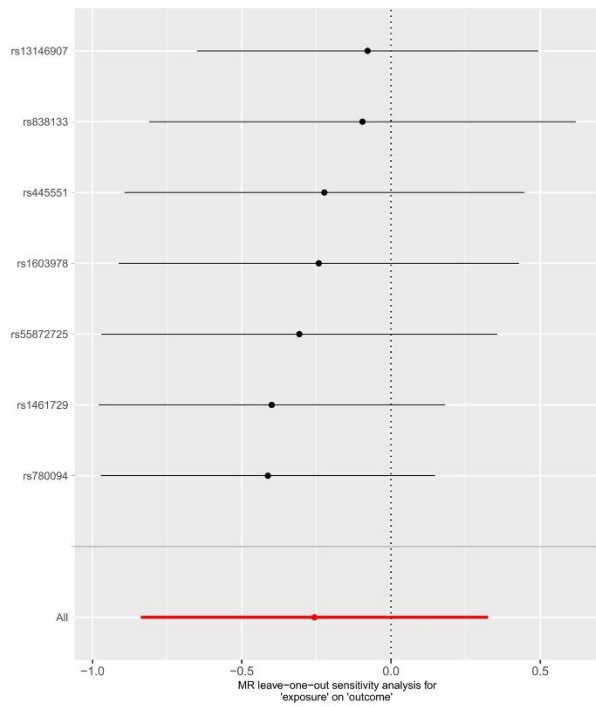


B. Fat intake (%) vs. PD

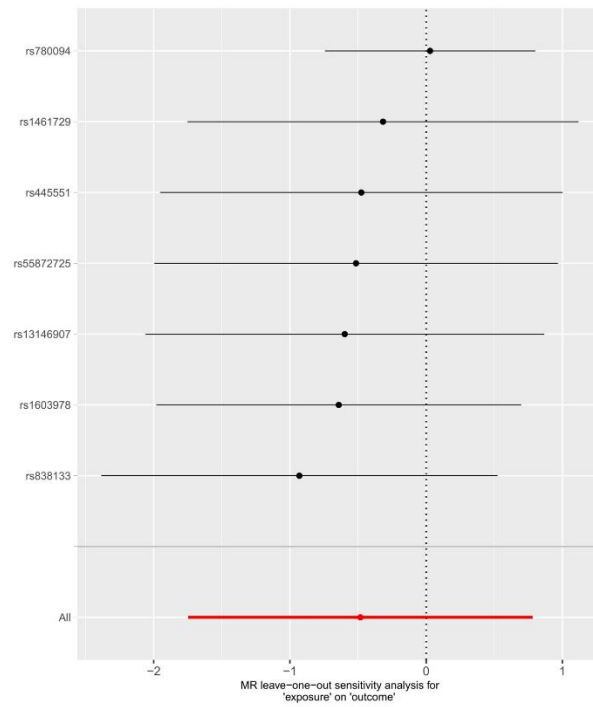


C. Fat intake (%) vs. ALS

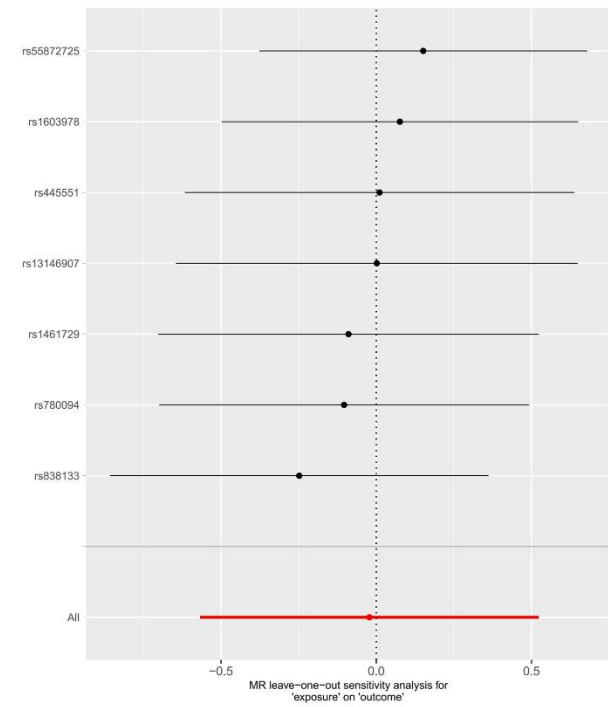
**Supplementary Figure 2.** The leave-one-out analysis for relative dietary fat intake on the NDDs. NDDs: Neurodegenerative diseases; AD: Alzheimer's disease; PD: Parkinson's disease; ALS: amyotrophic lateral sclerosis.



A. Protein intake (%) vs. AD

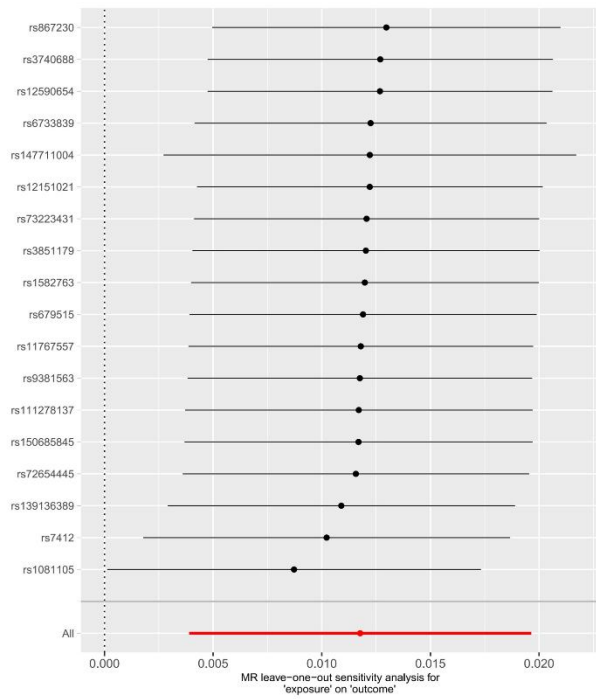


B. Protein intake (%) vs. PD

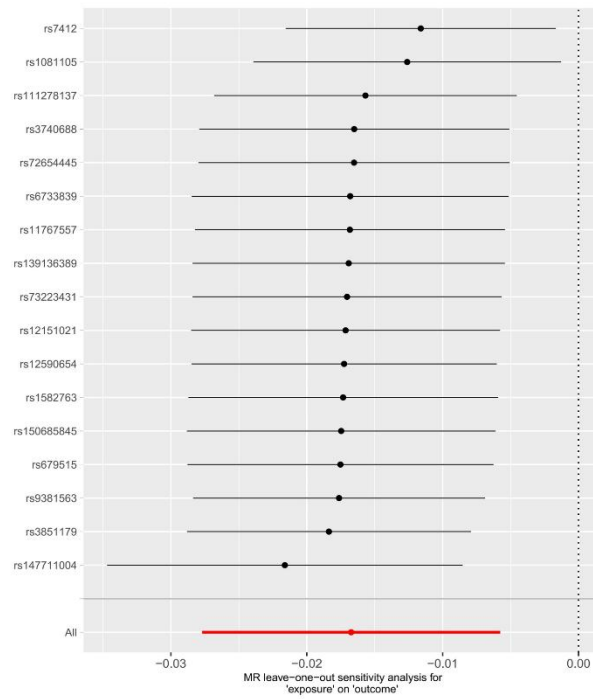


C. Protein intake (%) vs. ALS

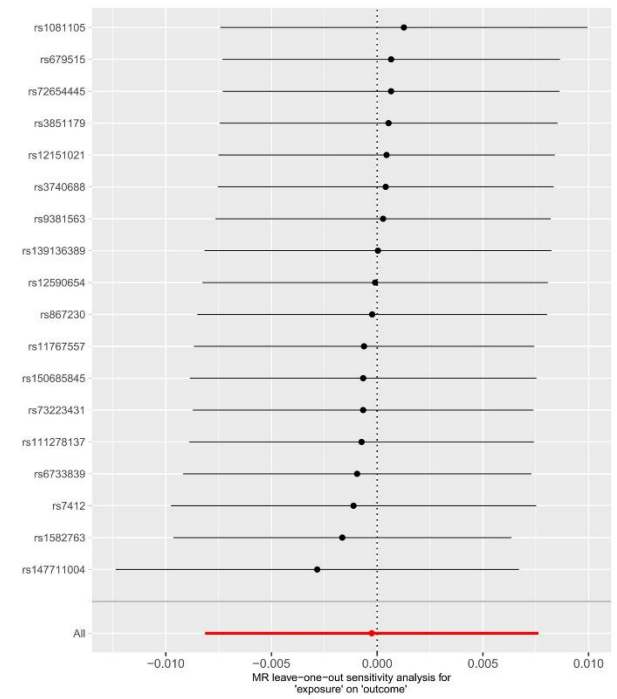
**Supplementary Figure 3.** The leave-one-out analysis for relative dietary protein intake on the NDDs. NDDs: Neurodegenerative diseases; AD: Alzheimer's disease; PD: Parkinson's disease; ALS: amyotrophic lateral sclerosis.



A. AD vs. Carbohydrate intake (%)

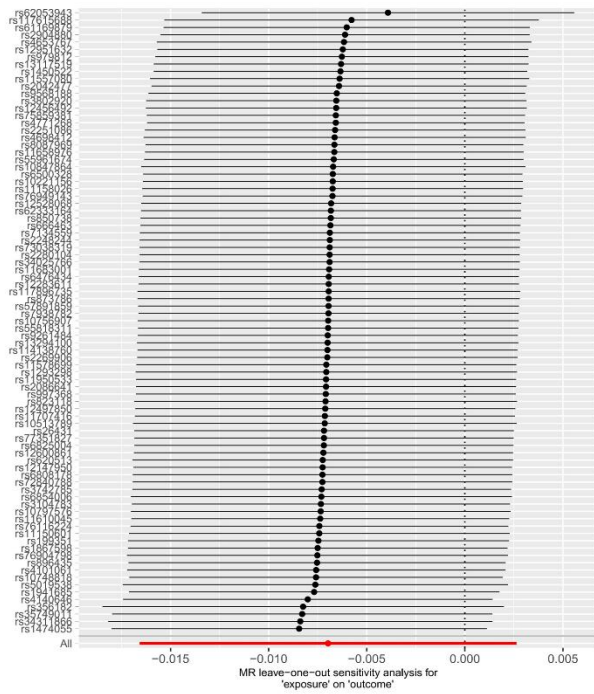


B. AD vs. Fat intake (%)

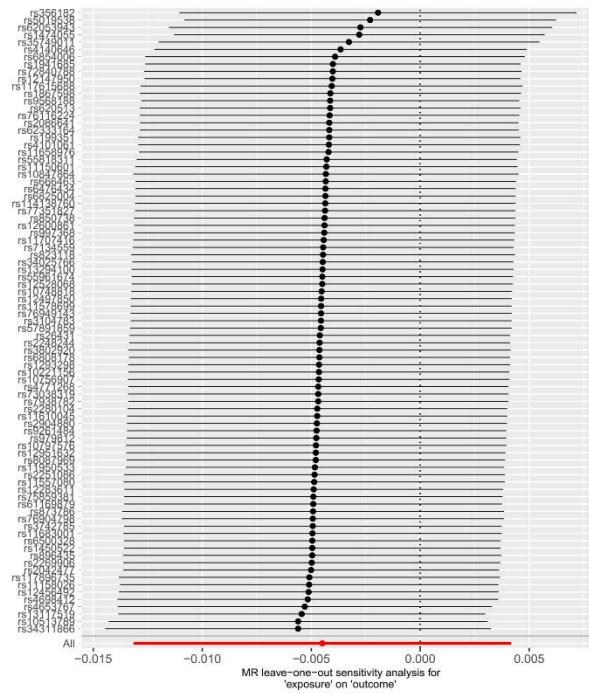


C. AD vs. Protein intake (%)

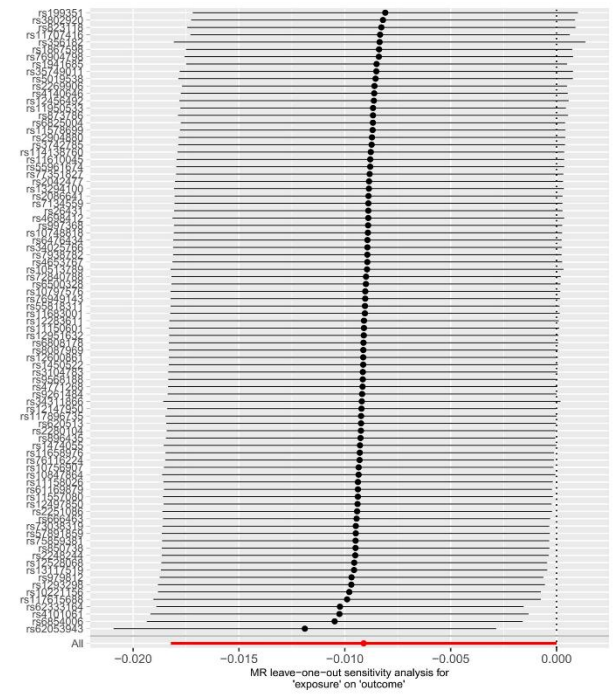
**Supplementary Figure 4.** The leave-one-out analysis for AD on the dietary macronutrient intake. AD: Alzheimer's disease.



A. PD vs. Carbohydrate intake (%)

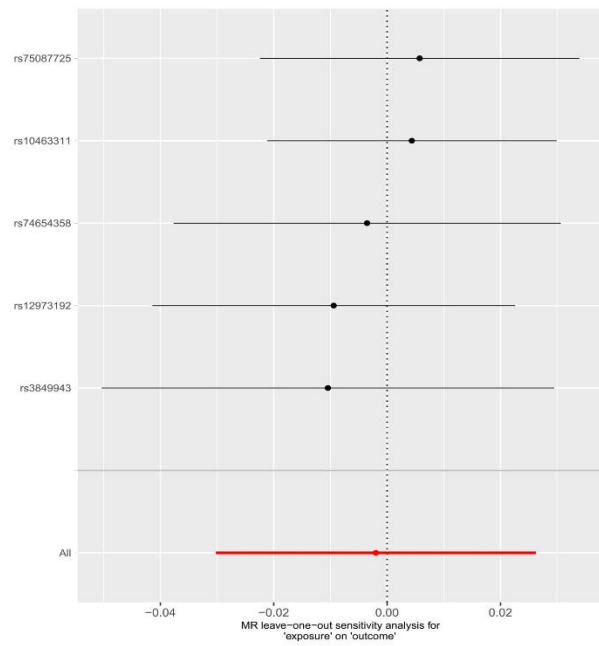


B. PD vs. Fat intake (%)

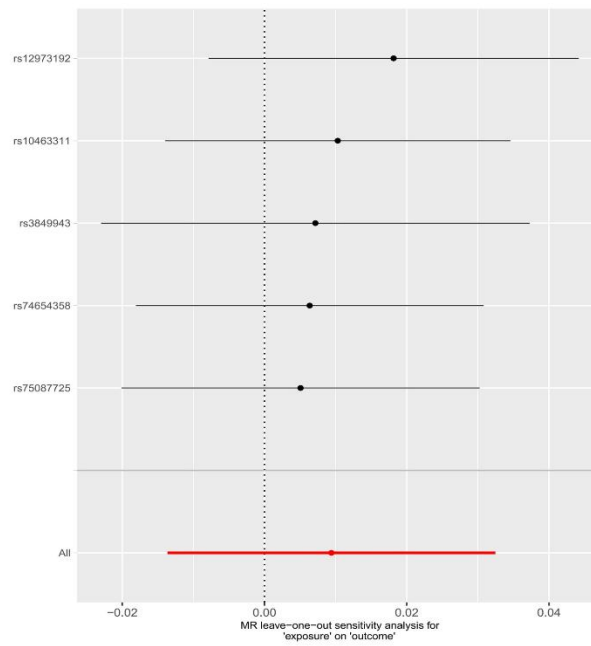


C. PD vs. Protein intake (%)

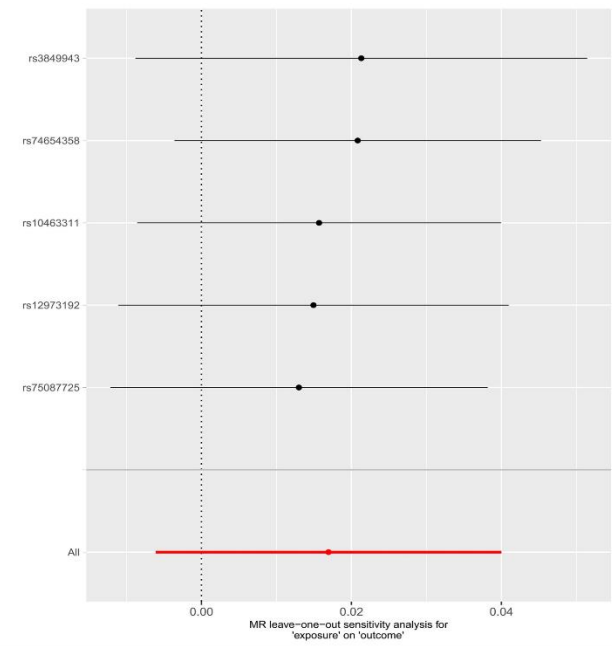
**Supplementary Figure 5.** The leave-one-out analysis for PD on the dietary macronutrient intake. PD: Parkinson's disease.



A. ALS vs. Carbohydrate intake (%)



B. ALS vs. Fat intake (%)



C. ALS vs. Protein intake (%)

**Supplementary Figure 6.** The leave-one-out analysis for ALS on the dietary macronutrient intake. ALS: Amyotrophic lateral sclerosis.