

**Supplementary Table1: The information of genome-wide association study we used**

Trait		PMID	Year	Cases	Controls	Population
Parkinson's disease		28346442	2024	5,861	494,487	European
Alzheimer's disease (Late onset) (more control exclusions)		28346442	2024	9,690	216,472	European
<b>Socioeconomic</b>						
Education	Year of education	30038396	2018	1131881	NA	European
Intelligence	Intelligence	30038396	2018	1131881	NA	European
<b>Behaviors</b>						
Smoking	Age of smoking	30643251	2019	341427	NA	European
	Lifetime smoking	31689377	2019	462690	NA	European
	Cigarette peer day	30643251	2019	337334	NA	European
	Smoking cession	30643251	2019	547219	NA	European
	Smoking intitation	30643251	2019	1232091	NA	European
Alcohol use	Alcohol use disorder	30940813	2019	274,424	NA	Mix
	Alcohol consumption	30643251	2019	941280	NA	European
Coffee consumption	Coffee	25288136	2014	121824	NA	Mix
Sleep traits	Chronotype	30696823	2019	697828	NA	European
	Insomnia	30804566	2020	453379	NA	European
	Sleep duration	30846698	2019	446118	NA	European
Physical activity	Moderate to vigorous physical activity	29899525	2018	377 234	NA	European
	Strenuous sports or other exercises	29899525	2018	124 842	225 650	European
	Vigorous physical activity	29899525	2018	98 060	162 995	European
	Sendentary lifestyle	32317632	2020	408,815	NA	European
<b>Dietary factors</b>	Dietary factors	36911739	2018	200000-500000	NA	European
Obesity traits	BMI	30239722	2019	694 649	NA	European
	Birth weight	27680694	2016	153781	NA	European

Childhood BMI	33045005	2020	61,111	NA	European
WC	25673412	2015	224259	NA	Mix
Wc adj BMI	25673412	2015	224259	NA	Mix
Hip	25673412	2015	224259	NA	Mix
Hip adj BMI	25673412	2015	224259	NA	Mix
Wc to hip ratio(WHR)	25673412	2015	224259	NA	European
WHR adjusted BMI	30239722	2019	694 649	NA	European
Body fat percentage	26833246	2016	100716	NA	Mix
Visceral adiposity	31501611	2019	502682	NA	European

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