

Appendix 1. Data source for Mendelian randomization (MR).

Trait	Cases	Controls	SNPs	Ancestry	Source	Link	Original study
Periodontitis	17353	28210	14323431	European	the Gene–Lifestyle Interactions in Dental Endpoints (GLIDE) consortium	https://data.bris.ac.uk/data/dataset/2j2rqgzexlq02oqbb4vmcnc2	Genome-wide analysis of dental caries and periodontitis combining clinical and self-reported data
NAFLD	2275	375002	20170223	European	FinnGen (R9)	https://r9.finnngen.fi/pheno/NAFLD	FinnGen provides genetic insights from a well-phenotyped isolated population
Fibrosis	146	373307	20170150	European		https://r9.finnngen.fi/pheno/FIBROLIV	
Cirrhosis	1142	373307	20170186	European		https://r9.finnngen.fi/pheno/CHIRHEP_NAS	
Fibrosis and cirrhosis	1841	366450	20170061	European		https://r9.finnngen.fi/pheno/K11_FIBROCHIRLIV	

Appendix 2. Detailed information of the SNPs of periodontitis applied in MR analyses.

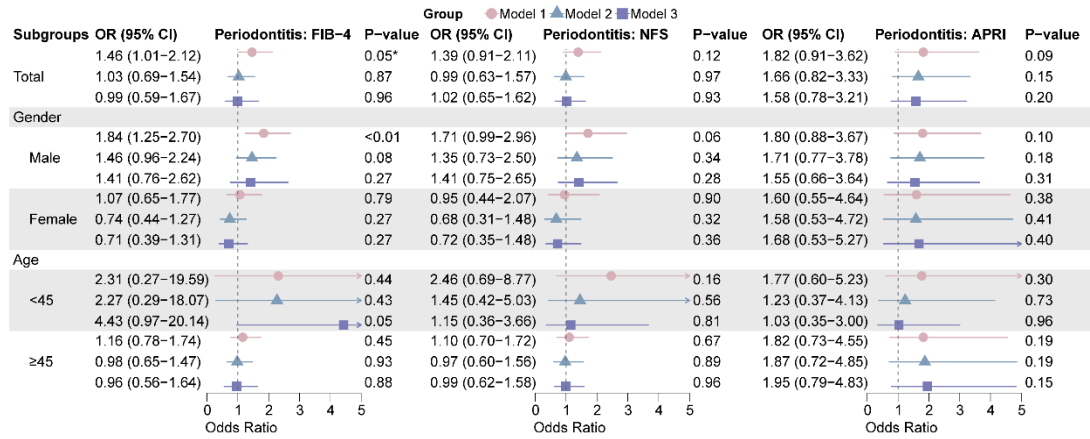
SNP	Chromosome	Position in hg19	Effect_Allele	Other_Allele	Beta	SE	P-value
rs138868497	11	86508546	T	C	1.64	0.33	8.57E-07
rs1445099	18	49745633	T	C	0.08	0.02	2.85E-06
rs151226594	11	64256137	T	G	-0.37	0.08	1.82E-06
rs263323	2	158020451	T	C	-0.20	0.04	1.51E-06
rs73155039	7	136207654	A	G	0.83	0.18	2.30E-06
rs76734229	18	10854213	A	G	-0.18	0.04	2.02E-06

Appendix 3. The results of heterogeneity analyses for MR.

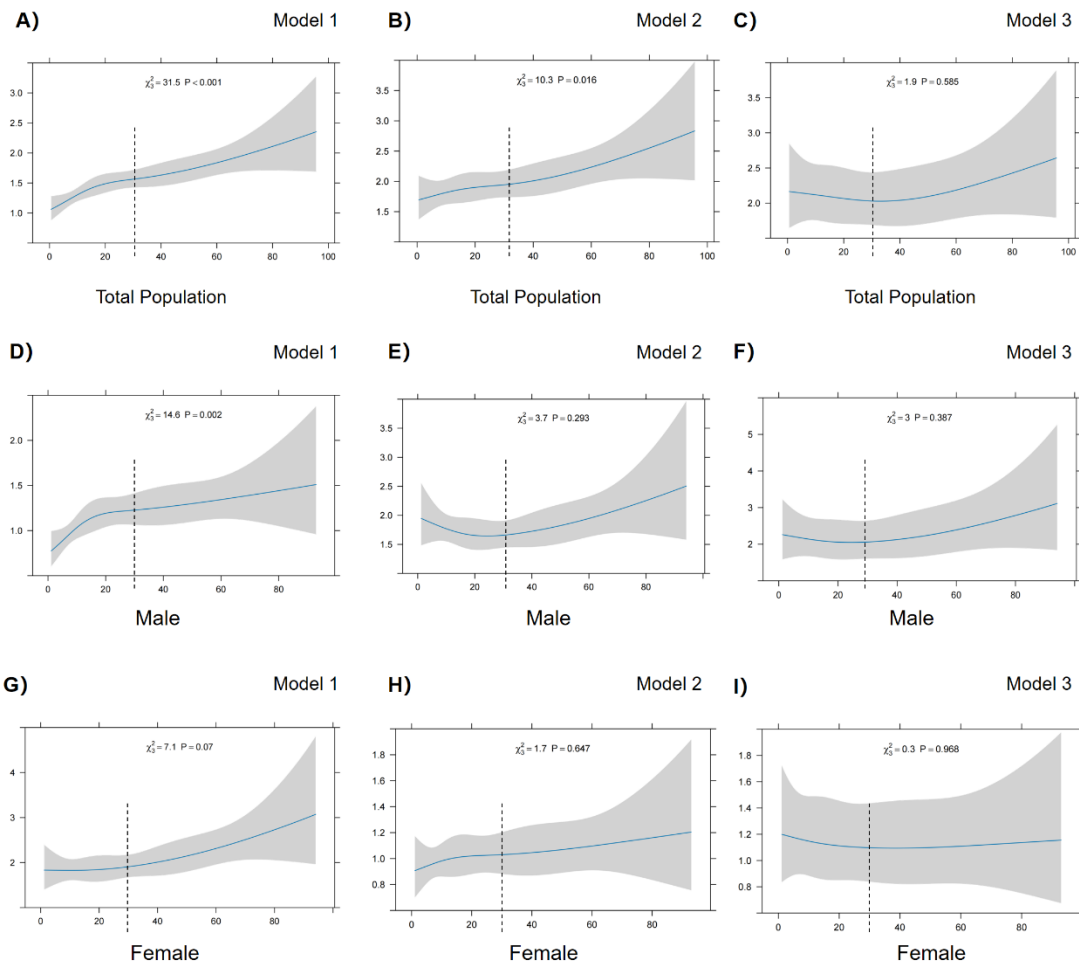
Exposure	Outcome	Method	Q	Q_df	Q_pval
Periodontitis	NAFLD	MR Egger	5.00	4	0.29
Periodontitis	NAFLD	Inverse variance weighted	5.05	5	0.41
Periodontitis	Fibrosis	MR Egger	1.19	4	0.88
Periodontitis	Fibrosis	Inverse variance weighted	1.19	5	0.95
Periodontitis	Cirrhosis	MR Egger	2.85	4	0.58
Periodontitis	Cirrhosis	Inverse variance weighted	2.93	5	0.71
Periodontitis	Fibrosis/Cirrhosis	MR Egger	2.56	4	0.63
Periodontitis	Fibrosis/Cirrhosis	Inverse variance weighted	3.16	5	0.67

Appendix 4. The results horizontal pleiotropy analyses for MR.

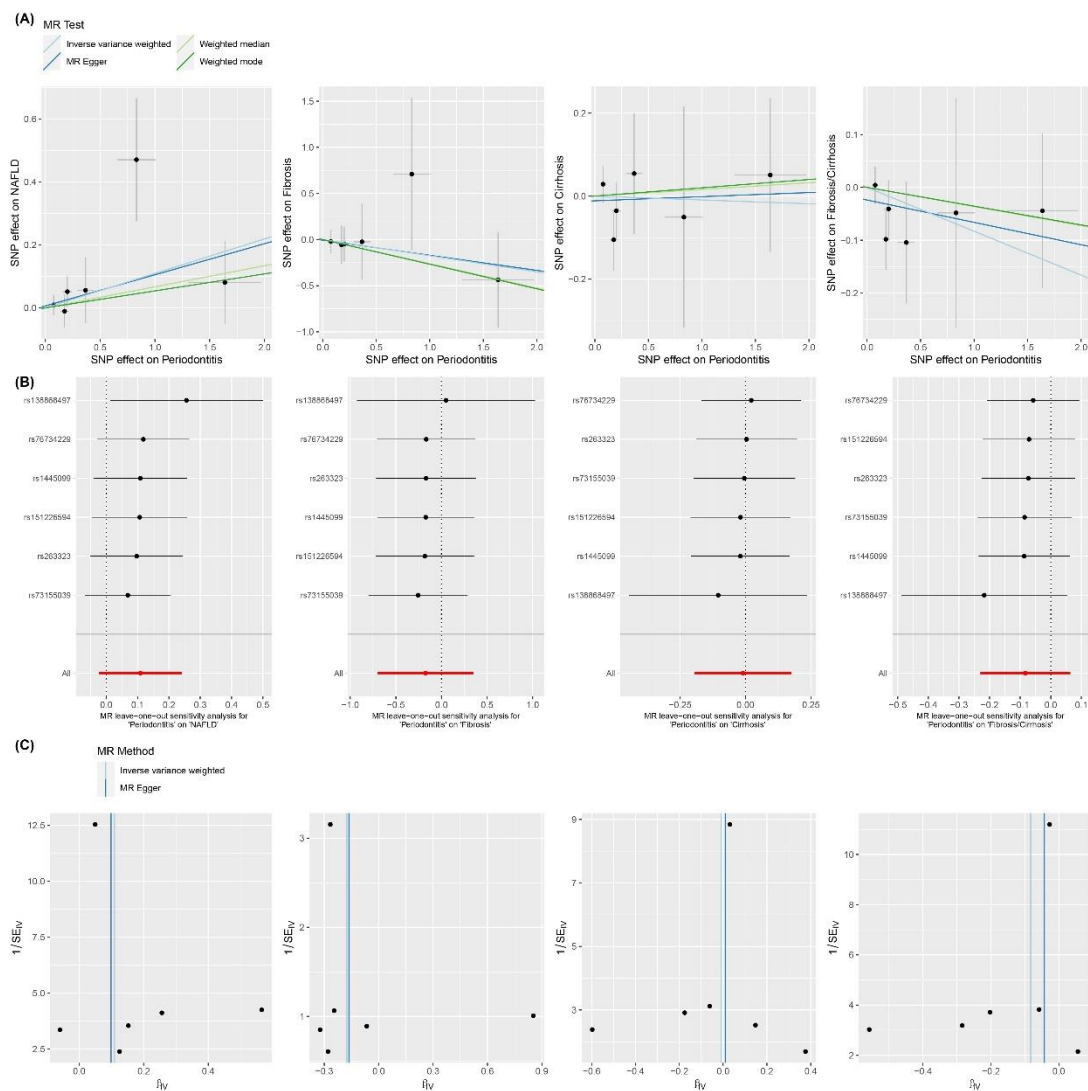
Exposure	Outcome	Egger intercept	SE	P-value
Periodontitis	NAFLD	0.01	0.03	0.85
Periodontitis	Fibrosis	-0.01	0.11	0.95
Periodontitis	Cirrhosis	-0.01	0.04	0.79
Periodontitis	Fibrosis/Cirrhosis	-0.02	0.03	0.48



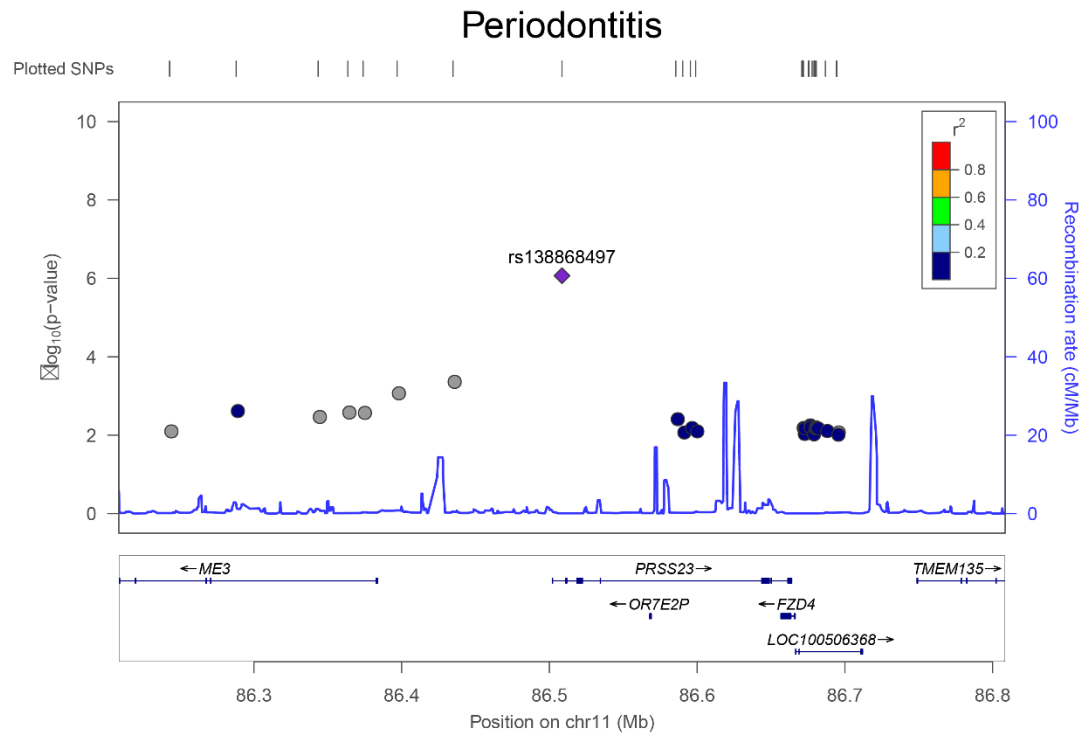
Appendix 5. Relationship of Periodontitis on Liver Conditions in Multivariate logistic regression analysis.



Appendix 6. Correlation between USFLI and the incidence of periodontitis.



Appendix 7. MR sensitivity study as scatter plots, leave-one-out analyses, and funnel plots.



Appendix 8. The regional associational plot indicating the lead SNP and nearby genes associated with periodontitis.