Appendix 1. Details of the studies included in the Mendelian randomization analyses.

Phynotype	GWAS data source	Sample size	Year	Number of SNP
Helicobacter pylori infection [a]	EBI	1,058 cases and 3,625 controls	2021	7,247,045
IDA [b]	UK Biobank	2,941 cases and 481,657 controls	2021	9,886,868
HBG [c]	A genome-wide meta-analysis	408,112 participants	2020	41,261,840
Iron serum [d]	Iceland, FinnGen and UK Biobank	163,511 participants	2021	19,689,928
Total iron binding capacity [d]	Iceland, FinnGen and UK Biobank	135,430 participants	2021	19,293,087
Ferritin [d]	Iceland, FinnGen and UK Biobank	246,139 participants	2021	21,642,116
Transferrin saturation [d]	Iceland, FinnGen and UK Biobank	131,471 participants	2021	19,330,058

1: All datasets are of European ethnicity
2: EBI: European Bioinformatic institute; IDA: Iron Deficiency Anemia; HBG: Hemoglobin
3: Web source:

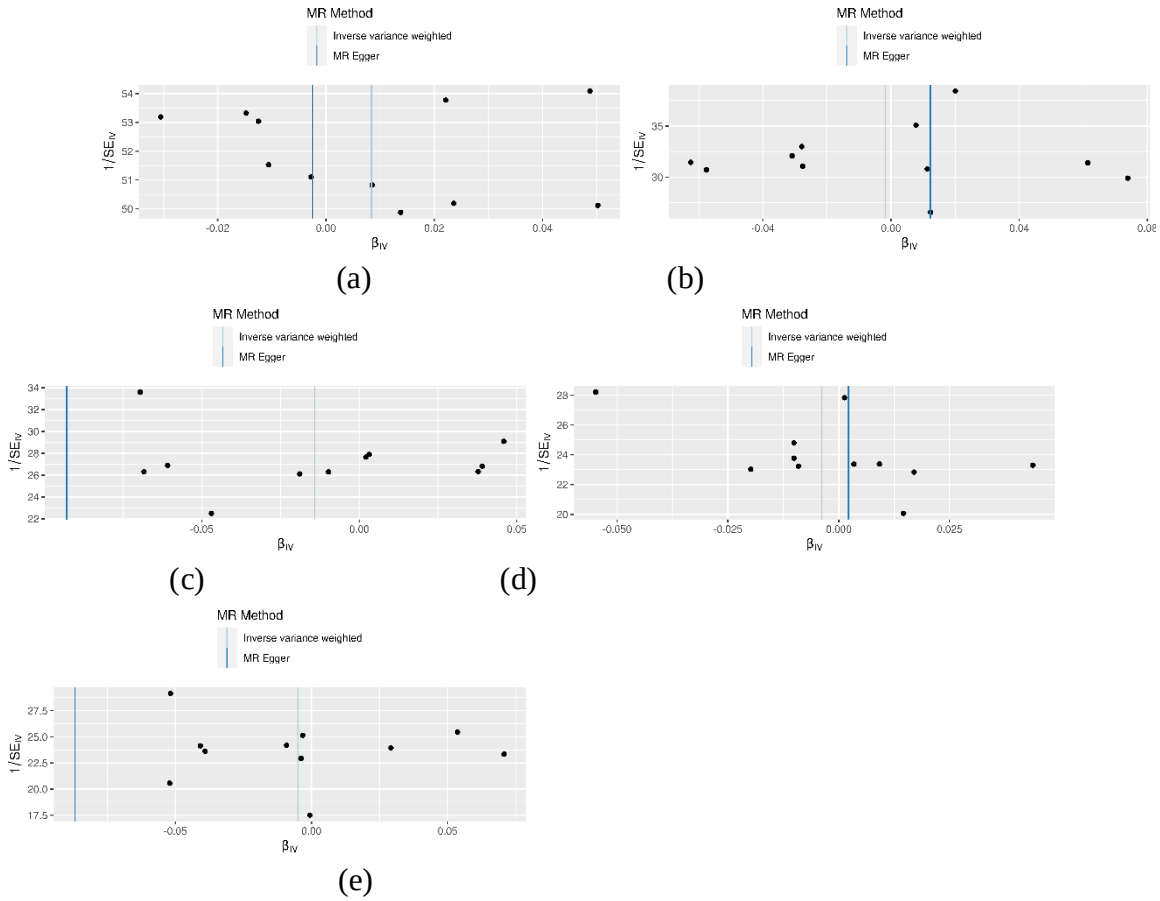
a:https://gwas.mrcieu.ac.uk/datasets/ieu-b-4905/
b:https://www.ebi.ac.uk/gwas/studies/GCST90038659
c:https://www.ebi.ac.uk/gwas/studies/GCST90002384
d:https://www.decode.com/summarydata/

4.The study includ: Airwave Health Monitoring Study, BioMe™ BioBank Program, Caerphilly Prospective Study, Cardiovascular Health Study, Estonia SNP Chip, Estonia Whole Genome Sequencing, Framingham Heart Study, The Finnish Cardiovascular Study, Genetic Epidemiology Research on Adult Health and Aging , Health2006, Health2008, Health2010, INTERVAL Study, The Multi-Ethnic Study of Atherosclerosis, Montreal Heart Institute Biobank phase1, Montreal Heart Institute Biobank phase2, Million Veteran Program , Rotterdam Study I, Rotterdam Study II, Rotterdam Study III, Study of Helath in Pomerania, Study of Health in Pomerania Trend, UK Biobank European-ancestry, Womens' Health Initiative , The Cardiovascular Risk in Young Finns Study.

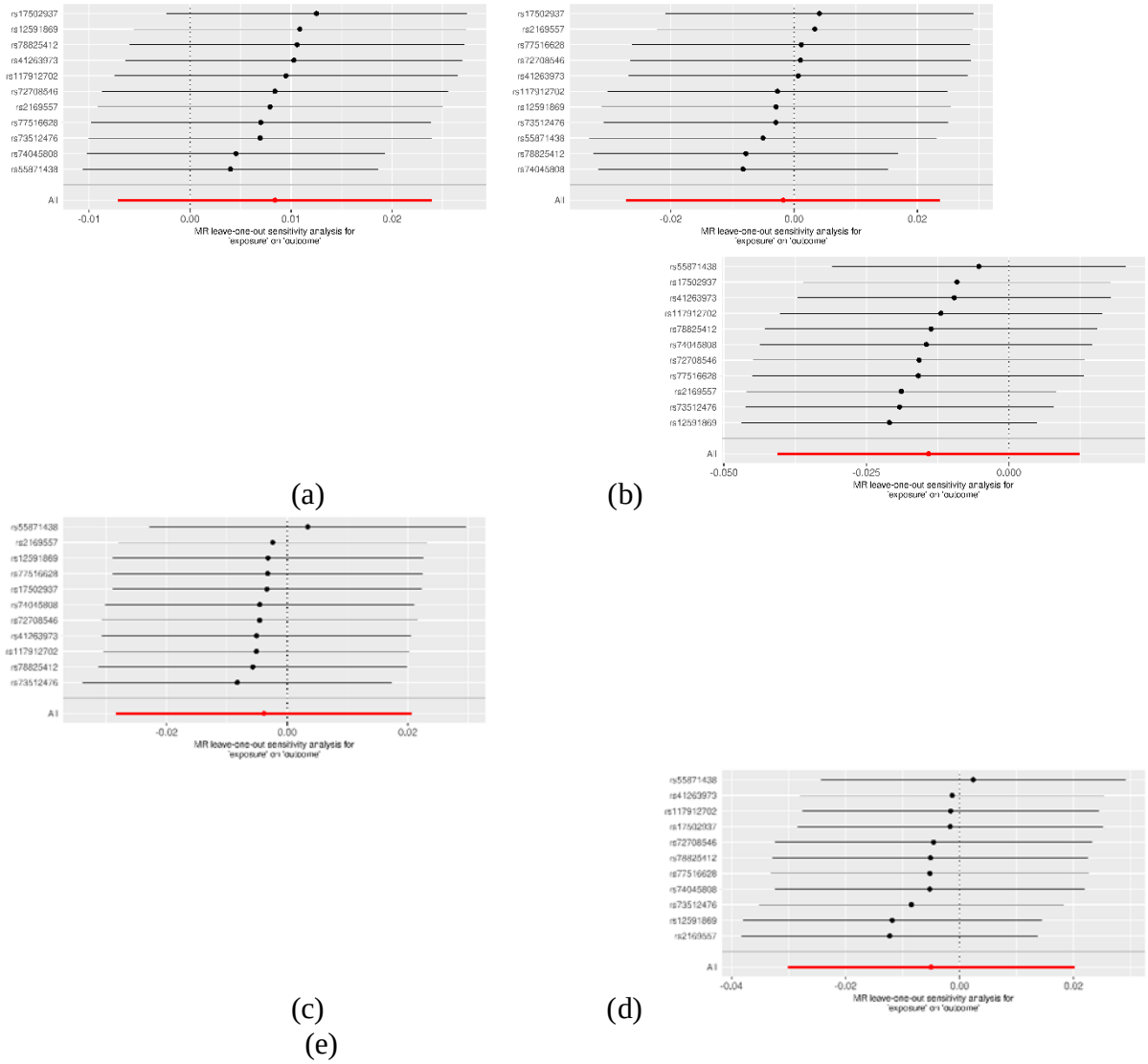
Appendix 2. Instrumental SNPs of H. pylori infection from EBI and F statistics

SNP	effect_allele	other_allele	Chr	Pos	EAF	BETA	SE	P	F
rs41263973	A	G	1	32162810	0.033534	0.315775	0.0672338	2.74E-06	22.05871308
rs2169557	T	C	2	20244954	0.48846	-0.105911	0.0230674	4.55E-06	21.08069108
rs77516628	T	A	4	62125618	0.088953	0.18787	0.0401253	2.94E-06	21.92190472
rs72708546	A	G	4	170153219	0.059115	-0.229692	0.0481386	1.90E-06	22.76694861
rs35030589*	A	G	6	32672903	0.13205	-0.175163	0.0342852	3.40E-07	26.10185513
rs117912702	A	G	6	166062930	0.019949	0.405025	0.0865994	3.02E-06	21.87428646
rs73512476	T	G	11	86585900	0.076735	0.212576	0.0440791	1.47E-06	23.25749972
rs17502937	T	G	13	30440740	0.020036	-0.396711	0.0846646	2.89E-06	21.95557239
rs74045808	T	C	14	34457396	0.10756	-0.174764	0.038012	4.49E-06	21.10794745
rs55871438	C	T	15	75411120	0.039419	0.29919	0.0647964	4.02E-06	21.32025487
rs78825412	A	C	15	83512621	0.032426	0.31781	0.0685235	3.64E-06	21.51077421
rs12591869	A	C	15	96674267	0.26981	-0.128595	0.0265143	1.29E-06	23.52273597

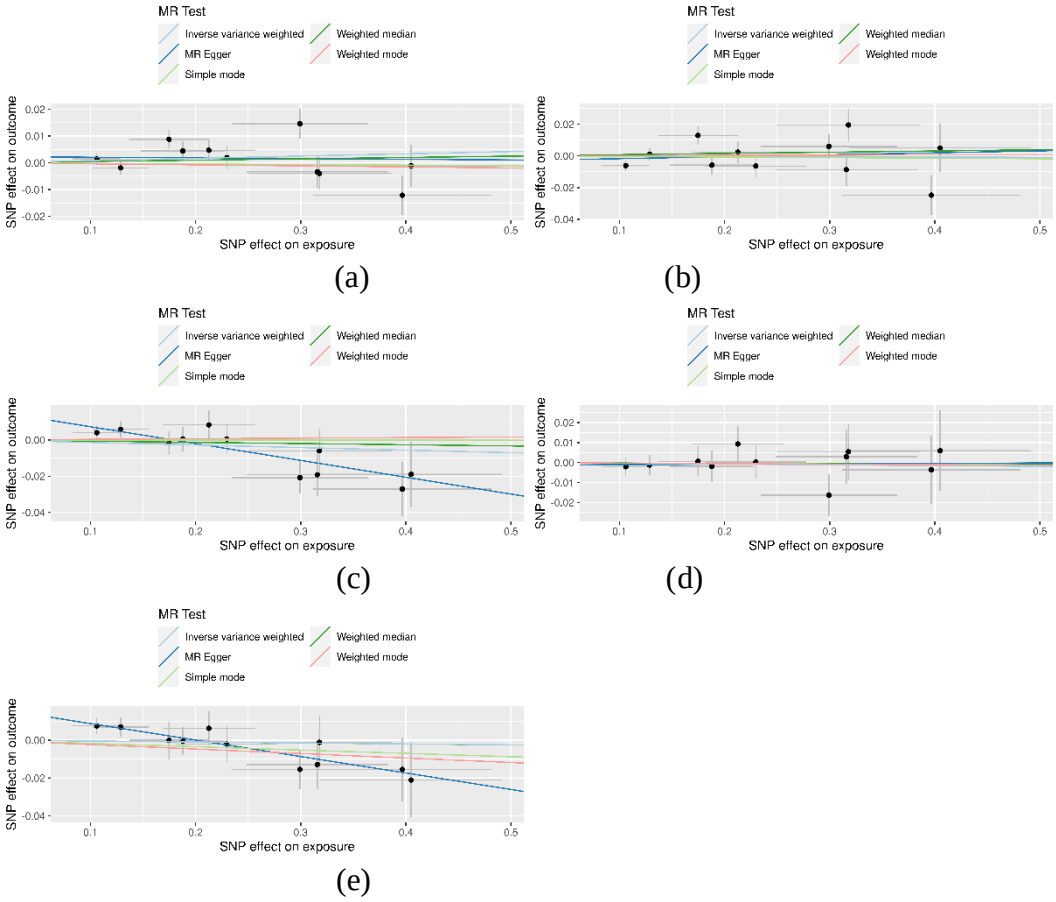
*Deleted in relation to confounding factors



Appendix 3. Funnel plots of significant estimates from genetically predicted Helicobacter pylori infection on (a) HGB; (b) Ferritin; (c) Iron; (d) TIBC; and (e) TSAT.



Appendix 4. Leave-one-out plots of significant estimates from genetically predicted Helicobacter pylori infection on (a) HGB; (b) Ferritin; (c) Iron; (d) TIBC; and (e) TSAT.



Appendix 5. Scatter plots of significant estimates from genetically predicted Helicobacter pylori infection on (a) HGB; (b) Ferritin; (c) Iron; (d) TIBC; and (e) TSAT.