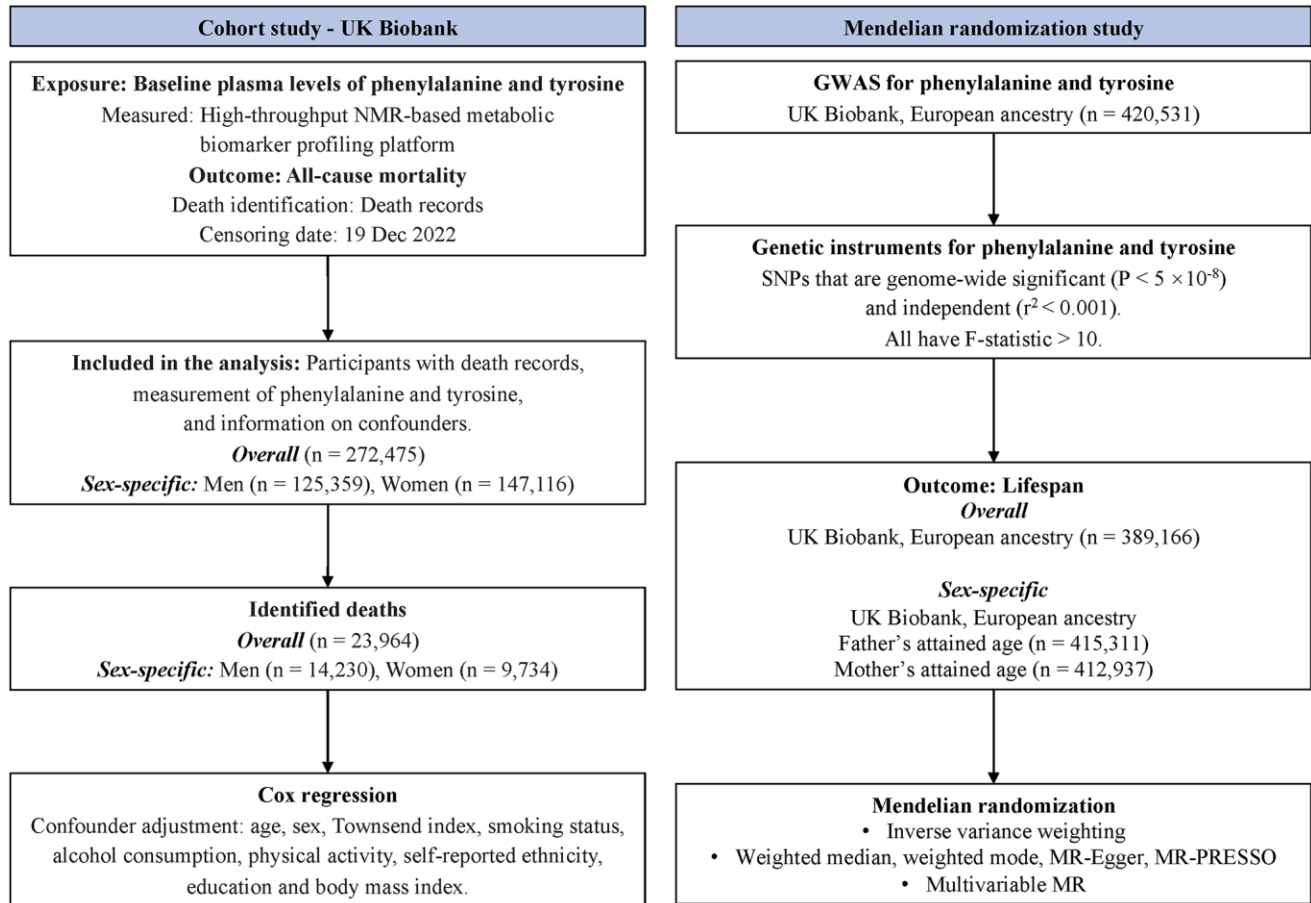
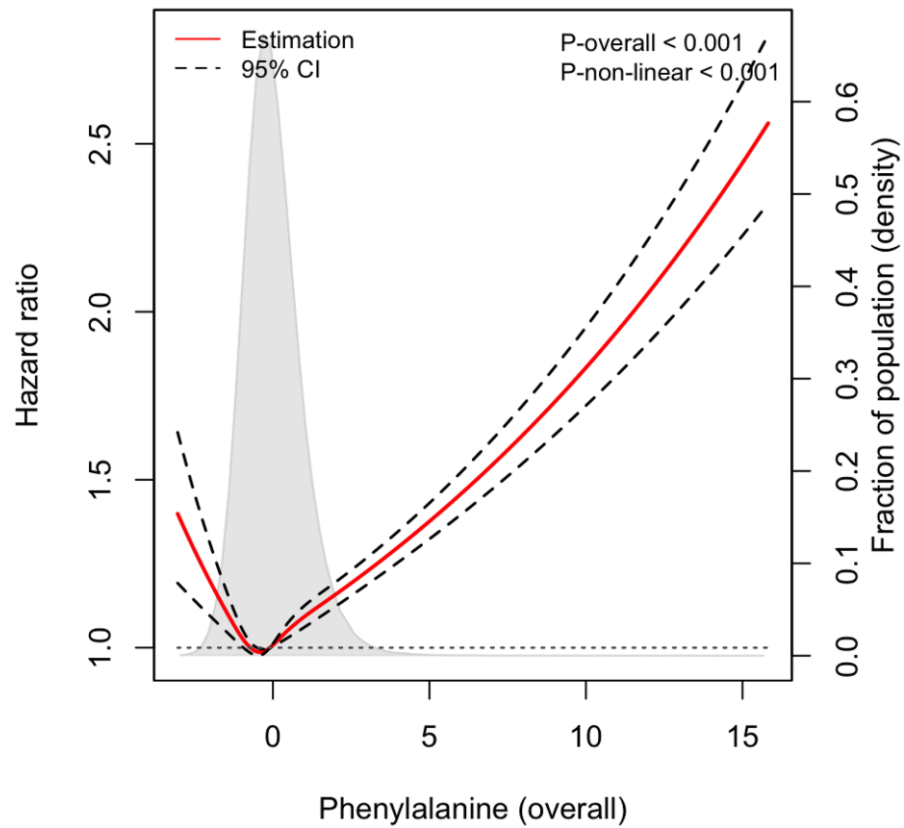


SUPPLEMENTARY FIGURES



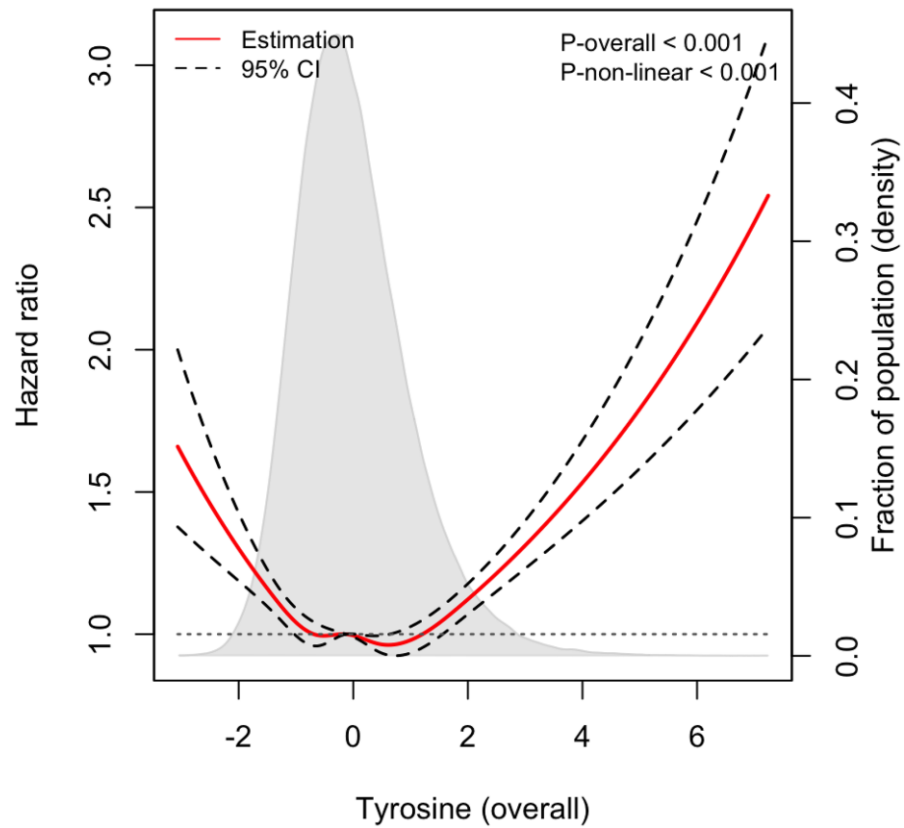
Supplementary Figure 1. Flow chart of study design.

All-cause Mortality

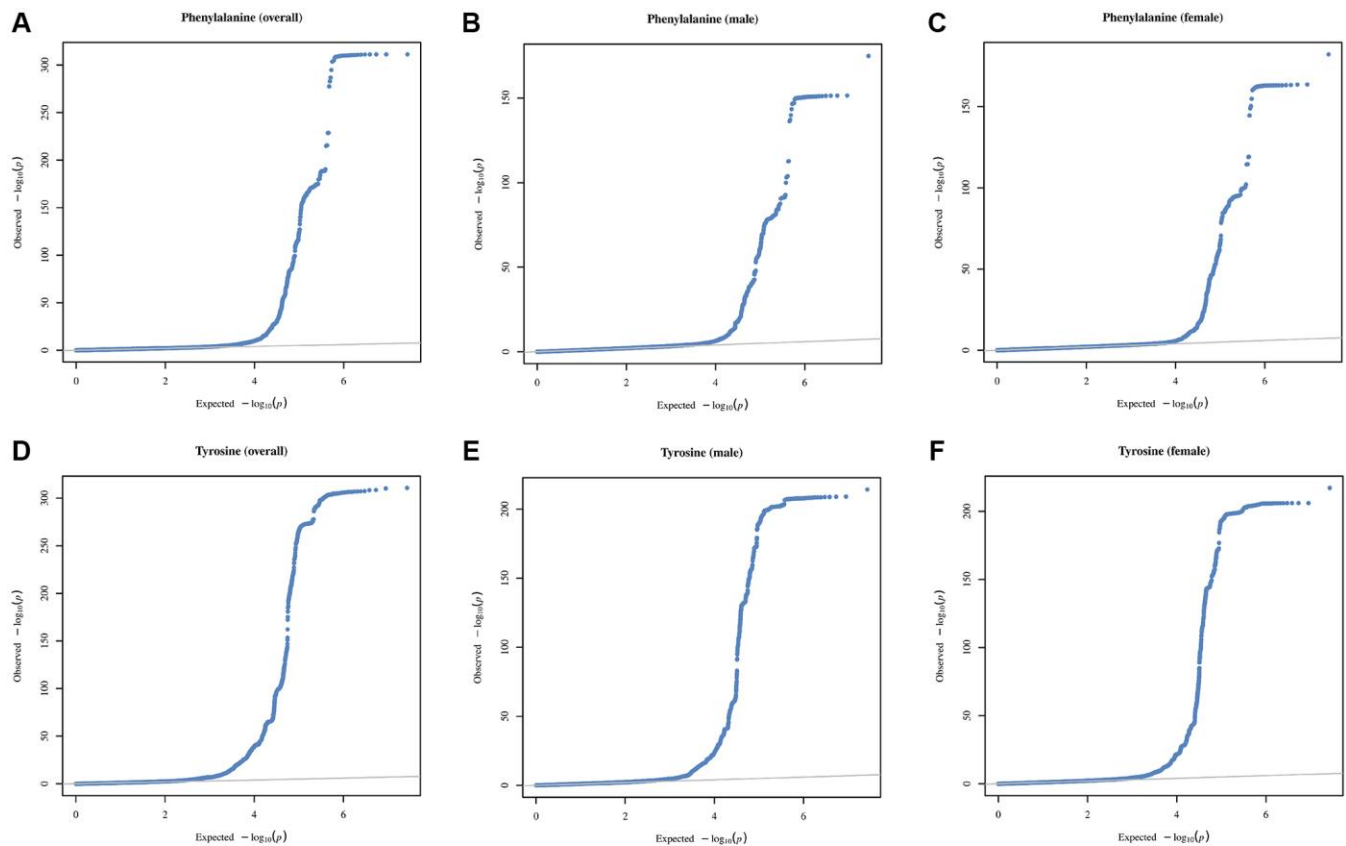


Supplementary Figure 2. Association of phenylalanine with all-cause mortality using restricted cubic splines.

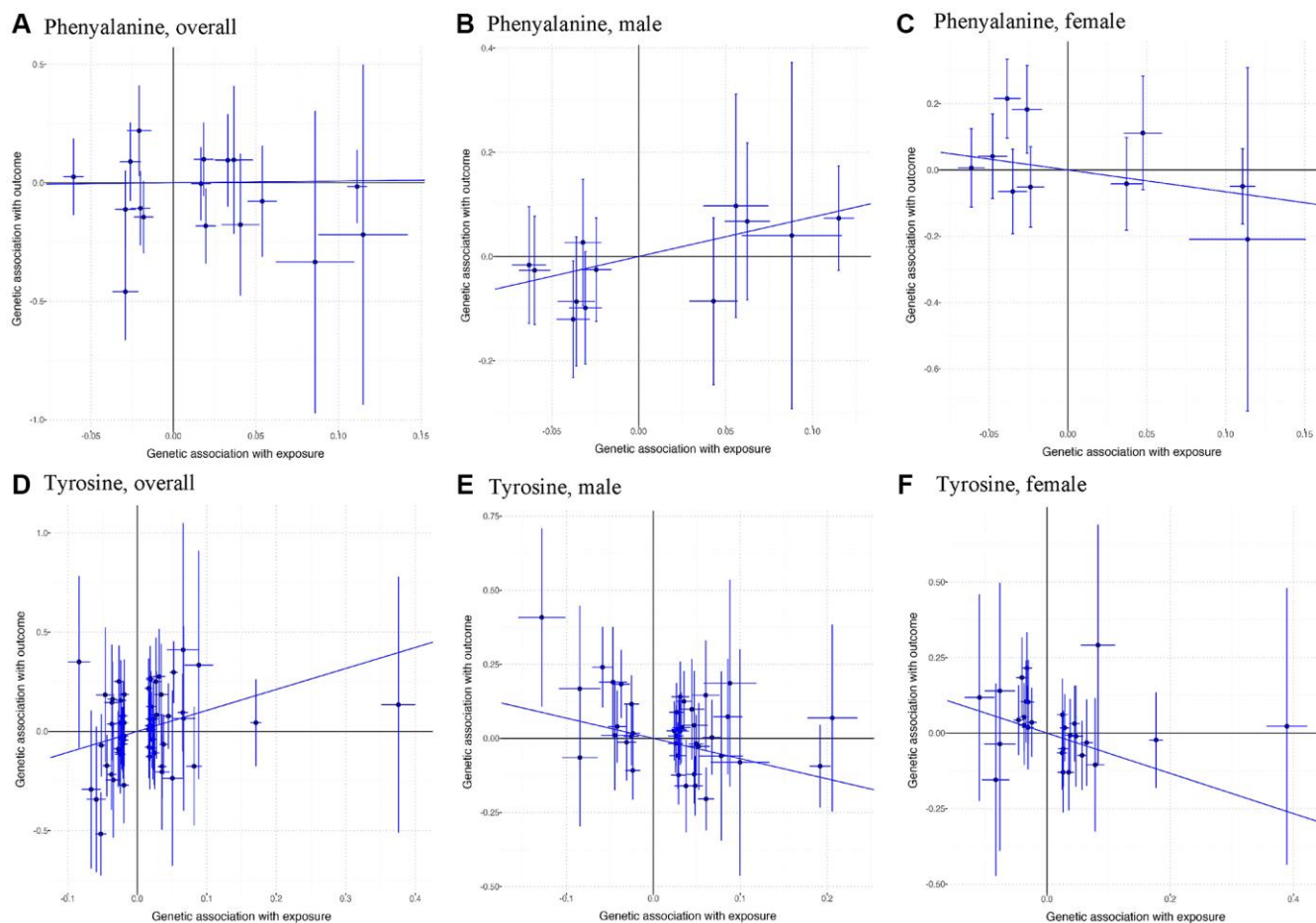
All-cause Mortality



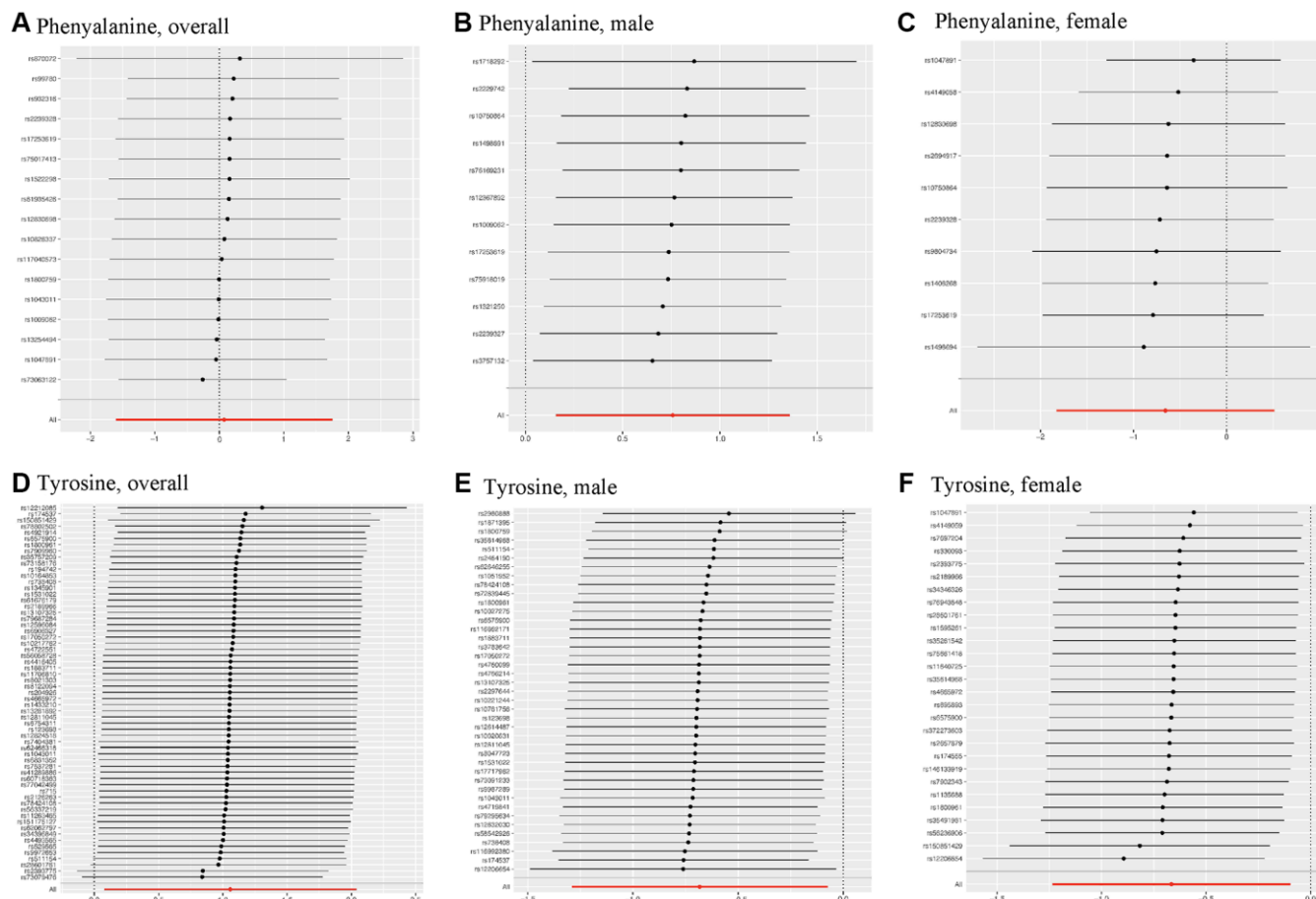
Supplementary Figure 3. Association of tyrosine with all-cause mortality using restricted cubic splines.



Supplementary Figure 4. Q-Q plot on the genome-wide association study of phenylalanine and tyrosine in overall people, men and women. (A) Q-Q plot for phenylalanine in overall people; (B) Q-Q plot for phenylalanine in men; (C) Q-Q plot for phenylalanine in women; (D) Q-Q plot for tyrosine in overall people; (E) Q-Q plot for tyrosine in men; (F) Q-Q plot for tyrosine in women.



Supplementary Figure 5. Scatter plots on the associations of each SNP with amino acids and with lifespan in overall people, men and women. (A) Scatter plot for phenylalanine in overall people; (B) Scatter plot for phenylalanine in men; (C) Scatter plot for phenylalanine in women; (D) Scatter plot for tyrosine in overall people; (E) Scatter plot for tyrosine in men; (F) Scatter plot for tyrosine in women.



Supplementary Figure 6. Leave-one-out analysis on the associations of phenylalanine and tyrosine with lifespan. (A) Leave-one-out analysis for phenylalanine in overall people; (B) leave-one-out analysis for phenylalanine in men; (C) leave-one-out analysis for phenylalanine in women; (D) leave-one-out analysis for tyrosine in overall people; (E) leave-one-out analysis for tyrosine in men; (F) leave-one-out analysis for tyrosine in women.