

Description of Additional supplementary files

Supplementary Data1:	Baseline characteristics of participants in the Multiomics cohort.
Supplementary Data 2:	Baseline characteristics of participants in the Metabolomics-only cohort across training, validation, and test sets.
Supplementary Data 3:	Baseline characteristics of participants in the Proteomics-only cohort across training, validation, and test sets.
Supplementary Data 4:	Impactful metabolites and proteins associated with cardiovascular diseases.
Supplementary Data 5:	Definition of cardiovascular diseases.
Supplementary Data 6:	List of SNPs included in the polygenic risk score for coronary artery disease.
Supplementary Data 7:	List of SNPs included in the polygenic risk score for stroke.
Supplementary Data 8:	List of SNPs included in the polygenic risk score for heart failure.
Supplementary Data 9:	List of SNPs included in the polygenic risk score for atrial fibrillation.
Supplementary Data 10:	List of SNPs included in the polygenic risk score for peripheral artery disease.
Supplementary Data 11:	List of SNPs included in the polygenic risk score for venous thromboembolism.
Supplementary Data 12:	Descriptive statistics of included 168 metabolites in the Multiomics cohort.
Supplementary Data 13:	Descriptive statistics of included 2,920 proteins in the Multiomics cohort.
Supplementary Data 14:	Definition of clinical predictors.
Supplementary Data 15:	Hyperparameters for ProNet and MetNet.
Supplementary Data 16:	Hyperparameters for machine learning models.