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Supplementary information

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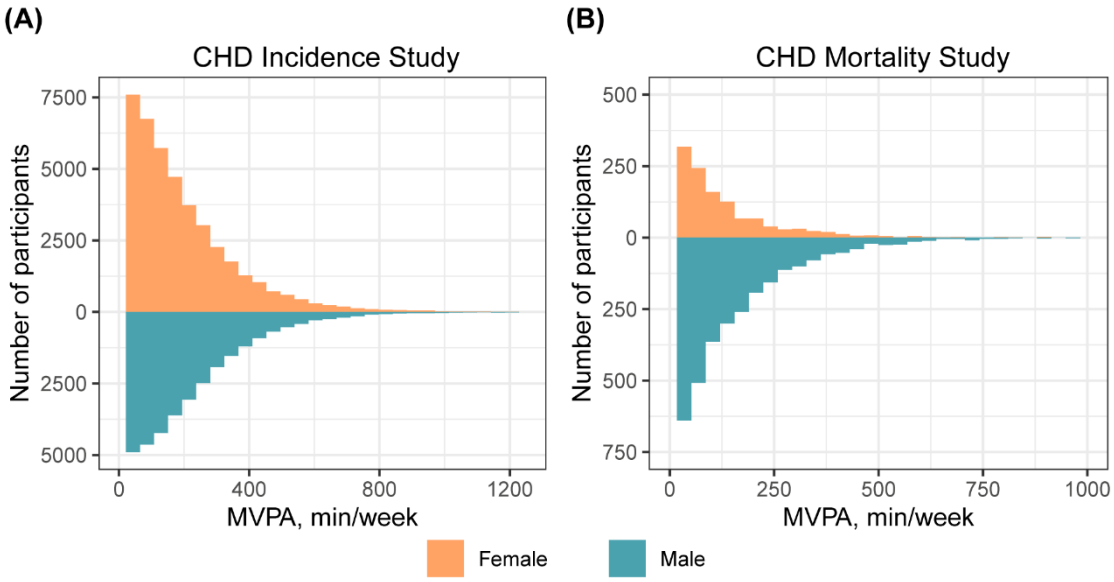
Sex differences in the association of wearable accelerometer-derived physical activity with coronary heart disease incidence and mortality

In the format provided by the authors and unedited

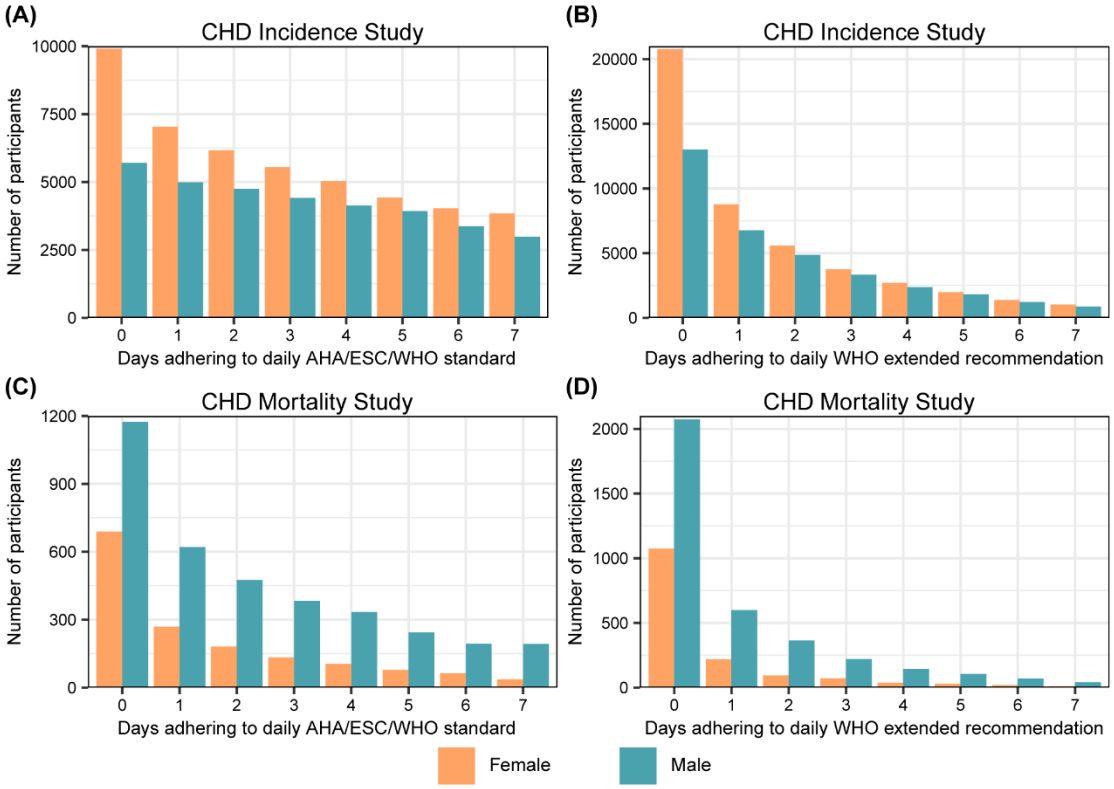
Contents of Supplementary Figures

Supplementary Fig. 1. Distribution of accelerometer-derived MVPA stratified by sex



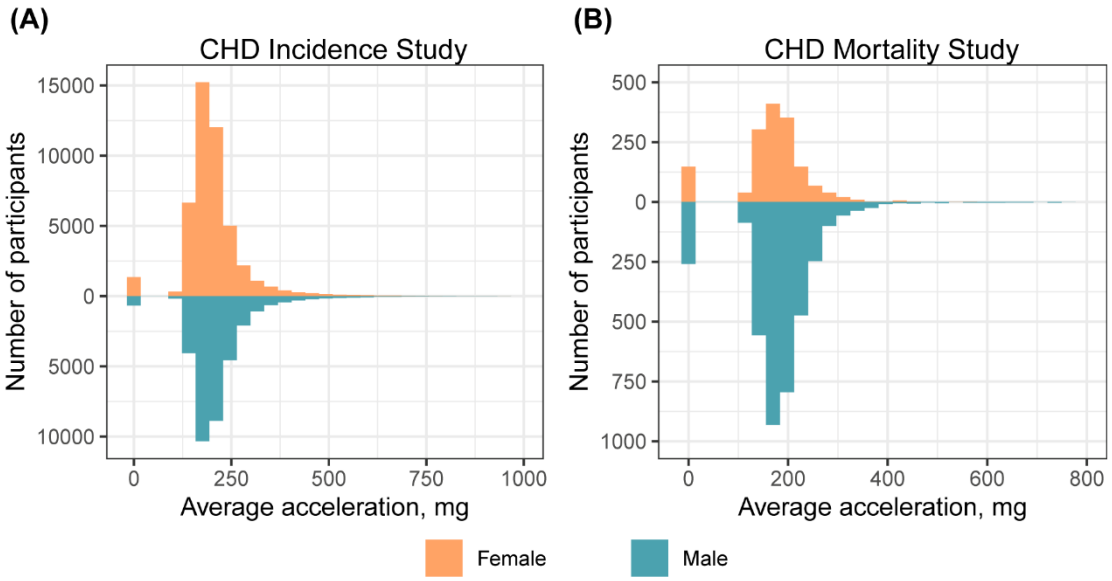
Abbreviations: CHD=coronary heart disease; MVPA=moderate-to-vigorous physical activity.

Supplementary Fig. 2. Distribution of days adhering to average daily PA guideline of MVPA stratified by sex



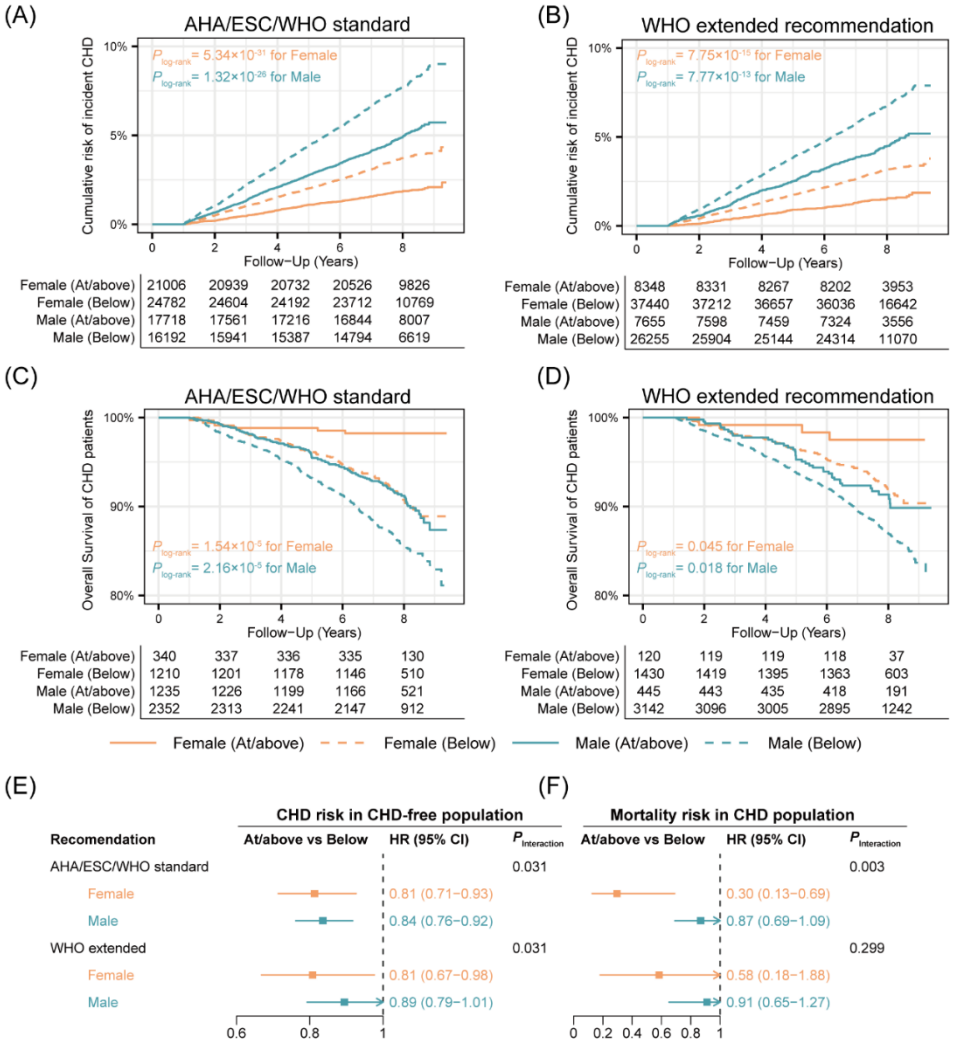
Abbreviations: CHD=coronary heart disease; AHA=American Heart Association; ESC=European Society of Cardiology; WHO=World Health Organization.

Supplementary Fig. 3. Distribution of PA intensity (average acceleration) stratified by sex



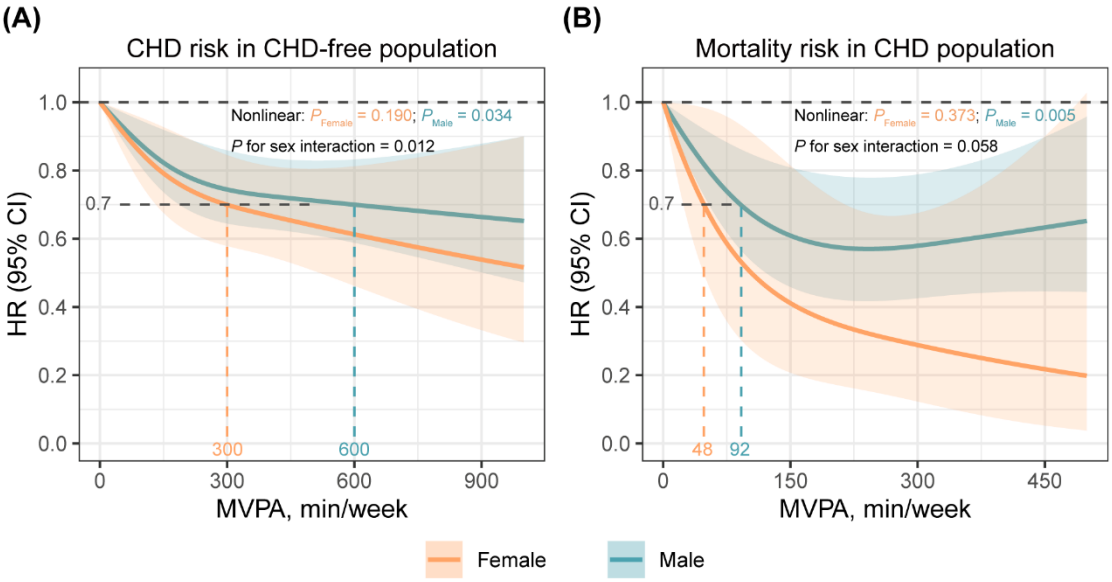
Abbreviations: CHD=coronary heart disease. Zero means no MVPA.

Supplementary Fig. 4. Sensitivity analyses for sex-specific cumulative risk of CHD in CHD-free population and overall survival in CHD patients stratified by adherence to PA recommendations by excluding individuals with events occurred within the first year



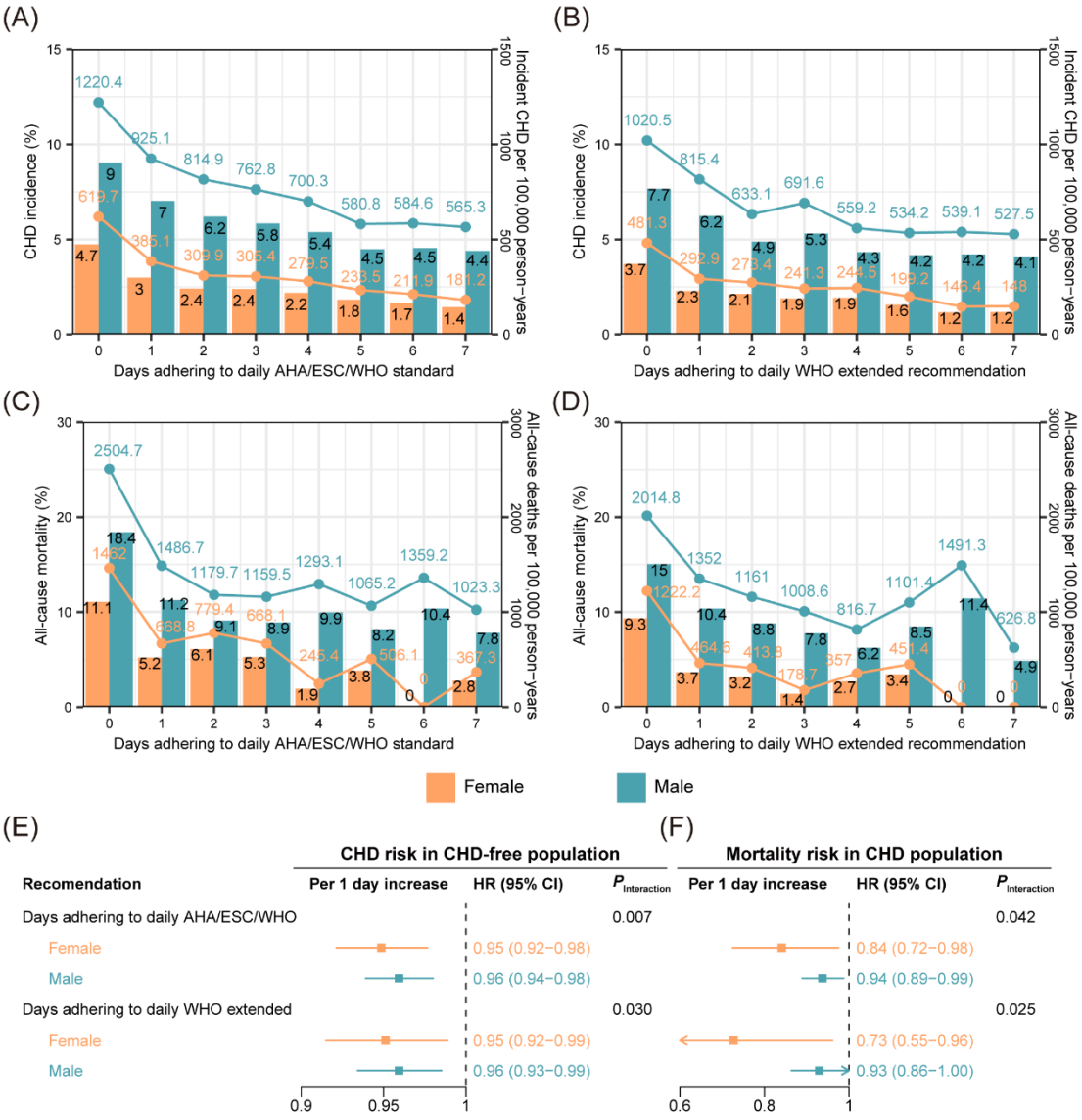
Sex-specific cumulative risk of incident CHD in CHD-free population stratified by (A) adherence to AHA/ESC/WHO standard recommendation (150 min/week); and (B) WHO extended recommendation (300 min/week). Sex-specific overall survival of CHD patients stratified by (C) adherence to AHA/ESC/WHO standard recommendation (150 min/week); and (D) WHO extended recommendation (300 min/week). Cumulative risks and survival differences between groups were assessed using the two-sided log-rank test. Sex-specific associations and sex differences between PA guideline adherence and (E) incident CHD risk in CHD-free population (AHA/ESC/WHO standard: $N_{\text{At/above vs. Below}}$=21,006 vs. 24,782 in females, and 17,718 vs. 16,192 in males; WHO extended: 8,348 vs. 37,440 in females, and 7,655 vs. 26,255 in males); and (F) all-cause mortality in CHD patients (AHA/ESC/WHO standard: $N_{\text{At/above vs. Below}}$=340 vs. 1,210 in females, and 1,235 vs. 2,352 in males; WHO extended: 120 vs. 1,430 in females, and 445 vs. 3,142 in males). The point estimates and error bars represent the HR and 95% CI from multivariable Cox proportional hazards models. All statistical tests were two-sided.

Supplementary Fig. 5. Sensitivity analyses for sex-specific dose-response association of MVPA with CHD incidence and mortality by excluding individuals with events occurred within the first year



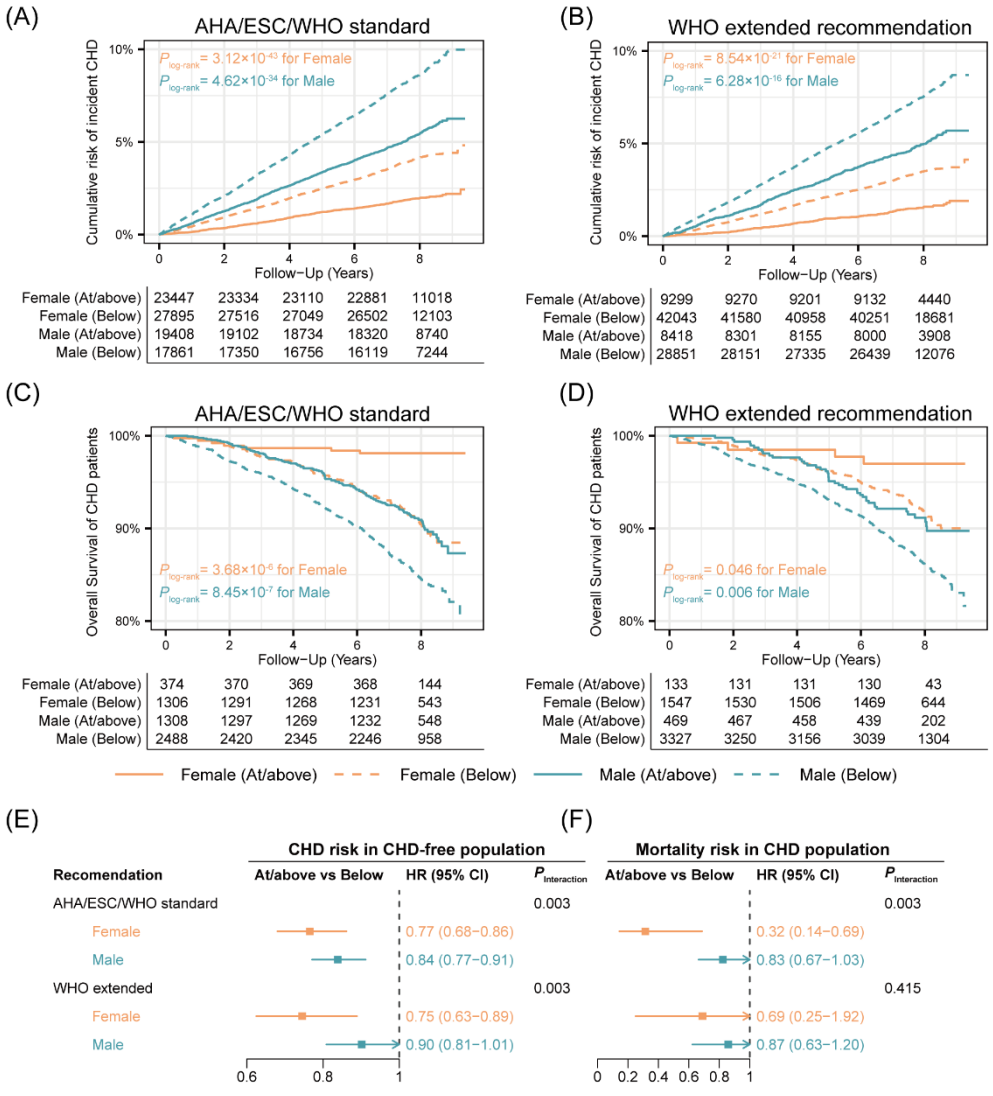
The adjusted HRs for associations of MVPA duration with (A) CHD incidence risk in CHD-free population (N_{Female}=45,788, N_{Male}=33,910) and (B) all-cause mortality risk in CHD patients (N_{Female}=1,550, N_{Male}=3,587) by sex. The y-axis represents the HRs for CHD risk or mortality risk. The solid line depicts the estimated HR derived from restricted cubic spline models, and the shaded area indicates the corresponding 95% CI. Statistical tests were two-sided.

Supplementary Fig. 6. Sensitivity analyses for sex-specific rates of CHD incidence and CHD death stratified by days adhering to daily PA recommendations by excluding individuals with events occurred within the first year



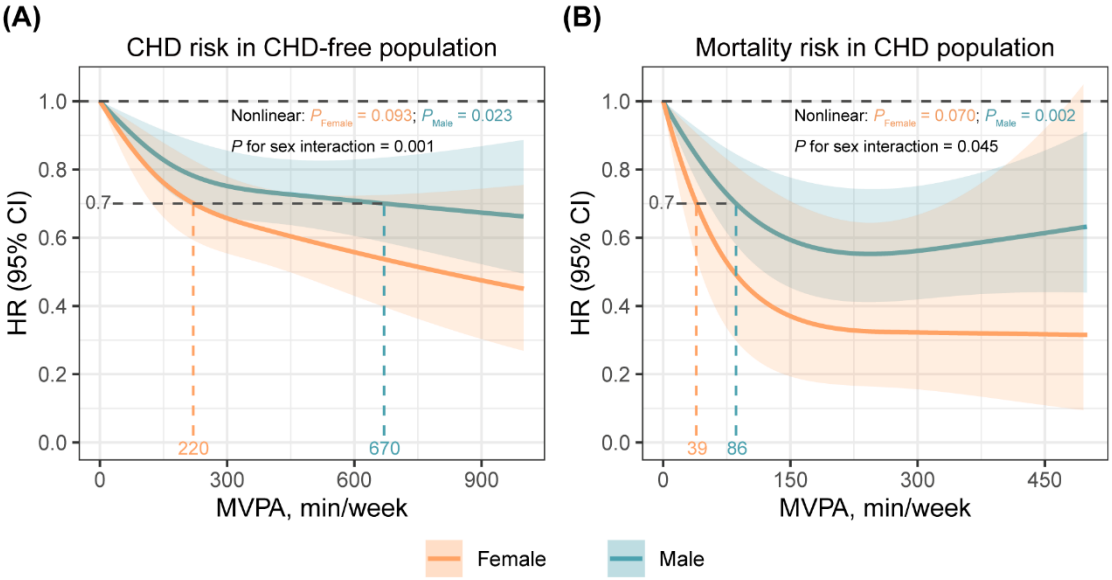
Sex-specific CHD incidence rate in CHD-free population stratified by (A) days adhering to AHA/ESC/WHO standard recommendation (150/7 min/day), and (B) WHO extended recommendation (300/7 min/day). Sex-specific mortality rate in CHD patients stratified by (C) days adhering to AHA/ESC/WHO standard recommendation (150/7 min/day), and (D) WHO extended recommendation (300/7 min/day). Sex-specific associations and sex differences between days adhering to daily PA recommendations and (E) CHD incidence risk in CHD-free population (N_{Female}=45,788, N_{Male}=33,910), and (F) all-cause mortality in CHD patients (N_{Female}=1,550, N_{Male}=3,587). The point estimates and error bars represent the HR and 95% CI from multivariable Cox proportional hazards models. Statistical tests were two-sided.

Supplementary Fig. 7. Sensitivity analyses for sex-specific cumulative risk of CHD in CHD-free population and overall survival in CHD patients stratified by adherence to PA recommendations in the imputed dataset



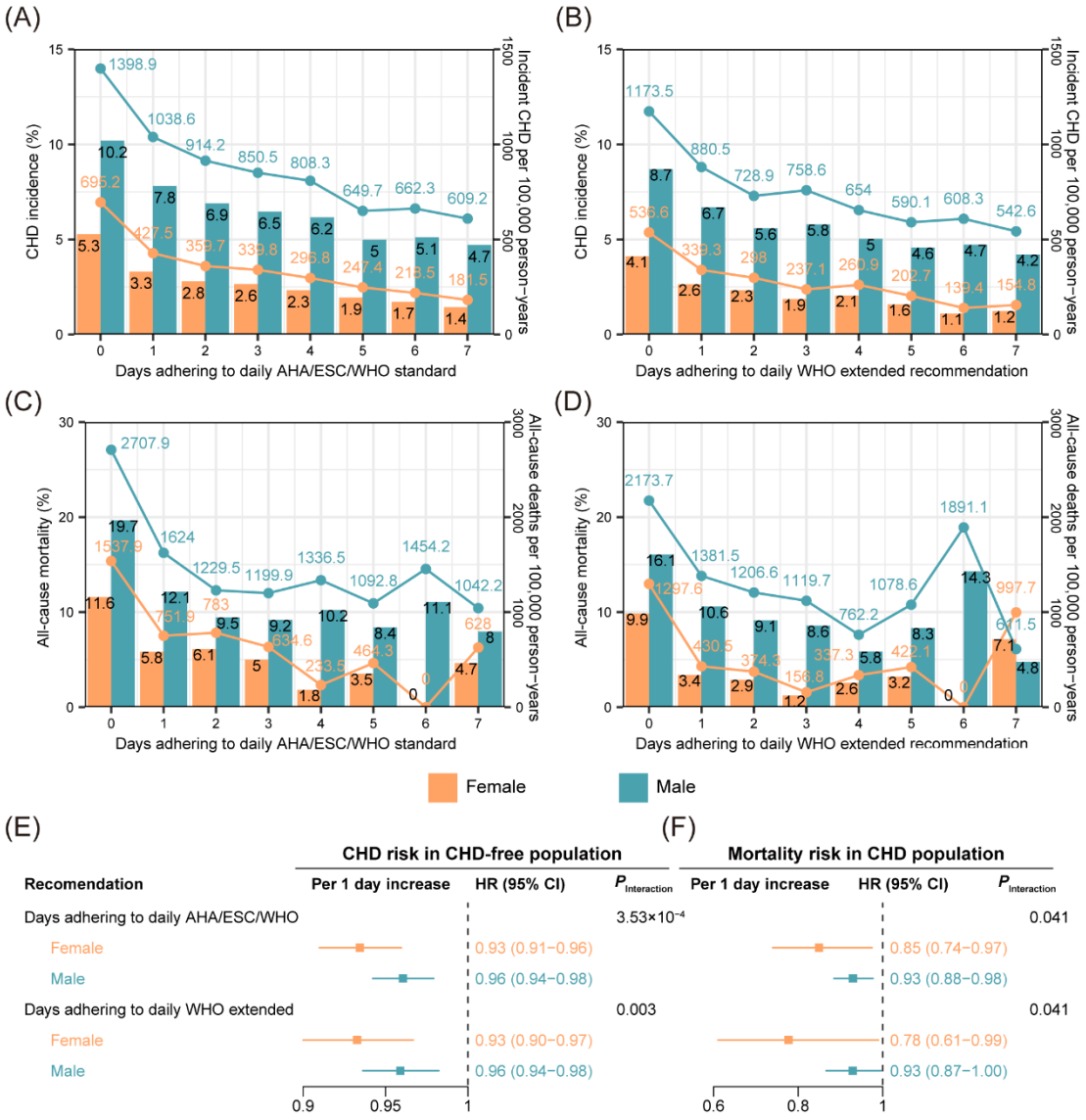
Sex-specific cumulative risk of incident CHD in CHD-free population stratified by (A) adherence to AHA/ESC/WHO standard recommendation (150 min/week); and (B) WHO extended recommendation (300 min/week). Sex-specific overall survival of CHD patients stratified by (C) adherence to AHA/ESC/WHO standard recommendation (150 min/week); and (D) WHO extended recommendation (300 min/week). Cumulative risks and survival differences between groups were assessed using the two-sided log-rank test. Sex-specific associations and sex differences between PA guideline adherence and (E) incident CHD risk in CHD-free population (AHA/ESC/WHO standard: $N_{\text{At/above vs. Below}}$=23,447 vs. 27,895 in females, and 19,408 vs. 17,861 in males; WHO extended: 9,299 vs. 42,043 in females, and 8,418 vs. 28,851 in males); and (F) all-cause mortality in CHD patients (AHA/ESC/WHO standard: $N_{\text{At/above vs. Below}}$=374 vs. 1,306 in females, and 1,308 vs. 2,488 in males; WHO extended: 133 vs. 1,547 in females, and 469 vs. 3,327 in males). The point estimates and error bars represent the HR and 95% CI from multivariable Cox proportional hazards models. All statistical tests were two-sided.

Supplementary Fig. 8. Sensitivity analyses for sex-specific dose-response association of MVPA with CHD incidence and mortality in the imputed dataset



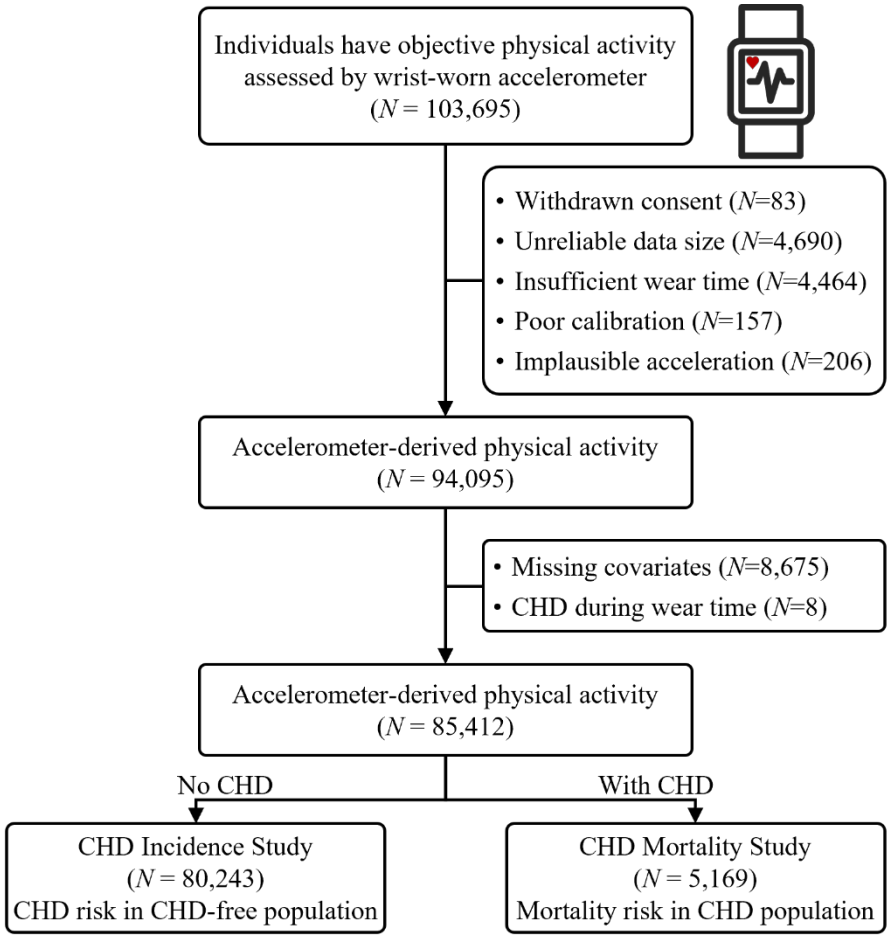
The adjusted HRs for associations of MVPA duration with (A) CHD incidence risk in CHD-free population (N_{Female}=51,342, N_{Male}=37,269) and (B) all-cause mortality risk in CHD patients (N_{Female}=1,680, N_{Male}=3,796) by sex. The y-axis represents the HRs for CHD risk or mortality risk. The solid line depicts the estimated HR derived from restricted cubic spline models, and the shaded area indicates the corresponding 95% CI. Statistical tests were two-sided.

Supplementary Fig. 9. Sensitivity analyses for sex-specific rates of CHD incidence and CHD death stratified by days adhering to daily PA recommendations in the imputed dataset



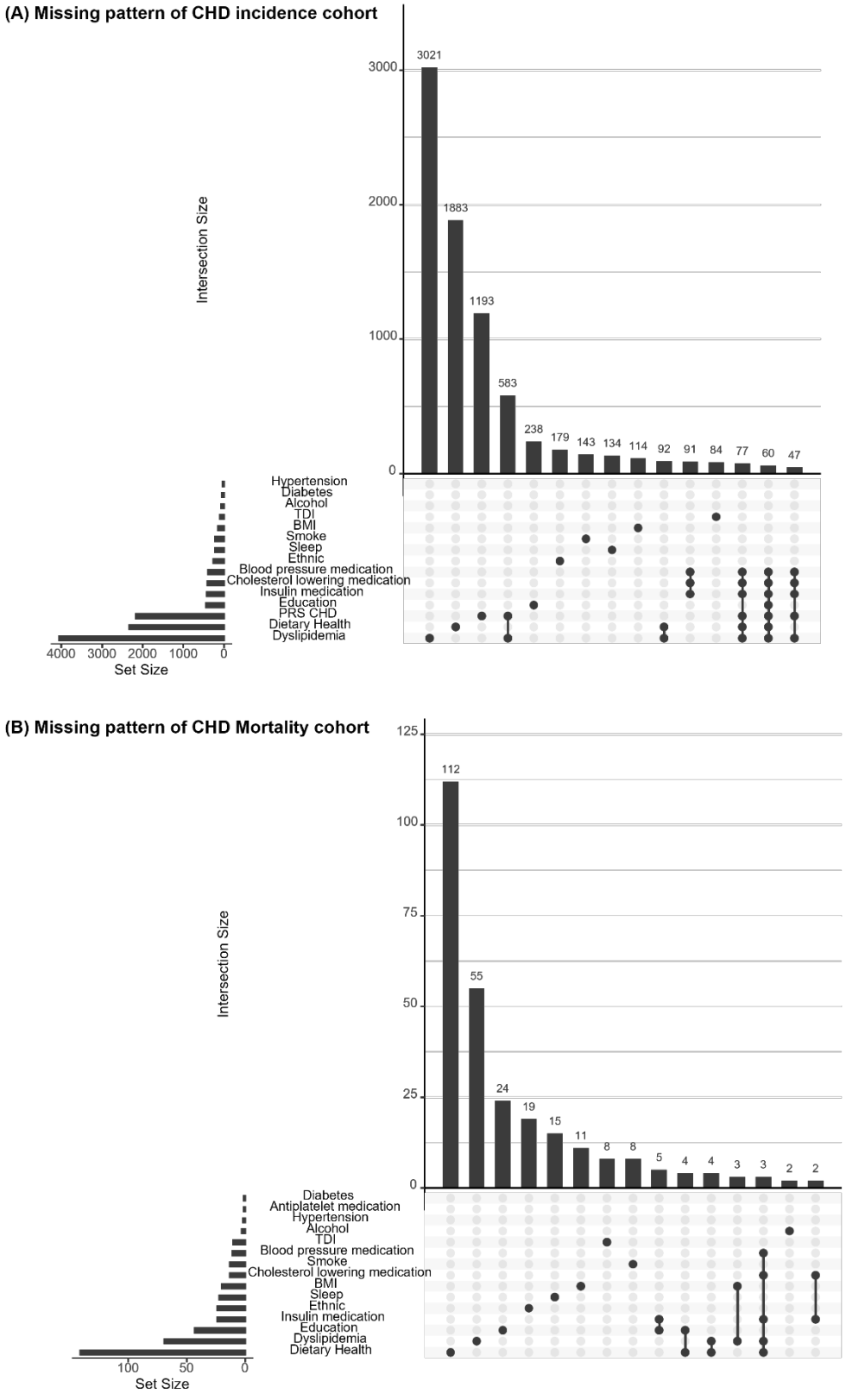
Sex-specific CHD incidence rate in CHD-free population stratified by (A) days adhering to AHA/ESC/WHO standard recommendation (150/7 min/day), and (B) WHO extended recommendation (300/7 min/day). Sex-specific mortality rate in CHD patients stratified by (C) days adhering to AHA/ESC/WHO standard recommendation (150/7 min/day), and (D) WHO extended recommendation (300/7 min/day). Sex-specific associations and sex differences between days adhering to daily PA recommendations and (E) CHD incidence risk in CHD-free population (N_{Female}=51,342, N_{Male}=37,269), and (F) all-cause mortality in CHD patients (N_{Female}=1,680, N_{Male}=3,796). The point estimates and error bars represent the HR and 95% CI from multivariable Cox proportional hazards models. Statistical tests were two-sided.

Supplementary Fig. 10. Flow chart of participant inclusion



Abbreviations: CHD=coronary heart disease

Supplementary Fig. 11. Missing patterns of two analytic datasets



Abbreviations: CHD=coronary heart disease; BMI= BMI=body mass index; TDI=Townsend deprivation index; PRS=polygenic risk score.