



Kunutsor, S. K., Kurl, S., Khan, H., Zaccardi, F., & Laukkanen, J. A. (2017). Associations of cardiovascular and all-cause mortality events with oxygen uptake at ventilatory threshold. *International Journal of Cardiology*, 236, 444-450. <https://doi.org/10.1016/j.ijcard.2017.01.156>

Peer reviewed version

License (if available):
CC BY-NC-ND

Link to published version (if available):
[10.1016/j.ijcard.2017.01.156](https://doi.org/10.1016/j.ijcard.2017.01.156)

[Link to publication record in Explore Bristol Research](#)
PDF-document

University of Bristol - Explore Bristol Research

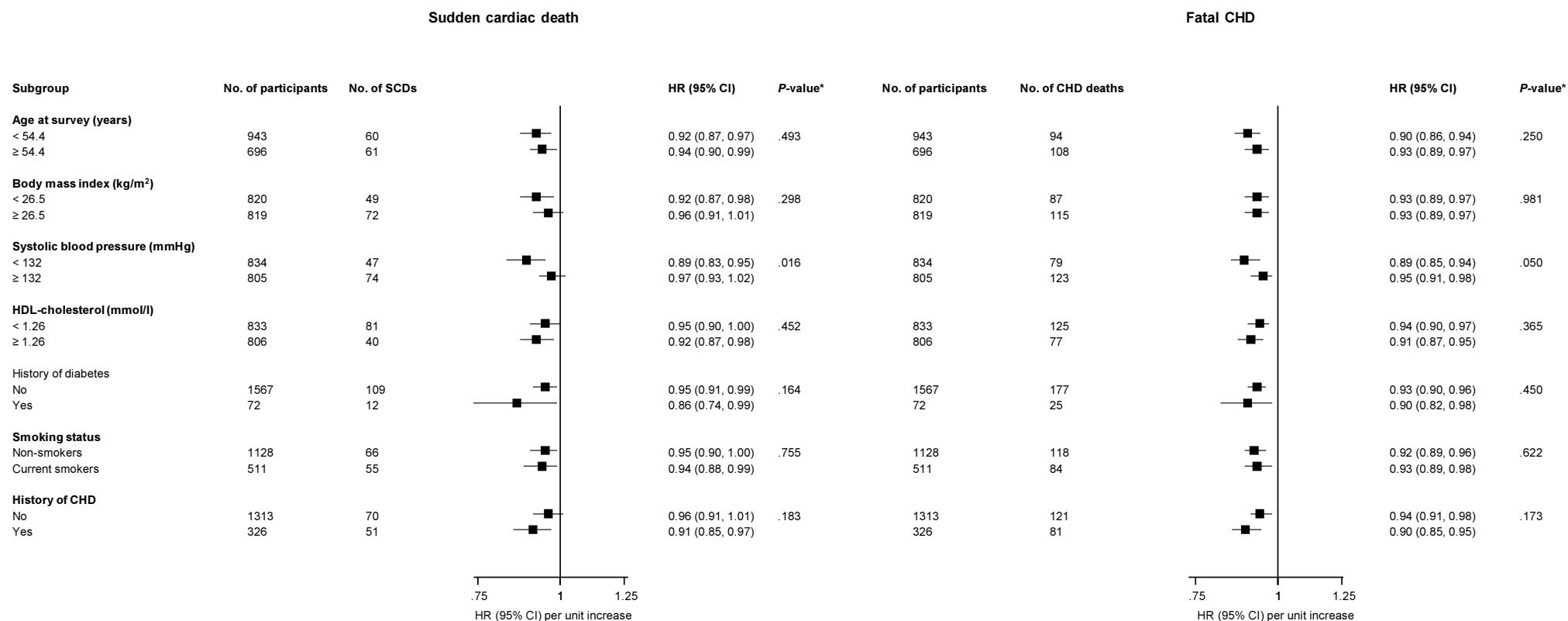
General rights

This document is made available in accordance with publisher policies. Please cite only the published version using the reference above. Full terms of use are available:
<http://www.bristol.ac.uk/pure/about/ebr-terms>

APPENDIX SUPPLEMENTS

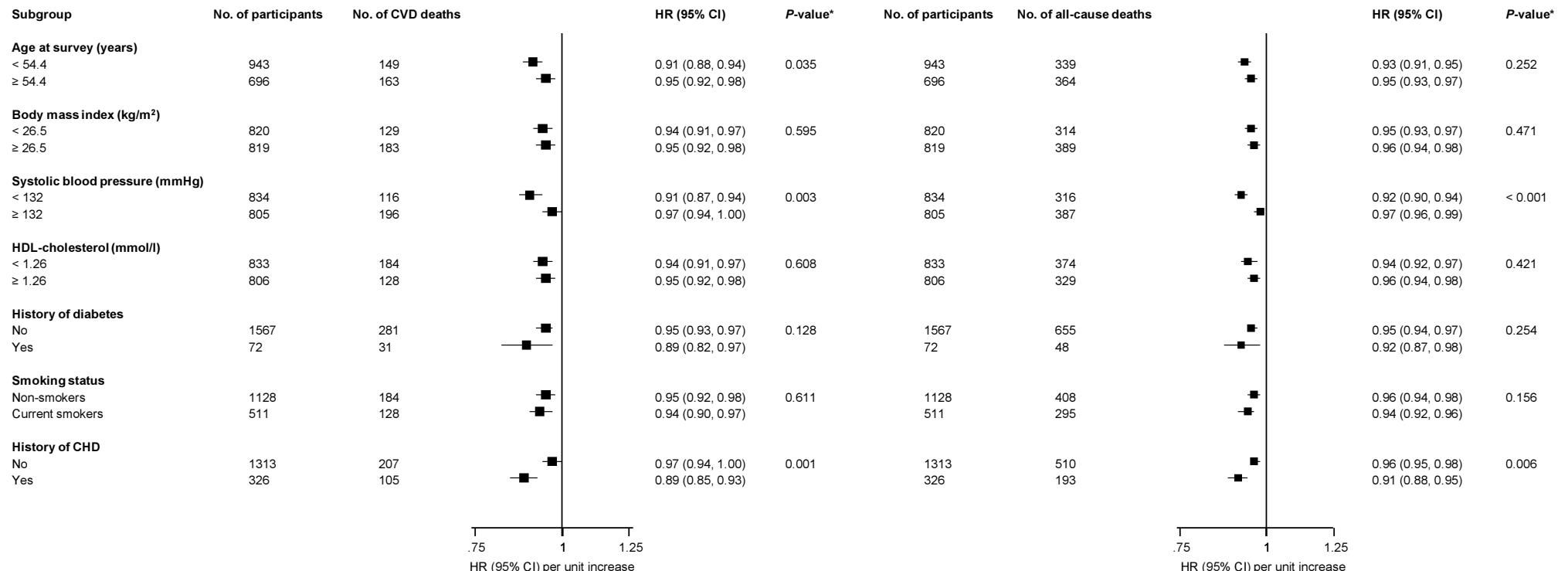
Appendix Supplement 1	Hazard ratios for sudden cardiac death and fatal coronary heart disease by several participant level characteristics
Appendix Supplement 2	Hazard ratios for fatal cardiovascular disease and all-cause mortality by several participant level characteristics
Appendix Supplement 3	Associations of peak VO ₂ with sudden cardiac death, fatal coronary heart disease, fatal cardiovascular disease, and all-cause mortality

Appendix Supplement 1: Hazard ratios for sudden cardiac death and fatal coronary heart disease by several participant level characteristics



Hazard ratios were adjusted for age, body mass index, systolic blood pressure, high-density lipoprotein cholesterol, smoking status, alcohol consumption, prevalent coronary heart disease, history of diabetes mellitus, resting heart rate, physical activity, and socioeconomic status; CHD, coronary heart disease; CI, confidence interval; HDL, high-density lipoprotein; HR, hazard ratio; SCD, sudden cardiac death; *, P-value for interaction

Appendix Supplement 2: Hazard ratios for fatal cardiovascular disease and all-cause mortality by several participant level characteristics



Hazard ratios were adjusted for age, body mass index, systolic blood pressure, high-density lipoprotein cholesterol, smoking status, alcohol consumption, prevalent coronary heart disease, history of diabetes mellitus, resting heart rate, physical activity, and socioeconomic status; CHD, coronary heart disease; CI, confidence interval; HDL, high-density lipoprotein; HR, hazard ratio; SCD, sudden cardiac death; *, P-value for interaction

Appendix Supplement 3. Associations of peak VO₂ with sudden cardiac death, fatal coronary heart disease, fatal cardiovascular disease, and all-cause mortality

Models Peak oxygen uptake	Sudden cardiac death		Fatal coronary heart disease		Fatal cardiovascular disease		All-cause mortality	
	121 cases		202 cases		312 cases		703 cases	
	Hazard ratio (95% CI)	P-value	Hazard ratio (95% CI)	P-value	Hazard ratio (95% CI)	P-value	Hazard ratio (95% CI)	P-value
Age-adjusted								
Per unit (ml/kg/min)	0.90 (0.87-0.93)	< 0.001	0.89 (0.87-0.91)	< 0.001	0.91 (0.90-0.93)	< 0.001	0.94 (0.93-0.95)	< 0.001
Per 1 MET	0.69 (0.62-0.77)	< 0.001	0.67 (0.62-0.73)	< 0.001	0.73 (0.68-0.77)	< 0.001	0.81 (0.77-0.84)	< 0.001
Quartile 1 (10.25-26.42)	1 [Reference]		1 [Reference]		1 [Reference]		1 [Reference]	
Quartile 2 (26.43-30.97)	0.62 (0.41-0.94)	0.024	0.57 (0.41-0.79)	0.001	0.62 (0.47-0.81)	< 0.001	0.65 (0.54-0.79)	< 0.001
Quartile 3 (30.98-35.79)	0.26 (0.15-0.45)	< 0.001	0.26 (0.17-0.40)	< 0.001	0.29 (0.21-0.41)	< 0.001	0.50 (0.41-0.61)	< 0.001
Quartile 4 (35.84-65.40)	0.16 (0.08-0.31)	< 0.001	0.15 (0.09-0.26)	< 0.001	0.24 (0.17-0.36)	< 0.001	0.33 (0.26-0.42)	< 0.001
Multivariate-adjusted*								
Per unit (ml/kg/min)	0.94 (0.90-0.97)	< 0.001	0.92 (0.89-0.94)	< 0.001	0.94 (0.92-0.96)	< 0.001	0.95 (0.94-0.96)	< 0.001
Per 1 MET	0.79 (0.70-0.89)	< 0.001	0.74 (0.68-0.82)	< 0.001	0.79 (0.73-0.85)	< 0.001	0.84 (0.80-0.88)	< 0.001
Quartile 1 (10.25-26.42)	1 [Reference]		1 [Reference]		1 [Reference]		1 [Reference]	
Quartile 2 (26.43-30.97)	0.80 (0.52-1.24)	0.326	0.72 (0.51-1.01)	0.056	0.75 (0.57-0.99)	0.045	0.73 (0.60-0.89)	0.002
Quartile 3 (30.98-35.79)	0.38 (0.21-0.69)	0.001	0.37 (0.23-0.57)	< 0.001	0.39 (0.27-0.56)	< 0.001	0.57 (0.46-0.71)	< 0.001
Quartile 4 (35.84-65.40)	0.31 (0.15-0.66)	0.002	0.26 (0.14-0.46)	< 0.001	0.40 (0.27-0.62)	< 0.001	0.43 (0.33-0.57)	< 0.001
Multivariate-adjusted* plus VO₂ at AT								
Per unit (ml/kg/min)	0.91 (0.86-0.97)	0.006	0.89 (0.85-0.94)	< 0.001	0.91 (0.87-0.94)	< 0.001	0.95 (0.93-0.98)	< 0.001
Per 1 MET	0.73 (0.58-0.91)	0.006	0.67 (0.56-0.80)	< 0.001	0.71 (0.62-0.82)	< 0.001	0.84 (0.76-0.92)	< 0.001
Quartile 1 (10.25-26.42)	1 [Reference]		1 [Reference]		1 [Reference]		1 [Reference]	
Quartile 2 (26.43-30.97)	0.80 (0.48-1.31)	0.372	0.76 (0.52-1.13)	0.180	0.79 (0.57-1.08)	0.139	0.80 (0.64-0.99)	0.041
Quartile 3 (30.98-35.79)	0.38 (0.18-0.78)	0.009	0.41 (0.23-0.72)	0.002	0.42 (0.27-0.66)	< 0.001	0.67 (0.50-0.88)	0.005
Quartile 4 (35.84-65.40)	0.30 (0.10-0.91)	0.033	0.32 (0.13-0.74)	0.008	0.47 (0.25-0.89)	0.020	0.57 (0.37-0.86)	0.008

*. Hazard ratios are adjusted for age, body mass index, systolic blood pressure, high-density lipoprotein cholesterol, smoking status, alcohol consumption, prevalent coronary heart disease, history of diabetes mellitus, resting heart rate, physical activity, and socioeconomic status

VO₂ at VT, oxygen uptake at ventilatory threshold

1 MET is equivalent to 3.5 ml/kg/min of oxygen uptake