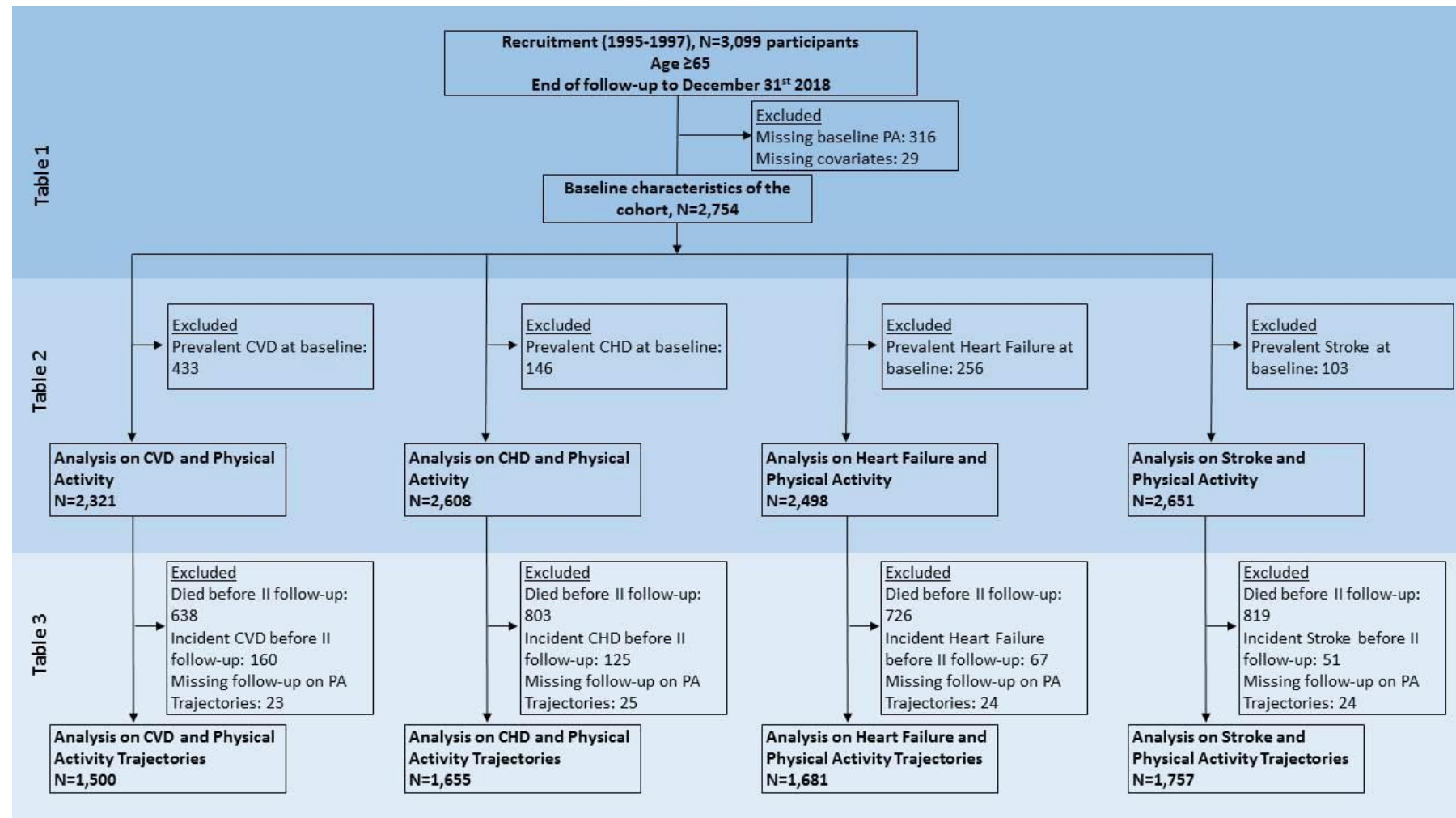


## Supplemental Material

Supplemental Figure 1. Flow chart for selection criteria of the cohort.



**Supplemental Table 1. Main comorbidities at baseline among participants who developed a cardiovascular event by the end of follow-up and those who did not (stratified by sex).**

	CVD		No CVD	
	Male (N=423)	Female (N=614)	Male (N=500)	Female (N=784)
<b>Main comorbidities</b>				
<b>Hypertension</b>	299 (70.7)	463 (75.4)	345 (69.0)	562 (71.7)
<b>MMSE<sup>a</sup> (&lt;24)</b>	120 (28.4)	223 (36.3)	145 (29.0)	299 (38.1)
<b>Osteoarthritis</b>	119 (28.1)	301 (49.0)	134 (26.8)	362 (46.2)
<b>Osteoporosis</b>	87 (20.6)	354 (57.7)	124 (24.8)	428 (54.6)
<b>CKD (GFR &lt;60 ml/min)<sup>b</sup></b>	83 (19.6)	202 (32.9)	69 (13.8)	250 (31.9)
<b>Chronic obstructive pulmonary disease</b>	83 (19.6)	39 (6.4)	67 (13.4)	40 (5.1)
<b>Diabetes</b>	48 (11.3)	50 (8.1)	29 (5.8)	79 (10.1)
<b>Asthma</b>	35 (8.3)	27 (4.4)	29 (5.8)	44 (5.6)
<b>Cancer</b>	34 (8.0)	40 (6.5)	47 (9.4)	50 (6.4)
<b>Dyslipidemia</b>	18 (4.3)	60 (9.8)	18 (3.6)	41 (5.2)
<b>Parkinson's disease</b>	18 (4.3)	21 (3.4)	31 (6.2)	26 (3.3)

<sup>a</sup> Mini Mental State Examination (MMSE).<sup>b</sup> Chronic Kidney Disease (CKD); Glomerular Filtration Rate (GFR).

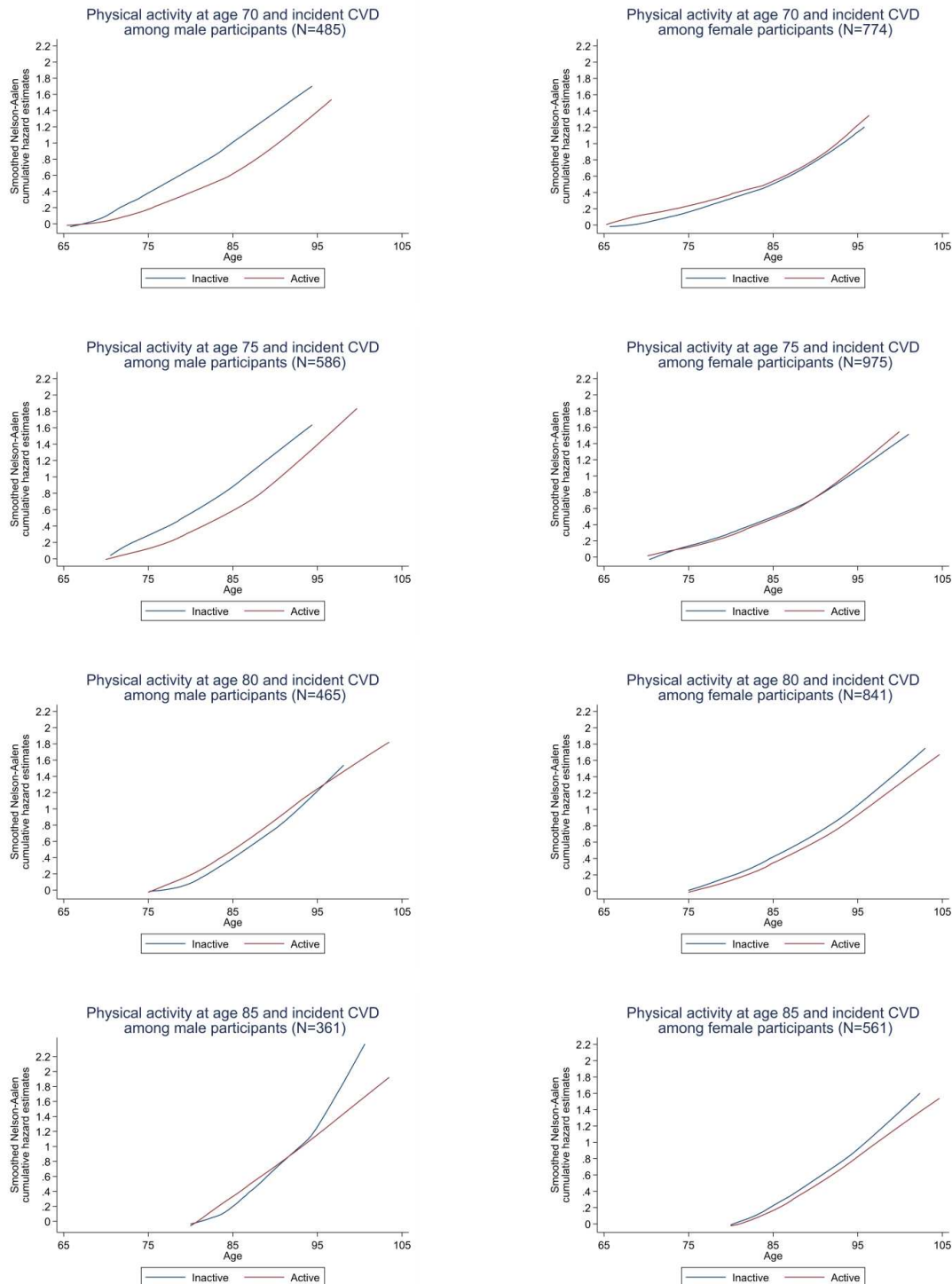
**Supplemental Table 2. Association between physical activity <sup>a</sup> at baseline and incident CVD, CHD, Heart Failure and Stroke, stratified by sex.**

	Physical activity	Male			Female		
		Cases/Total	Rate/1000 person-years	Fully adjusted <sup>a</sup> Model HR (95% CI)	Cases/Total	Rate/1000 person-years	Fully adjusted <sup>a</sup> Model HR (95% CI)
		Baseline (Mean (SD) follow-up=9.3 (6.6) years)			Baseline (Mean (SD) follow-up=11.9 (6.9) years)		
<b>CVD</b>	Inactive	89/203	61.76	Ref.	250/584	41.19	Ref.
	Active	334/720	46.98	<b>0.72 (0.57, 0.92)</b>	364/814	34.33	1.00 (0.85, 1.19)
		Baseline (Mean (SD) follow-up=9.5 (6.7) years)			Baseline (Mean (SD) follow-up=12.2 (7.0) years)		
<b>CHD</b>	Inactive	77/263	42.61	Ref.	182/689	25.66	Ref.
	Active	209/788	25.61	<b>0.66 (0.50, 0.86)</b>	208/868	17.54	0.92 (0.75, 1.14)
		Baseline (Mean (SD) follow-up=10.1 (6.6) years)			Baseline (Mean (SD) follow-up=12.9 (6.6) years)		
<b>Heart Failure</b>	Inactive	58/227	32.39	Ref.	178/635	24.89	Ref.
	Active	221/797	25.83	<b>0.71 (0.53, 0.97)</b>	247/839	20.77	1.01 (0.83, 1.24)
		Baseline (Mean (SD) follow-up=9.9 (6.6) years)			Baseline (Mean (SD) follow-up=12.7 (6.7) years)		
<b>Stroke</b>	Inactive	32/260	15.99	Ref.	101/701	13.13	Ref.
	Active	138/818	15.96	1.02 (0.69, 1.51)	149/872	12.19	1.15 (0.88, 1.49)

<sup>a</sup> Physical activity (moderate and vigorous physical activity) categorized as inactive  $\leq 20$  min/day and active  $> 20$  min/day.

<sup>b</sup> Fully adjusted model: adjusted for sociodemographic variables (sex, education, and number of members living in the same household), health behaviors (smoke, and alcohol consumption), the number of chronic comorbid conditions (cancer, chronic obstructive pulmonary disease, asthma, hypoacusia, hypovisus, diabetes, chronic kidney disease, anemia, Parkinson's disease, dyslipidemia, osteoporosis with or without femur fracture, congenital mental retardation, osteoarthritis, discopathy, orthostatic hypotension, urinary incontinence, and bowel incontinence) and comorbid cardiovascular diseases (CHD, heart failure, stroke, angina, transient ischemic attack, atrial fibrillation, hypertension, and peripheral artery disease, with the exclusion of the outcome of interest) at baseline, and stratified by categorized year of birth.

## Supplemental Figure 2. Association between physical activity at age 70, 75, 80 and 85 with any incident CVD.



Participants were taken from within a 5 year range of the age of interest.

Hazard ratios for men were at age 70 (213 failures) HR: 0.58 95% CI 0.39, 0.84; at age 75 (253 failures) HR: 0.74 95% CI

0.52, 1.05; at age 80 (204 failures) HR: 0.99 95% CI 0.68, 1.44; at age 85 (169 failures) HR: 0.84 95% CI 0.57, 1.23. Hazard ratios for women were at age 70 (323 failures) HR: 0.96 95% CI 0.76, 1.23; at age 75 (406 failures) HR: 1.18 95% CI 0.95, 1.47; at age 80 (367 failures) HR: 0.95 95% CI 0.77, 1.18; at age 85 (248 failures) HR: 0.92 95% CI 0.71, 1.19.

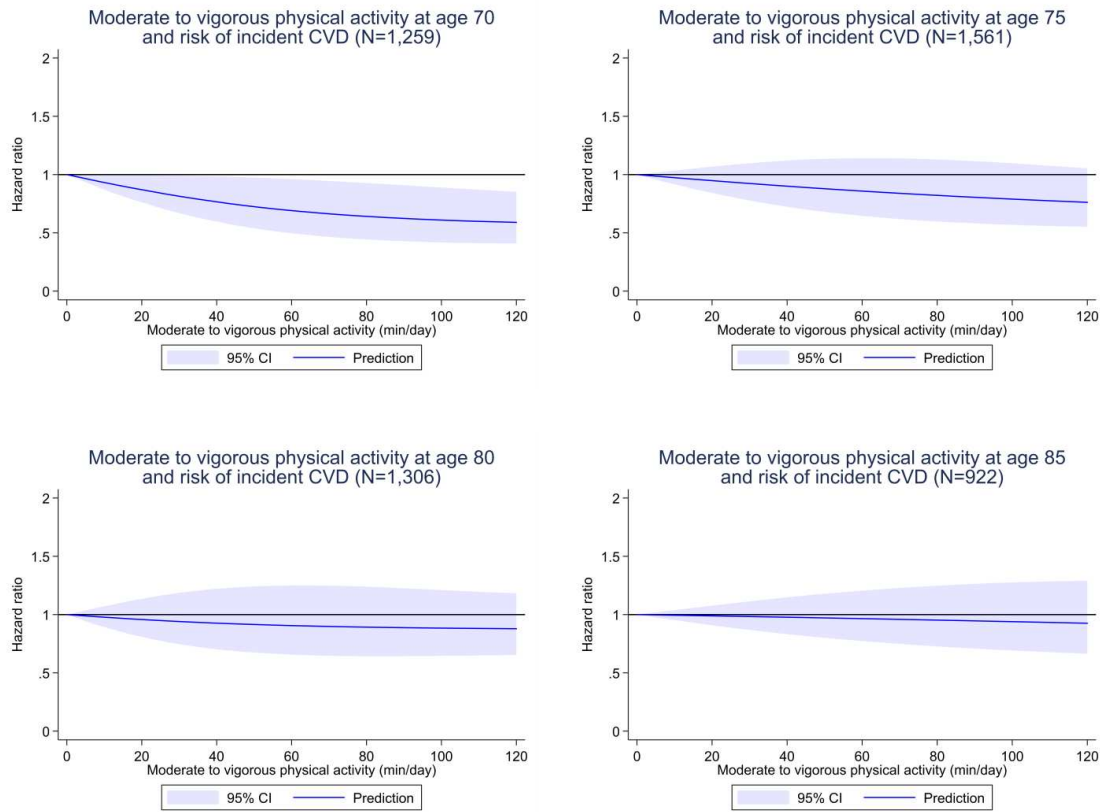
Smoothed Nelson-Aalen plots refer to unadjusted models.

**Supplemental Table 3. Association between baseline physical activity<sup>a</sup> and trajectories of physical activity from baseline, with overall mortality, stratified by sex.**

Physical activity	Male			Female			
	Cases/ Total	Rate/1000 person-years	Fully adjusted <sup>b</sup> Model HR (95% CI)	Cases/ Total	Rate/1000 person-years	Fully adjusted <sup>b</sup> Model HR (95% CI)	
<b>Overall mortality</b>	Mean (SD) follow-up=10.4 (6.7) years			Mean (SD) follow-up=13.3 (6.6) years			
	Inactive	258/278	116.98	Ref.	629/739	74.66	Ref.
	Active	736/852	77.48	<b>0.72 (0.62, 0.84)</b>	611/885	46.57	<b>0.81 (0.72, 0.92)</b>
<b>Overall mortality</b>	Mean (SD) follow-up=9.3 (5.6) years			Mean (SD) follow-up=11.5 (5.4) years			
	Stable-low	43/47	148.39	Ref.	194/240	81.84	Ref.
	High-decreasing	93/98	153.63	1.04 (0.72, 1.50)	139/173	81.25	1.06 (0.85, 1.32)
	Low-increasing	62/78	86.40	0.75 (0.50, 1.11)	123/177	58.66	0.91 (0.72, 1.14)
	Stable-high	380/483	78.87	0.60 (0.43, 0.83)	321/554	45.77	0.81 (0.67, 0.98)
<i>p for trend</i>			<b>&lt;0.0001</b>			<b>0.010</b>	

<sup>a</sup> Physical activity (moderate and vigorous physical activity) categorized as inactive ≤20 min/day and active >20 min/day.

<sup>b</sup> Fully adjusted model: adjusted for sociodemographic variables (sex, education, and number of members living in the same household), health behaviors (smoke, and alcohol consumption), the number of chronic comorbid conditions (cancer, chronic obstructive pulmonary disease, asthma, hypoacusia, hypovisus, diabetes, chronic kidney disease, anemia, Parkinson's disease, dyslipidemia, osteoporosis with or without femur fracture, congenital mental retardation, osteoarthritis, discopathy, orthostatic hypotension, urinary incontinence, and bowel incontinence) and comorbid cardiovascular diseases (CHD, heart failure, stroke, angina, transient ischemic attack, atrial fibrillation, hypertension, and peripheral artery disease) at baseline, and stratified by categorized year of birth.

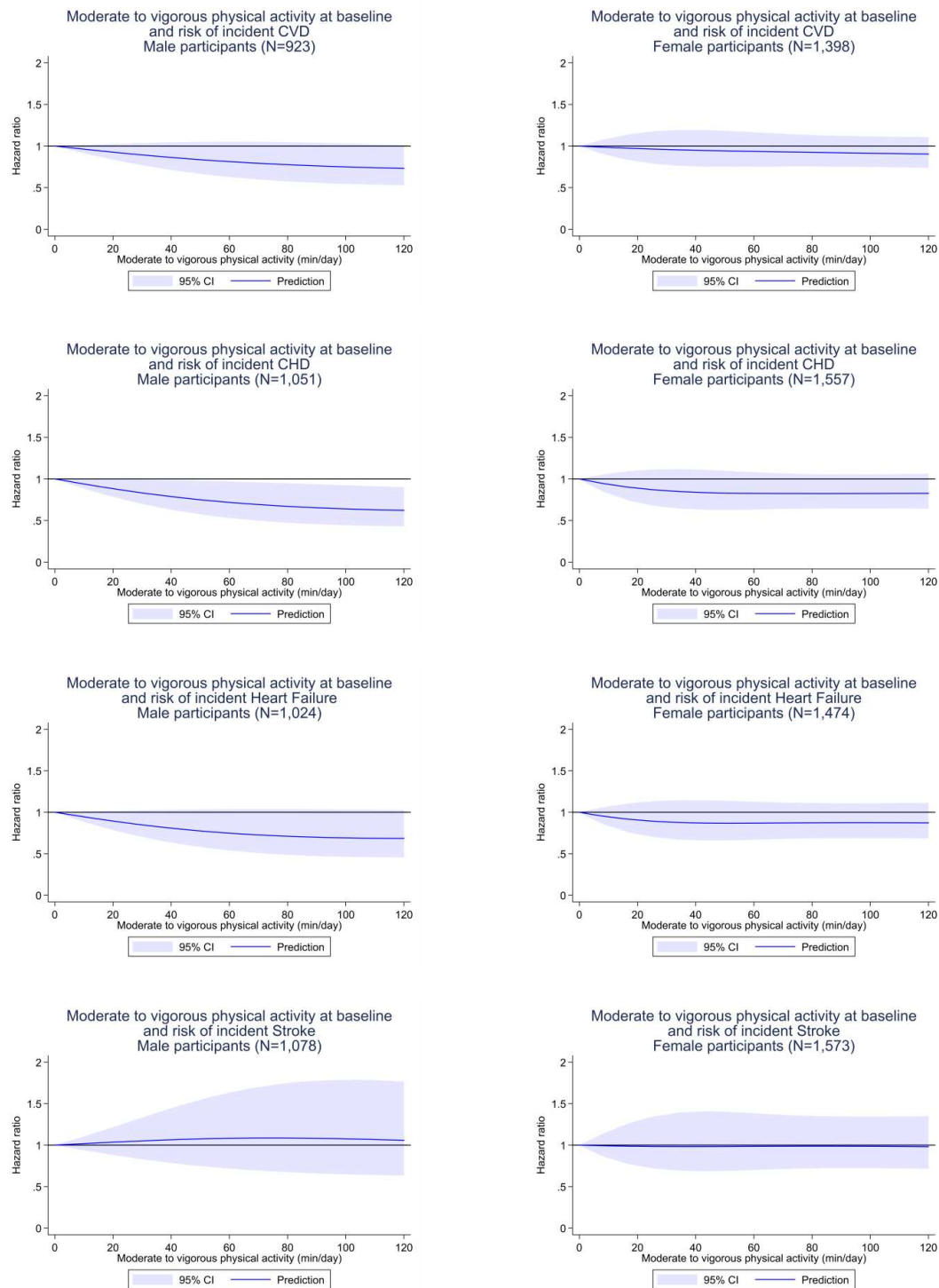
**Supplemental Figure 3. Association of incident CVD with continuous values of moderate and vigorous physical activity<sup>a</sup> at age 70, 75, 80 and 85.**

<sup>a</sup> Physical activity (PA) was considered as (moderate PA min/day) + 2\*(vigorous PA min/day).

All splines were adjusted for sociodemographic variables, and stratified by categorized year of birth. At age 85, due to lower number of participants, a 3 knot spline was adopted.



**Supplemental Figure 4. Correlation of minutes per day of physical activity <sup>a</sup> at baseline and incident CVD, CHD, heart failure and stroke, stratified by sex.**



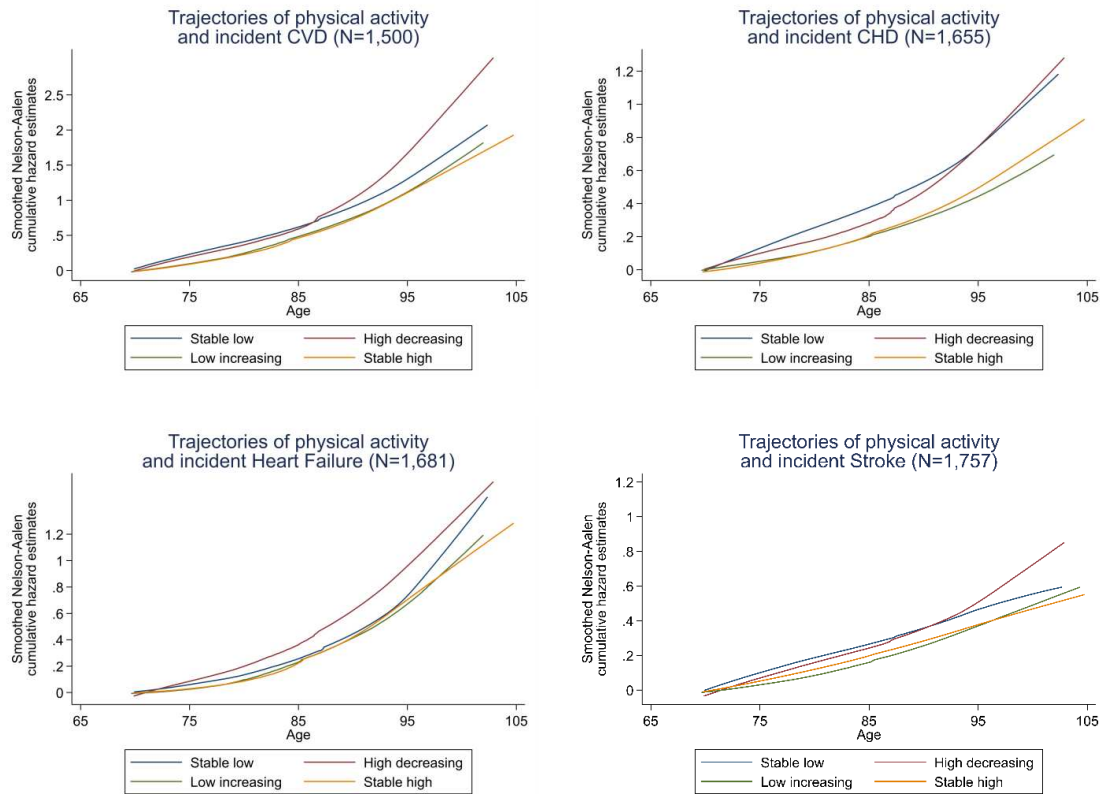
<sup>a</sup> Physical activity was considered as (moderate PA min/day) + 2\*(vigorous PA min/day). All splines were adjusted for sociodemographic variables, stratified by categorized year of birth.

Supplemental Table 4. Association between physical activity trajectories <sup>a</sup> at age 70, 75, 80 and 85, and any incident CVD.

Cardiovascular disease	Male			Female		
	Cases/ Total	Rate/1000 person- years	Fully adjusted <sup>b</sup> Model HR (95% CI)	Cases/ Total	Rate/1000 person- years	Fully adjusted <sup>b</sup> Model HR (95% CI)
<b>70 years</b>	<b>Mean (SD follow-up=8.9 (5.1) years)</b>			<b>Mean (SD) follow-up =11.1 (5.0) years)</b>		
Stable-low	8/14	93.35	Ref.	39/101	36.54	Ref.
High-decreasing	15/36	55.57	0.46 (0.19, 1.09)	38/81	46.27	1.39 (0.88, 2.21)
Low-increasing	10/26	55.42	0.37 (0.14, 0.96)	39/80	45.69	1.31 (0.83, 2.08)
Stable-high	117/276	45.00	0.29 (0.14, 0.62)	130/369	30.65	0.94 (0.65, 1.36)
<i>p for trend</i>			<b>0.002</b>			<b>0.265</b>
<b>75 years</b>	<b>Mean (SD follow-up =8.2 (4.8) years)</b>			<b>Mean (SD) follow-up =10.0 (4.8) years)</b>		
Stable-low	12/20	92.63	Ref.	48/129	38.11	Ref.
High-decreasing	23/53	60.49	0.51 (0.25, 1.04)	51/108	53.22	1.64 (1.10, 2.46)
Low-increasing	13/29	75.89	0.66 (0.30, 1.47)	31/76	41.35	0.95 (0.60, 1.51)
Stable-high	129/302	49.30	0.43 (0.23, 0.80)	160/430	35.94	1.18 (0.84, 1.65)
<i>p for trend</i>			<b>0.025</b>			<b>0.993</b>
<b>80 years</b>	<b>Mean (SD follow-up =6.3 (4.3) years)</b>			<b>Mean (SD) follow-up =8.2 (4.6) years)</b>		
Stable-low	6/13	79.04	Ref.	50/111	57.37	Ref.
High-decreasing	13/39	63.93	0.84 (0.30, 2.31)	37/79	74.51	1.36 (0.88, 2.11)
Low-increasing	11/21	98.78	1.37 (0.48, 3.91)	21/50	46.13	0.79 (0.48, 1.33)
Stable-high	82/166	73.17	0.91 (0.38, 2.19)	98/220	49.95	0.95 (0.67, 1.37)
<i>p for trend</i>			<b>0.863</b>			<b>0.384</b>
<b>85 years</b>	<b>Mean (SD) follow-up =5.6 (4.0) years)</b>			<b>Mean (SD) follow-up =6.6 (4.3) years)</b>		
Stable-low	4/11	88.93	Ref.	38/706	84.86	Ref.
High-decreasing	16/32	127.25	1.69 (0.52, 5.48)	24/52	76.82	0.92 (0.54, 1.57)
Low-increasing	8/14	104.48	1.59 (0.44, 5.79)	7/17	65.81	0.82 (0.35, 1.89)
Stable-high	38/81	71.87	0.90 (0.30, 2.69)	34/82	54.76	0.63 (0.38, 1.03)
<i>p for trend</i>			<b>0.162</b>			<b>0.056</b>

<sup>a</sup> Physical activity (moderate and vigorous physical activity) categorized as inactive  $\leq 20$  min day and active  $> 20$  min day. Follow-up started from the second visit that defined the trajectory.

<sup>b</sup> Fully adjusted model: adjusted for sociodemographic variables (sex, education, and number of members living in the same household), health behaviors (smoke, and alcohol consumption), the number of chronic comorbid conditions (cancer, chronic obstructive pulmonary disease, asthma, hypoacusia, hypovision, diabetes, chronic kidney disease, anemia, Parkinson's disease, dyslipidemia, osteoporosis with or without femur fracture, congenital mental retardation, osteoarthritis, discopathy, orthostatic hypotension, urinary incontinence, and bowel incontinence) and comorbid cardiovascular diseases (CHD, heart failure, stroke, angina, transient ischemic attack, atrial fibrillation, hypertension, and peripheral artery disease, with the exclusion of the outcome of interest) at baseline, and stratified by categorized year of birth.

**Supplemental Figure 5. Association between physical activity trajectories<sup>a</sup> with any incident Cardiovascular Diseases (CVD), Coronary Heart Disease (CHD), Heart Failure and Stroke**

<sup>a</sup> Physical activity (moderate to vigorous physical activity) trajectories were defined from baseline to the 1<sup>st</sup> or 2<sup>nd</sup> visit (the first available). Follow-up started from the second visit that defined the trajectory. Smoothed Nelson-Aalen plots refer to unadjusted models