

SUPPLEMENTAL MATERIAL

Table S1. ICD codes of Atrial Fibrillation, baseline comorbidities and clinical outcomes

Diagnosis	ICD 8	ICD 9	ICD 10
Atrial fibrillation	42792	427D	I48.0-I48.9
Diabetes mellitus	250	250	E10-E14
Hypertension	401-405	401-405	I10-I15
ACH	746-747	745-747	Q2, Q332, Q871E, Q872, Q874, Q878, Q90, Q96
Heart failure	42700	428A, 428B, 428X	I50.0-I50.9
Ischemic stroke	433,00, 433,99 434,00, 434,99 435,00, 435,99 436,00, 436,99	433A, 433B 433C, 433D 433W, 433X 434A, 434B 434X, 436X	I63.0-I63.9

International classification of diseases (ICD), ACH (adult congenital heart disease)

Table S2. Event rates for atrial fibrillation relative to body mass index group

	All	BMI <18.5 kg/m ²	BMI 18.5–<20.0 kg/m ²	BMI 20.0–<22.5 kg/m ²	BMI 22.5–<25.0 kg/m ²	BMI 25.0–<27.5 kg/m ²	BMI 27.5–<30.0 kg/m ²	BMI 30.0–<35.0 kg/m ²	BMI 35.0–<40.0 kg/m ²	BMI 40.0–50.0 kg/m ²
n (%)	1704467 (100)	138645 (8.1)	307135 (18.0)	687070 (40.3)	362485 (21.3)	126193 (7.4)	44592 (2.6)	30800 (1.8)	6244 (0.4)	1302 (0.1)
Events, n (%)	36693 (100)	2871 (7.8)	6228 (16.9)	14176 (38.6)	7967 (21.7)	3008 (8.2)	1260 (3.4)	953 (2.6)	190 (0.5)	40 (0.1)
Cases per 100 000 observed person years (CI)	68 (67–69)	61 (59–63)	61 (59–62)	65 (63–66)	73 (71–74)	82 (79–85)	100 (94–105)	114 (107–121)	122 (105–140)	131 (93–178)
Age at diagnosis, year(SD)	52.4 (10.6)	54.0 (10.3)	53.6 (10.3)	52.5 (10.6)	51.7 (10.7)	51.1 (10.8)	50.7 (10.6)	50.4 (10.3)	48.3 (10.6)	43.4 (10.3)
Median follow up time, year (IQR)	32 (24–41)	36 (26–45)	34 (26–44)	33 (25–41)	31 (22–39)	29 (21–38)	28 (21–37)	26 (19–35)	24 (18–32)	22 (17–30)
Person-years of follow-up	53704092	4699225	10186471	21882960	10972929	3679934	1262415	834324	155266	30569

BMI= body mass index; CI= Confidence intervals, IQR= Interquartile range, SD= Standard deviation.

Table S3. Hazard Ratios (95% CIs) for Atrial Fibrillation by cardiovascular risk factors

	Multivariable adjusted Model
Events/population, n	24897/1297909
Age	1.11(1.09-1.13)
P-value interaction	0.80
Center	1.00(0.99-1.01)
P-value interaction	0.10
Year	1.01(1.01-1.02)
P-value interaction	0.32
Systolic blood pressure	
100–119 mmHg	1
120–125 mmHg	1.07(1.03-1.11)
126–130 mmHg	1.10(1.06-1.15)
131–138 mmHg	1.08(1.04-1.13)
139–180 mmHg	1.20(1.15-1.25)
P-value interaction	0.23
Diastolic blood pressure	
40–59 mmHg	1
60–65 mmHg	0.99(0.95-1.04)
66–70 mmHg	1.00(0.96-1.05)
71–76 mmHg	1.00(0.95-1.04)
77–100 mmHg	1.03(0.99-1.08)
P-value interaction	0.73
Cardiorespiratory fitness	
High (8-9)	1
Moderate (5-7)	1.03 (0.99-1.07)
Low (1-4)	1.17(1.12-1.22)
P-value interaction	0.06
Muscle strength	
High (8-9)	1
Moderate (5-7)	0.91(0.82-1.01)
Low (1-4)	0.93(0.83-1.05)
P-value interaction	0.004
Parental education	
High (8-9)	1
Moderate (5-7)	1.04(0.99-1.08)
Low (1-4)	1.02(0.96-1.06)
P-value interaction	0.27
IQ	
High (8-9)	1
Moderate (5-7)	1.04 (1.01-1.07)
Low (1-4)	1.14(1.09-1.18)
P-value interaction	0.006
Baseline comorbidities	
Diabetes	1.50(0.95-2.35)
P-value interaction	0.33
Hypertension	1.55(1.24-1.95)
P-value interaction	0.46
GUCh	5.99(4.89-7.34)
P-value interaction	0.0004

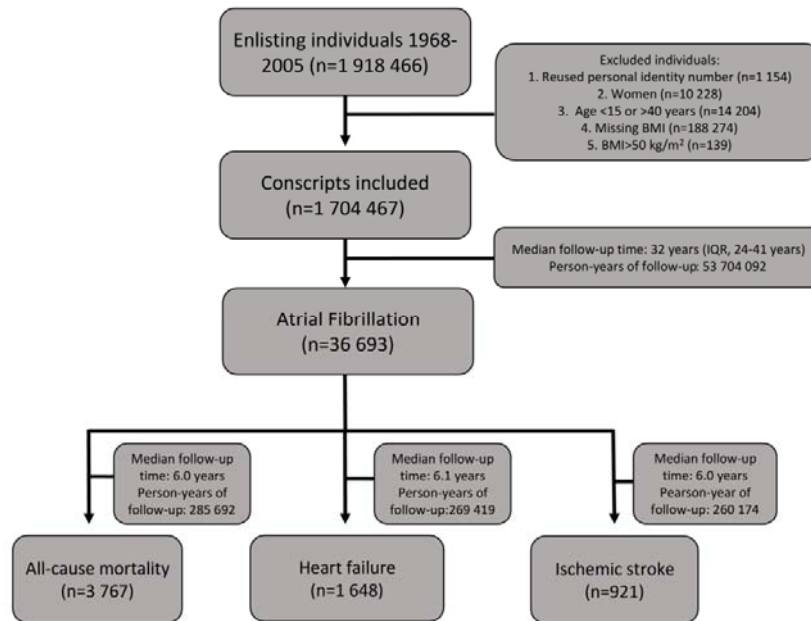
Hazard ratios were derived by Cox regressions (methods), and interactions by use of BMI as continuous variable (methods).

Table S4. Event rates for clinical outcomes in patients with atrial fibrillation relative to body mass index group

	All	BMI<20.0 kg/m ²	BMI 20– <25.0 kg/m ²	BMI 25– <30.0 kg/m ²	BMI ≥30 kg/m ²
All-cause mortality					
total n (%)	36459 (100)	9037(24.8)	22006 (60.4)	4244 (11.6)	1172 (3.2)
Events, n (%)	3767 (100)	917 (24.3)	2083 (55.3)	578 (15.3)	189 (5.0)
Cases per 1000 observed person years (CI)	13.2 (12.8– 13.6)	13.0 (12.1– 13.8)	11.9 (11.4– 12.5)	18.0 (16.6– 19.6)	22.6 (19.5– 26.0)
Age at death, y (SD)	58.6(7.4)	59.3(7.4)	58.7(7.4)	57.9(7.5)	56.1(8.1)
Median follow up time, y (IQR)	6.0 (2.4– 12.0)	6.7 (2.9–12.1)	6.7 (2.8–12.5)	6.5 (2.8–12.4)	6.7 (3.3–11.6)
Person-years of follow up	285692	70724	174543	32051	8373
Heart Failure					
Total n (%)	34534 (100)	8592 (24.9)	20966 (60.7)	3919 (11.3)	1057 (3.1)
Events, n (%)	3251 (100)	808 (24.9)	1818 (55.9)	475 (14.6)	150 (4.6)
Cases per 1000 observed person years (CI)	11.7 (11.3– 12.2)	11.8 (11.0– 12.6)	10.7 (10.2– 11.2)	15.5 (14.2– 17.0)	19.2 (16.2– 22.5)
Age of diagnosis, y(SD)	57.4(7.6)	57.6(8.3)	57.7(7.3)	56.8(7.7)	55.2(7.5)
Median follow up time, y IQR)	6.1 (2.5– 11.7)	6.2 (2.5–11.5)	6.2 (2.5–11.8)	6.0 (2.4–11.6)	5.9 (2.8–10.9)
Person-years of follow up	269419	66920	165627	29526	7345
Ischaemic Stroke					
Total n (%)	35025 (100)	8641 (24.7)	21183 (60.5)	4078 (11.6)	1123 (3.2)
Events, n (%)	921(100)	242 (26.3)	522 (56.7)	114 (12.4)	43 (4.7)
Cases per 1000 observed person years (CI)	3.4 (3.1–3.6)	3.6 (3.1–4.0)	3.1 (2.8–3.4)	3.7 (3.1–4.5)	5.4(3.9–7.3)
Age at diagnosis, y(SD)	61.2(6.8)	59.3(3.2)	58.2(6.9)	56.5(7.3)	54.3(8.2)
Median follow up time, y(IQR)	6.0 (2.4– 11.5)	6.1 (2.4–11.3)	6.1 (2.4–11.6)	5.7 (2.2–11.1)	5.7 (2.7–10.4)
Person-years of follow up	260174	67834	168028	30761	7980

BMI= body mass index; CI= Confidence intervals, IQR= Interquartile range, SD= Standard deviation.

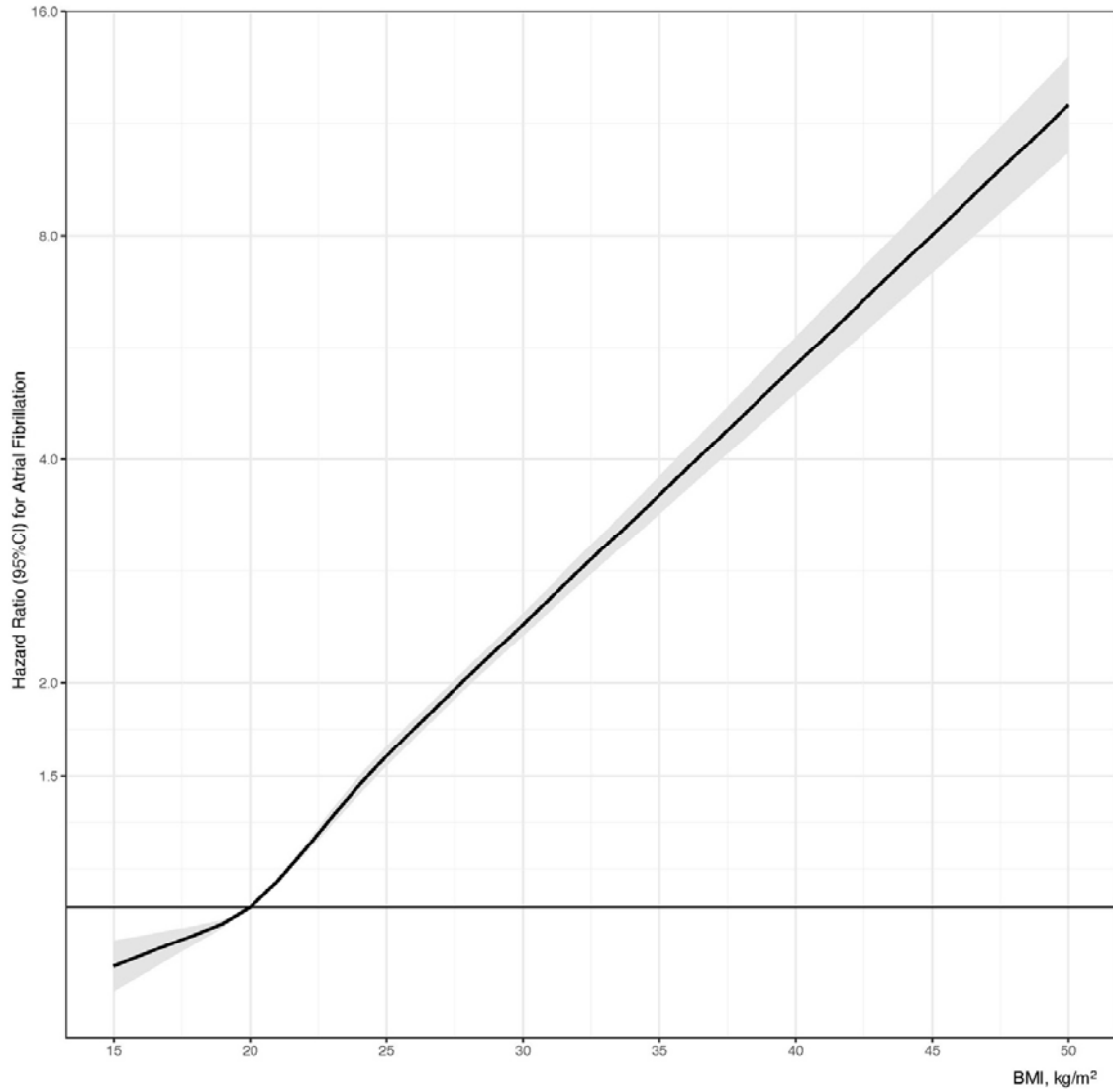
Figure S1. Study flowchart



The flow chart is in accordance with the STROBE criteria.

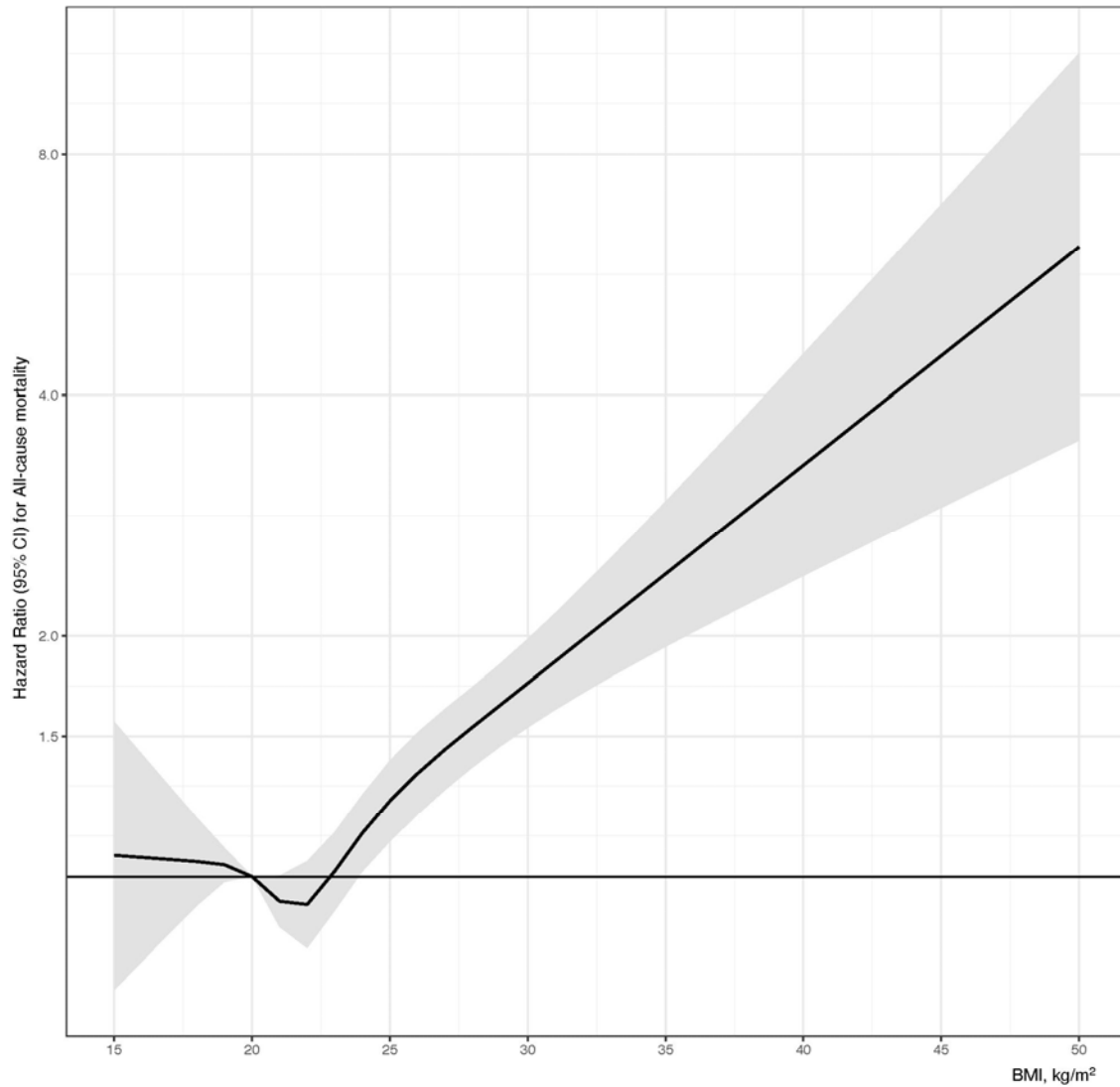
BMI; Body mass index.

Figure S2. Association between body mass index (BMI) at conscription and risk for Atrial Fibrillation



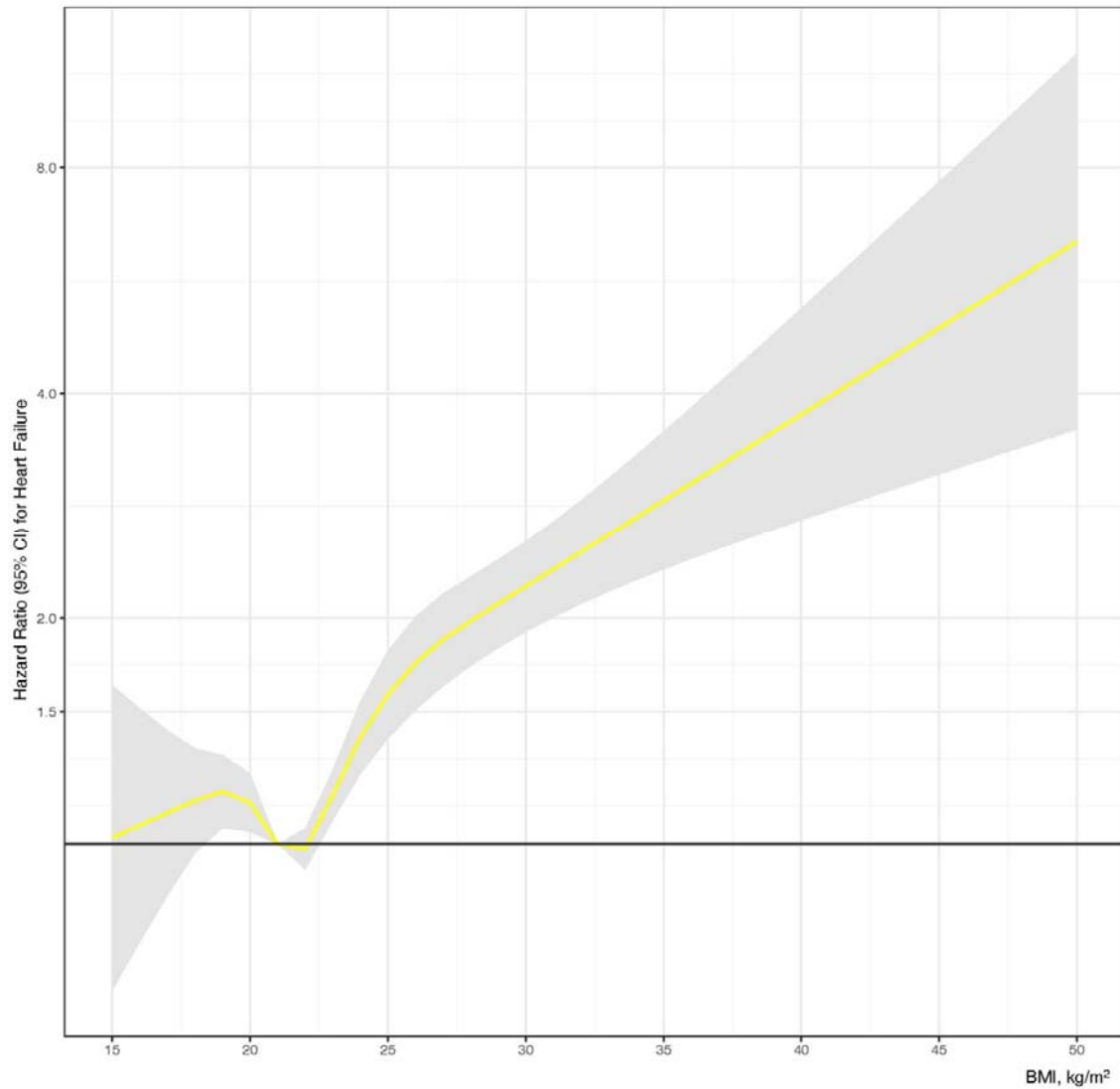
The model was unadjusted (n= 1704467). BMI was restricted to BMI between 15 and 50 kg/m² and modelled as a restricted cubic spline with knots at 5%, 25%, 75%, and 95% (i.e., 18.1, 19.9, 23.2, and 27.2 kg/m²), with BMI of 20 kg/m² as reference.

Figure S3. Association between body mass index (BMI) at conscription and risk for all-cause mortality in patients diagnosed with Atrial Fibrillation



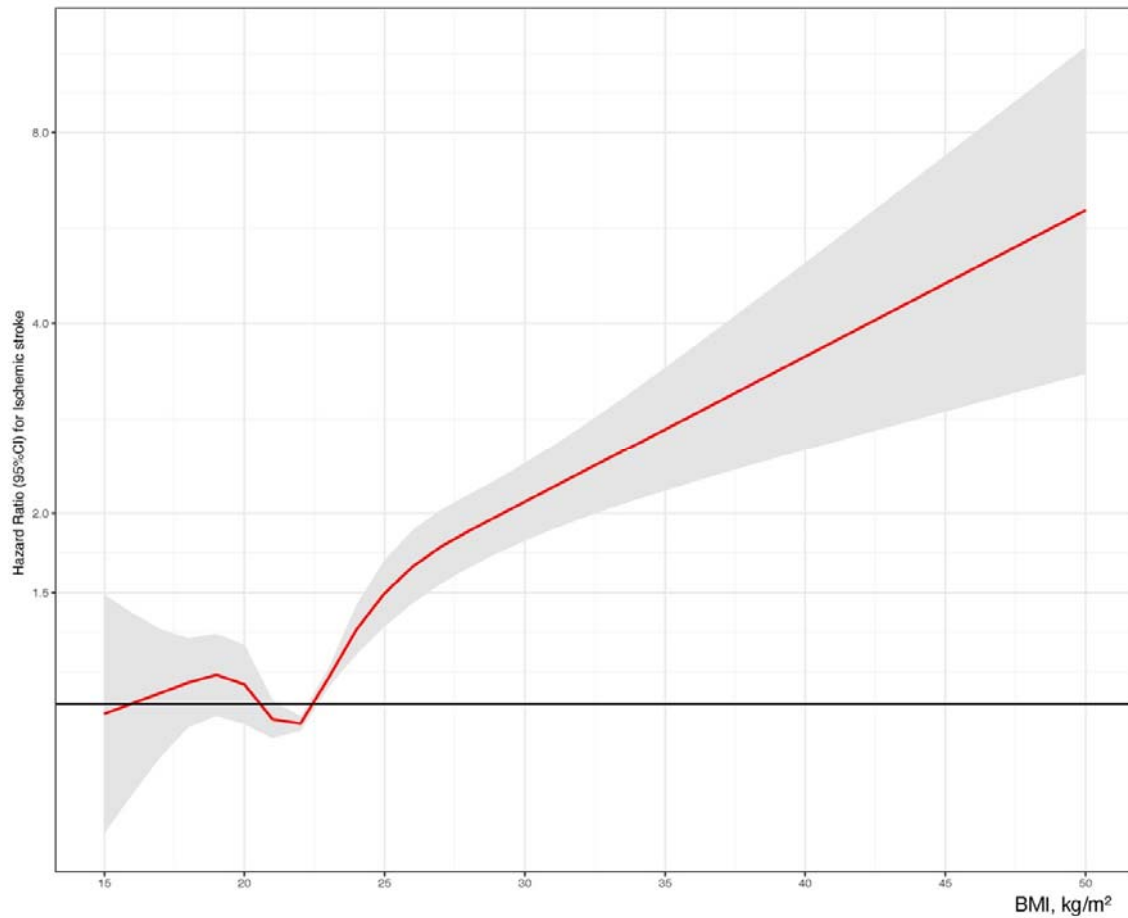
The model was unadjusted (n=36445). BMI was restricted to BMI between 15 and 50 kg/m² and modelled as a restricted cubic spline with knots at 5%, 25%, 75%, and 95% (ie, 18.1, 20.0, 23.2, and 27.2 kg/m²), with BMI of 20 kg/m² as reference.

Figure S4. Association between body mass index (BMI) at conscription and risk for Heart failure (HF) in patients diagnosed with Atrial fibrillation (AF)



The model was unadjusted (n=34534). BMI was restricted to BMI between 15 and 50 kg/m² and modelled as a restricted cubic spline with knots at 5%, 25%, 75%, and 95% (ie, 18.0, 20.0, 23.4, and 27.8 kg/m²), with BMI of 22 kg/m² as reference.

Figure S5. Association between body mass index (BMI) at conscription and risk for Ischemic stroke (IS) in patients diagnosed with Atrial fibrillation



The model was unadjusted (n=35 013). BMI was restricted to BMI between 15 and 50 kg/m² and modelled as a restricted cubic spline with knots at 5%, 25%, 75%, and 95% (ie, 18.1, 20.0, 23.5, and 28.1 kg/m²), with BMI of 22.5 kg/m² as reference.