

**Table S1** Gender-specific hazard ratios and 95% confidence intervals of cardiovascular disease for ECG abnormalities in Code4 and 5 at study entry

MC	At entry	No. at risk		Stroke	Coronary heart disease	Total CVD
Men						
Code4	No	4033	cases	435 (Reference)	177 (Reference)	595 (Reference)
	Minor	263	cases	63	17	78
			Age- and gender- adjusted HR (Model 1)	2.45 (1.88-3.20)‡	1.56 (0.95-2.58)	2.24 (1.76-2.84)‡
			Multivariate-adjusted HR (Model 2)	1.94 (1.48-2.55)‡	1.31 (0.78-2.18)	1.80 (1.42-2.30)‡
			Multivariate-adjusted HR (Model 3)	1.86 (1.42-2.45)‡	1.22 (0.72-2.05)	1.73 (1.36-2.22)‡
	Major	121	cases	31	17	45
			Age- and gender- adjusted HR (Model 1)	2.86 (1.98-4.13)‡	4.07 (2.46-6.75)‡	3.24 (2.38-4.40)‡
			Multivariate-adjusted HR (Model 2)	1.85 (1.26-2.72)†	2.99 (1.75-5.11)‡	2.25 (1.64-3.08)‡
			Multivariate-adjusted HR (Model 3)	1.82 (1.23-2.68)†	2.68 (1.56-4.61)‡	2.18 (1.58-3.00)‡
Code5	No	4028	cases	448 (Reference)	174 (Reference)	603 (Reference)
	Minor	311	cases	61	21	82
			Age- and gender- adjusted HR (Model 1)	2.02 (1.54-2.64)‡	1.73 (1.10-2.72)*	2.04 (1.62-2.58)‡
			Multivariate-adjusted HR (Model 2)	1.45 (1.09-1.91)†	1.36 (0.85-2.18)	1.51 (1.18-1.91)‡
			Multivariate-adjusted HR (Model 3)	1.39 (1.05-1.84)*	1.33 (0.83-2.14)	1.46 (1.15-1.86)†
	Major	78	cases	20	16	33
			Age- and gender- adjusted HR (Model 1)	2.97 (1.90-4.66)‡	6.49 (3.87-10.87)‡	3.93 (2.76-5.59)‡
			Multivariate-adjusted HR (Model 2)	1.93 (1.21-3.06)†	4.98 (2.89-8.59)‡	2.71 (1.88-3.90)‡
			Multivariate-adjusted HR (Model 3)	1.90 (1.19-3.03)†	4.58 (2.63-7.95)‡	2.64 (1.83-3.80)‡
Women						
Code4	No	5587	cases	473 (Reference)	130 (Reference)	596 (Reference)
	Minor	823	cases	77	28	103
			Age- and gender- adjusted HR (Model 1)	1.04 (0.81-1.32)	1.41 (0.93-2.12)	1.11 (0.90-1.37)
			Multivariate-adjusted HR (Model 2)	0.88 (0.69-1.13)	1.17 (0.77-1.77)	0.94 (0.76-1.17)
			Multivariate-adjusted HR (Model 3)	0.86 (0.67-1.10)	1.20 (0.78-1.82)	0.93 (0.75-1.15)
	Major	229	cases	46	5	51
			Age- and gender- adjusted HR (Model 1)	2.27 (1.67-3.07)‡	0.90 (0.37-2.20)	1.99 (1.49-2.65)‡
			Multivariate-adjusted HR (Model 2)	1.62 (1.18-2.23)†	0.59 (0.24-1.48)	1.41 (1.05-1.90)*
			Multivariate-adjusted HR (Model 3)	1.46 (1.04-2.04)*	0.58 (0.23-1.48)	1.29 (0.94-1.77)
Code5	No	5705	cases	476 (Reference)	123 (Reference)	591 (Reference)

Minor	703	cases	76	31	106
		Age- and gender- adjusted HR (Model 1)	1.10 (0.86-1.41)	1.84 (1.24-2.75)†	1.27 (1.03-1.56)*
		Multivariate-adjusted HR (Model 2)	0.94 (0.73-1.20)	1.64 (1.09-2.46)*	1.09 (0.88-1.34)
		Multivariate-adjusted HR (Model 3)	0.89 (0.69-1.14)	1.72 (1.14-2.59)†	1.05 (0.85-1.31)
Major	231	cases	44	9	53
		Age- and gender- adjusted HR (Model 1)	2.31 (1.69-3.15)‡	1.83 (0.92-3.61)	2.24 (1.69-2.97)‡
		Multivariate-adjusted HR (Model 2)	1.90 (1.39-2.61)‡	1.42 (0.71-2.84)	1.84 (1.38-2.45)‡
		Multivariate-adjusted HR (Model 3)	1.82 (1.32-2.50)‡	1.44 (0.72-2.89)	1.78 (1.33-2.38)‡

\*P<0.05; †P<0.01; ‡P<0.001

Model 2: Covariates were age, gender, systolic blood pressure, antihypertensive medication, BMI, smoking category (never, past or current smokers), alcohol intake category (never, past, current <46, current ≥46 g/day), serum total cholesterol and diabetic type.

Model 3: Covariates comprised Model 2 plus other ECG abnormalities (high R-wave, ventricular premature beats, atrial fibrillation) at study entry.

**Table S2** Mean (standard deviation) values of baseline characteristics for each pattern of changes in ECG abnormalities in Code4 and 5

MC	At entry	After 10 years annual examination	n	Observation time before commencing follow-up, year (total person-year)		Women (n=5845), %	Age, year	Body mass index, kg/m <sup>2</sup>	Systolic blood pressure, mmHg	Diastolic blood pressure, mmHg	Use of antihypertensive medication, %	Ex- or current smoker, %	Alcohol intake, g/day	Serum total cholesterol, mg/dL	Diabetes mellitus, %
Code4	No →	None	6759	3.1 (20735.1)	57.2	52.1 (8.5)	23.2 (3.2)	132.3 (18.9)	80.0 (11.5)	10.4	38.4	16.7 (23.5)	188.7 (34.2)	3.9	
	No →	Minor	1182	4.5 (5269.1)	76.1	54.4 (8.5)	23.6 (3.3)	139.2 (20.5)	82.2 (11.6)	20.9	25.6	10.9 (19.4)	194.0 (36.7)	4.0	
	No →	Major	237	4.5 (1069.9)	69.6	56.2 (8.3)	23.9 (3.5)	147.2 (20.3)	85.7 (11.6)	32.9	28.8	13.2 (22.9)	192.0 (39.3)	7.7	
	Minor →	No	283	3.2 (897.7)	77.7	53.9 (8.2)	23.0 (3.1)	137.7 (22.2)	81.7 (12.6)	13.8	23.2	10.3 (21.6)	193.6 (42.3)	4.1	
	Minor →	Minor	397	3.1 (1232.1)	79.4	55.5 (8.0)	23.7 (3.1)	145.4 (21.3)	83.6 (12.4)	24.8	21.3	11.1 (21.6)	197.2 (33.6)	5.8	
	Minor →	Major	226	3.8 (847.8)	73.9	56.3 (8.2)	23.7 (3.3)	150.7 (22.3)	86.5 (12.2)	38.9	26.4	14.9 (23.7)	192.9 (37.9)	5.7	
	Major →	No	24	3.3 (79.6)	62.5	54.6 (9.0)	24.1 (3.8)	148.7 (26.9)	87.8 (12.6)	12.5	42.9	18.8 (31.4)	195.8 (34.9)	8.7	
	Major →	Minor	56	2.3 (130.2)	73.2	56.5 (7.0)	23.4 (3.5)	146.8 (19.4)	84.3 (12.2)	25.0	26.0	8.1 (15.6)	202.0 (40.1)	9.4	
	Major →	Major	210	2.0 (426.0)	66.2	58.4 (7.9)	24.0 (3.3)	157.1 (24.7)	86.8 (13.1)	46.9	32.5	16.1 (22.9)	193.2 (35.0)	9.6	
				P for difference		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.90	0.24	0.081	0.0025
Code5	No →	None	6900	3.0 (20791.9)	58.5	52.2 (8.5)	23.1 (3.1)	132.6 (19.2)	79.8 (11.4)	10.2	37.6	16.1 (23.3)	188.7 (34.6)	3.9	
	No →	Minor	1101	4.9 (5400.3)	71.2	54.2 (8.5)	23.9 (3.3)	141.3 (20.6)	84.0 (11.6)	24.1	27.2	13.2 (21.3)	192.5 (34.4)	4.4	
	No →	Major	239	5.2 (1229.7)	76.2	54.2 (8.1)	23.3 (3.2)	141.5 (21.9)	82.2 (12.4)	25.5	27.0	11.0 (19.9)	188.6 (37.5)	6.3	
	Minor →	No	178	2.6 (464.8)	68.0	54.7 (8.8)	23.9 (3.1)	141.3 (22.3)	83.9 (13.2)	17.0	26.4	13.8 (21.7)	196.3 (36.8)	6.1	
	Minor →	Minor	488	3.1 (1505.6)	73.8	56.4 (8.2)	24.1 (3.3)	146.5 (22.1)	85.2 (12.2)	30.6	28.1	13.4 (21.7)	198.2 (37.5)	4.8	
	Minor →	Major	212	4.5 (959.2)	69.3	56.6 (8.1)	24.6 (3.1)	149.2 (22.7)	86.6 (12.6)	36.8	28.1	16.9 (25.9)	197.4 (37.7)	7.7	
	Major →	No	30	3.0 (91.1)	93.3	52.0 (8.7)	23.2 (3.1)	133.9 (19.3)	78.3 (11.0)	20.0	21.4	5.2 (12.4)	196.9 (46.1)	4.2	

Major →	Minor	40	2.8 (110.3)	85.0	56.2 (7.5)	23.8 (3.9)	139.8 (14.8)	81.7 (10.8)	28.2	20.5	6.9 (14.0)	200.4 (35.7)	7.9
Major →	Major	191	2.5 (483.9)	71.2	56.9 (8.6)	24.6 (3.5)	148.0 (25.3)	84.9 (13.8)	32.6	27.6	14.4 (23.7)	199.1 (38.3)	8.1
P for difference			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.30	0.37	<0.001	0.034	

Values are the mean ± standard deviation or percentages, adjusted for age and gender.

Minnesota Code: Code4 minor; 4-3 to modified 4-5: Code4 major; 4-1 to 4-2: Code5 minor; 5-3 to modified 5-5: Code5 major; 5-1 to 5-2.