

Supplementary materials

Supplementary table 1. The International Classification of Diseases codes used to identify the diagnoses and the causes of death*

Diseases	ICD-8	ICD-10
Medical condition		
Atrial fibrillation	427.93, 427.94	I48
Psychiatric disorders	290-315	F00-F99
Hypertension	400-404, 63700, 63703, 63704, 63709, 63719	I10-I15, O10, O11, O13-O16
Diabetes	249, 250	E10-E14, O24
CVD	390-458	I00-I99
Cause of death		
Death due to CVD	390-458	I00-I99
Death due to other causes	All other codes	All other codes

CVD=cardiovascular diseases; ICD=International Classification of Diseases.

*Denmark used ICD-8 from 1970 to 1993 and ICD-10 since 1994.

Supplementary table 2. The Danish national registers used to retrieve information for the study

Variables	Source of information	Period covered
Child's characteristics		
Date of birth	Medical Birth Register	1973-2016
Maternal smoking in early pregnancy	Medical Birth Register	1991-2016
Maternal hypertension before childbirth	National Hospital Register*	1977-2016
Maternal diabetes before childbirth	National Hospital Register	1977-2016
Date of death	Civil Registration System	1970-2016
Cause of death	Civil Registration System	1970-2016
Study participants' characteristics		
Age	Civil Registration System	1970-2016
Sex	Civil Registration System	1970-2016
Country of birth	Civil Registration System	1970-2016
Marital status	Civil Registration System	1972-2016
Linkage to children	Civil Registration System	1970-2016
Linkage to parents and siblings	Civil Registration System	1970-2016
Education	Integrated Database for Longitudinal Labor Market Research	1980-2016
Income	Integrated Database for Longitudinal Labor Market Research	1980-2015
History of CVD	National Hospital Register	1977-2016
History of psychiatric disorders	National Hospital Register Central Psychiatric Register†	1969-2016
Parents' and siblings' history of CVD	National Hospital Register	1977-2016

* The information on inpatient care in the National Hospital Register was available for the period 1977-2016 and that on outpatient care for the period of 1995-2016.

† The information on inpatient care in the Central Psychiatric Register was available for the period 1969-2016 and that on outpatient care for the period of 1995-2016. In addition, all psychiatric inpatient, outpatient and emergency department contacts in Denmark have been reported to the National Hospital Register since 1995.

Supplementary table 3. Adjusted incidence rate ratios and 95% confidence intervals for the association between the death of a child and the risk of atrial fibrillation in different subgroups

Subgroups	Number of events	Rate/10 ⁵ person-year	Multivariable IRR (95% CI)	P-value for the interaction
Sex				
Mothers	22,482	72.3	1.14 (1.06-1.22)	Reference
Fathers	52,223	176.7	1.10 (1.04-1.15)	0.0217
Age*				
<50 years	8137	23.1	1.21 (1.02-1.45)	Reference
≥50 years	66,388	269.7	1.12 (1.07-1.17)	0.4156
Education at baseline†				
0-9 years	24,898	130.9	1.18 (1.11-1.25)	Reference
10-14 years	34,300	119.7	1.04 (0.97-1.11)	0.0029
≥15 years	12,777	121.1	1.15 (1.03-1.29)	0.6415
Study entry categorized at the time when the NHR became nationwide				
Before 1978	45,311	210.4	1.11 (1.06-1.16)	Reference
1978 and afterwards	29,394	75.2	1.14 (1.06-1.23)	0.5965
Study entry categorized at the time when the NHR included specialized outpatient care				
Before 1995	4500	21.4	1.24 (0.99-1.56)	Reference
1995 and afterwards	70,205	177.1	1.12 (1.07-1.17)	0.4273

IRR=incident rate ratio; CI=confidence interval; NHR=National Hospital Register.

* Adjusted for sex, age at follow-up, calendar year at follow-up, country of birth, highest educational attainment, history of psychiatric disorders and of cardiovascular diseases.

† Adjusted for sex, age at follow-up, calendar year at follow-up, country of birth, history of psychiatric disorders and of cardiovascular diseases.

Supplementary table 4. Adjusted incidence rate ratios and 95% confidence intervals for the association between the death of a child and the risk of atrial fibrillation in sensitivity analyses

Study participants	Sensitivity analyses	N	Multivariable IRR (95% CI)
Participants with information on marital status	Main model	1,896,226	1.09 (1.04-1.14)
	Main model + marital status	1,896,226	1.09 (1.04-1.14)
Participants with information on income	Main model	1,887,599	1.15 (1.05-1.26)
	Main model + income	1,887,599	1.15 (1.05-1.25)
Participants who did not lose a child prior to baseline	Main model	2,798,097	1.12 (1.08-1.17)
	Main model	1,933,250	1.20 (1.12-1.30)
Participants with linkage to their parents	Main model + family history of CVD	1,933,250	1.21 (1.12-1.30)
	Main model	1,411,594	1.14 (1.06-1.22)
All female study participants	Main model + pregestational and gestational hypertension and diabetes	1,411,594	1.14 (1.06-1.22)
	Main model	693,990	1.21 (0.84-1.74)
Mothers with information on maternal smoking in early pregnancy at baseline*	Main model + maternal smoking in early pregnancy	693,990	1.21 (0.84-1.73)
	Main model	693,990	1.21 (0.84-1.73)

IRR=incidence rate ratio; CI=confidence intervals; CVD=cardiovascular diseases.

The main model was adjusted for sex, age at follow-up, calendar year at follow-up, country of birth, highest educational attainment, history of psychiatric disorders and of cardiovascular diseases.

*Information on maternal smoking in early pregnancy was available in the Danish Medical Birth Register since 1991.