

Supplementary Online Content

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eFigure 1. Adjusted incidence rate ratio according to time since first diagnosis of dementia

eTable 1. List of examined neurological disorders

eTable 2. Distribution of suicides, person-years and incidence rates for study population

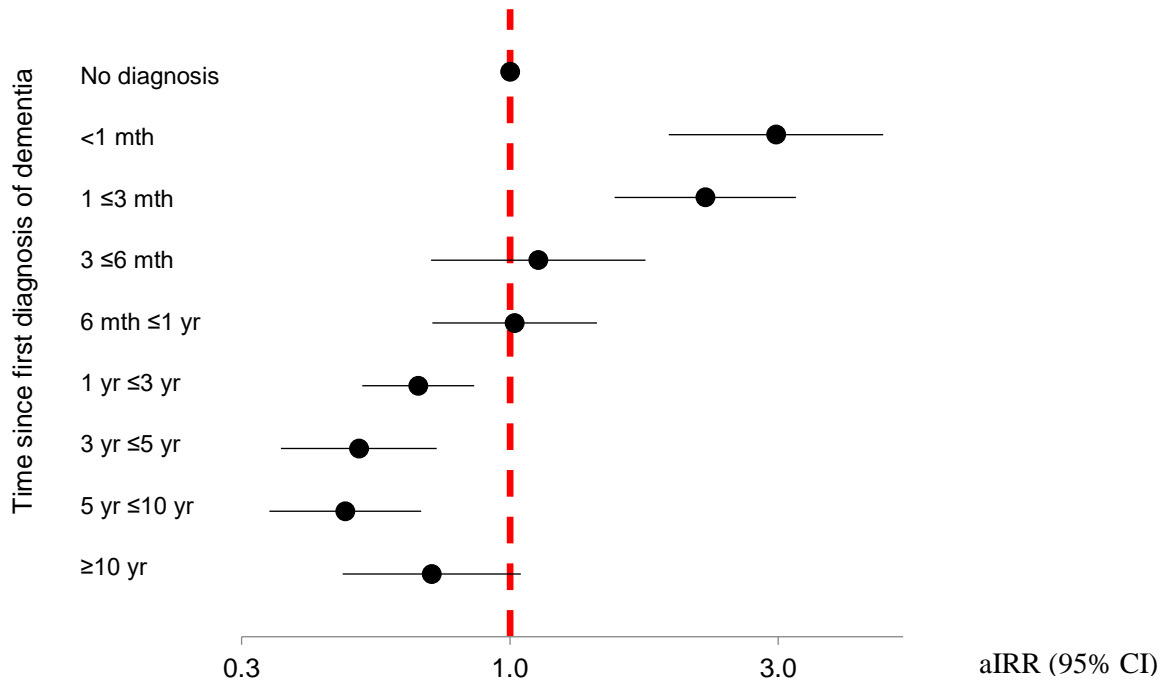
eTable 3. Adjusted incidence rate ratio of suicide in relation to period

eTable 4. Adjusted incidence rate ratio of suicide in relation to time since first diagnosis

This supplementary material has been provided by the authors to give readers additional information about their work.

Supplementary Appendix

eFigure 1. Adjusted incidence rate ratio according to time since first diagnosis of dementia.^a



^a Abbreviation: aIRR: adjusted incidence rate ratio. Adjusted for period, sex, age group, living status, region, socio-economic status, physical co-morbidity, psychiatric hospitalization prior to diagnosis of any neurological disorders, and deliberate self-harm prior to diagnosis of any neurological disorders. Error bars indicate 95% CIs.

eTable 1. List of examined neurological disorders.

Exposure	ICD-8¹	ICD-10²
Head injury	850.99; 800, 801, 803; 851-854	S02.0, S02.1, S02.7, S02.9; S06
Stroke	430-38	I61-I69
- Intracerebral haemorrhage	431	I61
- Cerebral infarction	433	I63
- Subarachnoid haemorrhage	430	I60
Epilepsy	345	G40-G41
Polyneuropathy and peripheral neuropathy	250.05, 350-58	G60-G64
- Guillain Barre		G61.0
- Chronic inflammatory demyelinating polyneuropathy		G61.8
Diseases of myoneural junction and muscle	341, 780-81, 756, 330	G70-G73
- Myasthenia gravis	733.0.	G70
- Muscular dystrophy	330.3	G71
Other brain disorders		G44
Parkinson disease	342.99	G20-G22
Multiple sclerosis	340	G35 -37
CNS infections	320-324	G0-G09
Meningitis	320	G0-G3
Encephalitis	62-66, 323	G04-G05
Amyotrophic lateral sclerosis	348	G12.2
Huntington disease	331.09	G10
Dementia	290.09, 290.18, 290.19	F00-F03, G30
- Alzheimer disease		F00, G30
Intellectual disability	311, 312, 313, 314, 315	F70-F79

1. *International Statistical Classification of Diseases and Related Health Problems*. 8th revision ed. Geneva: World Health Organisation; 1965.
2. *International Statistical Classification of Diseases and Related Health Problems*. 10th revision ed. Geneva: World Health Organization; 2007.

eTable 2. Distribution of suicides, person-years and incidence rates for study population.

	People with neurological disorders			People without neurological disorders		
	N	Person-years	IR [CI 95%]	N	Person-years	IR [CI 95%]
Gender:						
Male	3,696	6,411,983	57.6 (55.8-59.5)	20,231	73,085,363	27.7 (27.3-28.1)
Female	1,815	6,117,767	29.7 (28.3-31.0)	9,741	76,320,120	12.8 (12.5-13.0)
Period:						
1980-1989	1,733	1,463,955	118.4 (112.8-124.0)	12,957	40,395,918	32.1 (31.5-32.6)
1990-1999	1,471	2,611,705	56.3 (53.4-59.2)	8,378	40,796,943	20.5 (20.1-21.0)
2000-2009	1,348	4,303,900	31.3 (29.6-33.0)	5,457	40,057,455	13.6 (13.3-14.0)
2010-2016	959	4,150,189	23.1 (21.6-24.6)	3,180	28,155,168	11.3 (10.9-11.7)
Age group:						
15-29	494	2,908,812	17.0 (15.5-18.5)	3,570	36,577,083	9.8 (9.4-10.1)
30-39	750	1,764,021	42.5 (39.5-45.6)	4,559	26,592,578	17.1 (16.6-17.6)
40-49	1,028	1,675,479	61.4 (57.6-65.1)	5,979	26,089,667	22.9 (22.3-23.5)
50-59	997	1,687,216	59.1 (55.4-62.8)	5,720	22,690,421	25.2 (24.6-25.9)
60-69	909	1,672,693	54.3 (50.8-57.9)	4,549	18,679,933	24.4 (23.6-25.1)
70-79	820	1,532,985	53.5 (49.8-57.2)	3,476	12,473,122	27.9 (26.9-28.8)
80-89	445	1,065,920	41.7 (37.9-45.6)	1,834	5,427,568	33.8 (32.2-35.3)
90+	68	222,624	30.5 (23.3-37.8)	285	875,111	32.6 (28.8-36.3)
Living status:						
Alone	3,437	5,753,032	59.7 (57.7-61.7)	16,586	50,726,038	32.7 (32.2-33.2)
Cohabiting/married	2,072	6,768,041	30.6 (29.3-31.9)	13,353	97,503,331	13.7 (13.5-13.9)
Missing ^a	<4	8,677	NA	33	1,176,114	2.8 (1.8-3.8)
Region:						
Capital	1,948	3,781,769	51.5 (49.2-53.8)	9,956	46,957,633	21.2 (20.8-21.6)
Zealand	883	2,220,152	39.8 (37.1-42.4)	4,595	21,393,807	21.5 (20.9-22.1)
Southern Denmark	1,135	2,715,112	41.8 (39.4-44.2)	6,795	33,840,310	20.1 (19.6-20.6)
Central Jutland	1,124	2,736,227	41.1 (38.7-43.5)	5,978	33,186,564	18.0 (17.6-18.5)

Northern Jutland	421	1,076,489	39.1 (35.4-42.8)	2,648	14,027,168	18.9 (18.2-19.6)
Socio economic status:						
Working	788	4,874,161	16.2 (15.0-17.3)	4,483	57,971,358	7.7 (7.5-8.0)
Unemployed	803	1,407,421	57.1 (53.1-61.0)	1,908	4,097,534	46.6 (44.5-48.7)
Retired, disability pension	66	210,881	31.3 (23.7-38.8)	386	3,056,770	12.6 (11.4-13.9)
Under education	783	3,270,165	23.9 (22.3-25.6)	3,526	22,936,586	15.4 (14.9-15.9)
Data not available ^b	2,099	1,898,246	110.6 (105.8-115.3)	15,004	48,561,545	30.9 (30.4-31.4)
Missing	972	868,875	111.9 (104.8-118.9)	4,665	12,781,691	36.5 (35.5-37.5)
Charlton Comorbidity Index:						
No disorder	3,279	8,483,567	38.7 (37.3-40.0)	24,503	133,618,763	18.3 (18.1-18.6)
1-3 disorders	2,096	3,828,362	54.7 (52.4-57.1)	5,111	15,137,523	33.8 (32.8-34.7)
4+ disorders	136	217,820	62.4 (51.9-72.9)	358	649,197	55.1 (49.4-60.9)
History of psychiatric diagnosis:						
None	3,970	11,495,201	34.5 (33.5-35.6)	19,339	141,264,471	13.7 (13.5-13.9)
Depression	925	715,409	129.3 (121.0-137.6)	5,286	5,347,860	98.8 (96.2-101.5)
Other mental disorder	3,970	11,495,201	193.0 (177.8-208.3)	5,347	2,793,152	191.4 (186.3-196.6)
History of deliberate self-harm:						
None	4,840	12,303,798	39.3 (38.2-40.4)	24,356	147,870,152	16.5 (16.3-16.7)
Previous self-harm	671	225,951	297.0 (274.5-319.4)	5,616	1,535,331	365.8 (356.2-375.4)
Total	5,511	12,529,750	44.0 (42.8-45.1)	29,972	149,405,483	20.1 (19.8-20.3)

Abbreviation: IR: incidence rate per 100,000 person-years.

^a Given that only few the individuals with missing data concerning living status died by suicide, it was decided to merge this group with those co-habiting/married.

^b Socio-economic status was first available from 1992 onwards.

eTable 3. Adjusted incidence rate ratio of suicide in relation to period.

	1980-1999			2000-2016		
	<i>n</i>	IR per 100,000 PY	Full aIRR ^a (95% CI)	<i>n</i>	IR per 100,000 PY	Full aIRR ^a (95% CI)
Neurological disorders	3,204	78.6	1.4 (1.3-1.5)	2,307	27.3	[Reference]
No neurological disorders	21,335	26.3	0.7 (0.7-0.8)	8,637	12.7	0.6 (0.6-0.7)
Dementia	377	117.3	2.4 (2.0-2.9)	192	28.9	[Reference]
Multiple sclerosis	91	75.6	2.0 (1.5-2.8)	61	22.0	[Reference]
Polyneuropathy and periferel neuropathy	534	79.8	1.5 (1.3-1.8)	326	34.0	[Reference]
Diseases of myoneural junction and muscle	736	93.8	1.5 (1.3-1.7)	225	18.8	[Reference]
Meningitis	31	48.5	1.5 (0.9-2.6)	26	16.1	[Reference]
Head injury	437	76.8	1.4 (1.3-1.6)	1,155	30.3	[Reference]
Epilepsy	578	81.8	1.4 (1.3-1.6)	470	32.6	[Reference]
CNS infections	66	58.8	1.4 (1.0-2.0)	51	20.2	[Reference]
Parkinson disease	119	102.5	1.3 (1.0-1.8)	73	48.5	[Reference]
Subarachnoid haemorrhage	80	88.2	1.3 (0.8-1.9)	31	37.2	[Reference]
Stroke	937	72.0	1.2 (1.0-1.4)	298	34.0	[Reference]
Traumatic stroke	45	58.7	1.2 (0.8-2.0)	26	26.2	[Reference]
Thrombosis cerebri	81	88.4	1.2 (0.7-1.8)	25	30.5	[Reference]
Intellectual disabilities	31	28.1	0.9 (0.6-1.3)	65	21.2	[Reference]
Encephalitis	30	58.6	0.9 (0.5-1.5)	23	27.9	[Reference]

Abbreviations: IR: incidence rate per 100,000 person-years; aIRR: adjusted incidence rate ratio; CNS infection: central nervous system infection.

^a Adjusted for period, sex, age group, living status, region, socio-economic status, physical co-morbidity, psychiatric hospitalization prior to diagnosis of any neurological disorders, and deliberate self-harm prior to diagnosis of any neurological disorders. Estimates for people with no disorders were only reported for the model examining neurological disorders in general.

eTable 4. Adjusted incidence rate ratio of suicide in relation to time since first diagnosis.

	n	Person-years	IR	Full aIRR ^a (95% CI)
Time since first diagnosis				
<i>None</i>	29,972	149,405,483	20.1	[Reference]
<i><1 mth</i>	1,286	1,523,115	84.4	3.0 (2.8-3.1)
<i>1 ≤3 mth</i>	174	147,115	118.3	3.1 (2.7-3.6)
<i>3 ≤6 mth</i>	191	218,232	87.5	2.3 (2.0-2.7)
<i>6 mth ≤1 yr</i>	317	421,702	75.2	2.0 (1.8-2.2)
<i>1 yr ≤3 yr</i>	921	1,491,987	61.7	1.7 (1.6-1.9)
<i>3 yr ≤5 yr</i>	586	1,345,659	43.5	1.3 (1.2-1.4)
<i>5 yr ≤10 yr</i>	933	2,560,711	36.4	1.3 (1.2-1.4)
<i>≥10 yr</i>	1,103	4,821,227	22.9	1.5 (1.4-1.6)

Abbreviations: IR: incidence rate per 100,000 person-years; aIRR: adjusted incidence rate ratio.

^a Adjusted for period, sex, age group, living status, region, socio-economic status, physical co-morbidity, psychiatric hospitalization prior to diagnosis of any neurological disorders, and deliberate self-harm prior to diagnosis of any neurological disorders.