

TABLES, FIGURES & SUPPLEMENTARY APPENDIX

Main figures and tables

Table 1. Descriptive statistics for persons with diabetes and matched controls	2
Figure 1. Life years lost in relation to age at onset of type 1 diabetes	4
Figure 2. Adjusted Hazard Ratios for All Outcomes, According to Age at T1D Diagnosis	5
Figure 3. Adjusted Hazard Ratios for All Outcomes, According to Age at T1D Diagnosis and Stratified by Sex	6
Figure 4. Causes of Death According to Age at Diagnosis of type 1 diabetes	7
Supplementary material	8
Supplementary Table 1. Number of individuals excluded due to presence of serious conditions or congenital disorders at inclusion.	8
Supplementary Table 2. Total number of deleted individuals in each group.	8
Supplementary Table 3. Number of deaths in each age group	9
Supplementary Table 4. Follow-up time in each age group	9
Supplementary Table 5. Event rates per 100.000 person years by age at diagnosis and corresponding controls with 95% exact Poisson confidence intervals	10
Supplementary Table 6. Event rates per 100.000 person years by sex and age at diagnosis and corresponding controls with 95% exact Poisson confidence intervals	10
Supplementary Table 7. Life years lost (men and women) due to type 1 diabetes, estimated by median life expectancies.	12
Supplementary Table 8. Life years lost for males with type 1 diabetes.	13
Supplementary Table 9. Life years lost for females with type 1 diabetes.	14
Details on the Cox proportional hazards model	15
Supplementary Table 10. ICD codes used to exclude patients and controls at baseline.	17

Table 1. Descriptive statistics for persons with diabetes and matched controls

	Controls	Individuals with type 1 diabetes					
		All	According to age at diagnosis				
			0–10 years	11–15 years	16–20 years	21–25 years	26–30 years
n	135178	27195	7409	6538	4619	4616	4013
Male (%)	75417 (55.8)	15165 (55.8)	3741 (50.5)	3652 (55.9)	2760 (59.8)	2682 (58.1)	2330 (58.1)
Age – mean (SD)	28.84 (9.34)	28.86 (9.36)	23.75 (5.39)	26.05 (7.33)	28.36 (9.03)	33.25 (9.35)	38.40 (9.18)
Education (%)							
College level	71900 (54.3)	15009 (56.0)	4252 (58.3)	3694 (57.4)	2599 (57.1)	2432 (53.3)	2032 (51.2)
Elementary school	25426 (19.2)	5424 (20.2)	1642 (22.5)	1337 (20.8)	930 (20.4)	770 (16.9)	745 (18.8)
Upper secondary school	35130 (26.5)	6381 (23.8)	1405 (19.2)	1410 (21.9)	1020 (22.4)	1358 (29.8)	1188 (30.0)
Marital status (%)							
Married	29673 (22.0)	5606 (20.6)	682 (9.2)	954 (14.6)	888 (19.2)	1445 (31.3)	1637 (40.8)
Divorced	5996 (4.4)	1263 (4.6)	88 (1.2)	204 (3.1)	218 (4.7)	337 (7.3)	416 (10.4)
Single	99264 (73.4)	20284 (74.6)	6637 (89.6)	5369 (82.1)	3510 (76.0)	2820 (61.1)	1948 (48.5)
Widowed	220 (0.2)	41 (0.2)	2 (0.0)	10 (0.2)	3 (0.1)	14 (0.3)	12 (0.3)
Region of birth (%)							
Other European Union	2402 (1.9)	264 (1.0)	52 (0.7)	55 (0.9)	39 (0.9)	68 (1.5)	50 (1.3)
Nordic	2473 (1.9)	490 (1.9)	91 (1.2)	90 (1.4)	85 (1.9)	114 (2.6)	110 (2.9)
Non-European	5924 (4.6)	543 (2.1)	83 (1.1)	92 (1.4)	77 (1.7)	124 (2.8)	167 (4.4)
Sweden	117188 (91.6)	25132 (95.1)	7103 (96.9)	6215 (96.3)	4271 (95.5)	4096 (93.0)	3447 (91.3)
Income¹ – mean (SD)	1308.20 (1257.71)	1261.64 (992.00)	1002.10 (677.80)	1141.09 (869.05)	1229.59 (919.07)	1509.13 (1084.74)	1689.42 (1364.79)
Preexisting conditions – n (%)							
CVD	209 (0.2)	240 (0.9)	27 (0.4)	34 (0.5)	37 (0.8)	64 (1.4)	78 (1.9)
CHD	160 (0.1)	252 (0.9)	20 (0.3)	32 (0.5)	36 (0.8)	74 (1.6)	90 (2.2)
AMI	83 (0.1)	142 (0.5)	11 (0.1)	17 (0.3)	21 (0.5)	44 (1.0)	49 (1.2)
Stroke	127 (0.1)	110 (0.4)	17 (0.2)	18 (0.3)	17 (0.4)	24 (0.5)	34 (0.8)
Renal disease	27 (0.0)	110 (0.4)	20 (0.3)	33 (0.5)	25 (0.5)	19 (0.4)	13 (0.3)
Heart failure	47 (0.0)	92 (0.3)	9 (0.1)	8 (0.1)	14 (0.3)	23 (0.5)	38 (0.9)
Atrial fibrillation	128 (0.1)	36 (0.1)	2 (0.0)	4 (0.1)	4 (0.1)	13 (0.3)	13 (0.3)
Amputation	8 (0.0)	36 (0.1)	3 (0.0)	5 (0.1)	6 (0.1)	7 (0.2)	15 (0.4)

Hba1c – mean (SD)			69.75 (15.67)	67.61 (15.91)	63.44 (17.04)	63.09 (17.52)	63.63 (17.53)
Systolic blood pressure – mean (SD)			120.19 (12.49)	121.46 (13.20)	122.22 (14.12)	124.03 (15.16)	126.28 (16.24)
BMI – mean (SD)			24.56 (3.58)	24.63 (3.76)	24.67 (4.11)	25.40 (4.57)	26.15 (4.99)
LDL cholesterol – mean (SD)			2.55 (0.80)	2.59 (0.81)	2.58 (0.80)	2.66 (0.81)	2.83 (0.91)
HDL cholesterol – mean (SD)			1.48 (0.40)	1.49 (0.41)	1.44 (0.42)	1.46 (0.46)	1.44 (0.43)
Estimated GFR ² – mean (SD)			108.44 (27.82)	109.24 (33.31)	106.73 (28.42)	101.65 (28.48)	98.02 (28.33)
Lipid lowering medication – n (%)			0.03 (0.16)	0.03 (0.18)	0.05 (0.22)	0.09 (0.28)	0.12 (0.32)
Antihypertensives – n (%)			0.10 (0.29)	0.11 (0.31)	0.10 (0.30)	0.13 (0.33)	0.17 (0.38)
Smokers – n (%)			868 (12.8)	808 (13.5)	521 (12.3)	650 (15.4)	648 (17.8)
No physical activity ³ – n (%)			215 (7.9)	170 (7.9)	106 (7.8)	104 (9.2)	83 (8.4)
Daily physical ³ activity – n (%)			550 (20.2)	438 (20.4)	318 (23.3)	248 (21.9)	235 (23.8)
Microalbuminuria ⁴ – n (%)			439 (7.6)	352 (6.8)	205 (5.6)	242 (6.7)	241 (7.7)
Macroalbuminuria ⁴ – n (%)			258 (4.5)	256 (5.0)	142 (3.9)	180 (5.0)	157 (5.0)

Abbreviations: CVD = cardiovascular disease; CHD = coronary heart disease; AMI = acute myocardial infarction; BMI = body mass index; LDL = low density lipoprotein; HDL = high density lipoprotein; GFR = glomerular filtration rate.

¹Income in 100 SEK / years. 100 SEK ≈ £ 8.54 ≈ \$ 11.45.

²The estimated glomerular filtration rate (eGFR) was calculated with the Modification of Diet in Renal Disease equation (Levey et al. Ann Intern Med. 1999)

³Physical activity at least 30 minutes per day.

⁴Microalbuminuria was defined by two positive results on three urine samples obtained within 1 year, with positivity defined by an albumin: creatinine ratio of 3 to 30 mg per millimole (approximately 30 to 300 mg per gram) or a urinary albumin clearance of 20 to 200 µg per minute [20 to 300 mg per liter]).

Macroalbuminuria was defined by an albumin:creatinine ratio of more than 30 mg per millimole (approximately >300 mg per gram) or a urinary albumin clearance of more than 200 µg per minute (>300 mg per liter).

Figure 1. Life years lost in relation to age at onset of type 1 diabetes

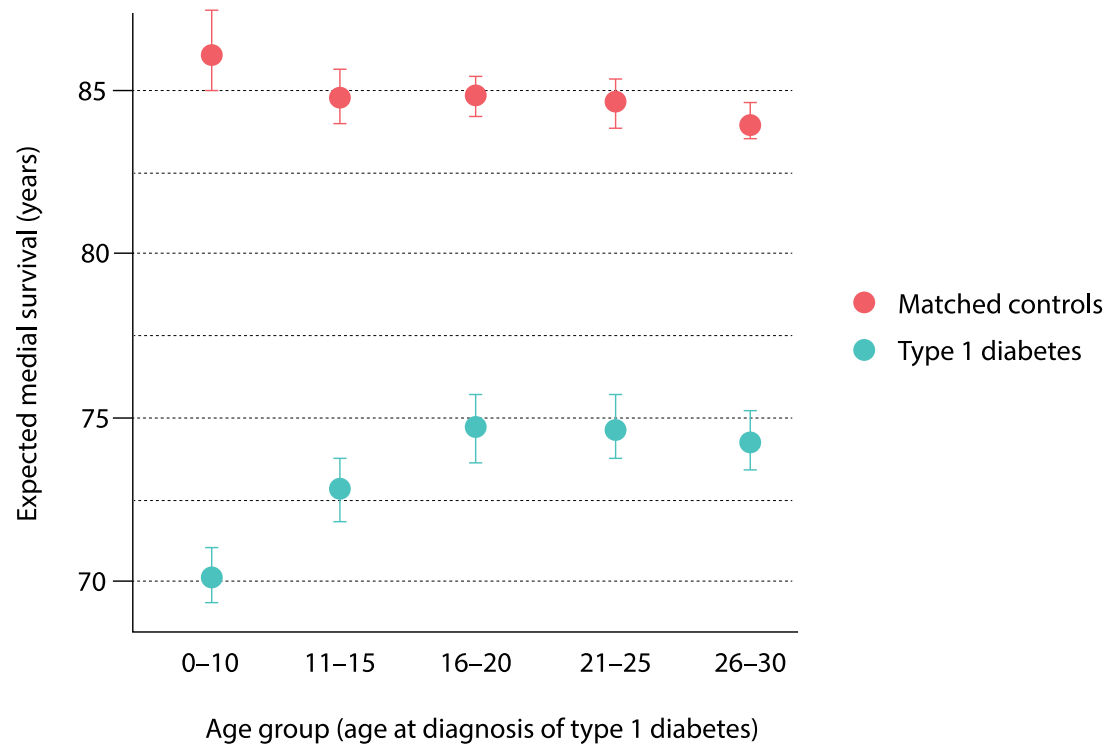


Figure 1: Loss of life year was estimated using separate Cox regressions fitted to persons with type 1 diabetes and their control persons within each age group. Conditional median survival was estimated from the upper limit of each age interval. Life years lost due to diabetes is calculated as the difference (between people with type 1 diabetes and controls) in the expected median survival.

Figure 2. Adjusted Hazard Ratios for All Outcomes, According to Age at T1D Diagnosis

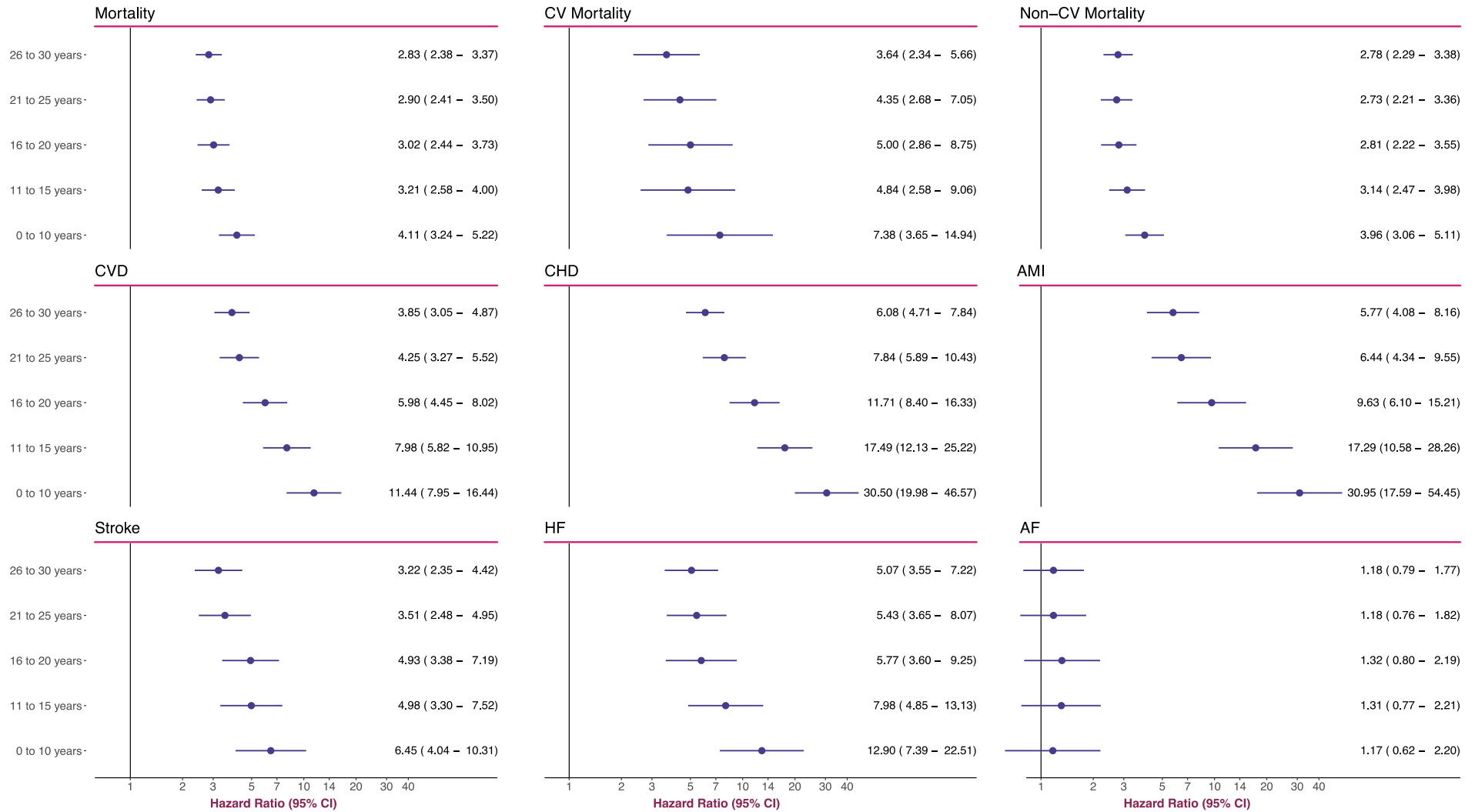


Figure 2: The analyses were based on Cox regression and adjusted was made for preexisting comorbidities, calendar year, income, country of birth, marital status, educational attainment, duration of diabetes. Matched controls serve as reference group for all models.

Figure 3. Adjusted Hazard Ratios for All Outcomes, According to Age at T1D Diagnosis and Stratified by Sex

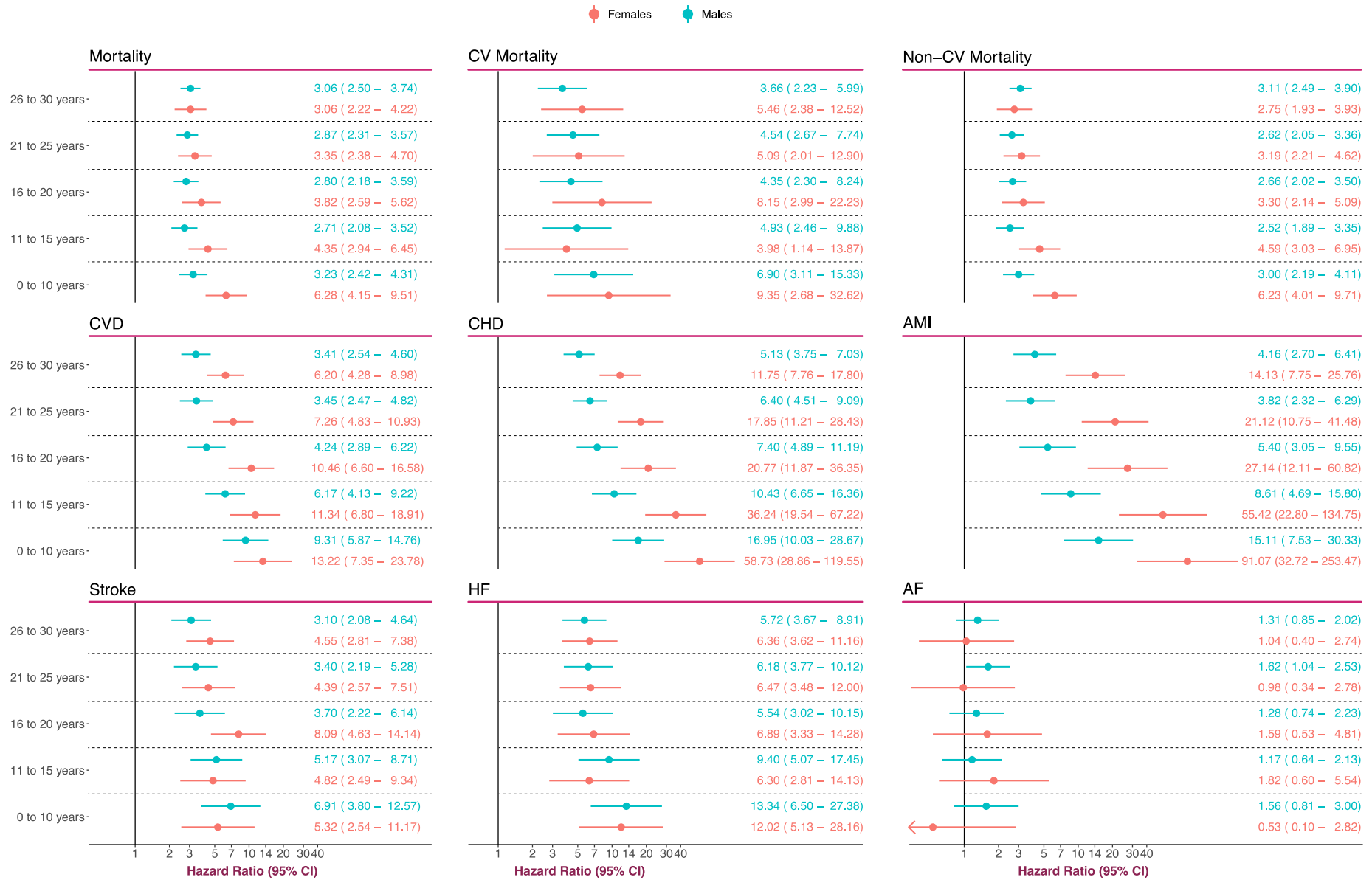


Figure 3: The analyses were based on Cox regression and adjusted was made for preexisting comorbidities, calendar year, income, country of birth, marital status, educational attainment, duration of diabetes. Matched controls serve as reference group for all models.

Figure 4. Causes of Death According to Age at Diagnosis of type 1 diabetes

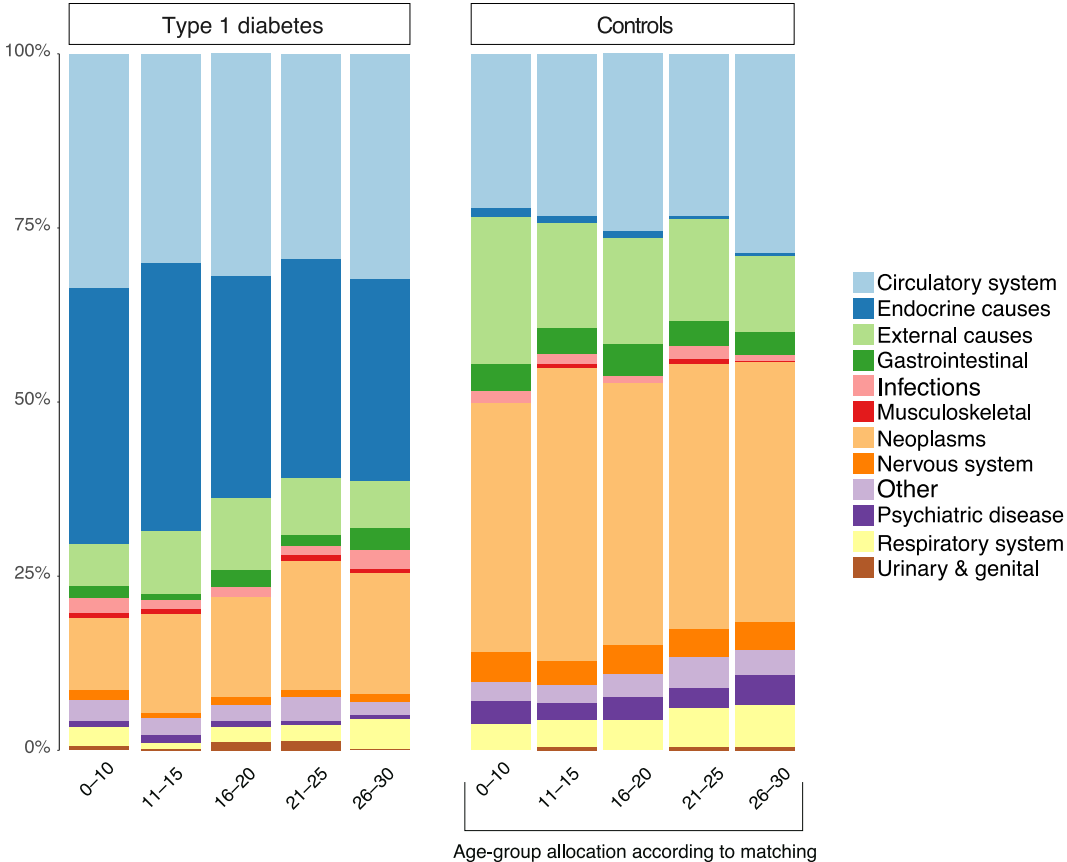


Figure 4. Causes of death according death certificates in the Swedish Cause of Death Registry. Causes of death in the registry are classified according to the International Classification of Diseases (ICD), 10th Revision. Only the primary cause of death was assessed. Hence, cardiovascular disease may be a significant contributor to deaths classified as e.g “Endocrine causes”.

Supplementary material

Supplementary Table 1. Number of individuals excluded due to presence of serious conditions or congenital disorders at inclusion.

	Group	n	%
Control	0 to 9 years	145	0.5
	10 to 14 years	152	0.5
	15 to 19 years	127	0.5
	20 to 24 years	133	0.6
	25 to 30 years	185	0.7
T1DM	0 to 9 years	50	0.8
	10 to 14 years	75	1.1
	15 to 19 years	58	1.2
	20 to 24 years	51	1.1
	25 to 30 years	76	1.5

Supplementary Table 2. Total number of deleted individuals in each group.

These figures include exclusions due to serious conditions/genital disorders, as well as inconsistent vital data.

Age-group	Type 1 diabetes	Matched Controls
0 to 9 years	108	389
10 to 14 years	135	393
15 to 19 years	102	311
20 to 24 years	96	323
25 to 30 years	124	412

Supplementary Table 3. Number of deaths in each age group

Age group	Dead
Type 1 diabetes	
0 to 10 years	154
11 to 15 years	152
16 to 20 years	140
21 to 25 years	209
26 to 30 years	269
Controls	1405

Supplementary Table 4. Follow-up time in each age group

Group	Type	Median follow-up (years)	Mean follow-up (years)
0 to 10 years	Control	10.151951	9.555039
	T1DM	9.634611	9.193914
11 to 15 years	Control	10.308122	9.664582
	T1DM	9.883641	9.347698
16 to 20 years	Control	10.330025	9.705880
	T1DM	9.911020	9.402238
21 to 25 years	Control	10.787132	9.980127
	T1DM	10.160164	9.611617
26 to 30 years	Control	10.535364	9.901913
	T1DM	9.869952	9.440924

Supplementary Table 5. Event rates per 100.000 person years by age at diagnosis and corresponding controls with 95% exact Poisson confidence intervals

Age-group	Type	Mortality	CV mortality	Non-CV mortality	CVD	CHD	AMI	Stroke	Heart failure	Atrial fibrillation
0–10	Control	0.17 (0.14, 0.19)	0.02 (0.01, 0.03)	0.15 (0.12, 0.17)	0.05 (0.04, 0.07)	0.03 (0.02, 0.05)	0.02 (0.01, 0.03)	0.03 (0.02, 0.05)	0.02 (0.02, 0.04)	0.06 (0.04, 0.08)
	T1DM	0.61 (0.51, 0.73)	0.09 (0.05, 0.14)	0.52 (0.43, 0.64)	0.48 (0.38, 0.58)	0.50 (0.41, 0.61)	0.31 (0.23, 0.4)	0.20 (0.15, 0.28)	0.31 (0.14, 0.27)	0.06 (0.03, 0.11)
11–15	Control	0.20 (0.18, 0.23)	0.02 (0.01, 0.03)	0.18 (0.16, 0.21)	0.09 (0.07, 0.11)	0.08 (0.07, 0.1)	0.05 (0.03, 0.06)	0.05 (0.03, 0.06)	0.05 (0.02, 0.04)	0.08 (0.06, 0.09)
	T1DM	0.78 (0.67, 0.91)	0.15 (0.1, 0.21)	0.63 (0.53, 0.74)	0.71 (0.6, 0.83)	0.71 (0.6, 0.83)	0.44 (0.35, 0.53)	0.32 (0.25, 0.4)	0.43 (0.2, 0.34)	0.12 (0.08, 0.17)
16–20	Control	0.27 (0.24, 0.31)	0.04 (0.03, 0.06)	0.23 (0.19, 0.26)	0.17 (0.15, 0.2)	0.13 (0.1, 0.15)	0.08 (0.06, 0.1)	0.10 (0.08, 0.12)	0.08 (0.03, 0.06)	0.12 (0.1, 0.15)
	T1DM	0.83 (0.7, 0.98)	0.18 (0.12, 0.25)	0.65 (0.53, 0.78)	0.77 (0.64, 0.92)	0.80 (0.67, 0.95)	0.42 (0.33, 0.53)	0.38 (0.29, 0.49)	0.42 (0.19, 0.35)	0.18 (0.12, 0.25)
21–25	Control	0.38 (0.34, 0.42)	0.07 (0.06, 0.1)	0.31 (0.27, 0.35)	0.26 (0.23, 0.3)	0.23 (0.2, 0.27)	0.14 (0.12, 0.17)	0.13 (0.1, 0.15)	0.14 (0.06, 0.1)	0.17 (0.14, 0.2)
	T1DM	1.12 (0.96, 1.29)	0.33 (0.25, 0.43)	0.79 (0.66, 0.94)	1.05 (0.89, 1.22)	1.20 (1.04, 1.38)	0.57 (0.46, 0.69)	0.53 (0.42, 0.65)	0.56 (0.37, 0.59)	0.26 (0.19, 0.35)
26–30	Control	0.60 (0.56, 0.66)	0.15 (0.13, 0.18)	0.45 (0.41, 0.50)	0.45 (0.41, 0.50)	0.46 (0.41, 0.50)	0.25 (0.22, 0.29)	0.21 (0.18, 0.24)	0.25 (0.12, 0.17)	0.30 (0.27, 0.34)
	T1DM	1.90 (1.71, 2.11)	0.56 (0.45, 0.68)	1.34 (1.18, 1.52)	1.53 (1.35, 1.73)	1.80 (1.61, 2.01)	0.87 (0.74, 1.02)	0.75 (0.63, 0.89)	0.87 (0.65, 0.91)	0.43 (0.34, 0.54)

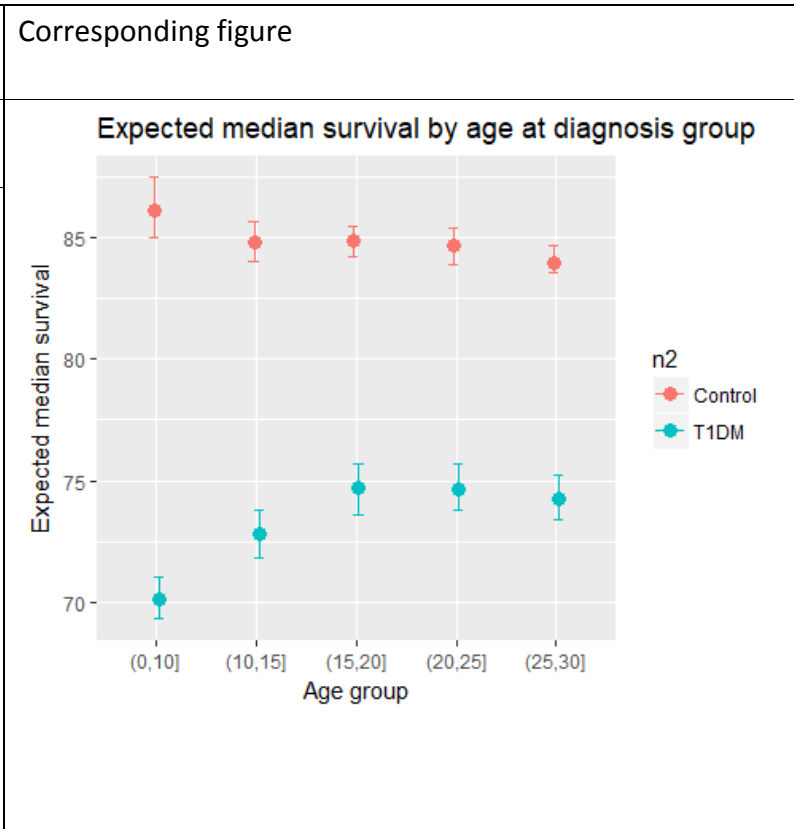
Supplementary Table 6. Event rates per 100.000 person years by sex and age at diagnosis and corresponding controls with 95% exact Poisson confidence intervals

Sex	Age-group	Type	Mortality	CV mortality	Non-CV mortality	CVD	CHD	AMI	Stroke	Heart failure	Atrial fibrillation
Males	0–10	Control	0.22 (0.18, 0.26)	0.03 (0.01, 0.04)	0.19 (0.15, 0.23)	0.06 (0.04, 0.09)	0.05 (0.03, 0.07)	0.03 (0.02, 0.05)	0.03 (0.02, 0.05)	0.03 (0.02, 0.05)	0.09 (0.06, 0.12)
		T1DM	0.69 (0.54, 0.88)	0.10 (0.05, 0.19)	0.59 (0.45, 0.77)	0.60 (0.45, 0.77)	0.53 (0.39, 0.69)	0.36 (0.25, 0.5)	0.29 (0.19, 0.41)	0.36 (0.14, 0.34)	0.10 (0.05, 0.19)

	11–15	Control	0.27 (0.23, 0.32)	0.03 (0.02, 0.05)	0.24 (0.2, 0.28)	0.12 (0.09, 0.15)	0.11 (0.09, 0.14)	0.06 (0.05, 0.09)	0.05 (0.04, 0.07)	0.06 (0.02, 0.06)	0.12 (0.09, 0.15)
		T1DM	0.92 (0.75, 1.11)	0.20 (0.13, 0.3)	0.72 (0.57, 0.89)	0.66 (0.51, 0.82)	0.64 (0.5, 0.8)	0.37 (0.27, 0.5)	0.34 (0.24, 0.46)	0.37 (0.19, 0.39)	0.17 (0.1, 0.26)
	16–20	Control	0.32 (0.27, 0.37)	0.05 (0.04, 0.08)	0.27 (0.22, 0.32)	0.21 (0.18, 0.26)	0.16 (0.13, 0.2)	0.1 (0.08, 0.13)	0.11 (0.08, 0.14)	0.1 (0.04, 0.08)	0.17 (0.13, 0.2)
		T1DM	0.89 (0.72, 1.09)	0.18 (0.11, 0.29)	0.71 (0.56, 0.89)	0.75 (0.59, 0.94)	0.79 (0.63, 0.98)	0.45 (0.33, 0.6)	0.33 (0.23, 0.46)	0.45 (0.15, 0.35)	0.19 (0.12, 0.3)
	21–25	Control	0.46 (0.4, 0.52)	0.10 (0.08, 0.13)	0.36 (0.3, 0.41)	0.34 (0.29, 0.39)	0.32 (0.27, 0.37)	0.2 (0.16, 0.24)	0.15 (0.11, 0.18)	0.2 (0.08, 0.13)	0.23 (0.19, 0.28)
		T1DM	1.37 (1.14, 1.62)	0.45 (0.32, 0.6)	0.92 (0.74, 1.14)	1.08 (0.88, 1.31)	1.27 (1.05, 1.52)	0.6 (0.45, 0.78)	0.54 (0.41, 0.72)	0.6 (0.39, 0.69)	0.38 (0.27, 0.53)
	26–30	Control	0.73 (0.66, 0.8)	0.22 (0.18, 0.26)	0.51 (0.45, 0.57)	0.59 (0.52, 0.66)	0.59 (0.52, 0.66)	0.34 (0.29, 0.39)	0.26 (0.22, 0.3)	0.34 (0.14, 0.21)	0.4 (0.35, 0.46)
		T1DM	2.31 (2.03, 2.62)	0.73 (0.58, 0.92)	1.57 (1.34, 1.83)	1.63 (1.4, 1.9)	1.89 (1.63, 2.17)	0.92 (0.74, 1.12)	0.81 (0.65, 1)	0.91 (0.65, 1.01)	0.55 (0.42, 0.71)
Females	0–10	Control	0.12 (0.09, 0.15)	0.01 (0.01, 0.03)	0.10 (0.08, 0.14)	0.04 (0.02, 0.06)	0.02 (0.01, 0.03)	0.01 (0, 0.02)	0.03 (0.02, 0.05)	0.01 (0.01, 0.04)	0.03 (0.02, 0.05)
		T1DM	0.53 (0.39, 0.69)	0.07 (0.03, 0.15)	0.46 (0.33, 0.61)	0.36 (0.25, 0.5)	0.48 (0.35, 0.64)	0.25 (0.16, 0.38)	0.12 (0.06, 0.21)	0.25 (0.09, 0.26)	0.02 (0, 0.07)
	11–15	Control	0.13 (0.10, 0.16)	0.01 (0.0, 0.02)	0.12 (0.1, 0.16)	0.06 (0.04, 0.09)	0.06 (0.04, 0.08)	0.02 (0.01, 0.04)	0.04 (0.02, 0.06)	0.02 (0.01, 0.04)	0.03 (0.02, 0.05)
		T1DM	0.63 (0.49, 0.8)	0.10 (0.05, 0.17)	0.53 (0.4, 0.69)	0.76 (0.6, 0.95)	0.78 (0.62, 0.97)	0.51 (0.38, 0.67)	0.3 (0.2, 0.42)	0.51 (0.17, 0.37)	0.07 (0.03, 0.14)
	16–20	Control	0.19 (0.14, 0.24)	0.03 (0.01, 0.05)	0.16 (0.12, 0.21)	0.11 (0.08, 0.15)	0.07 (0.05, 0.11)	0.04 (0.02, 0.07)	0.07 (0.05, 0.11)	0.04 (0.01, 0.05)	0.06 (0.03, 0.09)
		T1DM	0.73 (0.54, 0.96)	0.17 (0.08, 0.30)	0.56 (0.39, 0.77)	0.81 (0.61, 1.06)	0.81 (0.61, 1.07)	0.38 (0.25, 0.56)	0.46 (0.31, 0.65)	0.38 (0.19, 0.47)	0.15 (0.07, 0.28)
	21–25	Control	0.27 (0.22, 0.33)	0.04 (0.02, 0.06)	0.24 (0.19, 0.29)	0.16 (0.13, 0.21)	0.12 (0.09, 0.16)	0.06 (0.04, 0.09)	0.1 (0.07, 0.14)	0.06 (0.03, 0.08)	0.08 (0.05, 0.11)
		T1DM	0.79 (0.59, 1.02)	0.17 (0.09, 0.30)	0.61 (0.44, 0.83)	1 (0.78, 1.27)	1.11 (0.88, 1.39)	0.52 (0.36, 0.72)	0.5 (0.35, 0.7)	0.52 (0.27, 0.58)	0.1 (0.04, 0.21)
	26–30	Control	0.43 (0.37, 0.5)	0.05 (0.03, 0.08)	0.38 (0.32, 0.44)	0.26 (0.21, 0.31)	0.27 (0.22, 0.33)	0.13 (0.1, 0.17)	0.14 (0.11, 0.19)	0.13 (0.07, 0.13)	0.17 (0.13, 0.21)
		T1DM	1.34 (1.09, 1.63)	0.32 (0.20, 0.47)	1.03 (0.81, 1.28)	1.39 (1.13, 1.68)	1.68 (1.4, 2.01)	0.81 (0.62, 1.04)	0.67 (0.49, 0.88)	0.81 (0.53, 0.92)	0.26 (0.16, 0.41)

Supplementary Table 7. Life years lost (men and women) due to type 1 diabetes, estimated by median life expectancies.

Age-group	Group	Strata	Median survival	Lower confidence limit	Upper confidence limit
0–10	T1D	All	70.14100	69.32158	71.03422
	Control	All	86.09309	84.99932	87.44011
11–15	T1D	All	72.82341	71.81656	73.81029
	Control	All	84.81850	84.03012	85.64408
16–20	T1D	All	74.69964	73.59879	75.66393
	Control	All	84.85147	84.21138	85.45232
21–25	T1D	All	74.64191	73.79055	75.68982
	Control	All	84.67625	83.88912	85.35661
26–30	T1D	All	74.26762	73.42015	75.21834
	Control	All	83.92813	83.56594	84.64054



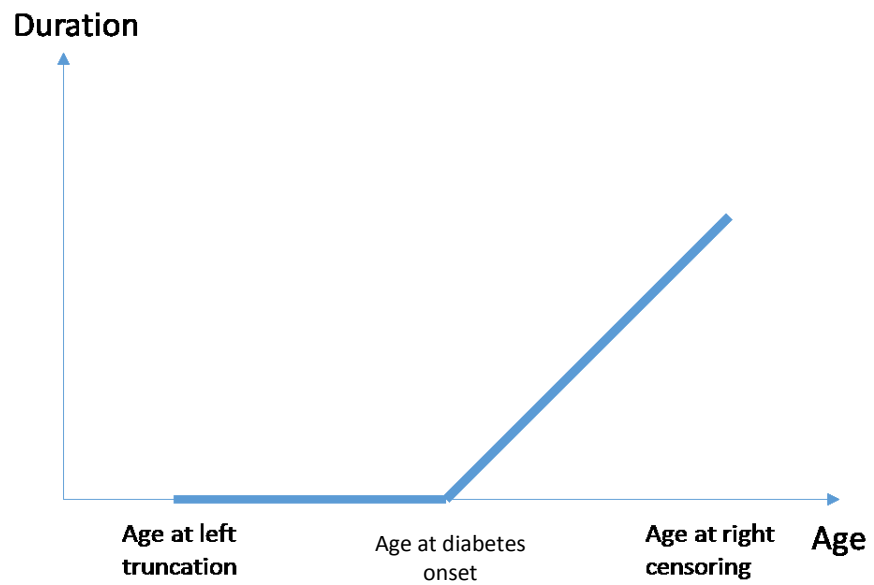
Supplementary Table 8. Life years lost for males with type 1 diabetes.						Corresponding figure
Age-group	Group	Strata	Median survival	Lower confidence limit	Upper confidence limit	
0–10	T1D	Males	69.15275	68.06502	70.42357	<p>Expected median survival by age at diagnosis group, males</p> <p>Expected median survival</p> <p>Age group</p> <p>Control</p> <p>T1DM</p>
	Control	Males	83.37794	82.50228	86.22998	
11–15	T1D	Males	71.82352	70.80230	72.95277	
	Control	Males	82.37657	81.61613	83.79808	
16–20	T1D	Males	73.36265	72.05407	74.69964	
	Control	Males	84.03696	82.95688	84.75428	
21–25	T1D	Males	72.96646	71.78862	74.33812	
	Control	Males	81.89185	81.04723	83.17648	
26–30	T1D	Males	73.16838	72.10472	74.26283	
	Control	Males	82.61065	81.90897	83.37794	

Supplementary Table 9. Life years lost for females with type 1 diabetes.						Corresponding figure
Age-group	Group	Strata	Median survival	Lower confidence limit	Upper confidence limit	
0–10	T1D	Females	70.98768	70.01369	72.68047	
	Control	Females	88.67614	87.14168	90.43201	
11–15	T1D	Females	74.17864	72.85364	75.50091	
	Control	Females	87.12457	86.04586	89.08430	
16–20	T1D	Females	77.26010	75.02943	78.60107	
	Control	Females	85.96099	85.19245	86.86105	
21–25	T1D	Females	77.29227	75.19233	78.58373	
	Control	Females	87.68104	86.11978	88.76397	
26–30	T1D	Females	75.90144	74.54472	77.36824	
	Control	Females	86.02122	85.06229	87.48471	

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Details on the Cox proportional hazards model

The statistical model we use differ slightly from the standard Cox proportional hazards model and the reason for this is the inclusion of the diabetes free controls in the design. We use age as the underlying time scale which allows the baseline hazard to capture the increase in hazard due to aging. To allow persons with diabetes to age at a different rate than the diabetes free controls we need to include duration of diabetes as a second-time scale. The duration of diabetes is only defined for persons with diabetes and we need to find a way to handle that in the statistical model. There have been several attempts at this in prior papers including allocating the value of duration for a specific person with diabetes at the index date to the corresponding controls or stratifying on duration of diabetes for the persons with diabetes and letting the controls follow the corresponding person with diabetes. We have developed a more robust statistical method to model and therefore account for the effect of duration



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Figure 1 Lexis Diagram illustrating the two-time scales involved in a design with person with diabetes together with matched controls

As an illustration let's will look at the hazard function for a person using age as the underlying time scale. Let the hazard due to aging while diabetes free be denoted $\lambda_0(t)$ and that at some age t_d the patient is diagnosed with diabetes. At this point life becomes more hazardous which we model by adding α to the log hazard (α is the additional risk imposed on the individual once diabetes develops) For every year beyond the age of diagnosis the patients now ages at a different rate compared to a diabetes free person which we represent by adding β to the log hazard for every year the patient lived with the disease. Mathematically the model is specified as:

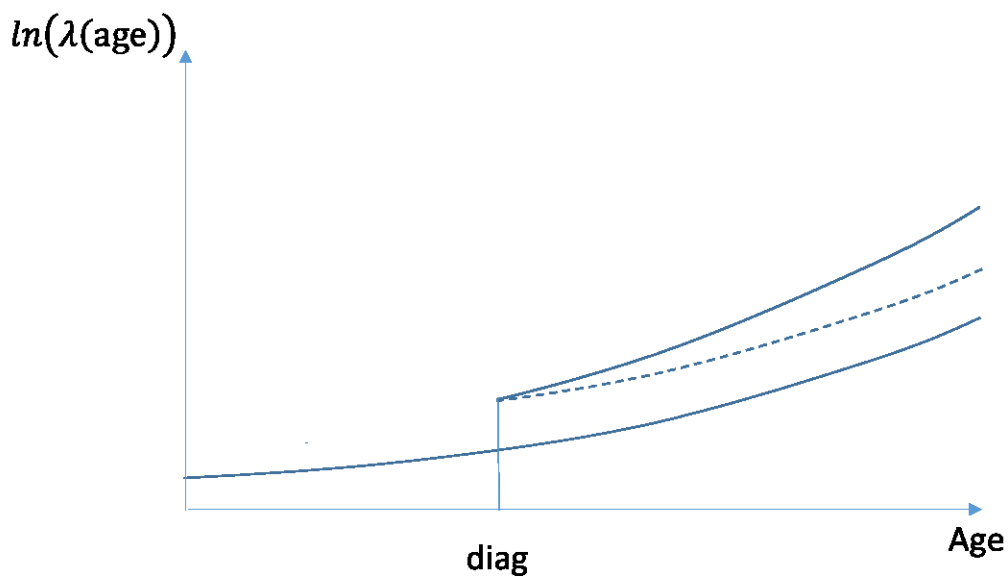
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$$\lambda(t) = \lambda_0(t) \exp(\alpha I_{\{t > t_d\}} + (t - t_d) \beta I_{\{t > t_d\}}) =$$

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$$\lambda_0(t) \exp(\alpha I_{\{t > t_d\}} + D(t)\beta)$$

where $D(t) = (t - t_d)I_{\{t > t_d\}}$ is simply the duration at age t for patients diagnosed with diabetes and zero for those not diagnosed (including the controls) which can be illustrated as in figure 2 where the dotted line represents aging for a person with diabetes in absence of any effect of duration. In the design with controls match to diabetic patients based on age and sex we can view the controls as patients who have not yet been diagnosed with diabetes and therefore $t < t_d$ during the entire time we follow these patients and thus they get no contribution from the term $D(t) = (t - t_d)I_{\{t > t_d\}}$. It is practical to code for this in the data set by simply setting duration to zero.



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Figure 2. The hazard as a function of age. This figure illustrates how hazard increases abruptly (“diag” = time of diagnosis) once diabetes develops. Then, hazard increases along with age but people with type 1 diabetes do not follow the trajectory of diabetes free individuals; instead those with diabetes experience a more rapid increase in hazard as they age.

49 [Supplementary Table 10. ICD codes used to exclude patients and controls at baseline.](#)
50 These ICD codes represent serious congenital, or otherwise severe, disorders present at birth or early
51 in life, which may bias the association between type 1 diabetes and the outcomes studied. If a
52 patient with type 1 diabetes was diagnosed with any of the disorders listed below, that individual
53 was excluded, along with all of the matched controls.

ICD code	ICD diagnose group or specific disorder	Individuals with type 1 diabetes excluded
A810	Creutzfeldt-Jakob disease	1
A812	Progressive multifocal leukoencephalopathy	1
B180G	Chronic viral hepatitis B with delta-agent	1
B200	HIV infection with other concomitant infections	1
B201		1
B203		1
B204		2
B205		1
B206		2
B208		1
B209		3
B238		HIV with other unspecified diseases
B249	Disease caused by HIV	4
C008	Malignant neoplasm in lip, oral cavity or pharynx	1
C019	Malignant neoplasm in lip, oral cavity or pharynx	3
C020	Malignant neoplasm in lip, oral cavity or pharynx	1
C021	Malignant neoplasm in lip, oral cavity or pharynx	2
C029	Malignant neoplasm in lip, oral cavity or pharynx	2
C039	Malignant neoplasm in lip, oral cavity or pharynx	1
C040	Malignant neoplasm in lip, oral cavity or pharynx	2
C041	Malignant neoplasm in lip, oral cavity or pharynx	2
C048	Malignant neoplasm in lip, oral cavity or pharynx	1
C049	Malignant neoplasm in lip, oral cavity or pharynx	2
C059	Malignant neoplasm in lip, oral cavity or pharynx	1
C069	Malignant neoplasm in lip, oral cavity or pharynx	4
C079	Malignant neoplasm in lip, oral cavity or pharynx	9
C089	Malignant neoplasm in lip, oral cavity or pharynx	1
C090	Malignant neoplasm in lip, oral cavity or pharynx	1
C099	Malignant neoplasm in lip, oral cavity or pharynx	7
C101	Malignant neoplasm in lip, oral cavity or pharynx	1
C108	Malignant neoplasm in lip, oral cavity or pharynx	1
C109	Malignant neoplasm in lip, oral cavity or pharynx	5
C111	Malignant neoplasm in lip, oral cavity or pharynx	1
C118	Malignant neoplasm in lip, oral cavity or pharynx	1
C119	Malignant neoplasm in lip, oral cavity or pharynx	4
C129	Malignant neoplasm in lip, oral cavity or pharynx	1
C138	Malignant neoplasm in lip, oral cavity or pharynx	1

C139	Malignant neoplasm in lip, oral cavity or pharynx	1
C153	Malignant neoplasm in digestive organs	3
C154	Malignant neoplasm in digestive organs	2
C155	Malignant neoplasm in digestive organs	10
C158	Malignant neoplasm in digestive organs	1
C159	Malignant neoplasm in digestive organs	6
C160	Malignant neoplasm in digestive organs	7
C162	Malignant neoplasm in digestive organs	6
C163	Malignant neoplasm in digestive organs	7
C164	Malignant neoplasm in digestive organs	1
C168	Malignant neoplasm in digestive organs	1
C169	Malignant neoplasm in digestive organs	13
C170	Malignant neoplasm in digestive organs	3
C172	Malignant neoplasm in digestive organs	4
C179	Malignant neoplasm in digestive organs	4
C180	Malignant neoplasm in digestive organs	12
C181	Malignant neoplasm in digestive organs	2
C182	Malignant neoplasm in digestive organs	16
C183	Malignant neoplasm in digestive organs	5
C184	Malignant neoplasm in digestive organs	6
C185	Malignant neoplasm in digestive organs	5
C186	Malignant neoplasm in digestive organs	5
C187	Malignant neoplasm in digestive organs	32
C188	Malignant neoplasm in digestive organs	1
C189	Malignant neoplasm in digestive organs	19
C199	Malignant neoplasm in digestive organs	6
C209	Malignant neoplasm in digestive organs	39
C210	Malignant neoplasm in digestive organs	3
C211	Malignant neoplasm in digestive organs	3
C218	Malignant neoplasm in digestive organs	3
C221	Malignant neoplasm in digestive organs	2
C229	Malignant neoplasm in digestive organs	5
C239	Malignant neoplasm in digestive organs	2
C240	Malignant neoplasm in digestive organs	4
C241	Malignant neoplasm in digestive organs	1
C248	Malignant neoplasm in digestive organs	2
C249	Malignant neoplasm in digestive organs	9
C250	Malignant neoplasm in digestive organs	8
C251	Malignant neoplasm in digestive organs	1
C252	Malignant neoplasm in digestive organs	1
C254	Malignant neoplasm in digestive organs	5
C259	Malignant neoplasm in digestive organs	9
C260	Malignant neoplasm in digestive organs	2
C300	Malignant neoplasm in respiratory organs and chest cavity	5

C310	Malignant neoplasm in respiratory organs and chest cavity	2
C320	Malignant neoplasm in respiratory organs and chest cavity	7
C321	Malignant neoplasm in respiratory organs and chest cavity	1
C323	Malignant neoplasm in respiratory organs and chest cavity	1
C328	Malignant neoplasm in respiratory organs and chest cavity	1
C329	Malignant neoplasm in respiratory organs and chest cavity	2
C340	Malignant neoplasm in respiratory organs and chest cavity	2
C341	Malignant neoplasm in respiratory organs and chest cavity	11
C342	Malignant neoplasm in respiratory organs and chest cavity	1
C343	Malignant neoplasm in respiratory organs and chest cavity	5
C348	Malignant neoplasm in respiratory organs and chest cavity	2
C349	Malignant neoplasm in respiratory organs and chest cavity	27
C349A	Malignant neoplasm in respiratory organs and chest cavity	2
C349B	Malignant neoplasm in respiratory organs and chest cavity	1
C349C	Malignant neoplasm in respiratory organs and chest cavity	4
C349G	Malignant neoplasm in respiratory organs and chest cavity	1
C349H	Malignant neoplasm in respiratory organs and chest cavity	1
C379	Malignant neoplasm in respiratory organs and chest cavity	2
C381	Malignant neoplasm in respiratory organs and chest cavity	1
C383	Malignant neoplasm in respiratory organs and chest cavity	1
C400	Malignant neoplasm in skeletal and chondral tissue	3
C402	Malignant neoplasm in skeletal and chondral tissue	8
C409	Malignant neoplasm in skeletal and chondral tissue	1
C410	Malignant neoplasm in skeletal and chondral tissue	3
C411	Malignant neoplasm in skeletal and chondral tissue	2
C413	Malignant neoplasm in skeletal and chondral tissue	1
C414	Malignant neoplasm in skeletal and chondral tissue	4
C432	Malignant melanoma and other malignant dermatological neoplasms	1
C434	Malignant melanoma and other malignant dermatological neoplasms	2
C435	Malignant melanoma and other malignant dermatological neoplasms	11
C436	Malignant melanoma and other malignant dermatological neoplasms	6
C437	Malignant melanoma and other malignant dermatological neoplasms	8
C439	Malignant melanoma and other malignant dermatological neoplasms	3
C439X	Malignant melanoma and other malignant dermatological neoplasms	1
C441	Malignant melanoma and other malignant dermatological neoplasms	1
C442	Malignant melanoma and other malignant dermatological neoplasms	3
C443	Malignant melanoma and other malignant dermatological neoplasms	12
C444	Malignant melanoma and other malignant dermatological neoplasms	1

C445	Malignant melanoma and other malignant dermatological neoplasms	2
C446	Malignant melanoma and other malignant dermatological neoplasms	2
C447	Malignant melanoma and other malignant dermatological neoplasms	2
C449	Malignant melanoma and other malignant dermatological neoplasms	3
C449E	Malignant melanoma and other malignant dermatological neoplasms	1
C450	Malignant neoplasms in mesothelial and other soft tissues	1
C459	Malignant neoplasms in mesothelial and other soft tissues	1
C480	Malignant neoplasms in mesothelial and other soft tissues	6
C488	Malignant neoplasms in mesothelial and other soft tissues	1
C491	Malignant neoplasms in mesothelial and other soft tissues	5
C492	Malignant neoplasms in mesothelial and other soft tissues	3
C493	Malignant neoplasms in mesothelial and other soft tissues	4
C494	Malignant neoplasms in mesothelial and other soft tissues	3
C496	Malignant neoplasms in mesothelial and other soft tissues	1
C499	Malignant neoplasms in mesothelial and other soft tissues	1
C499J	Malignant neoplasms in mesothelial and other soft tissues	1
C500	Malignant neoplasms in breast tissue	5
C501	Malignant neoplasms in breast tissue	14
C502	Malignant neoplasms in breast tissue	18
C503	Malignant neoplasms in breast tissue	6
C504	Malignant neoplasms in breast tissue	67
C505	Malignant neoplasms in breast tissue	12
C506	Malignant neoplasms in breast tissue	2
C508	Malignant neoplasms in breast tissue	7
C509	Malignant neoplasms in breast tissue	256
C511	Malignant neoplasms in female genital organs	1
C519	Malignant neoplasms in female genital organs	7
C530	Malignant neoplasms in female genital organs	1
C538	Malignant neoplasms in female genital organs	1
C539	Malignant neoplasms in female genital organs	43
C541	Malignant neoplasms in female genital organs	2
C542	Malignant neoplasms in female genital organs	2
C543	Malignant neoplasms in female genital organs	1
C549	Malignant neoplasms in female genital organs	64
C559	Malignant neoplasms in female genital organs	4
C569	Malignant neoplasms in female genital organs	47
C570	Malignant neoplasms in female genital organs	1
C574	Malignant neoplasms in female genital organs	1
C577	Malignant neoplasms in female genital organs	1
C578	Malignant neoplasms in female genital organs	1
C579	Malignant neoplasms in female genital organs	1
C609	Malignant neoplasms in male genital organs	3

C619	Malignant neoplasms in male genital organs	166
C620	Malignant neoplasms in male genital organs	1
C621	Malignant neoplasms in male genital organs	15
C629	Malignant neoplasms in male genital organs	19
C637	Malignant neoplasms in male genital organs	1
C649	Malignant neoplasms in the urinary organs	29
C659	Malignant neoplasms in the urinary organs	5
C669	Malignant neoplasms in the urinary organs	1
C672	Malignant neoplasms in the urinary organs	4
C674	Malignant neoplasms in the urinary organs	1
C676	Malignant neoplasms in the urinary organs	1
C679	Malignant neoplasms in the urinary organs	66
C690	Malignant neoplasms in the eyes, brain and other parts of the central nervous system	1
C692	Malignant neoplasms in the eyes, brain and other parts of the central nervous system	1
C693	Malignant neoplasms in the eyes, brain and other parts of the central nervous system	6
C699	Malignant neoplasms in the eyes, brain and other parts of the central nervous system	1
C700	Malignant neoplasms in the eyes, brain and other parts of the central nervous system	3
C710	Malignant neoplasms in the eyes, brain and other parts of the central nervous system	4
C711	Malignant neoplasms in the eyes, brain and other parts of the central nervous system	9
C712	Malignant neoplasms in the eyes, brain and other parts of the central nervous system	4
C713	Malignant neoplasms in the eyes, brain and other parts of the central nervous system	7
C714	Malignant neoplasms in the eyes, brain and other parts of the central nervous system	2
C715	Malignant neoplasms in the eyes, brain and other parts of the central nervous system	2
C716	Malignant neoplasms in the eyes, brain and other parts of the central nervous system	12
C717	Malignant neoplasms in the eyes, brain and other parts of the central nervous system	1
C718	Malignant neoplasms in the eyes, brain and other parts of the central nervous system	2
C719	Malignant neoplasms in the eyes, brain and other parts of the central nervous system	12
C729	Malignant neoplasms in the eyes, brain and other parts of the central nervous system	2
C739	Malignant neoplasms in the thyroid gland and other endocrine glands	25
C740	Malignant neoplasms in the thyroid gland and other endocrine glands	2
C741	Malignant neoplasms in the thyroid gland and other endocrine glands	1
C749	Malignant neoplasms in the thyroid gland and other endocrine glands	2
C751	Malignant neoplasms in the thyroid gland and other endocrine glands	1
C752	Malignant neoplasms in the thyroid gland and other endocrine glands	2

C758	Malignant neoplasms in the thyroid gland and other endocrine glands	1
C759	Malignant neoplasms in the thyroid gland and other endocrine glands	1
C760	Malignant neoplasms with no precise	1
C761	Malignant neoplasms with no specified, secondary and non-specific localizations	2
C762	Malignant neoplasms with no specified, secondary and non-specific localizations	7
C763	Malignant neoplasms with no specified, secondary and non-specific localizations	1
C770	Malignant neoplasms with no specified, secondary and non-specific localizations	10
C772	Malignant neoplasms with no specified, secondary and non-specific localizations	5
C773	Malignant neoplasms with no specified, secondary and non-specific localizations	3
C774	Malignant neoplasms with no specified, secondary and non-specific localizations	4
C779	Malignant neoplasms with no specified, secondary and non-specific localizations	1
C780	Malignant neoplasms with no specified, secondary and non-specific localizations	5
C781	Malignant neoplasms with no specified, secondary and non-specific localizations	1
C782	Malignant neoplasms with no specified, secondary and non-specific localizations	2
C786	Malignant neoplasms with no specified, secondary and non-specific localizations	4
C787	Malignant neoplasms with no specified, secondary and non-specific localizations	7
C788	Malignant neoplasms with no specified, secondary and non-specific localizations	1
C790	Malignant neoplasms with no specified, secondary and non-specific localizations	1
C792	Malignant neoplasms with no specified, secondary and non-specific localizations	3
C793	Malignant neoplasms with no specified, secondary and non-specific localizations	11
C795	Malignant neoplasms with no specified, secondary and non-specific localizations	11
C798	Malignant neoplasms with no specified, secondary and non-specific localizations	9
C809	Malignant neoplasms with no specified, secondary and non-specific localizations	3
C810	Malignant neoplasms in	4
C811	Malignant neoplasms of lymphoid, hematopoietic and related tissue	15
C812	Malignant neoplasms of lymphoid, hematopoietic and related tissue	6
C813	Malignant neoplasms of lymphoid, hematopoietic and related tissue	1
C819	Malignant neoplasms of lymphoid, hematopoietic and related tissue	20
C820	Malignant neoplasms of lymphoid, hematopoietic and related tissue	1
C822	Malignant neoplasms of lymphoid, hematopoietic and related tissue	3
C827	Malignant neoplasms of lymphoid, hematopoietic and related tissue	6

C829	Malignant neoplasms of lymphoid, hematopoietic and related tissue	6
C831	Malignant neoplasms of lymphoid, hematopoietic and related tissue	1
C833	Malignant neoplasms of lymphoid, hematopoietic and related tissue	14
C835	Malignant neoplasms of lymphoid, hematopoietic and related tissue	1
C835X	Malignant neoplasms of lymphoid, hematopoietic and related tissue	1
C837	Malignant neoplasms of lymphoid, hematopoietic and related tissue	1
C838	Malignant neoplasms of lymphoid, hematopoietic and related tissue	5
C839	Malignant neoplasms of lymphoid, hematopoietic and related tissue	6
C840	Malignant neoplasms of lymphoid, hematopoietic and related tissue	1
C844	Malignant neoplasms of lymphoid, hematopoietic and related tissue	2
C845	Malignant neoplasms of lymphoid, hematopoietic and related tissue	7
C851	Malignant neoplasms of lymphoid, hematopoietic and related tissue	8
C851A	Malignant neoplasms of lymphoid, hematopoietic and related tissue	1
C851B	Malignant neoplasms of lymphoid, hematopoietic and related tissue	5
C859	Malignant neoplasms of lymphoid, hematopoietic and related tissue	13
C859A	Malignant neoplasms of lymphoid, hematopoietic and related tissue	1
C883	Malignant neoplasms of lymphoid, hematopoietic and related tissue	1
C900	Malignant neoplasms of lymphoid, hematopoietic and related tissue	14
C902	Malignant neoplasms of lymphoid, hematopoietic and related tissue	2
C910	Malignant neoplasms of lymphoid, hematopoietic and related tissue	26
C910A	Malignant neoplasms of lymphoid, hematopoietic and related tissue	1
C910B	Malignant neoplasms of lymphoid, hematopoietic and related tissue	7
C911	Malignant neoplasms of lymphoid, hematopoietic and related tissue	15
C913	Malignant neoplasms of lymphoid, hematopoietic and related tissue	1
C914	Malignant neoplasms of lymphoid, hematopoietic and related tissue	2
C919	Malignant neoplasms of lymphoid, hematopoietic and related tissue	4
C920	Malignant neoplasms of lymphoid, hematopoietic and related tissue	19
C921	Malignant neoplasms of lymphoid, hematopoietic and related tissue	6
C922	Malignant neoplasms of lymphoid, hematopoietic and related tissue	1
C923	Malignant neoplasms of lymphoid, hematopoietic and related tissue	2

C924	Malignant neoplasms of lymphoid, hematopoietic and related tissue	2
C925	Malignant neoplasms of lymphoid, hematopoietic and related tissue	3
C929	Malignant neoplasms of lymphoid, hematopoietic and related tissue	1
C930	Malignant neoplasms of lymphoid, hematopoietic and related tissue	1
C944	Malignant neoplasms of lymphoid, hematopoietic and related tissue	1
C950	Malignant neoplasms of lymphoid, hematopoietic and related tissue	4
C969	Malignant neoplasms of lymphoid, hematopoietic and related tissue	1
C979	Multiple malignant neoplasms with differing origins	1
D370	Neoplasm of uncertain behavior of lip, oral cavity and pharynx	15
D371	Neoplasm of uncertain behavior of stomach	1
D372	Neoplasm of uncertain behavior of small intestine	4
D374	Neoplasm of uncertain behavior of colon	14
D374B		1
D375	Neoplasm of uncertain behavior of rectum	8
D376	Neoplasm of uncertain behavior of liver, GB and bile duct	14
D377	Neoplasm of uncertain behavior of other digestive organs	11
D379	Unspecified localization of neoplasm of uncertain behavior in the digestive organs	7
D380	Neoplasm of uncertain behavior of larynx	1
D381	Neoplasm of uncertain behavior of trachea, bronchus, lung	21
D383	Neoplasm of uncertain behavior of mediastinum	9
D385	Neoplasm of uncertain behavior of other respiratory organs	4
D386	Unspecified localization of neoplasm of uncertain behavior in the respiratory organs	1
D390	Neoplasm of uncertain behavior of uterus	10
D391	Neoplasm of uncertain behavior of ovary	33
D392A	Neoplasm of uncertain behavior of placenta	2
D397	Unspecified localization of neoplasm of uncertain behavior in the female genital organs	2
D399	Unspecified localization of neoplasm of uncertain behavior in the female genital organs	1
D400	Neoplasm of uncertain behavior of prostate	2
D401	Neoplasm of uncertain behavior of testis	7
D409	Neoplasm of uncertain behavior of male genital organ, unsp	1
D410	Neoplasm of uncertain behavior of urinary organs	7
D411	Neoplasm of uncertain behavior of urinary organs	1
D412	Neoplasm of uncertain behavior of urinary organs	3
D414	Neoplasm of uncertain behavior of urinary organs	10
D419	Neoplasm of uncertain behavior of urinary organs	3
D420	Neoplasm of uncertain behavior of meninges	5
D421	Neoplasm of uncertain behavior of meninges	1
D430	Neoplasm of uncertain behavior of brain and central nervous system	22

D431	Neoplasm of uncertain behavior of brain and central nervous system	4
D432	Neoplasm of uncertain behavior of brain and central nervous system	7
D434	Neoplasm of uncertain behavior of brain and central nervous system	1
D437	Neoplasm of uncertain behavior of brain and central nervous system	2
D439	Neoplasm of uncertain behavior of brain and central nervous system	2
D440	Neoplasm of uncertain behavior of endocrine glands	13
D440A	Neoplasm of uncertain behavior of endocrine glands	1
D441	Neoplasm of uncertain behavior of endocrine glands	4
D442	Neoplasm of uncertain behavior of endocrine glands	1
D443	Neoplasm of uncertain behavior of endocrine glands	7
D448	Neoplasm of uncertain behavior of endocrine glands	4
D459	Polycythemia vera	3
D460	Myelodysplastic syndromes	1
D469	Myelodysplastic syndromes	3
D471	Other neoplasms of uncertain behavior of lymphoid, hematopoietic and related tissue	4
D473	Other neoplasms of uncertain behavior of lymphoid, hematopoietic and related tissue	2
D479	Other neoplasms of uncertain behavior of lymphoid, hematopoietic and related tissue	5
D480	Neoplasm of uncertain behavior of other and unspecified sites	5
D480B	Neoplasm of uncertain behavior of other and unspecified sites	1
D481	Neoplasm of uncertain behavior of other and unspecified sites	6
D483	Neoplasm of uncertain behavior of other and unspecified sites	5
D484	Neoplasm of uncertain behavior of other and unspecified sites	1
D485	Neoplasm of uncertain behavior of other and unspecified sites	2
D486	Neoplasm of uncertain behavior of other and unspecified sites	32
D487	Neoplasm of uncertain behavior of other and unspecified sites	15
D487B	Neoplasm of uncertain behavior of other and unspecified sites	1
D489	Neoplasm of uncertain behavior of other and unspecified sites	8
D610	Other aplastic anemias and other bone marrow failure syndromes	1
D611	Other aplastic anemias and other bone marrow failure syndromes	3
D613	Other aplastic anemias and other bone marrow failure syndromes	3
D619	Other aplastic anemias and other bone marrow failure syndromes	5
D669	Hereditary factor VIII deficiency	2
D679	Hereditary factor VIII deficiency	1
D680	Other coagulation defects	2
D684	Other coagulation defects	1
D688	Other coagulation defects	3
E250	Adrenogenital disorders	2
E340	Other endocrine disorders	2
E700	Disorders of aromatic amino-acid metabolism	3
E700A	Disorders of aromatic amino-acid metabolism	1
E700X	Disorders of aromatic amino-acid metabolism	1

E702	Disorders of aromatic amino-acid metabolism	1
E713	Disorders of branched-chain amino-acid metabolism and fatty-acid metabolism	1
E713B	Disorders of branched-chain amino-acid metabolism and fatty-acid metabolism	1
E720	Other disorders of amino-acid metabolism	2
E721	Other disorders of amino-acid metabolism	1
E722	Other disorders of amino-acid metabolism	1
E724	Other disorders of amino-acid metabolism	1
E725	Other disorders of amino-acid metabolism	4
E729	Other disorders of amino-acid metabolism	1
E740	Other disorders of carbohydrate metabolism	3
E754	Disorders of sphingolipid metabolism and other lipid storage disorders	2
E779	Disorders of glycoprotein metabolism	1
E800	Disorders of porphyrin and bilirubin metabolism	1
E801	Disorders of porphyrin and bilirubin metabolism	1
E802	Disorders of porphyrin and bilirubin metabolism	3
E840	Cystic fibrosis with pulmonary manifestations	26
E841	Cystic fibrosis with intestinal manifestations	5
E848	Cystic fibrosis with other manifestations	49
E849	Cystic fibrosis, unspecified	31
E850	Non-neuropathic hereditary amyloidosis	1
E851	Neuropathic hereditary amyloidosis	1
E852	Hereditary amyloidosis, unspecified	1
G701	Myasthenia gravis and other myoneural disorders	1
G702	Myasthenia gravis and other myoneural disorders	1
G710A	Diseases of myoneural junction and muscle	4
G800	Spastic quadriplegic cerebral palsy	8
G801	Spastic diplegic cerebral palsy	24
G801A	Spastic diplegic cerebral palsy	1
P119	Other birth injuries to central nervous system	1
P271	Chronic respiratory disease originating in the perinatal period	1
Q030	Congenital malformations, deformations and chromosomal abnormalities	5
Q031	Congenital malformations, deformations and chromosomal abnormalities	2
Q042	Congenital malformations, deformations and chromosomal abnormalities	1
Q044	Congenital malformations, deformations and chromosomal abnormalities	1
Q051	Congenital malformations, deformations and chromosomal abnormalities	2
Q052	Congenital malformations, deformations and chromosomal abnormalities	13
Q053	Congenital malformations, deformations and chromosomal abnormalities	4

Q054	Congenital malformations, deformations and chromosomal abnormalities	2
Q057	Congenital malformations, deformations and chromosomal abnormalities	3
Q058	Congenital malformations, deformations and chromosomal abnormalities	1
Q059	Congenital malformations, deformations and chromosomal abnormalities	12
Q068	Congenital malformations, deformations and chromosomal abnormalities	4
Q069	Congenital malformations, deformations and chromosomal abnormalities	2
Q079	Congenital malformations, deformations and chromosomal abnormalities	1
Q201	Congenital malformations, deformations and chromosomal abnormalities	4
Q203	Congenital malformations, deformations and chromosomal abnormalities	8
Q204	Congenital malformations, deformations and chromosomal abnormalities	2
Q205	Congenital malformations, deformations and chromosomal abnormalities	1
Q210	Congenital malformations, deformations and chromosomal abnormalities	7
Q211	Congenital malformations, deformations and chromosomal abnormalities	14
Q212	Congenital malformations, deformations and chromosomal abnormalities	3
Q213	Congenital malformations, deformations and chromosomal abnormalities	6
Q219	Congenital malformations, deformations and chromosomal abnormalities	1
Q220	Congenital malformations, deformations and chromosomal abnormalities	4
Q221	Congenital malformations, deformations and chromosomal abnormalities	3
Q222	Congenital malformations, deformations and chromosomal abnormalities	1
Q224	Congenital malformations, deformations and chromosomal abnormalities	2
Q225	Congenital malformations, deformations and chromosomal abnormalities	2
Q228	Congenital malformations, deformations and chromosomal abnormalities	1
Q230	Congenital malformations, deformations and chromosomal abnormalities	6
Q231	Congenital malformations, deformations and chromosomal abnormalities	5
Q232	Congenital malformations, deformations and chromosomal abnormalities	2
Q233	Congenital malformations, deformations and chromosomal abnormalities	1
Q238	Congenital malformations, deformations and chromosomal abnormalities	1
Q244	Congenital malformations, deformations and chromosomal abnormalities	3
Q246	Congenital malformations, deformations and chromosomal abnormalities	2
Q248	Congenital malformations, deformations and chromosomal abnormalities	1

Q249	Congenital malformations, deformations and chromosomal abnormalities	1
Q900	Congenital malformations, deformations and chromosomal abnormalities	2
Q909	Congenital malformations, deformations and chromosomal abnormalities	8
Q923	Congenital malformations, deformations and chromosomal abnormalities	1
Q929	Congenital malformations, deformations and chromosomal abnormalities	1
Q933	Congenital malformations, deformations and chromosomal abnormalities	1
Q935	Congenital malformations, deformations and chromosomal abnormalities	2
Q939	Congenital malformations, deformations and chromosomal abnormalities	1
Q953	Congenital malformations, deformations and chromosomal abnormalities	1
Q955	Congenital malformations, deformations and chromosomal abnormalities	1
Q960	Congenital malformations, deformations and chromosomal abnormalities	2
Q961	Congenital malformations, deformations and chromosomal abnormalities	1
Q963	Congenital malformations, deformations and chromosomal abnormalities	1
Q968	Congenital malformations, deformations and chromosomal abnormalities	1
Q969	Congenital malformations, deformations and chromosomal abnormalities	5
Q984	Congenital malformations, deformations and chromosomal abnormalities	3
Q998	Congenital malformations, deformations and chromosomal abnormalities	3

54

55