Trends in incidence of young-onset diabetes by diabetes type: a multi-national population-based study

Appendix

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1 Quality score algorithm

We used an adapted Newcastle-Ottawa Quality Assessment Scale. The scale includes items that assess representativeness of the data sources, sample size at each time point, the method of defining diabetes, whether people with gestational diabetes were excluded, and completeness of the number of data points reported. The maximum score was 8. Quality was classified as high (7–8), medium (5–6), or low ($\leq$4). A study can be awarded a maximum of one or two points for each numbered item within each category.

Selection

1. Representativeness of the general population (sampling frame).
   (a) National scheme with $\geq$80% coverage of national population (2 points)
   (b) Random sample from national health insurance (1 point) or national population-based survey with $\geq$80% response rate (1 point)
   (c) Regional representative or national scheme with <80% coverage of national population (0 points)
2. Sample size at each time point.
   (a) >10,000 (1 point)
   (b) $\leq$10,000 (0 points)

Outcome

1. Definition of diabetes.
   (a) By blood glucose measurement (FPG, OGTT, HbA1c) or by multiple approaches /administrative algorithm where 2 or more criteria used (2 points)
   (b) Clinical diagnosis (e.g. ICD code or physician-diagnosed) (1 point)
   (c) Anti-diabetic medication or self-report of physician-diagnosed diabetes (0 points)
2. Exclusion of gestational diabetes
   (a) Yes (1 point)
   (b) No (0 points)

Completeness of trend data

1. How many time points are provided?
   (a) $\geq$10 (2 points)
   (b) 6–9 (1 point)
   (c) <6 (0 points)

Thus, the total possible score is 8.

2 Supplementary Tables

Supplementary Table 1: Diabetes definition by data source

Jurisdiction	Diabetes definition	Gestational diabetes excluded
Australia	Clinical diagnosis certified by a doctor, nurse or credentialed diabetes educator.	Yes
Denmark	Algorithm incorporating clinical diagnosis (ICD codes) from the hospitalisations or outpatient clinics, prescription of anti-diabetic medications, clinical and billing records.	Yes
Finland	Algorithm incorporating clinical diagnosis (ICD codes) from the Care Register for Health Care, Register of Primary Health Care Visits, Medical Birth Register and Causes of Death Statistics and prescription of anti-diabetic medications.	Yes
Hungary	Anti-diabetes medications and clinical diagnosis (ICD-10 codes).	Yes
Japan	Anti-diabetes medications and clinical diagnosis (ICD-10 codes).	Yes
Scotland	Clinical diagnosis using the Read coding system.	Yes
South Korea	Anti-diabetes medications and clinical diagnosis (ICD-10 codes).	Yes
Spain (Catalonia)	Algorithm incorporating diagnostic codes, HbA1c tests and anti-diabetes medications	Yes

ICD=International Classification of Diseases; ICD-10=International Classification of Diseases, 10th edition.

Supplementary Table 2: A summary of how people with gestational diabetes were excluded in each data source

Jurisdiction	Method of exclusion of gestational diabetes
Australia	The presence or absence of gestational diabetes is recorded by the registering clinician for each registrant.
Denmark	If a woman is diagnosed with GDM in the National Patient Register (NPR), she is excluded from entering the diabetes register on any other criterion from 280 days before to 280 days after the GDM diagnosis, ensuring the exclusion of any potential pregnancy-related period and being conservatively thorough.
Finland	The database separates individuals with gestational diabetes by searching for specific diagnosis codes across multiple healthcare registers, including the Hospital Discharge Register, Care Register for Health Care, Register of Primary Health Care Visits, and Cause of Death statistics. Any entry in the Medical Birth Register for gestational diabetes also qualifies. Individuals were classified as having gestational diabetes if no other diabetes diagnoses were found. For diagnoses before 1987, pregnancy and postpartum periods were calculated and compared with diabetes diagnosis dates. Similarly, post-1987 deliveries were checked against antidiabetic medication purchases. If diabetes diagnoses or medication purchases were limited to the pregnancy and postpartum period, the individual was classified as having gestational diabetes. This classification allows the FinDM database to be used for research on gestational diabetes.
Hungary	Gestational diabetes was identified using the ICD-10 code of O244.
Japan	Gestational diabetes was identified using the ICD-10 codes of O244 and O249.
Scotland	Gestational diabetes was recorded as a reason for the diagnosis of diabetes in the clinical record.
South Korea	Gestational diabetes was identified using ICD-10 codes.
Spain (Catalonia)	Only people with ICD-10 codes of E10 or E11 in the clinical records were included.

Supplementary Table 3: Quality assessment of the included data sources

Country/Region	Origin of data	Representativeness of population	Sample size at time points	Definition of diabetes	Exclusion of gestational diabetes	Completeness (no. of data points)	Total Score
Range of allocated points		0-2	0-1	0-2	0-1	0-2	8
Australia	National Diabetes Services Scheme, and Pharmaceutical Benefits Scheme	2	1	1	1	2	7
Denmark	National Patient Register, prescription database, health insurance database, diabetes quality database, and eye screening database	2	1	2	1	2	8
Finland	FinDM (Diabetes in Finland) research database	2	1	2	1	2	8
Hungary	National Health Insurance Fund database	2	1	2	1	0	6
Japan	National Database of Health Insurance Claims and Specific Health Check ups of Japan	2	1	1	1	0	5
Scotland	Scottish Diabetes Research Network – National Diabetes Dataset 2021	2	1	1	1	2	7
South Korea	National Health Insurance Service – National Sample cohort	1	1	2	1	2	7
Spain (Catalonia)	Information System for the Development of Research in Primary Care	0	1	2	1	2	6

Supplementary Table 4: Crude incidence rate of diagnosed diabetes for people aged 15-39 years, by jurisdiction. Numbers in brackets represent 95% confidence intervals.

Country	Period	Sex	Person-years of follow-up	Typical type 1 diabetes		Typical type 2 diabetes		Uncertain diabetes type	
				Incident cases	Crude incidence (per 100,000 person-years)	Incident cases	Crude incidence (per 100,000 person-years)	Incident cases	Crude incidence (per 100,000 person-years)
Australia	2005–2017	Overall	80,592,582	9,174	11.4 (11.2, 11.6)	42,772	53.1 (52.6, 53.6)	13,231	16.4 (16.1, 16.7)
		Males	40,607,882	5,357	13.2 (12.8, 13.6)	23,862	58.8 (58.0, 59.5)	5,692	14.0 (13.7, 14.4)
		Females	39,984,700	3,817	9.5 (9.2, 9.9)	18,910	47.3 (46.6, 48.0)	7,539	18.9 (18.4, 19.3)
Denmark	2000–2020	Overall	36,515,901	4,567	12.5 (12.1, 12.9)	19,992	54.7 (54.0, 55.5)	4,476	12.3 (11.9, 12.6)
		Males	18,527,957	2,951	15.9 (15.4, 16.5)	11,242	60.7 (59.6, 61.8)	2,630	14.2 (13.7, 14.7)
		Females	17,987,944	1,616	9.0 (8.6, 9.4)	8,750	48.6 (47.6, 49.7)	1,846	10.3 (9.8, 10.7)
Finland	2000–2017	Overall	29,595,959	5,223	17.6 (17.2, 18.1)	18,335	62.0 (61.1, 62.9)	6,700	22.6 (22.1, 23.2)
		Males	15,147,484	3,389	22.4 (21.6, 23.1)	9,616	63.5 (62.2, 64.8)	2,935	19.4 (18.7, 20.1)
		Females	14,448,475	1,834	12.7 (12.1, 13.3)	8,719	60.3 (59.1, 61.6)	3,765	26.1 (25.2, 26.9)
Hungary	2014–2018	Overall	15,531,126	1,923	12.4 (11.8, 12.9)	10,699	68.9 (67.6, 70.2)	2,002	12.9 (12.3, 13.5)
		Males	7,937,813	1,265	15.9 (15.1, 16.8)	4,999	63.0 (61.3, 64.7)	1,314	16.6 (15.7, 17.5)
		Females	7,593,313	658	8.7 (8.0, 9.4)	5,700	75.1 (73.1, 77.0)	688	9.1 (8.4, 9.8)
Japan	2015–2018	Overall	132,106,474	7,024	5.3 (5.2, 5.4)	115,561	87.5 (87.0, 88.0)	25,068	19.0 (18.7, 19.2)
		Males	64,097,170	3,170	4.9 (4.8, 5.1)	74,592	116.4 (115.5, 117.2)	15,542	24.2 (23.9, 24.6)
		Females	68,009,304	3,854	5.7 (5.5, 5.8)	40,969	60.2 (59.7, 60.8)	9,526	14.0 (13.7, 14.3)
Scotland	2010–2020	Overall	18,568,412	3,074	16.6 (16.0, 17.2)	12,827	69.1 (67.9, 70.3)	3,907	21.0 (20.4, 21.7)
		Males	9,233,299	1,887	20.4 (19.5, 21.4)	7,178	77.7 (76.0, 79.6)	1,836	19.9 (19.0, 20.8)
		Females	9,335,113	1,187	12.7 (12.0, 13.5)	5,649	60.5 (59.0, 62.1)	2,071	22.2 (21.2, 23.2)
South Korea	2007–2019	Overall	4,777,971	129	2.7 (2.3, 3.2)	8,561	179.2 (175.4, 183.0)	971	20.3 (19.1, 21.6)
		Males	2,477,829	44	1.8 (1.3, 2.4)	5,507	222.3 (216.5, 228.2)	557	22.5 (20.7, 24.4)
		Females	2,300,142	85	3.7 (3.0, 4.6)	3,054	132.8 (128.2, 137.6)	414	18.0 (16.3, 19.8)
Spain (Catalonia)	2006–2020	Overall	28,742,724	5,765	20.1 (19.5, 20.6)	20,526	71.4 (70.4, 72.4)	7,084	24.6 (24.1, 25.2)
		Males	14,761,347	2,083	14.1 (13.5, 14.7)	10,787	73.1 (71.7, 74.5)	2,806	19.0 (18.3, 19.7)
		Females	13,981,377	3,682	26.3 (25.5, 27.2)	9,739	69.7 (68.3, 71.1)	4,278	30.6 (29.7, 31.5)

Supplementary Table 5: Age distribution of people with incident diabetes and people without diabetes, by jurisdiction

	People with incident diabetes (%)					People without diabetes (%)				
	15-19 years	20-24 years	25-29 years	30-34 years	35-39 years	15-19 years	20-24 years	25-29 years	30-34 years	35-39 years
Australia	6.5	8.7	16.0	27.6	41.3	18.4	20.4	20.9	20.4	19.9
Denmark	8.4	9.8	15.0	24.5	42.4	18.9	19.3	19.9	20.4	21.6
Finland	9.1	9.8	16.3	25.1	39.7	19.4	20.0	20.1	20.1	20.5
Hungary	5.8	7.4	12.8	23.4	50.6	16.2	19.3	19.8	20.0	24.6
Japan	3.1	6.7	15.2	28.1	47.0	17.5	18.3	19.3	21.5	23.5
Scotland	7.6	10.1	15.6	26.5	40.3	17.9	21.1	21.4	20.3	19.4
South Korea	5.6	7.0	12.3	26.7	48.5	18.4	18.8	19.5	20.7	22.7
Spain (Catalonia)	4.9	6.8	14.1	28.1	46.1	14.0	15.7	19.9	24.4	26.0

Supplementary Table 6: Average annual change in the incidence rates of diabetes, by country, sex, and diabetes type. Adjusted for age. Numbers in brackets represent 95% confidence intervals.

Country	Period	Sex	Typical type 1 diabetes	Typical type 2 diabetes	Uncertain diabetes type	Total diabetes
Australia	2005-2017	Overall	0.8 (0.2, 1.3)	−0.1 (−0.4, 0.1)	−1.6 (−2.0, −1.1)	−0.3 (−0.5, −0.1)
		Males	−0.3 (−1.0, 0.4)	1.8 (1.5, 2.1)	2.2 (1.5, 2.9)	1.5 (1.3, 1.8)
		Females	2.3 (1.4, 3.2)	−2.5 (−2.9, −2.1)	−4.3 (−4.9, −3.8)	−2.4 (−2.7, −2.1)
Denmark	2000-2020	Overall	2.0 (1.5, 2.5)	2.0 (1.8, 2.3)	−0.2 (−0.7, 0.3)	1.7 (1.5, 1.9)
		Males	2.1 (1.5, 2.7)	2.3 (1.9, 2.6)	−0.4 (−1.0, 0.2)	1.8 (1.6, 2.1)
		Females	1.8 (1.0, 2.7)	1.8 (1.4, 2.1)	0.1 (−0.6, 0.9)	1.5 (1.2, 1.8)
Finland	2000-2017	Overall	0.5 (0.0, 1.1)	3.4 (3.1, 3.7)	−1.0 (−1.4, −0.5)	1.9 (1.7, 2.1)
		Males	−0.0 (−0.7, 0.6)	4.2 (3.8, 4.6)	0.2 (−0.5, 0.9)	2.6 (2.3, 2.9)
		Females	1.6 (0.7, 2.5)	2.4 (2.0, 2.8)	−1.9 (−2.5, −1.3)	1.1 (0.8, 1.4)
Hungary	2014-2018	Overall	1.3 (−1.9, 4.5)	0.3 (−1.1, 1.6)	−3.3 (−6.3, −0.3)	−0.1 (−1.2, 1.0)
		Males	0.9 (−3.0, 4.9)	0.6 (−1.4, 2.5)	−0.6 (−4.3, 3.3)	0.4 (−1.2, 2.0)
		Females	1.8 (−3.6, 7.4)	0.0 (−1.8, 1.9)	−8.4 (−13.2, −3.4)	−0.7 (−2.3, 1.0)
Japan	2015-2018	Overall	1.3 (−0.8, 3.5)	8.5 (8.0, 9.1)	7.7 (6.5, 8.9)	8.0 (7.5, 8.5)
		Males	3.5 (0.3, 6.8)	10.5 (9.8, 11.2)	8.3 (6.8, 9.8)	9.9 (9.3, 10.5)
		Females	−0.4 (−3.2, 2.5)	5.0 (4.0, 5.9)	6.7 (4.8, 8.6)	4.9 (4.1, 5.7)
Scotland	2010-2020	Overall	1.3 (0.2, 2.4)	−0.7 (−1.2, −0.2)	−2.3 (−3.2, −1.3)	−0.7 (−1.1, −0.3)
		Males	1.0 (−0.5, 2.4)	−0.8 (−1.5, −0.1)	−2.0 (−3.4, −0.6)	−0.7 (−1.3, −0.1)
		Females	1.8 (−0.1, 3.6)	−0.6 (−1.4, 0.3)	−2.5 (−3.8, −1.1)	−0.7 (−1.4, −0.1)
South Korea	2007-2019	Overall	6.0 (1.2, 11.1)	4.8 (4.2, 5.4)	3.0 (1.3, 4.7)	4.6 (4.1, 5.2)
		Males	15.9 (6.3, 26.2)	5.4 (4.7, 6.2)	3.5 (1.2, 5.8)	5.3 (4.6, 6.0)
		Females	1.8 (−3.9, 7.8)	3.7 (2.7, 4.7)	2.2 (−0.3, 4.9)	3.5 (2.6, 4.4)
Spain (Catalonia)	2006-2020	Overall	2.9 (2.3, 3.5)	−1.5 (−1.8, −1.2)	1.6 (1.0, 2.1)	−0.1 (−0.3, 0.2)
		Males	−3.1 (−4.1, −2.1)	−2.8 (−3.2, −2.3)	−1.6 (−2.5, −0.7)	−2.6 (−3.0, −2.3)
		Females	6.3 (5.5, 7.1)	−0.0 (−0.5, 0.4)	3.6 (2.9, 4.3)	2.1 (1.8, 2.5)

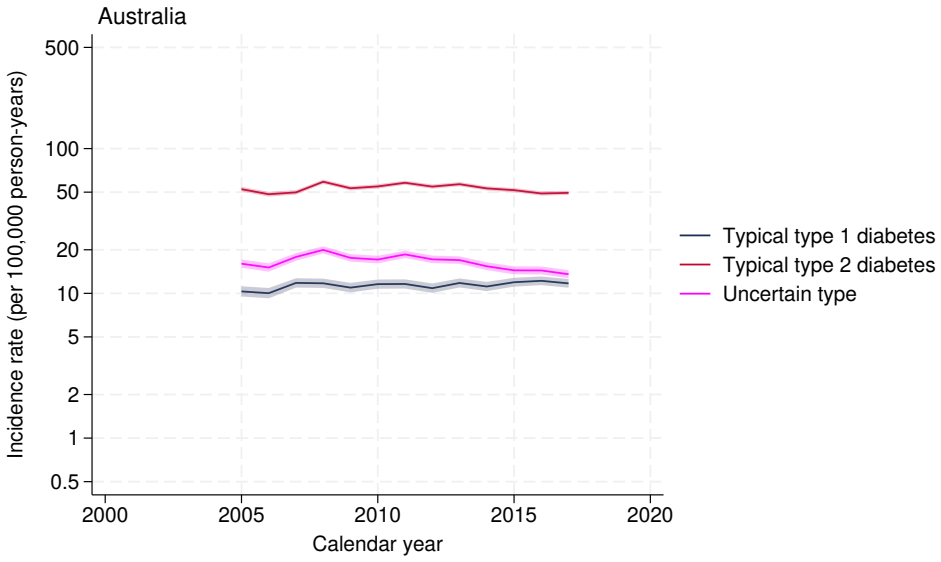
Supplementary Table 7: Average annual change in the incidence rates of diabetes, by country, sex, and diabetes type. Adjusted for age. Analysis restricted to ages 15-34. Numbers in brackets represent 95% confidence intervals.

Country	Period	Sex	Typical type 1 diabetes	Typical type 2 diabetes	Uncertain diabetes type	Total diabetes
Australia	2005-2017	Overall	0.8 (0.2, 1.3)	−0.2 (−0.5, 0.2)	−2.7 (−3.3, −2.1)	−0.5 (−0.7, −0.2)
		Males	−0.3 (−1.0, 0.4)	2.3 (1.8, 2.8)	1.6 (0.6, 2.6)	1.5 (1.1, 1.9)
		Females	2.3 (1.4, 3.2)	−2.7 (−3.2, −2.2)	−5.2 (−5.9, −4.5)	−2.4 (−2.7, −2.0)
Denmark	2000-2020	Overall	2.0 (1.5, 2.5)	2.4 (2.1, 2.8)	−0.7 (−1.4, 0.0)	1.9 (1.7, 2.2)
		Males	2.1 (1.5, 2.7)	2.4 (2.0, 2.9)	−0.9 (−1.8, 0.0)	1.9 (1.6, 2.2)
		Females	1.8 (1.0, 2.7)	2.5 (2.0, 2.9)	−0.4 (−1.4, 0.6)	1.9 (1.5, 2.3)
Finland	2000-2017	Overall	0.5 (0.0, 1.1)	3.3 (2.9, 3.7)	−1.8 (−2.5, −1.2)	1.5 (1.3, 1.8)
		Males	−0.0 (−0.7, 0.6)	5.2 (4.6, 5.8)	−0.5 (−1.6, 0.7)	2.5 (2.0, 2.9)
		Females	1.6 (0.7, 2.5)	1.8 (1.2, 2.3)	−2.5 (−3.2, −1.7)	0.7 (0.3, 1.1)
Hungary	2014-2018	Overall	1.3 (−1.9, 4.5)	3.7 (1.6, 5.7)	−5.1 (−10.8, 1.0)	2.4 (0.7, 4.1)
		Males	0.9 (−3.0, 4.9)	4.1 (0.9, 7.4)	−0.0 (−7.7, 8.2)	2.6 (0.2, 5.0)
		Females	1.8 (−3.6, 7.4)	3.4 (0.8, 6.2)	−12.7 (−21.0, −3.5)	2.2 (−0.1, 4.6)
Japan	2015-2018	Overall	1.3 (−0.8, 3.5)	10.4 (9.6, 11.2)	8.9 (7.2, 10.7)	9.3 (8.6, 10.0)
		Males	3.5 (0.3, 6.8)	14.0 (12.9, 15.0)	9.4 (7.2, 11.6)	12.4 (11.5, 13.4)
		Females	−0.4 (−3.2, 2.5)	5.1 (3.9, 6.3)	7.9 (5.1, 10.8)	4.8 (3.8, 5.8)
Scotland	2010-2020	Overall	1.3 (0.2, 2.4)	−1.0 (−1.8, −0.2)	−3.5 (−4.7, −2.3)	−0.9 (−1.5, −0.3)
		Males	1.0 (−0.5, 2.4)	−1.9 (−2.9, −0.8)	−4.4 (−6.2, −2.5)	−1.4 (−2.2, −0.7)
		Females	1.8 (−0.1, 3.6)	−0.0 (−1.1, 1.1)	−2.8 (−4.4, −1.2)	−0.3 (−1.2, 0.5)
South Korea	2007-2019	Overall	6.0 (1.2, 11.1)	6.4 (5.6, 7.3)	2.0 (−0.3, 4.4)	5.9 (5.1, 6.7)
		Males	15.9 (6.3, 26.2)	7.3 (6.1, 8.4)	3.7 (0.7, 6.8)	7.0 (5.9, 8.0)
		Females	1.8 (−3.9, 7.8)	5.2 (3.9, 6.5)	−0.3 (−3.8, 3.3)	4.5 (3.2, 5.7)
Spain (Catalonia)	2006-2020	Overall	2.9 (2.3, 3.5)	0.2 (−0.3, 0.7)	−0.7 (−1.7, 0.3)	1.0 (0.6, 1.3)
		Males	−3.1 (−4.1, −2.1)	−1.6 (−2.3, −0.9)	−0.9 (−2.4, 0.6)	−2.0 (−2.5, −1.4)
		Females	6.3 (5.5, 7.1)	1.6 (1.0, 2.2)	−0.6 (−1.9, 0.7)	3.0 (2.5, 3.4)

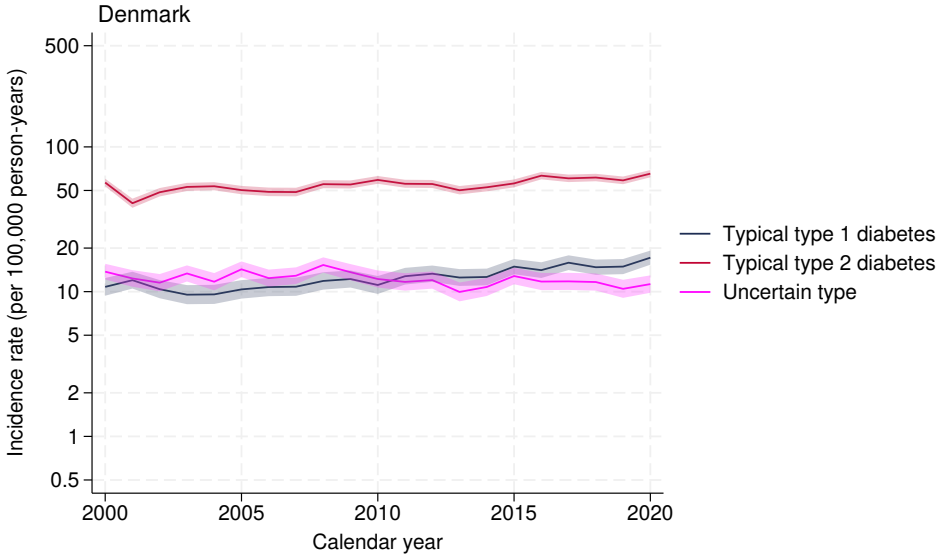
Supplementary Table 8: Average annual change in the incidence rates of diabetes, by country, sex, and diabetes type. Adjusted for age. Includes all uncertain diabetes cases as either type 1 or type 2 diabetes. Numbers in brackets represent 95% confidence intervals.

Country	Period	Sex	Typical type 1 diabetes	Typical type 2 diabetes
Australia	2005-2017	Overall	−0.8 (−1.2, −0.4)	−0.5 (−0.7, −0.2)
		Males	0.4 (−0.2, 0.9)	1.9 (1.6, 2.2)
		Females	−1.9 (−2.5, −1.4)	−3.0 (−3.3, −2.7)
Denmark	2000-2020	Overall	1.1 (0.7, 1.5)	1.6 (1.4, 1.8)
		Males	1.2 (0.7, 1.7)	1.7 (1.5, 2.0)
		Females	1.0 (0.3, 1.6)	1.5 (1.2, 1.8)
Finland	2000-2017	Overall	−0.4 (−0.8, −0.0)	2.2 (1.9, 2.4)
		Males	−0.1 (−0.7, 0.4)	3.3 (2.9, 3.6)
		Females	−0.7 (−1.3, −0.1)	1.1 (0.7, 1.4)
Hungary	2014-2018	Overall	−0.1 (−2.9, 2.8)	−0.3 (−1.5, 0.9)
		Males	0.7 (−2.7, 4.3)	0.3 (−1.4, 2.1)
		Females	−1.7 (−6.3, 3.1)	−0.9 (−2.6, 0.8)
Japan	2015-2018	Overall	6.0 (4.7, 7.4)	8.4 (7.9, 8.9)
		Males	7.6 (5.8, 9.5)	10.1 (9.5, 10.8)
		Females	3.9 (1.9, 6.0)	5.3 (4.5, 6.1)
Scotland	2010-2020	Overall	−0.8 (−1.7, −0.0)	−1.1 (−1.5, −0.6)
		Males	−1.0 (−2.1, 0.2)	−1.1 (−1.7, −0.4)
		Females	−0.7 (−1.9, 0.5)	−1.1 (−1.8, −0.4)
South Korea	2007-2019	Overall	2.8 (0.7, 4.9)	4.6 (4.1, 5.2)
		Males	5.0 (2.1, 8.0)	5.2 (4.5, 5.9)
		Females	0.3 (−2.7, 3.3)	3.5 (2.6, 4.4)
Spain (Catalonia)	2006-2020	Overall	1.9 (1.4, 2.4)	−0.7 (−1.0, −0.4)
		Males	−2.4 (−3.3, −1.6)	−2.5 (−2.9, −2.1)
		Females	4.5 (3.8, 5.2)	1.1 (0.7, 1.5)

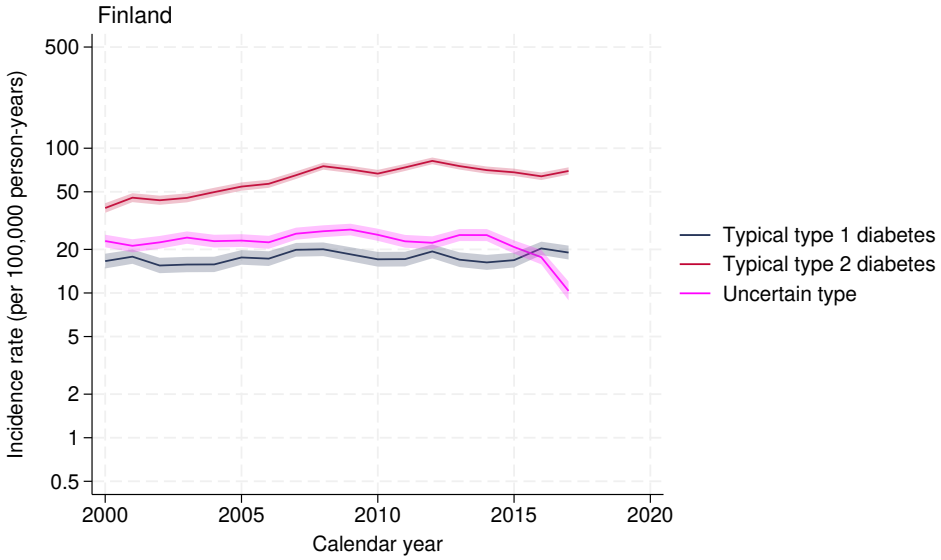
3 Supplementary Figures



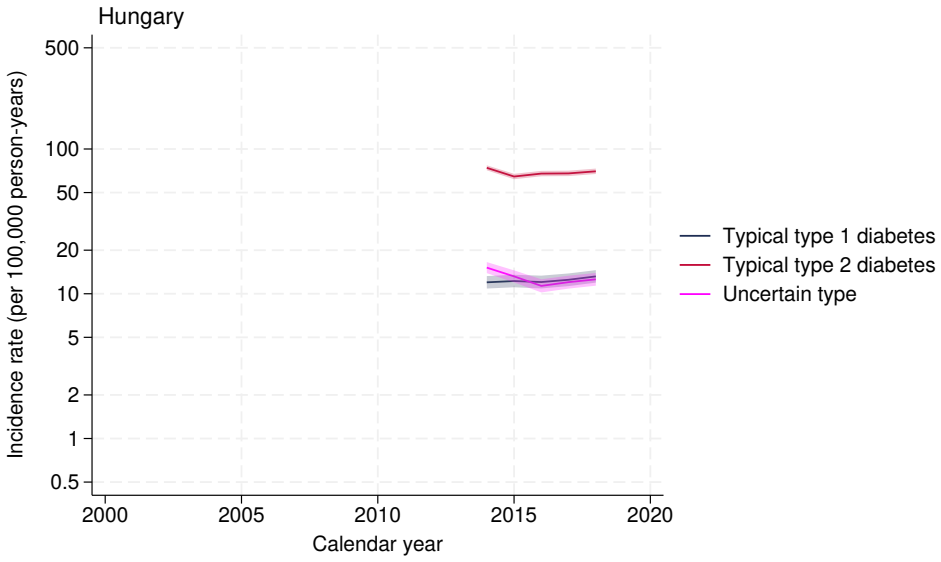
Supplementary Figure 1: Crude incidence rates of diabetes in Australia among people aged 15-39 years, by diabetes type. Shaded areas represent 95% confidence intervals.



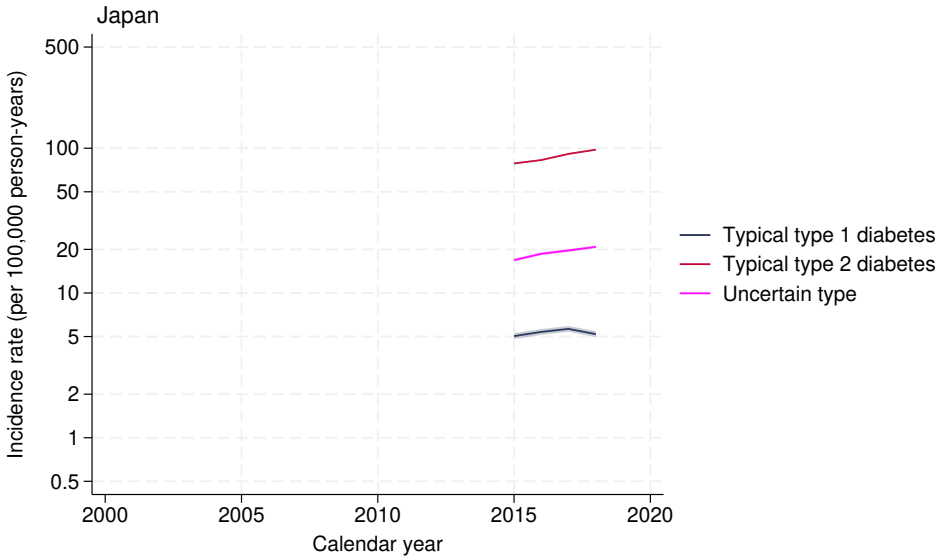
Supplementary Figure 2: Crude incidence rates of diabetes in Denmark among people aged 15-39 years, by diabetes type. Shaded areas represent 95% confidence intervals.



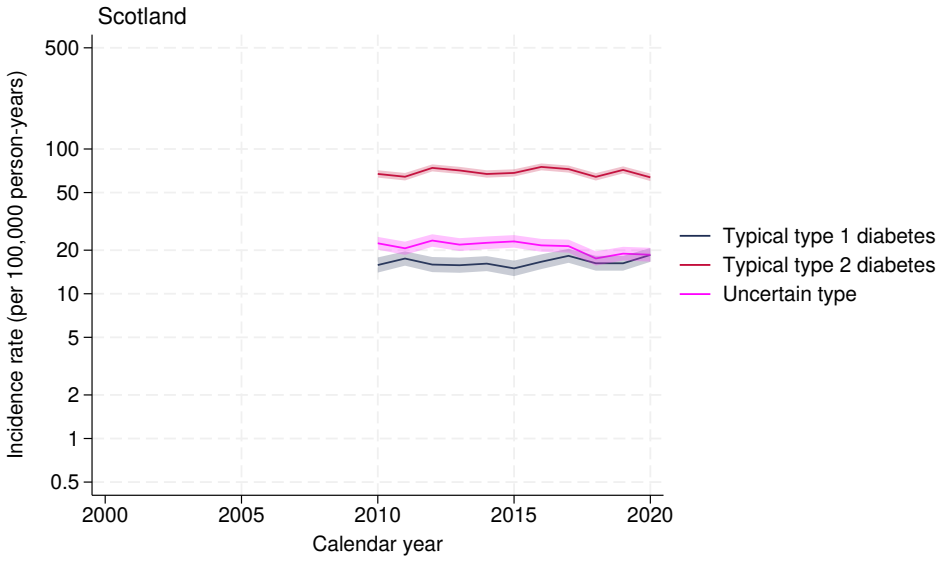
Supplementary Figure 3: Crude incidence rates of diabetes in Finland among people aged 15-39 years, by diabetes type. Shaded areas represent 95% confidence intervals.



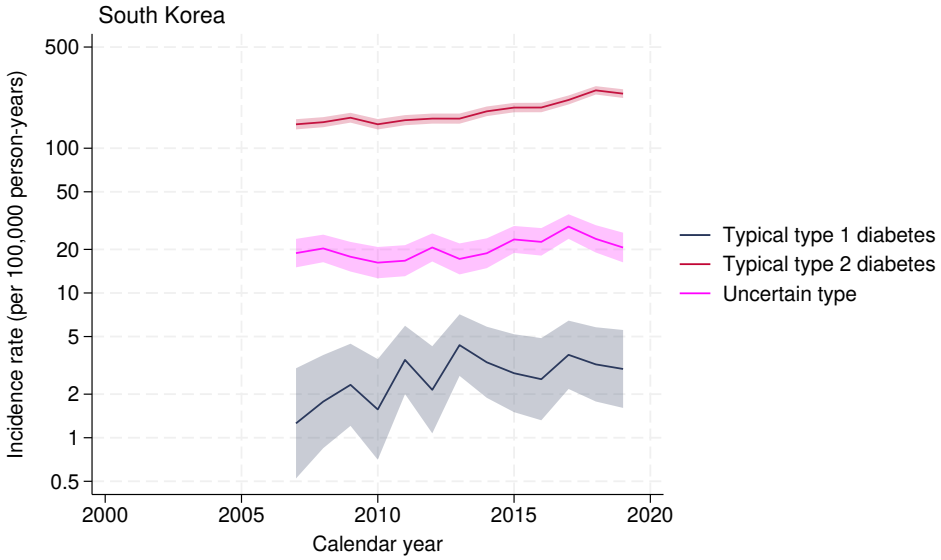
Supplementary Figure 4: Crude incidence rates of diabetes in Hungary among people aged 15-39 years, by diabetes type. Shaded areas represent 95% confidence intervals.



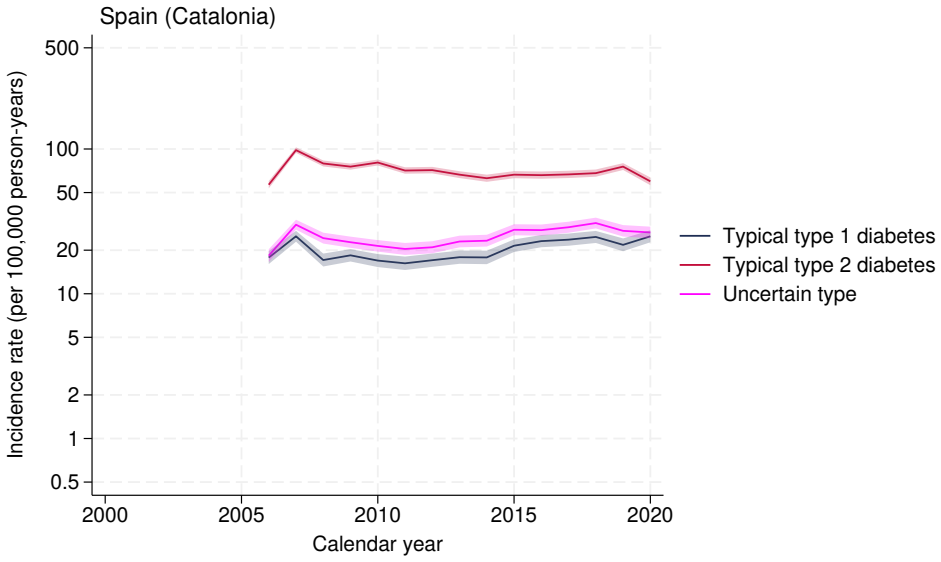
Supplementary Figure 5: Crude incidence rates of diabetes in Japan among people aged 15-39 years, by diabetes type. Shaded areas represent 95% confidence intervals.



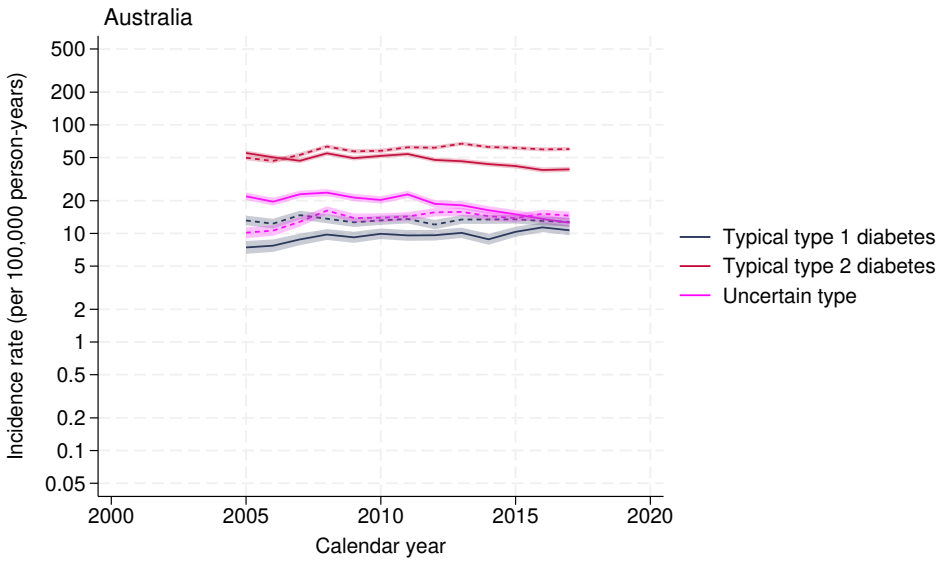
Supplementary Figure 6: Crude incidence rates of diabetes in Scotland among people aged 15-39 years, by diabetes type. Shaded areas represent 95% confidence intervals.



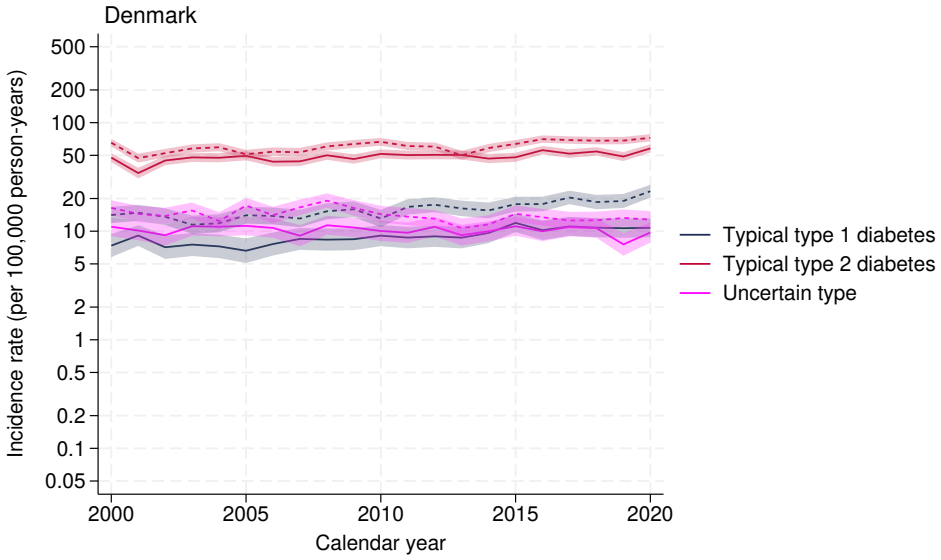
Supplementary Figure 7: Crude incidence rates of diabetes in South Korea among people aged 15-39 years, by diabetes type. Shaded areas represent 95% confidence intervals.



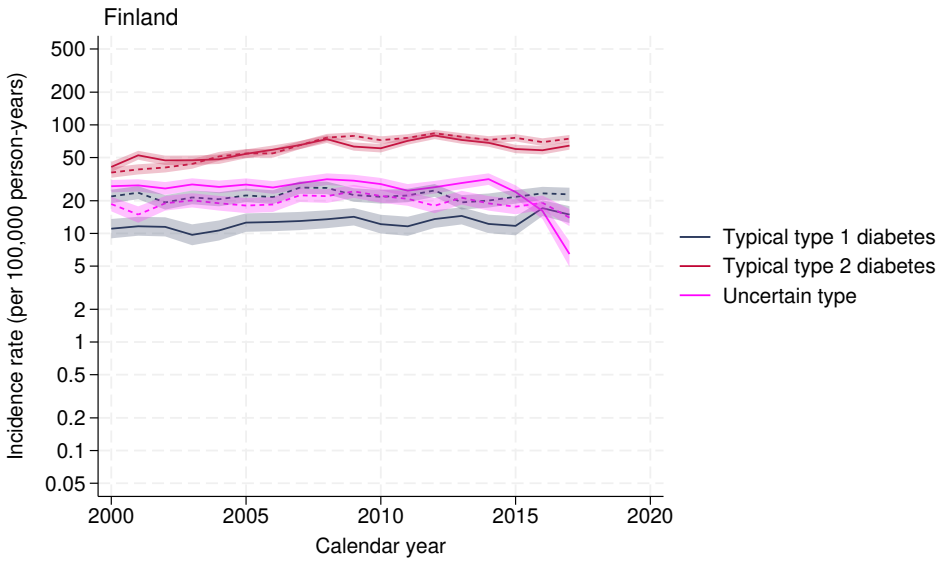
Supplementary Figure 8: Crude incidence rates of diabetes in Spain (Catalonia) among people aged 15-39 years, by diabetes type. Shaded areas represent 95% confidence intervals.



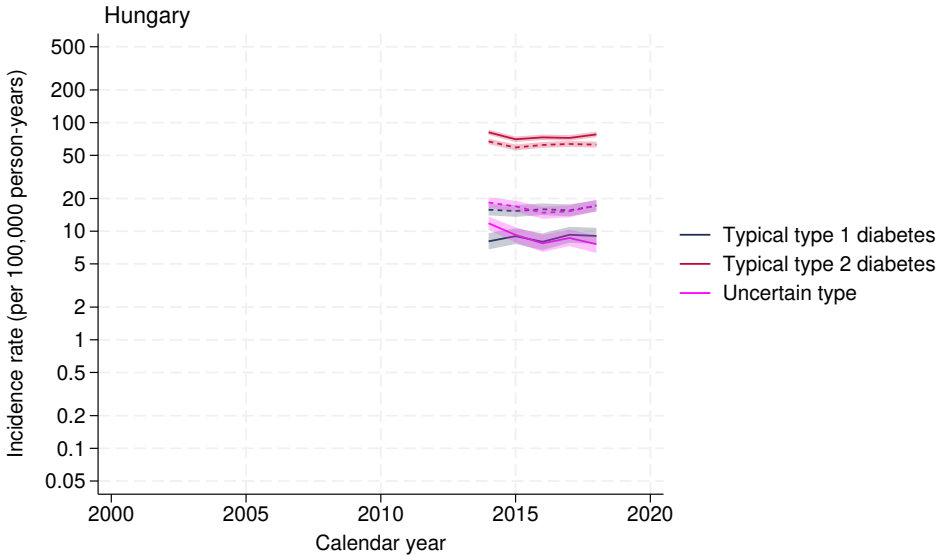
Supplementary Figure 9: Crude incidence rates of diabetes in Australia among people aged 15-39 years, by diabetes type and sex. Females = solid connecting lines; males = dashed connecting lines. Shaded areas represent 95% confidence intervals.



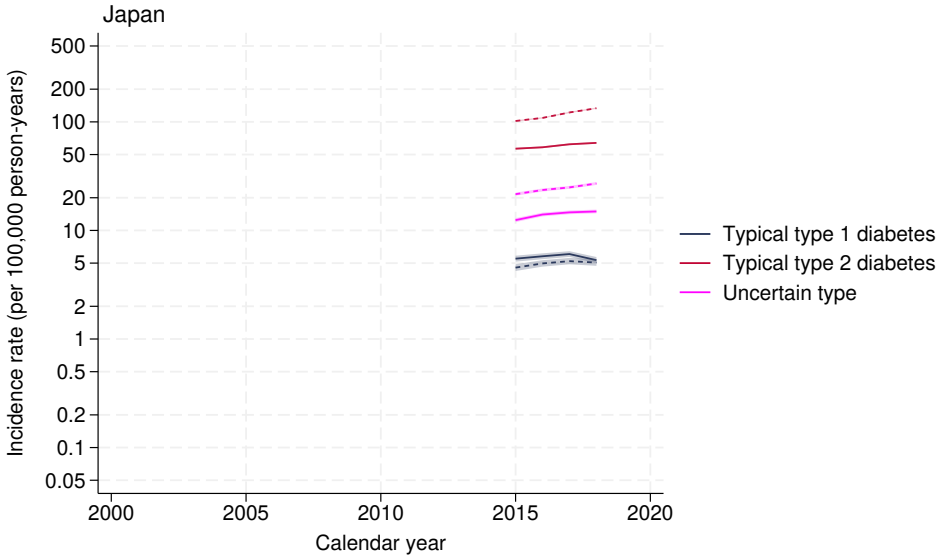
Supplementary Figure 10: Crude incidence rates of diabetes in Denmark among people aged 15-39 years, by diabetes type and sex. Females = solid connecting lines; males = dashed connecting lines. Shaded areas represent 95% confidence intervals.



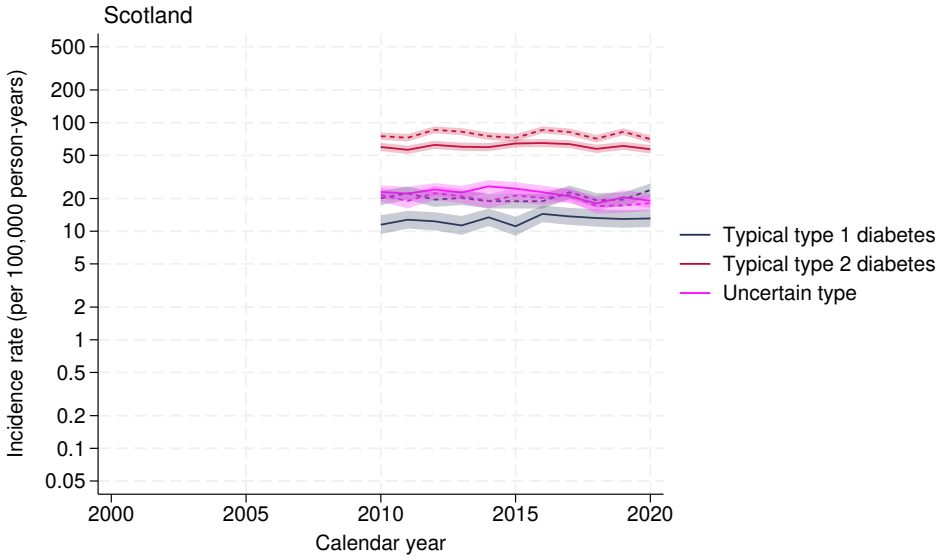
Supplementary Figure 11: Crude incidence rates of diabetes in Finland among people aged 15-39 years, by diabetes type and sex. Females = solid connecting lines; males = dashed connecting lines. Shaded areas represent 95% confidence intervals.



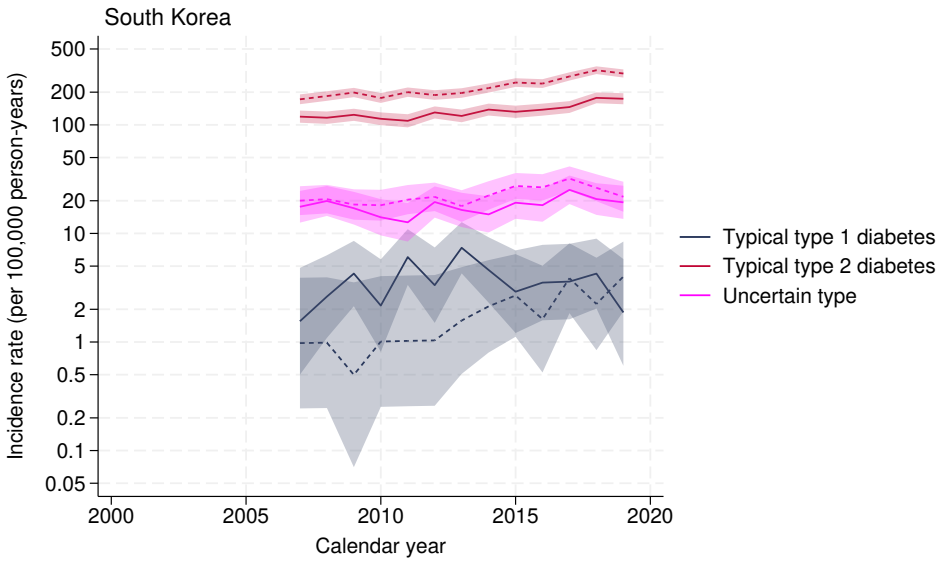
Supplementary Figure 12: Crude incidence rates of diabetes in Hungary among people aged 15-39 years, by diabetes type and sex. Females = solid connecting lines; males = dashed connecting lines. Shaded areas represent 95% confidence intervals.



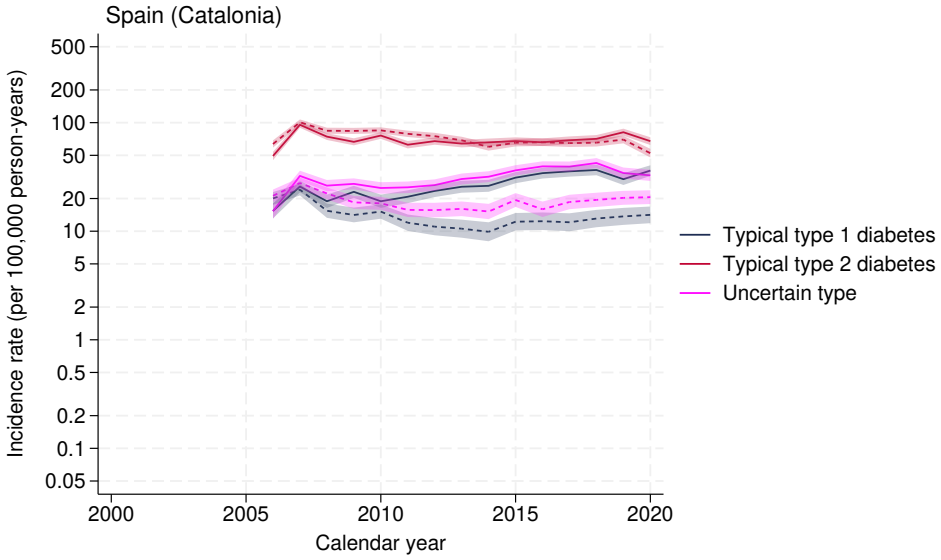
Supplementary Figure 13: Crude incidence rates of diabetes in Japan among people aged 15-39 years, by diabetes type and sex. Females = solid connecting lines; males = dashed connecting lines. Shaded areas represent 95% confidence intervals.



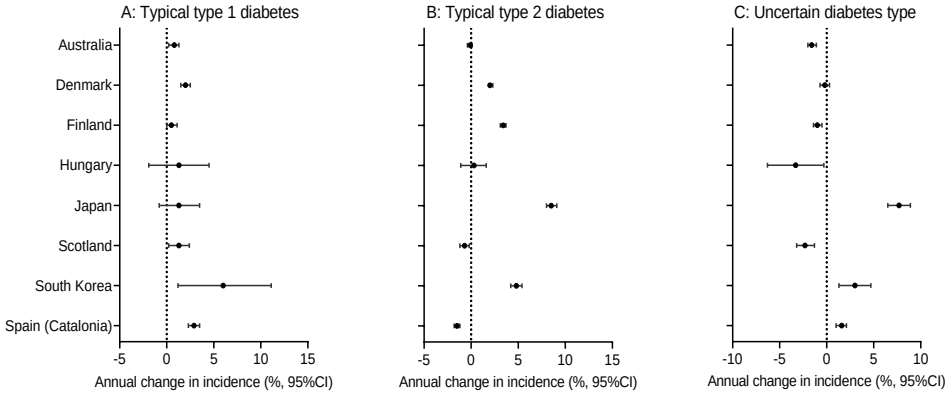
Supplementary Figure 14: Crude incidence rates of diabetes in Scotland among people aged 15-39 years, by diabetes type and sex. Females = solid connecting lines; males = dashed connecting lines. Shaded areas represent 95% confidence intervals.



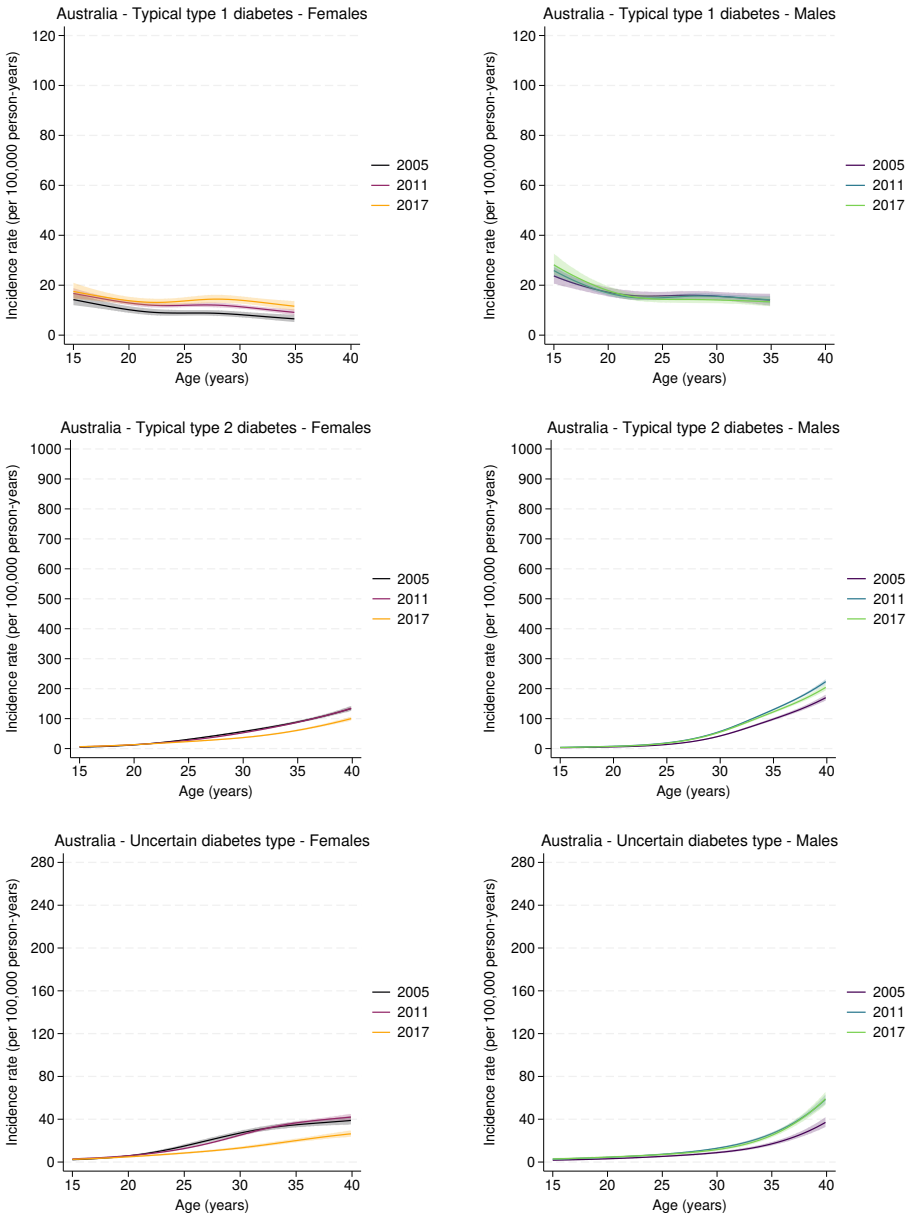
Supplementary Figure 15: Crude incidence rates of diabetes in South Korea among people aged 15-39 years, by diabetes type and sex. Females = solid connecting lines; males = dashed connecting lines. Shaded areas represent 95% confidence intervals.



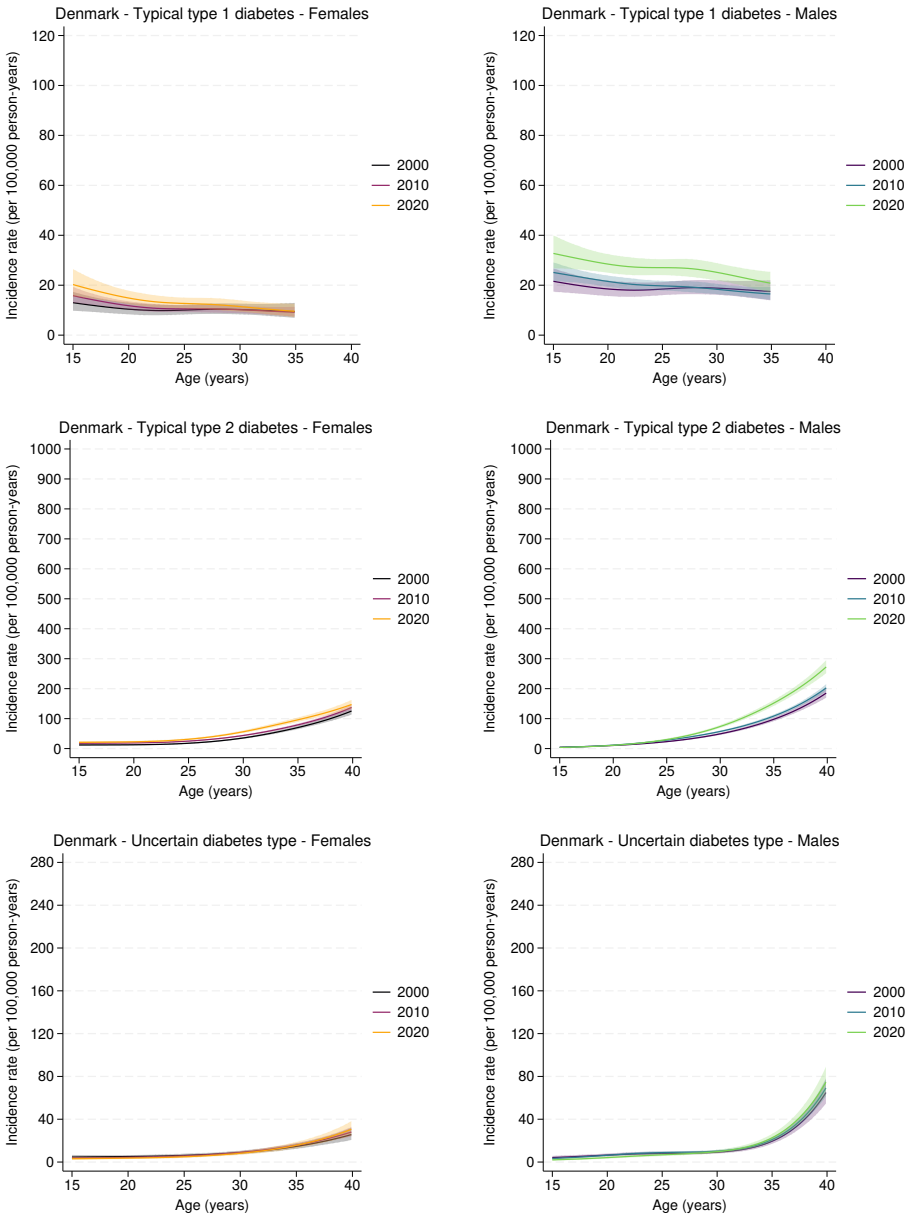
Supplementary Figure 16: Crude incidence rates of diabetes in Spain (Catalonia) among people aged 15-39 years, by diabetes type and sex. Females = solid connecting lines; males = dashed connecting lines. Shaded areas represent 95% confidence intervals.



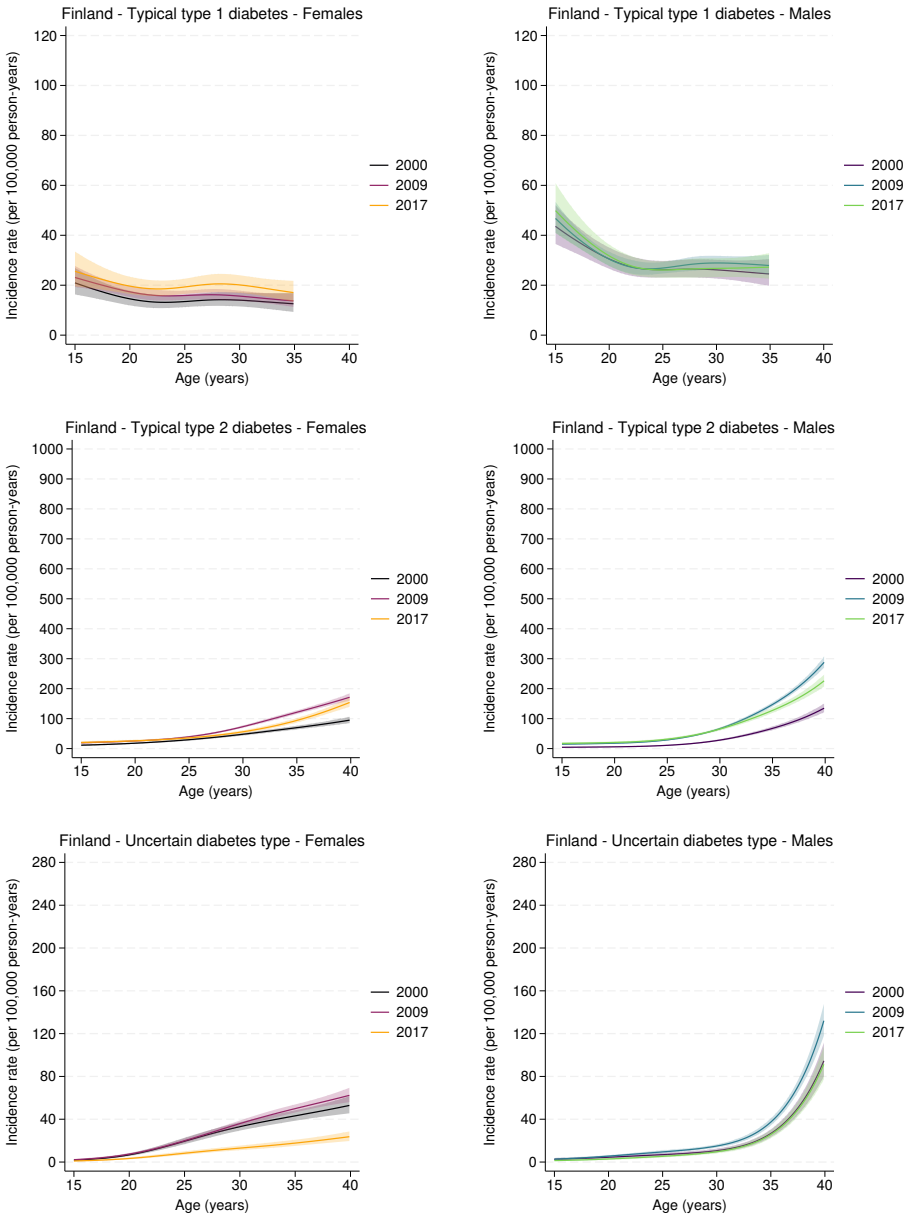
Supplementary Figure 17: Average annual change in the incidence rates of diabetes, by jurisdiction and diabetes type.



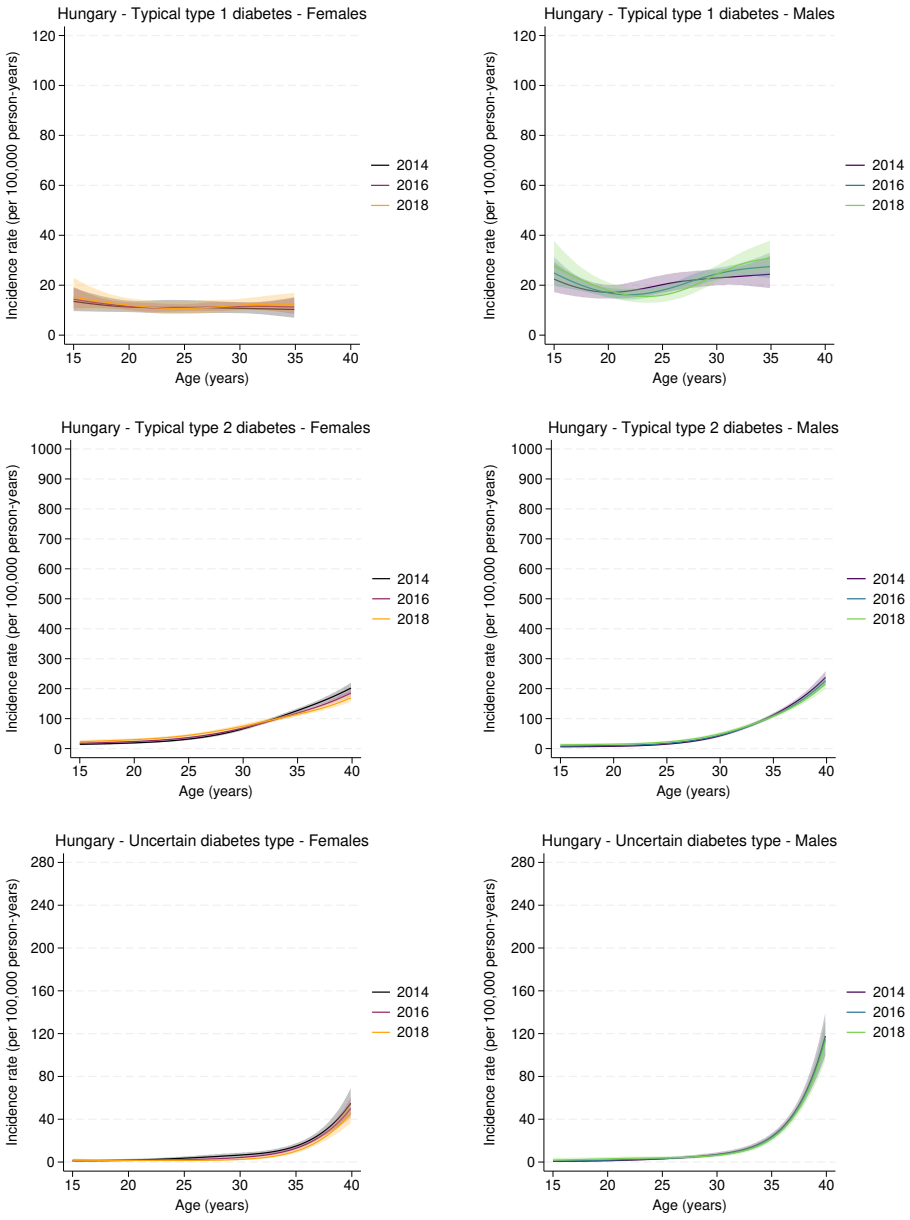
Supplementary Figure 18: Incidence rates of diabetes in Australia by age for the first, middle, and last calendar year of follow-up, by diabetes type and sex. Shaded areas represent 95% confidence intervals.



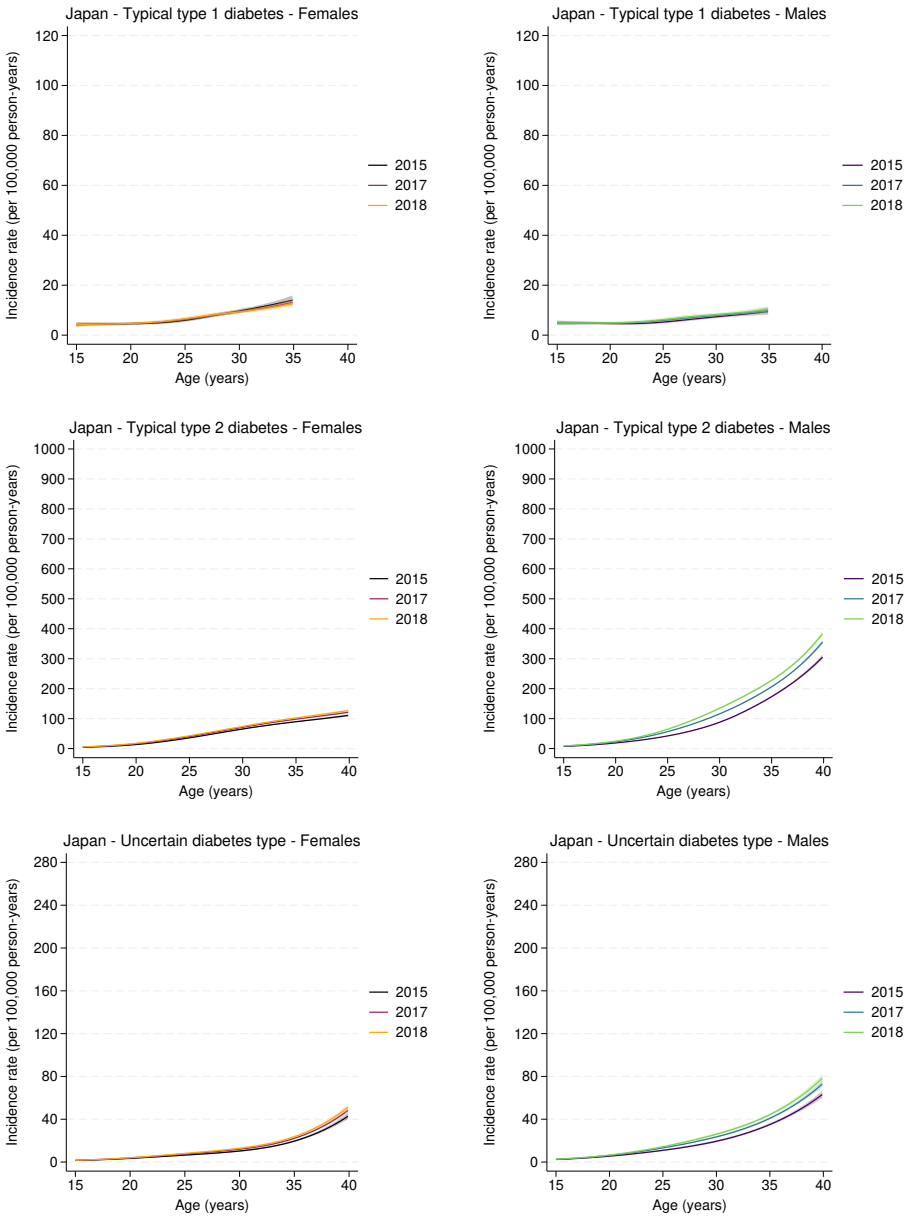
Supplementary Figure 19: Incidence rates of diabetes in Denmark by age for the first, middle, and last calendar year of follow-up, by diabetes type and sex. Shaded areas represent 95% confidence intervals.



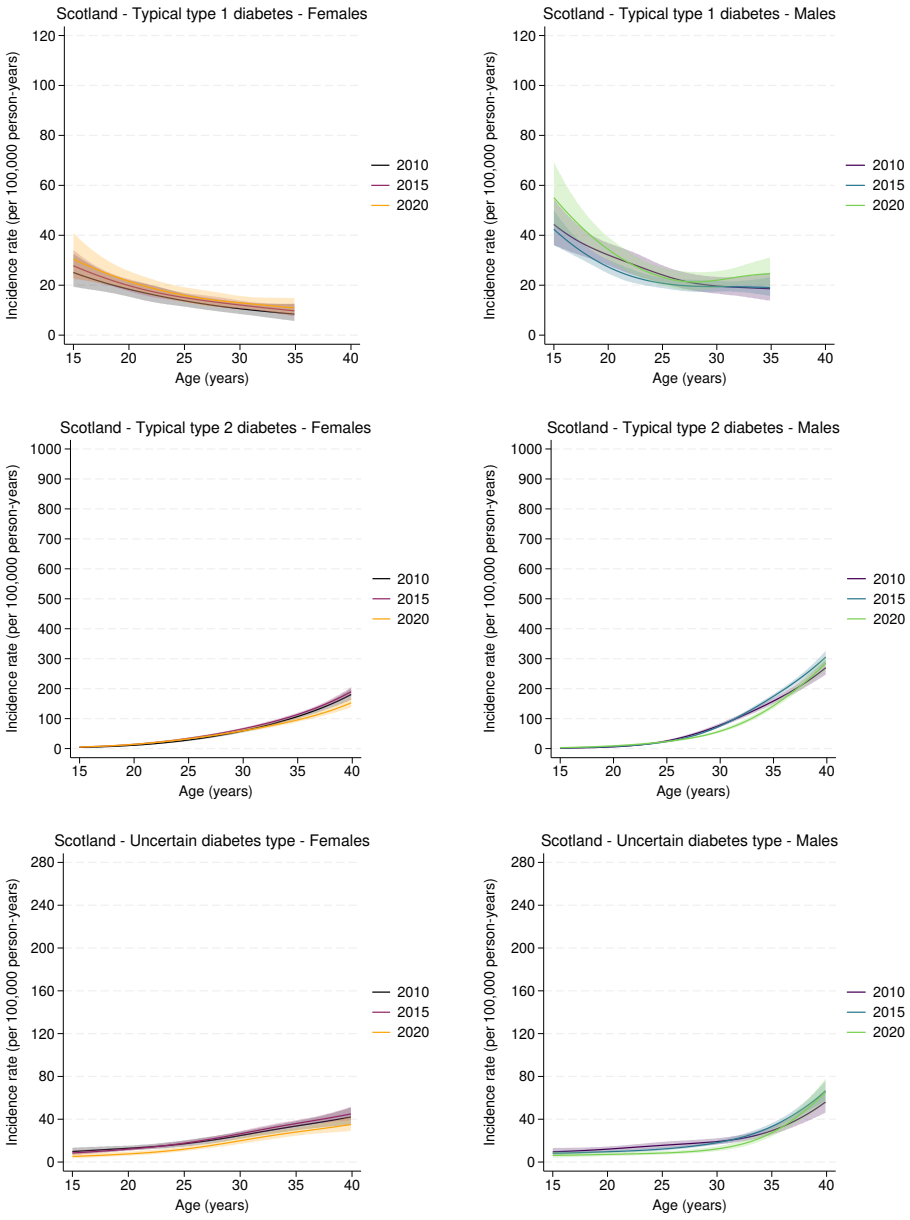
Supplementary Figure 20: Incidence rates of diabetes in Finland by age for the first, middle, and last calendar year of follow-up, by diabetes type and sex. Shaded areas represent 95% confidence intervals.



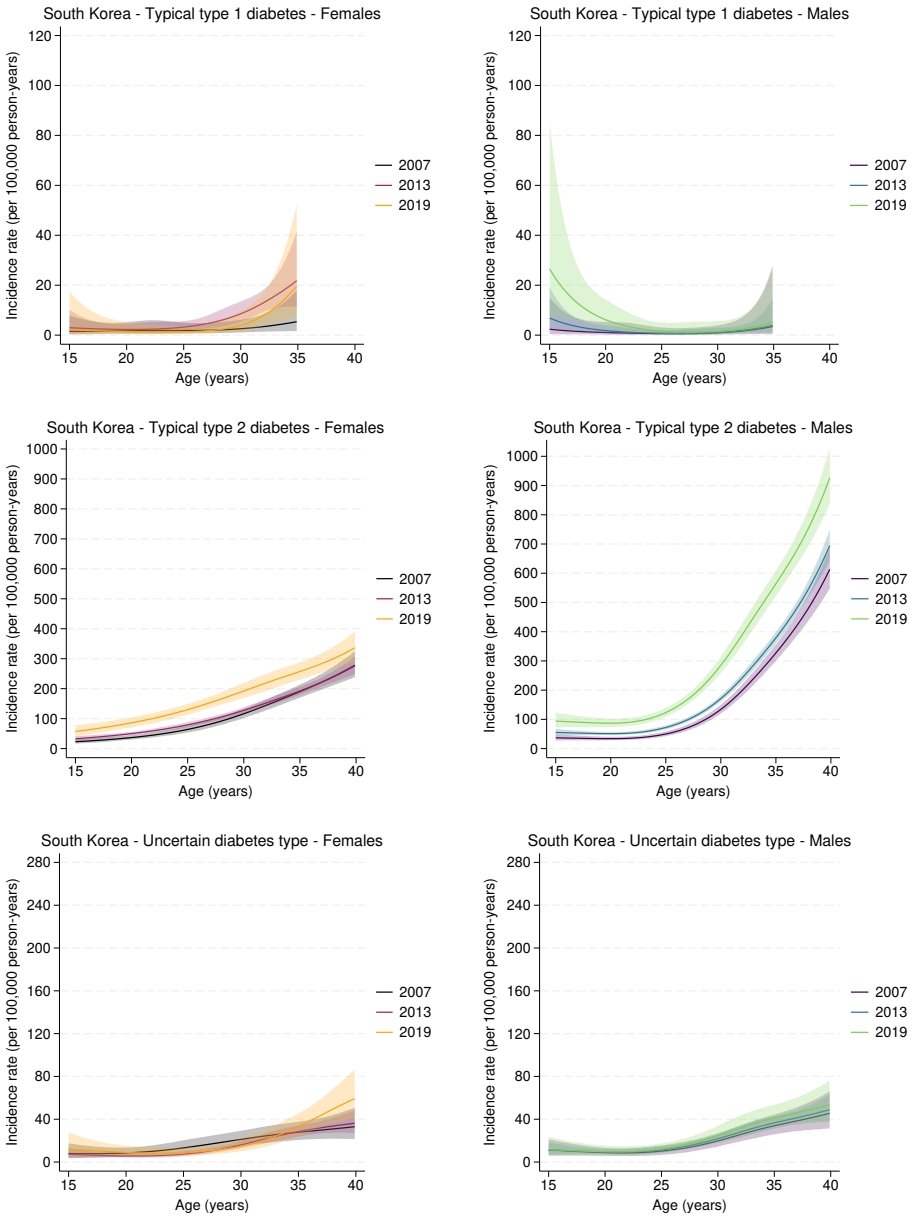
Supplementary Figure 21: Incidence rates of diabetes in Hungary by age for the first, middle, and last calendar year of follow-up, by diabetes type and sex. Shaded areas represent 95% confidence intervals.



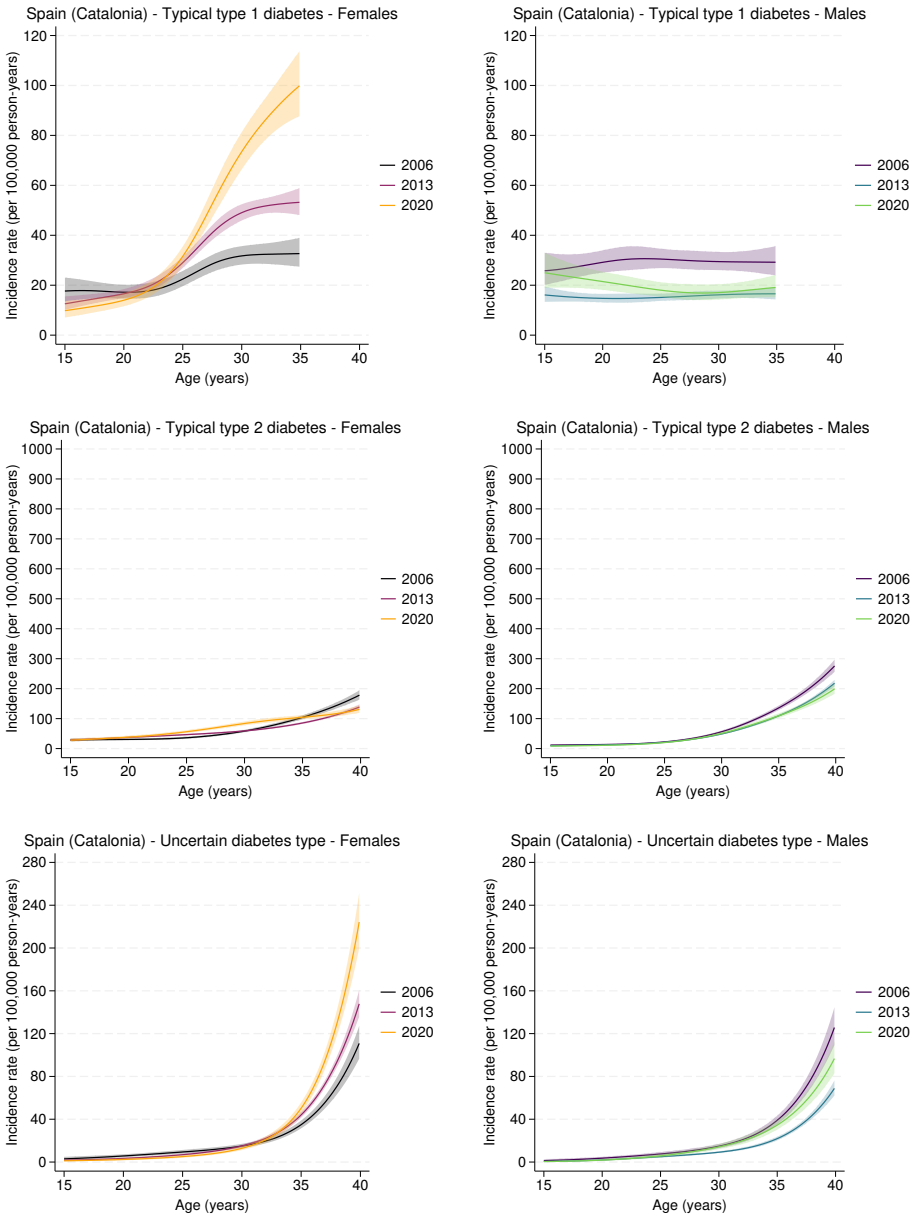
Supplementary Figure 22: Incidence rates of diabetes in Japan by age for the first, middle, and last calendar year of follow-up, by diabetes type and sex. Shaded areas represent 95% confidence intervals.



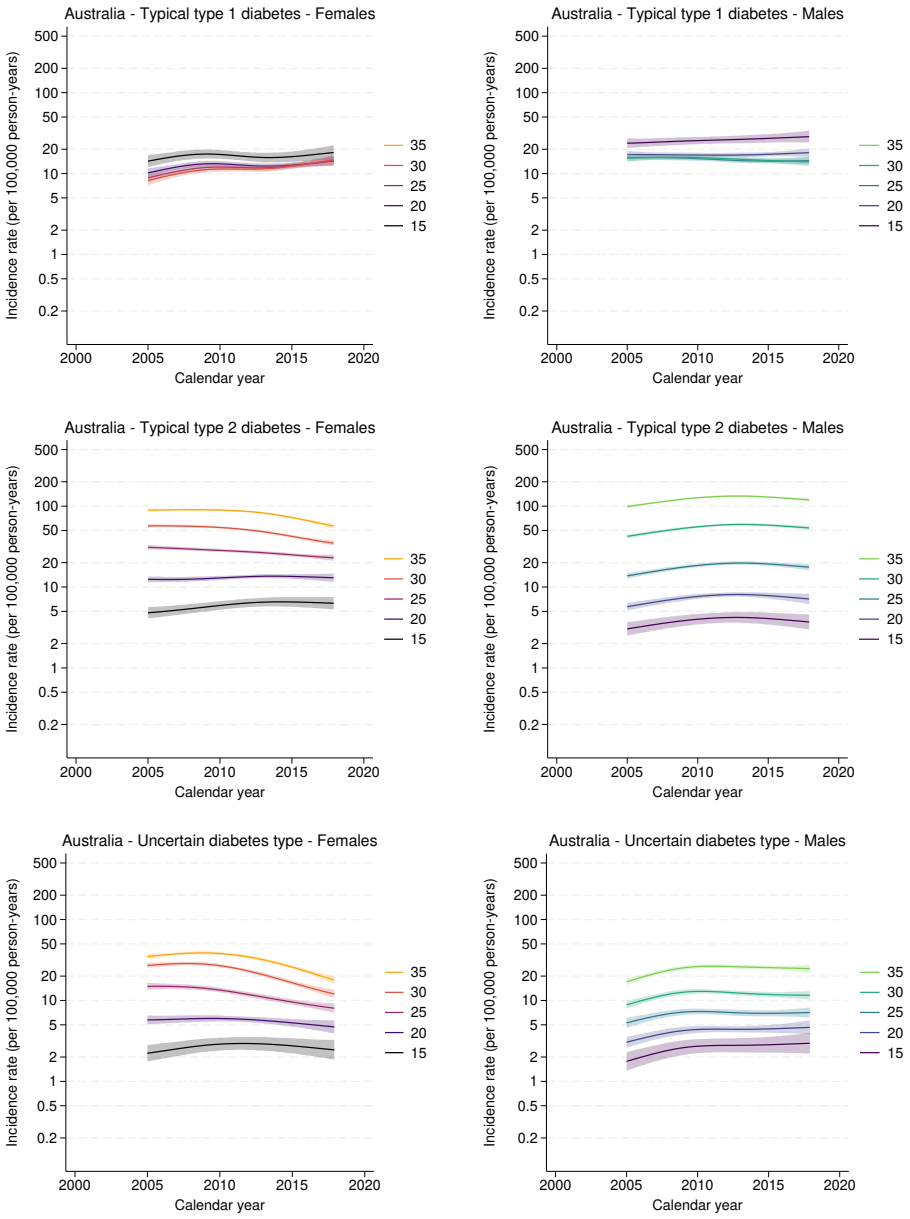
Supplementary Figure 23: Incidence rates of diabetes in Scotland by age for the first, middle, and last calendar year of follow-up, by diabetes type and sex. Shaded areas represent 95% confidence intervals.



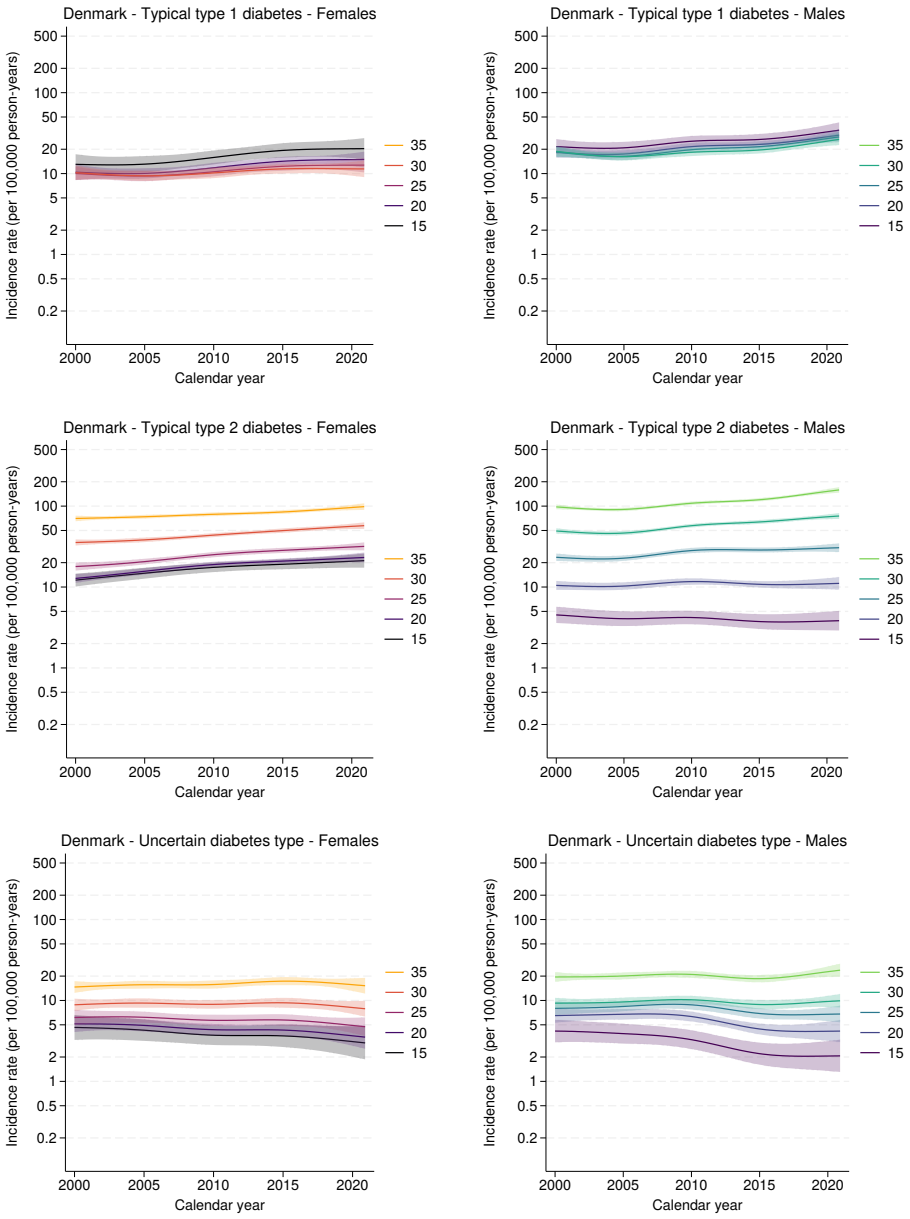
Supplementary Figure 24: Incidence rates of diabetes in South Korea by age for the first, middle, and last calendar year of follow-up, by diabetes type and sex. Shaded areas represent 95% confidence intervals.



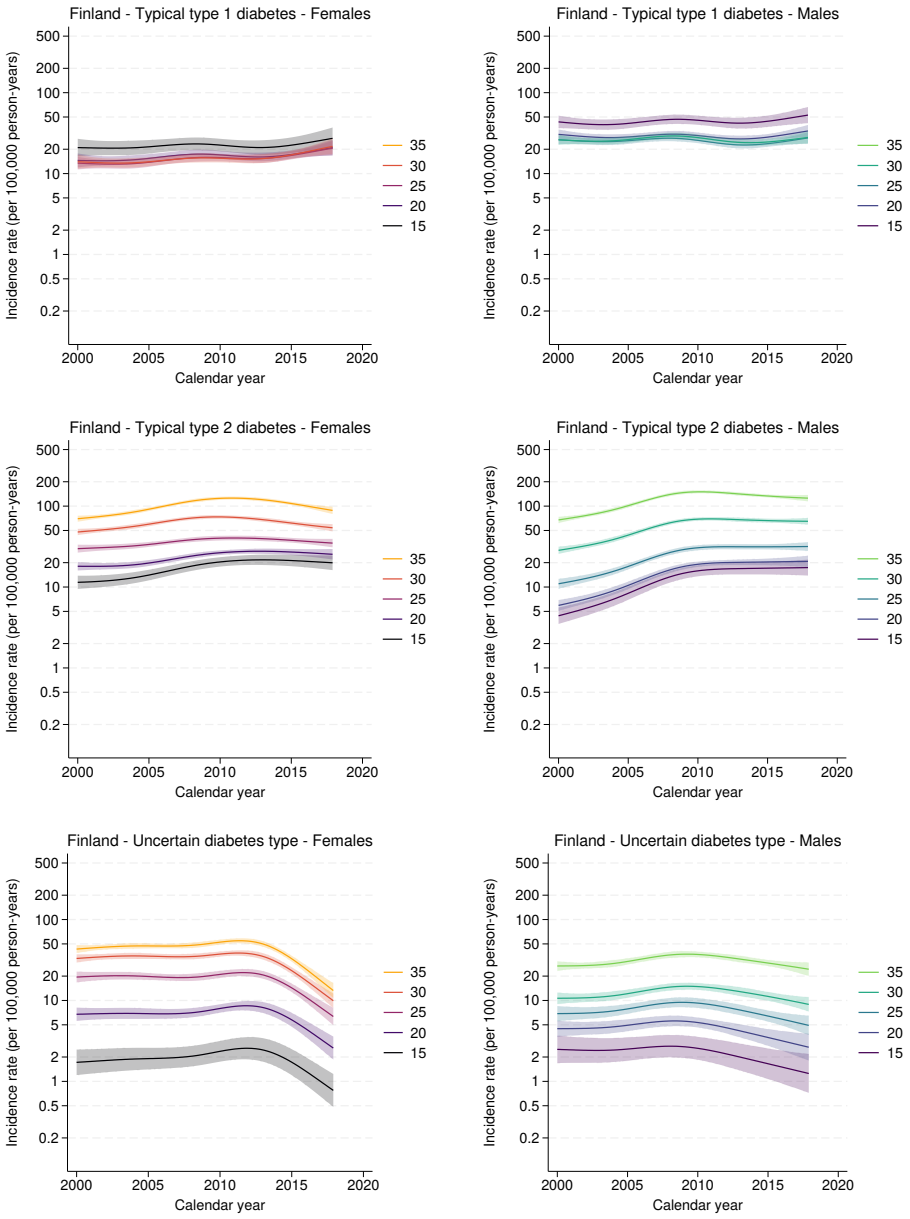
Supplementary Figure 25: Incidence rates of diabetes in Spain (Catalonia) by age for the first, middle, and last calendar year of follow-up, by diabetes type and sex. Shaded areas represent 95% confidence intervals.



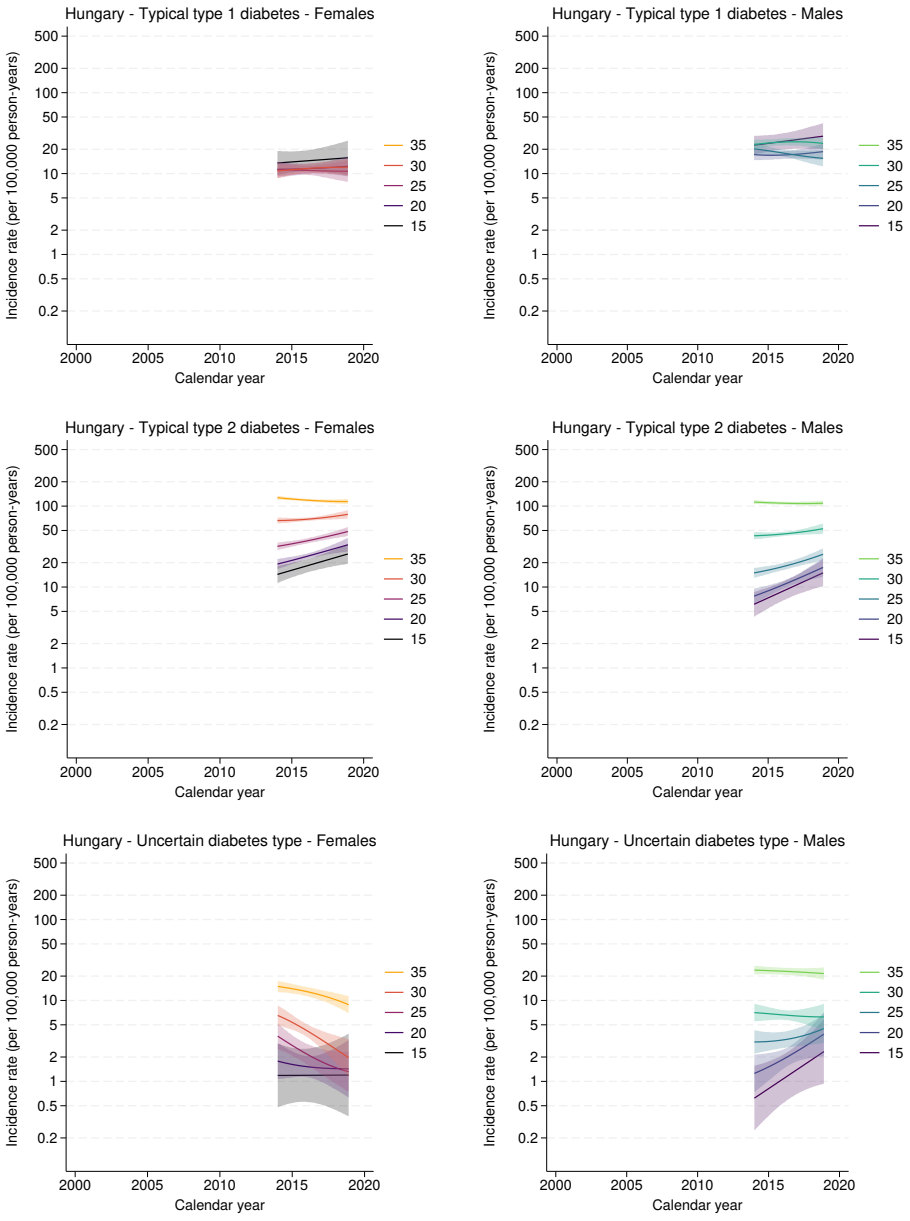
Supplementary Figure 26: Incidence rates of diabetes in Australia for people aged 15, 20, 25, 30, and 35 years, by diabetes type and sex. Shaded areas represent 95% confidence intervals.



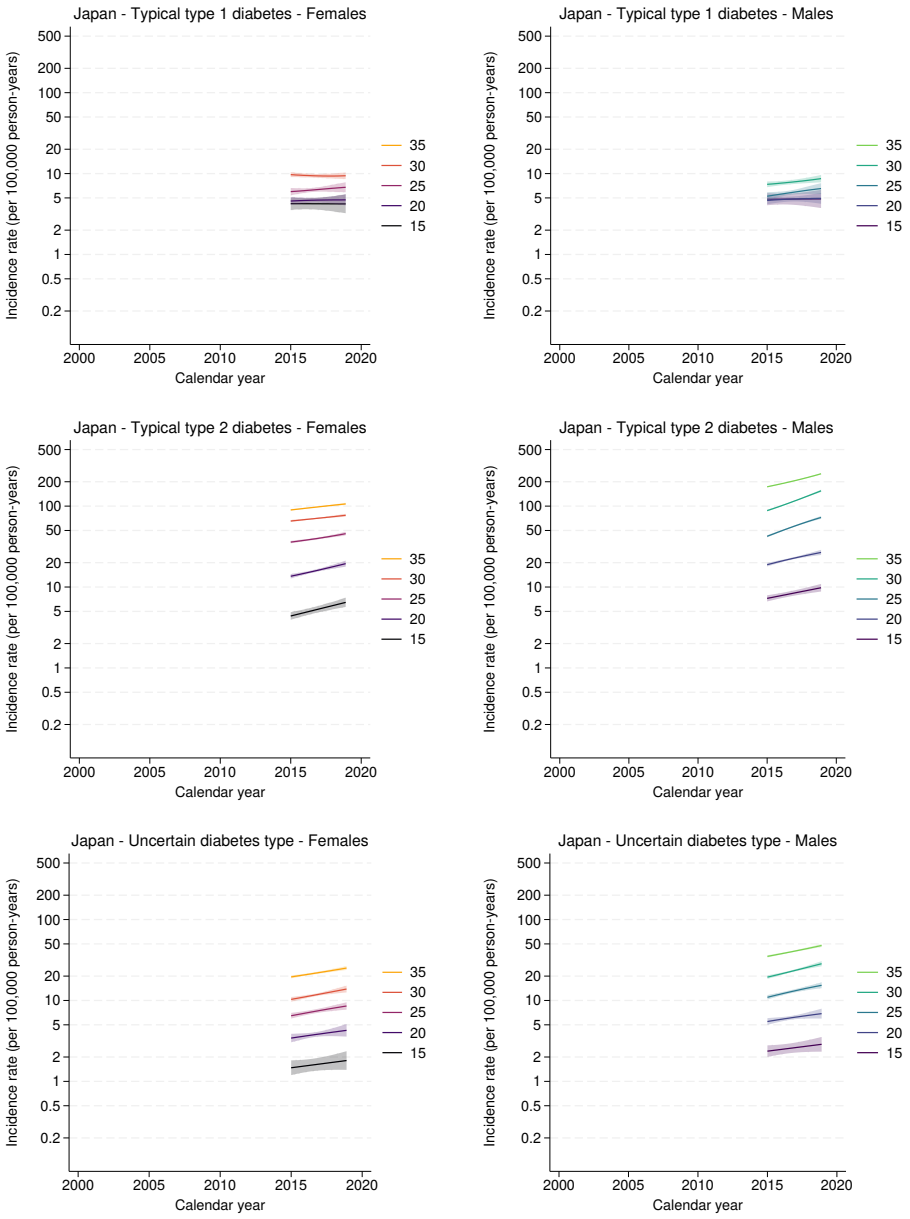
Supplementary Figure 27: Incidence rates of diabetes in Denmark for people aged 15, 20, 25, 30, and 35 years, by diabetes type and sex. Shaded areas represent 95% confidence intervals.



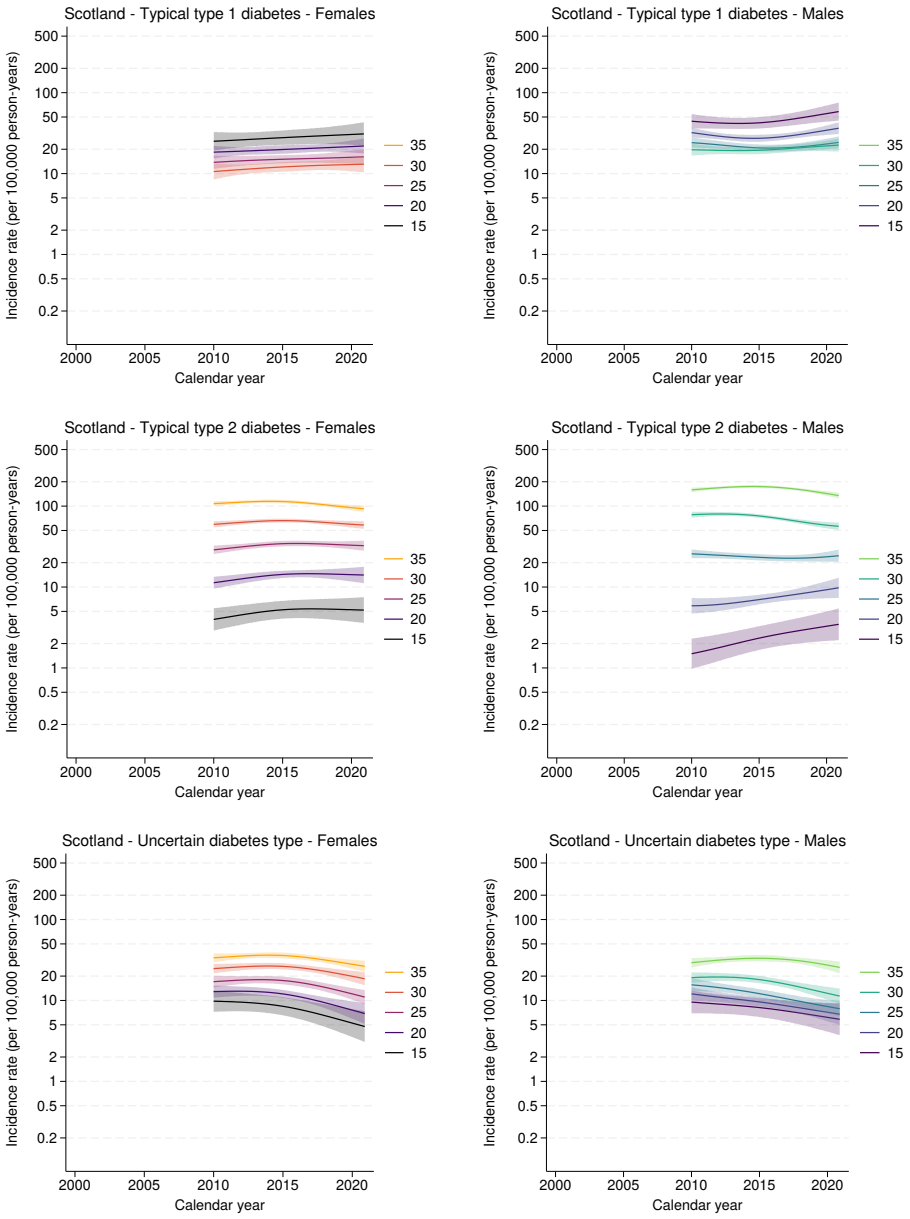
Supplementary Figure 28: Incidence rates of diabetes in Finland for people aged 15, 20, 25, 30, and 35 years, by diabetes type and sex. Shaded areas represent 95% confidence intervals.



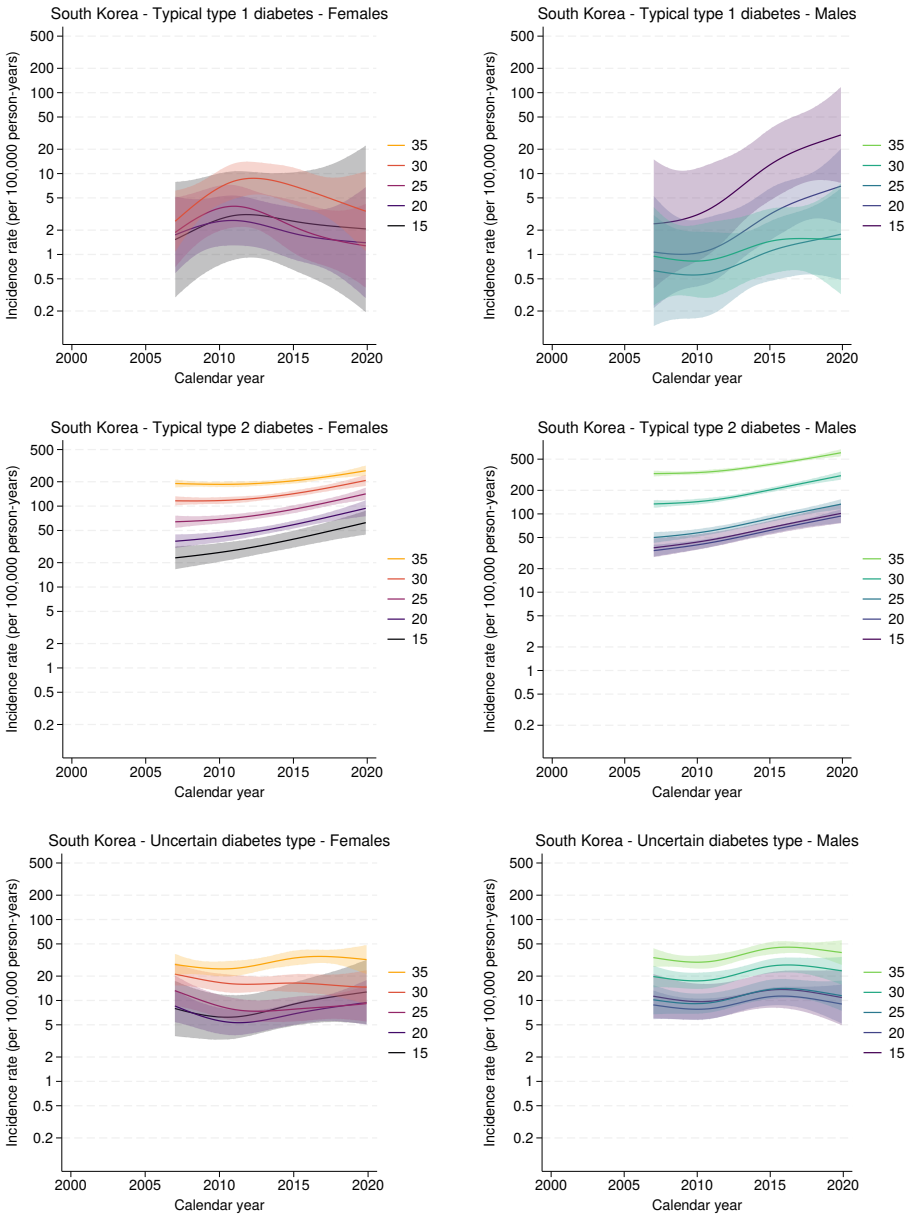
Supplementary Figure 29: Incidence rates of diabetes in Hungary for people aged 15, 20, 25, 30, and 35 years, by diabetes type and sex. Shaded areas represent 95% confidence intervals.



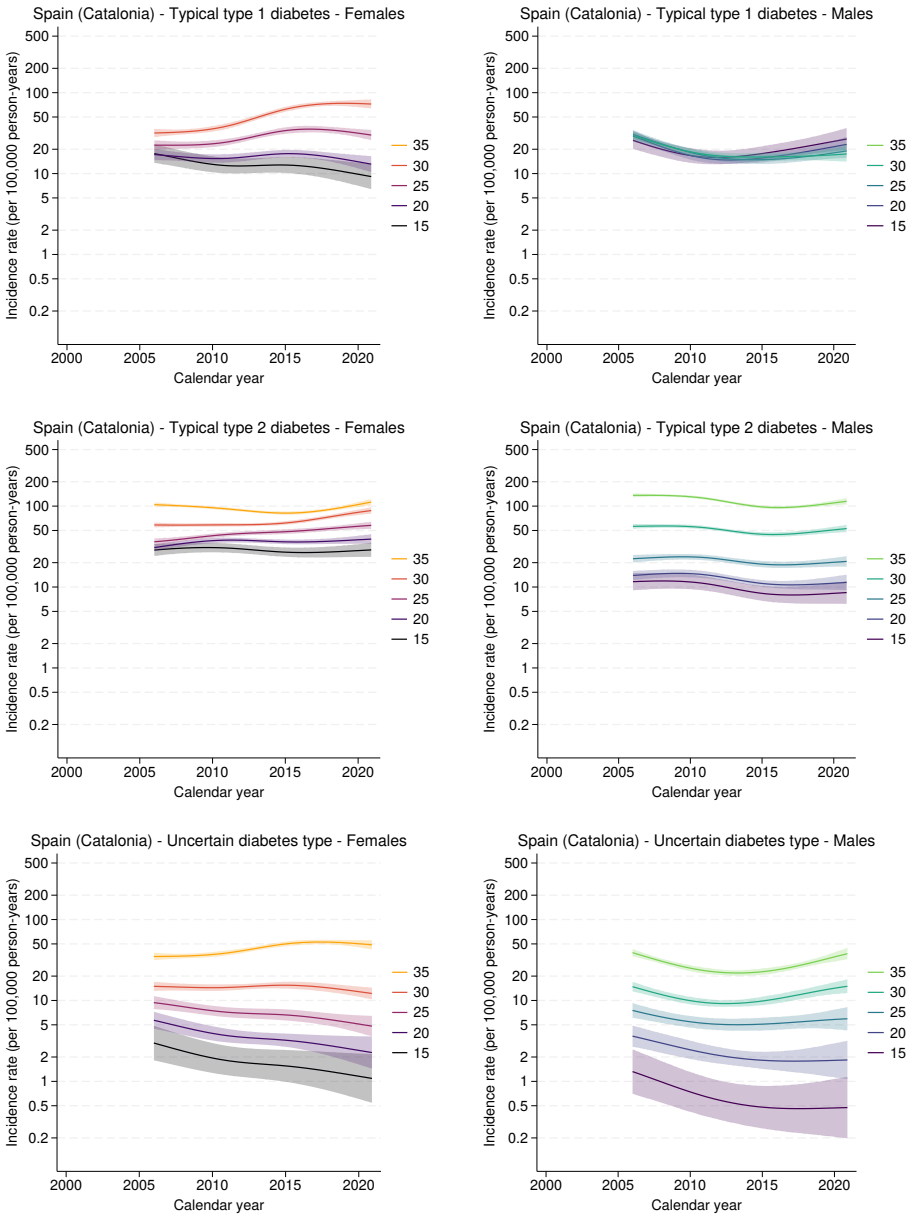
Supplementary Figure 30: Incidence rates of diabetes in Japan for people aged 15, 20, 25, 30, and 35 years, by diabetes type and sex. Shaded areas represent 95% confidence intervals.



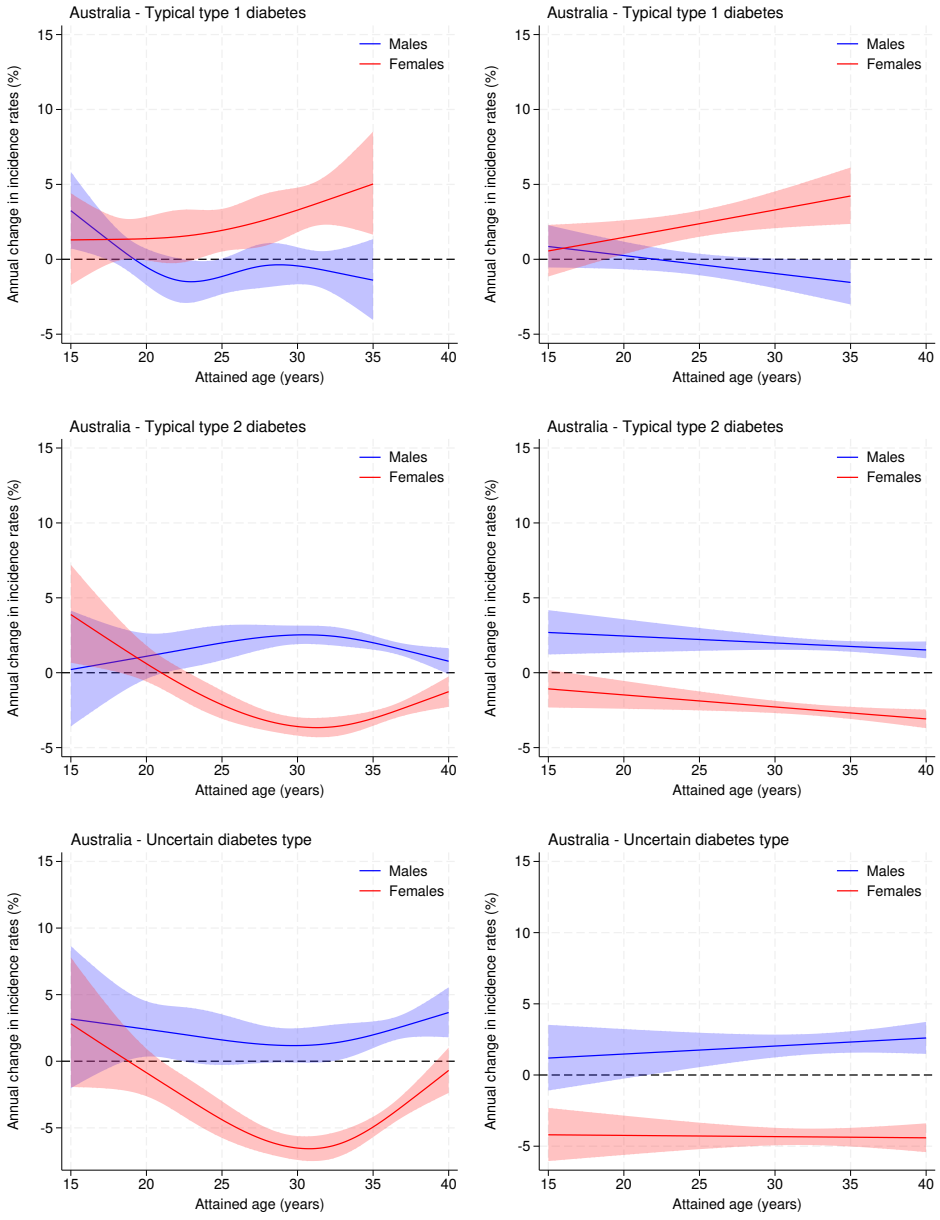
Supplementary Figure 31: Incidence rates of diabetes in Scotland for people aged 15, 20, 25, 30, and 35 years, by diabetes type and sex. Shaded areas represent 95% confidence intervals.



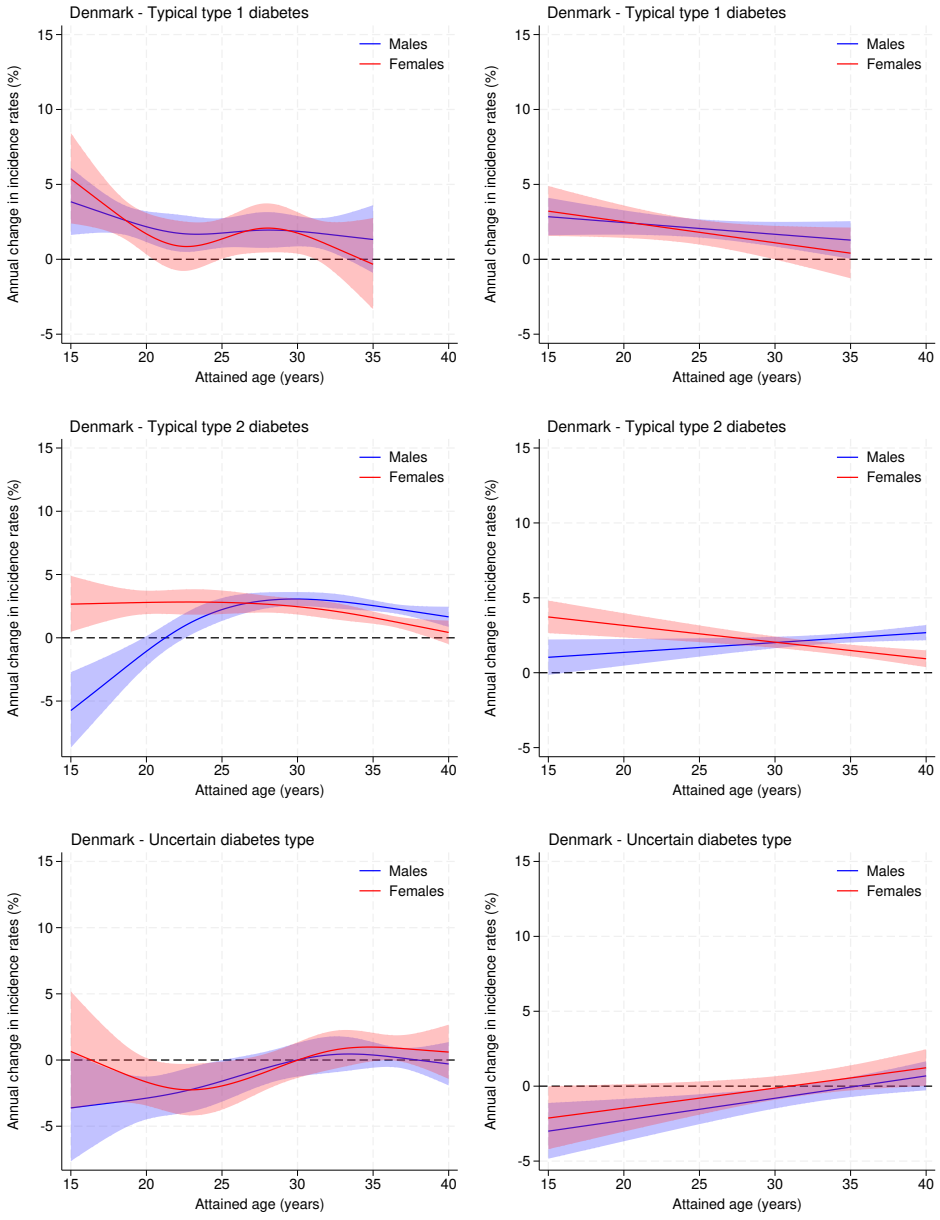
Supplementary Figure 32: Incidence rates of diabetes in South Korea for people aged 15, 20, 25, 30, and 35 years, by diabetes type and sex. Shaded areas represent 95% confidence intervals.



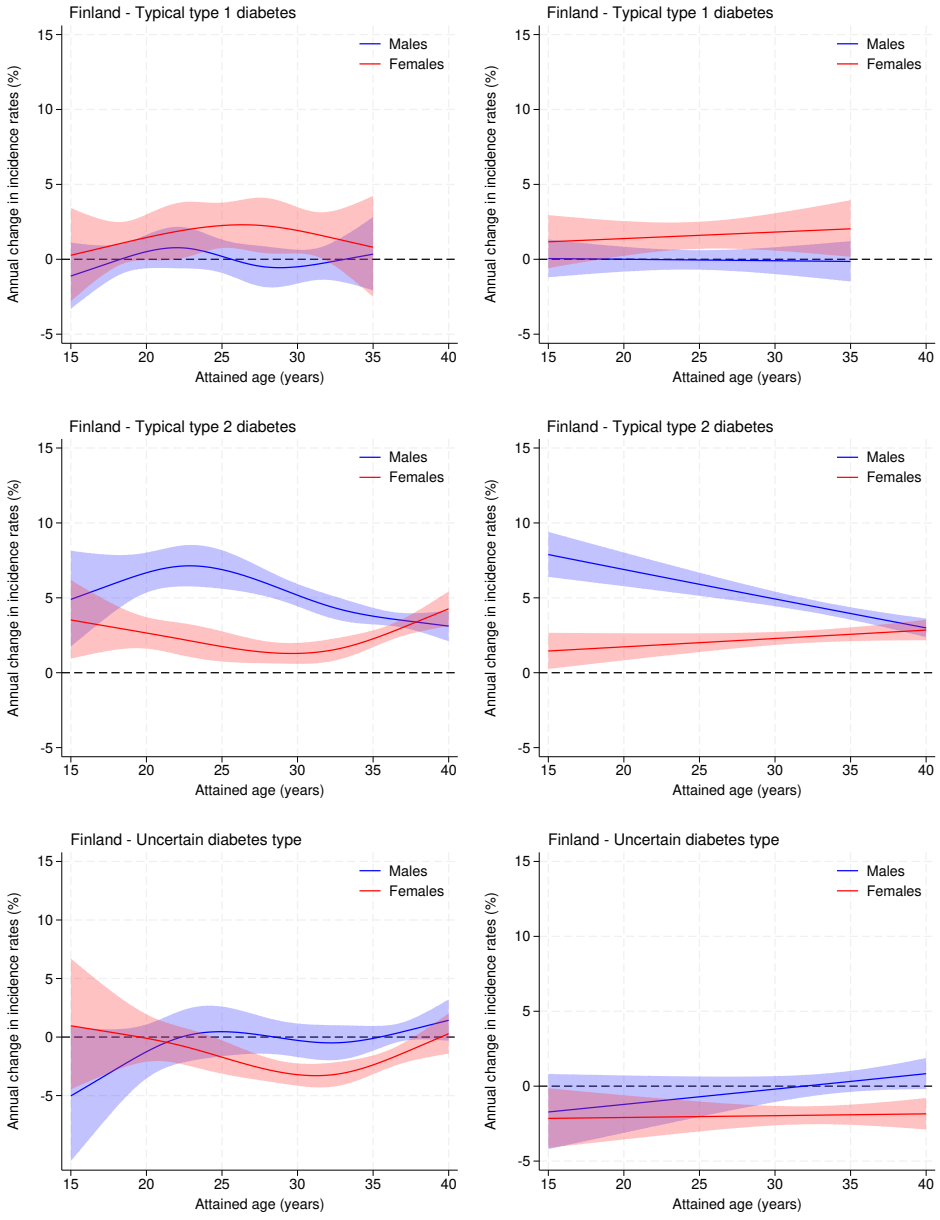
Supplementary Figure 33: Incidence rates of diabetes in Spain (Catalonia) for people aged 15, 20, 25, 30, and 35 years, by diabetes type and sex. Shaded areas represent 95% confidence intervals.



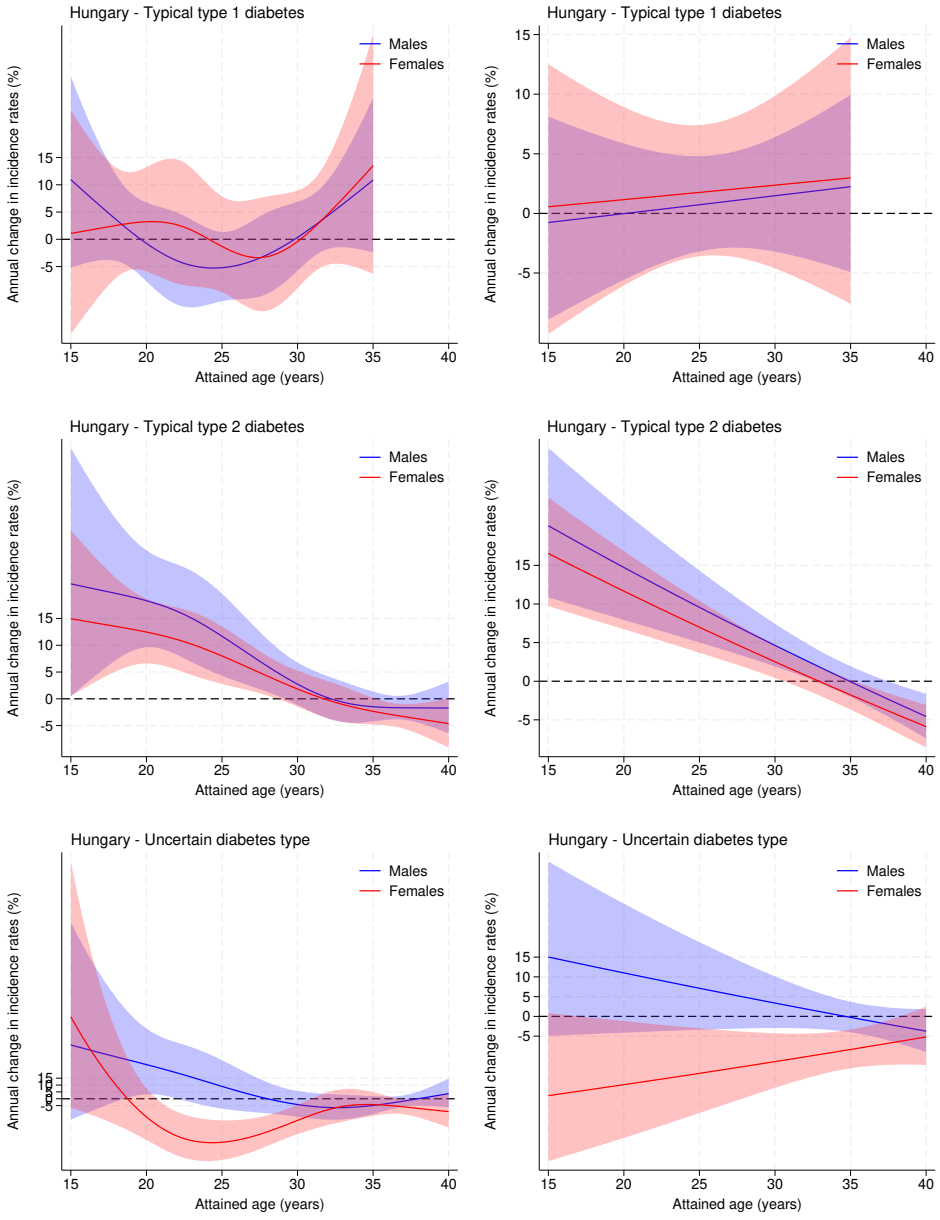
Supplementary Figure 34: Annual change in the incidence rates of diabetes in Australia by age, by diabetes type and sex. Values are predicted from a Poisson model with a spline effect of attained age, a log-linear effect of calendar time, and an interaction between age and calendar time. The left panels use a spline term for age in the interaction, the right panels use the product of age and calendar time in the interaction. Shaded areas represent 95% confidence intervals.



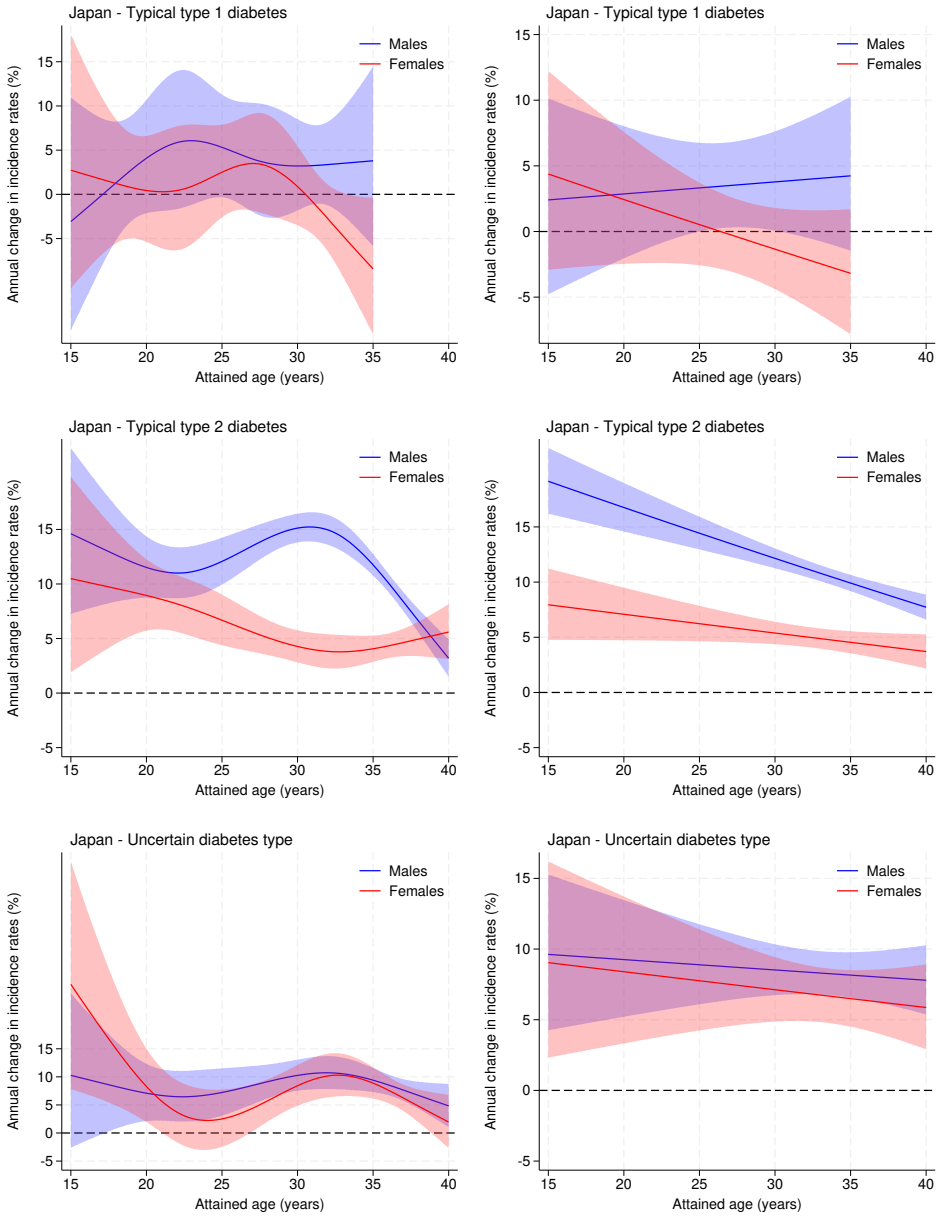
Supplementary Figure 35: Annual change in the incidence rates of diabetes in Denmark by age, by diabetes type and sex. Values are predicted from a Poisson model with a spline effect of attained age, a log-linear effect of calendar time, and an interaction between age and calendar time. The left panels use a spline term for age in the interaction, the right panels use the product of age and calendar time in the interaction. Shaded areas represent 95% confidence intervals.



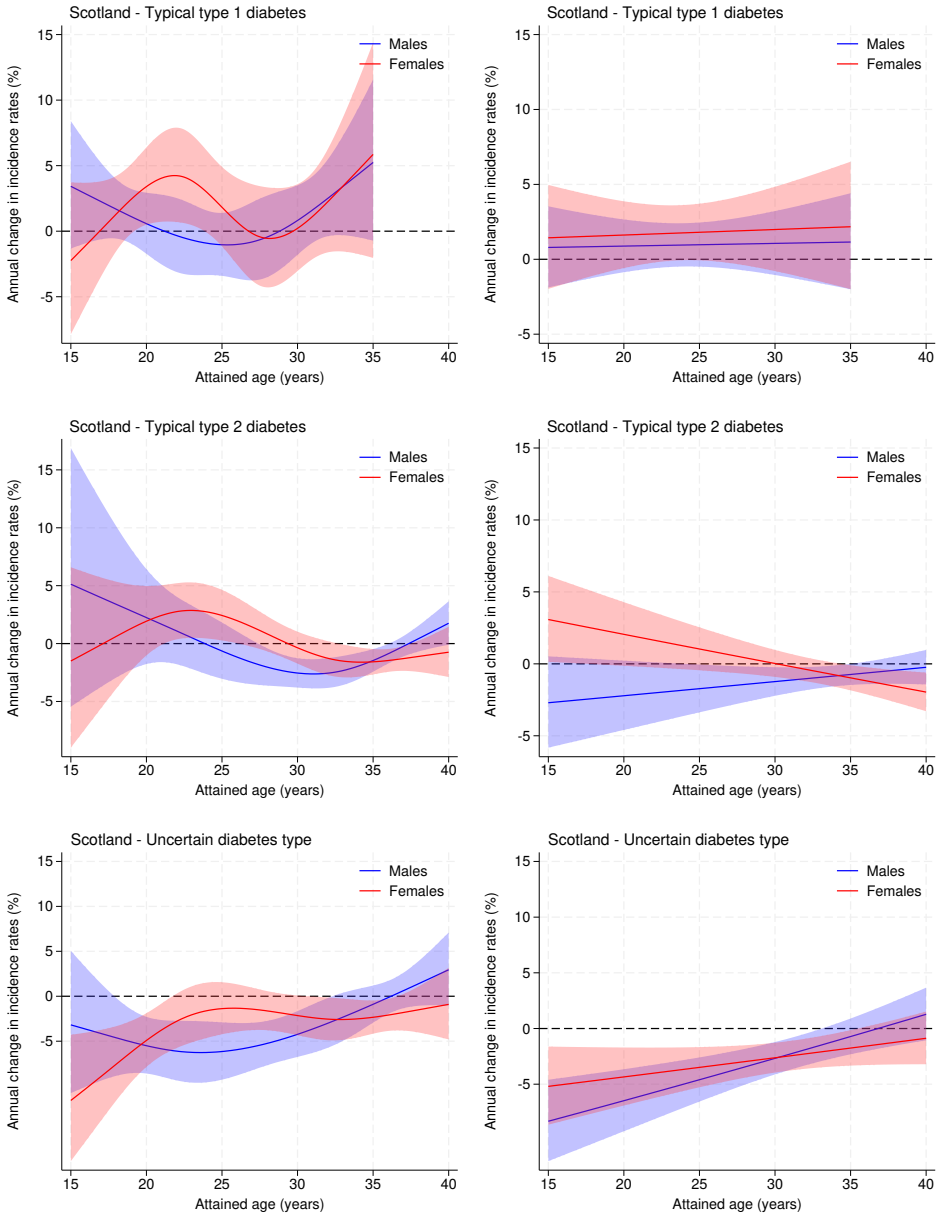
Supplementary Figure 36: Annual change in the incidence rates of diabetes in Finland by age, by diabetes type and sex. Values are predicted from a Poisson model with a spline effect of attained age, a log-linear effect of calendar time, and an interaction between age and calendar time. The left panels use a spline term for age in the interaction, the right panels use the product of age and calendar time in the interaction. Shaded areas represent 95% confidence intervals.



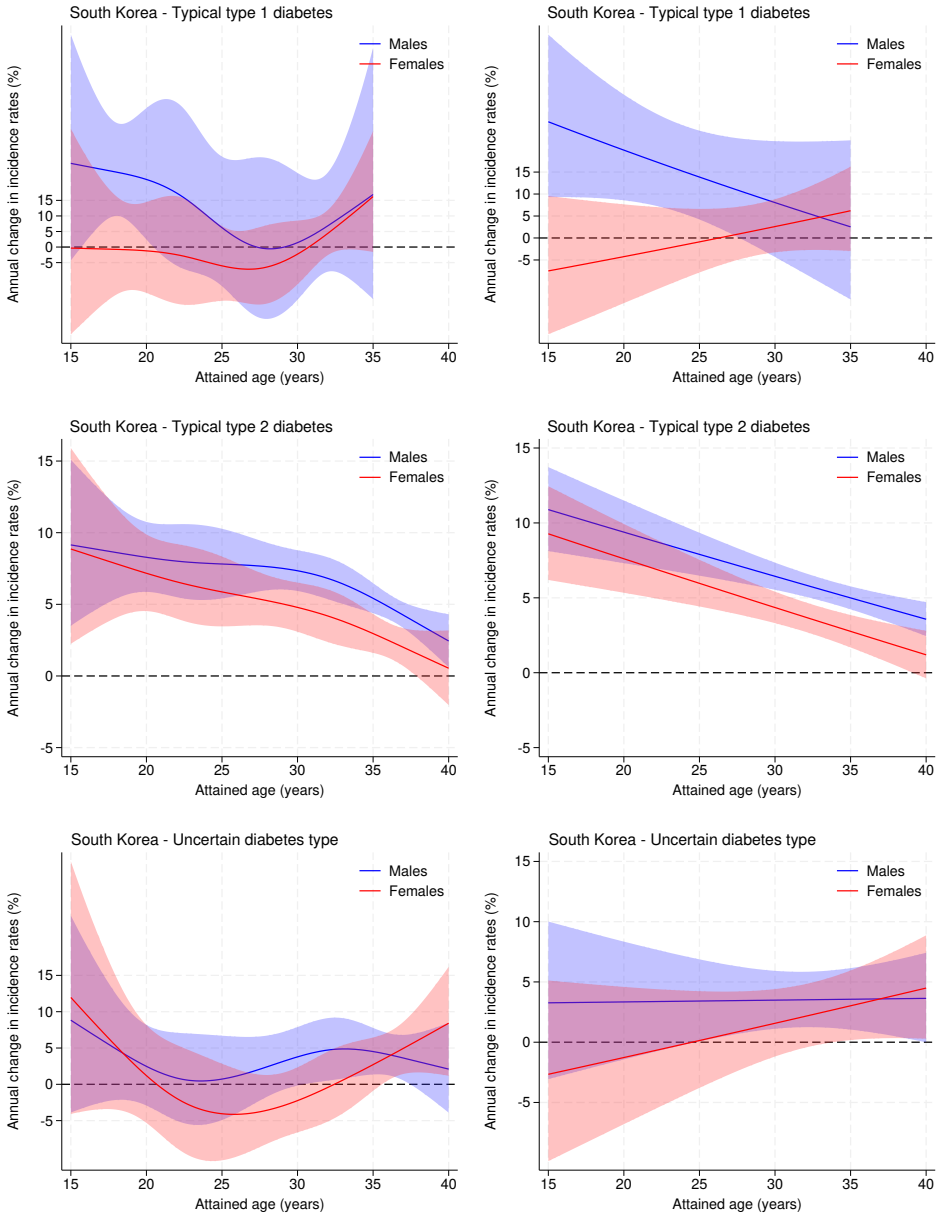
Supplementary Figure 37: Annual change in the incidence rates of diabetes in Hungary by age, by diabetes type and sex. Values are predicted from a Poisson model with a spline effect of attained age, a log-linear effect of calendar time, and an interaction between age and calendar time. The left panels use a spline term for age in the interaction, the right panels use the product of age and calendar time in the interaction. Shaded areas represent 95% confidence intervals.



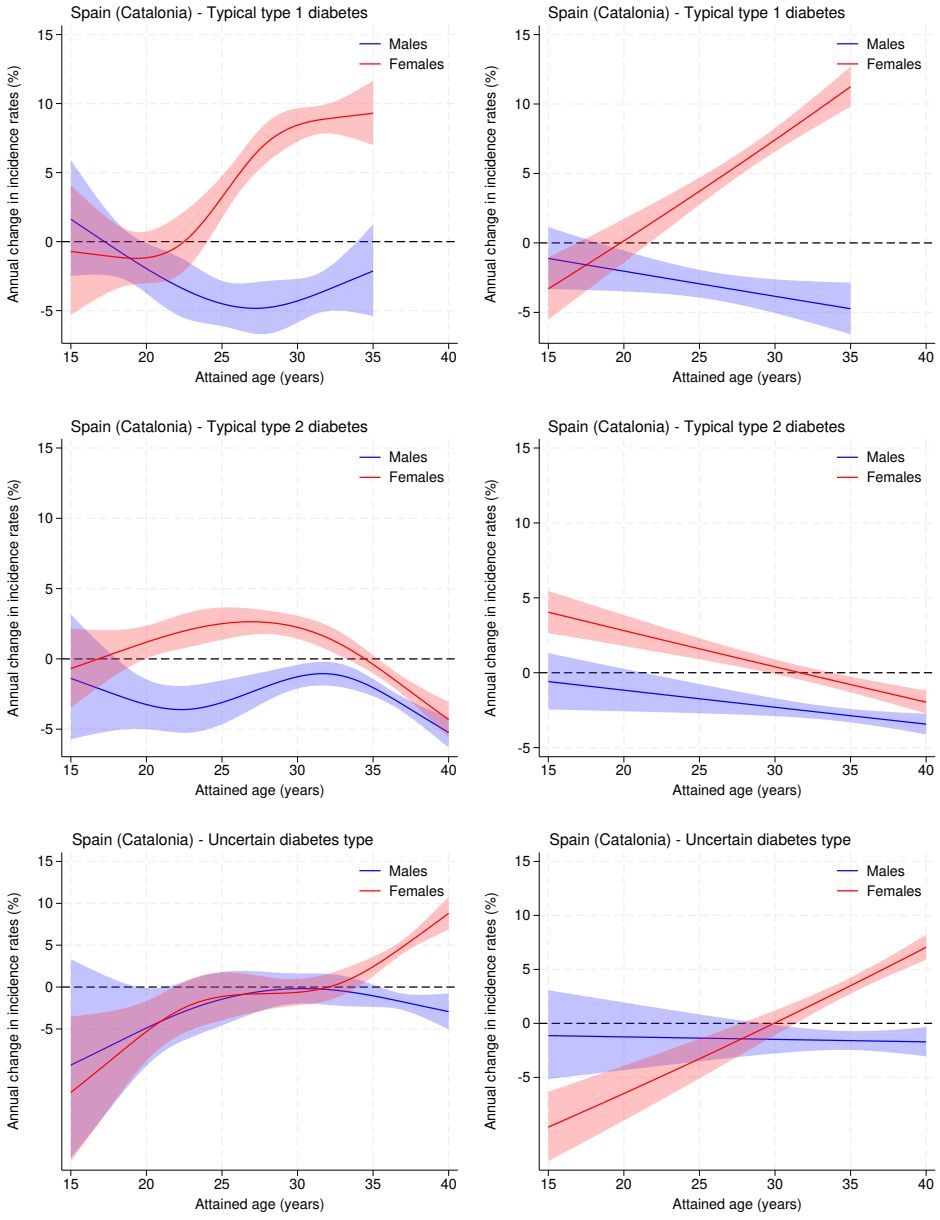
Supplementary Figure 38: Annual change in the incidence rates of diabetes in Japan by age, by diabetes type and sex. Values are predicted from a Poisson model with a spline effect of attained age, a log-linear effect of calendar time, and an interaction between age and calendar time. The left panels use a spline term for age in the interaction, the right panels use the product of age and calendar time in the interaction. Shaded areas represent 95% confidence intervals.



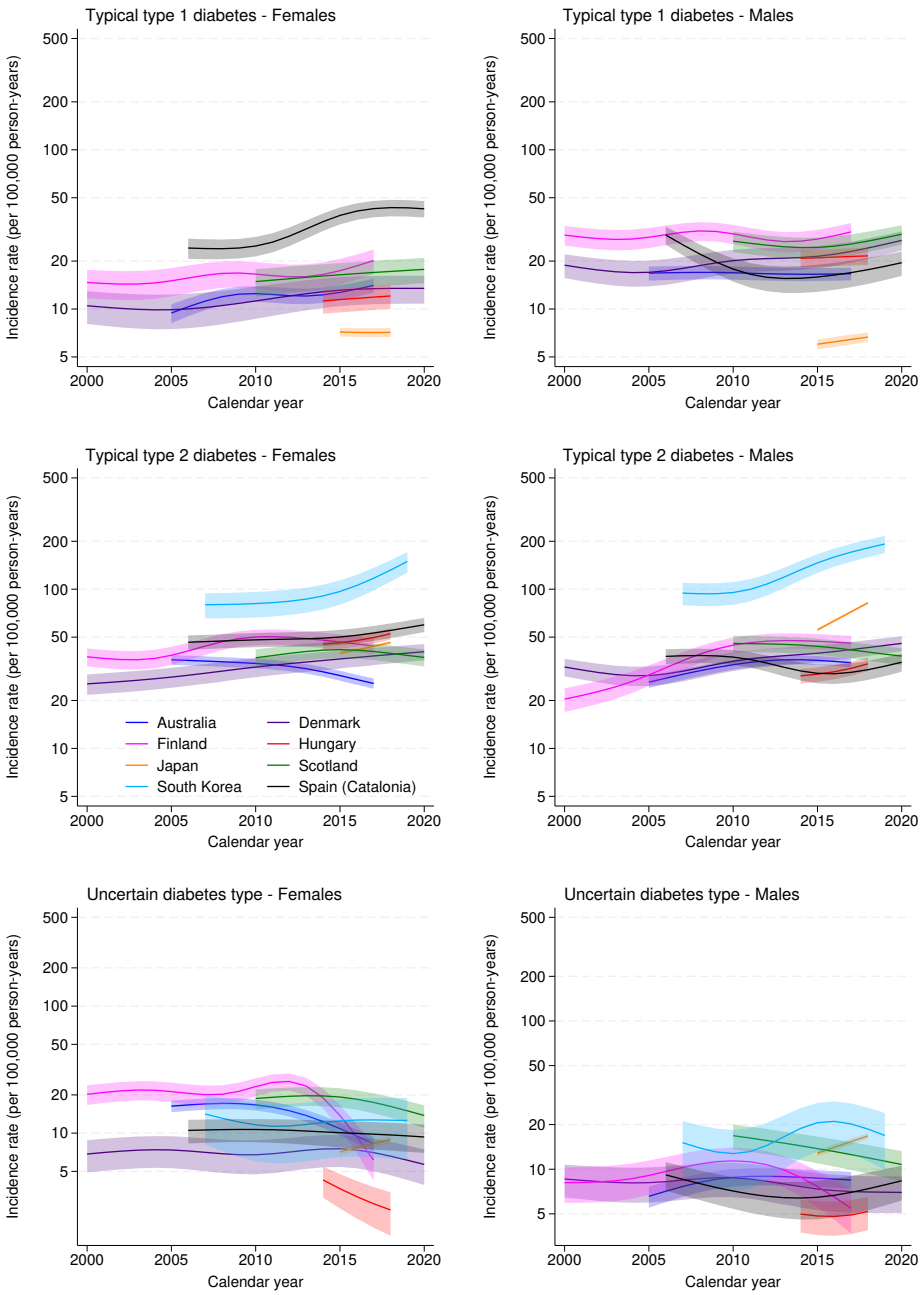
Supplementary Figure 39: Annual change in the incidence rates of diabetes in Scotland by age, by diabetes type and sex. Values are predicted from a Poisson model with a spline effect of attained age, a log-linear effect of calendar time, and an interaction between age and calendar time. The left panels use a spline term for age in the interaction, the right panels use the product of age and calendar time in the interaction. Shaded areas represent 95% confidence intervals.



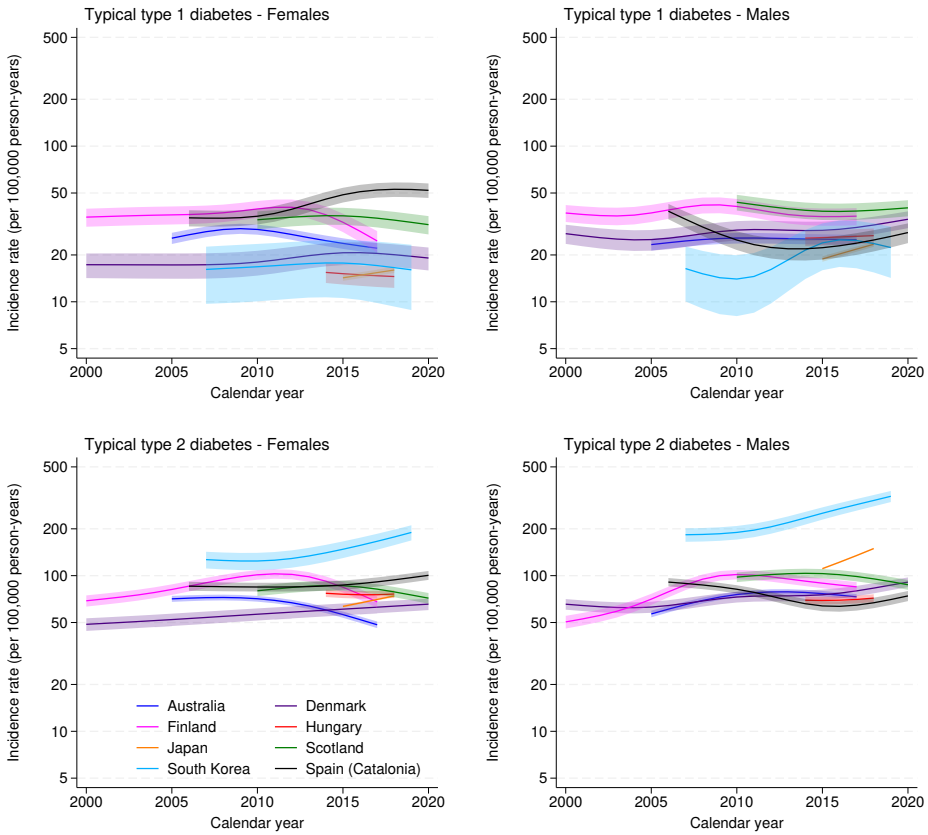
Supplementary Figure 40: Annual change in the incidence rates of diabetes in South Korea by age, by diabetes type and sex. Values are predicted from a Poisson model with a spline effect of attained age, a log-linear effect of calendar time, and an interaction between age and calendar time. The left panels use a spline term for age in the interaction, the right panels use the product of age and calendar time in the interaction. Shaded areas represent 95% confidence intervals.



Supplementary Figure 41: Annual change in the incidence rates of diabetes in Spain (Catalonia) by age, by diabetes type and sex. Values are predicted from a Poisson model with a spline effect of attained age, a log-linear effect of calendar time, and an interaction between age and calendar time. The left panels use a spline term for age in the interaction, the right panels use the product of age and calendar time in the interaction. Shaded areas represent 95% confidence intervals.



Supplementary Figure 42: Age-standardized incidence rates of diabetes for people aged 15-34 years, by diabetes type and sex. South Korea is excluded from type 1 diabetes due to insufficient numbers. Shaded areas represent 95% confidence intervals.



Supplementary Figure 43: Age-standardized incidence rates of diabetes for people aged 15-39 years, by diabetes type and sex. Includes all uncertain diabetes cases as either type 1 or type 2 diabetes. Shaded areas represent 95% confidence intervals.