

Supplementary materials

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APPENDIX 1: SEARCH STRATEGY

Data from the Index Version 1.0 (Gregory 2022, Ogle 2023) were updated in 2024 through an additional search conducted via Covidence systematic review software (Veritas Health Innovation, Melbourne, Australia). Five databases (CINAHL, Embase, OVID PubMed, Web of Science, and Zotec) were searched from January 2020 to June 2024 without language restrictions. The following search terms and their synonyms were used in various combinations:

1. Diabetes Mellitus, Type 1 (Type 1 Diabetes Mellitus, Juvenile Diabetes, T1DM, IDDM (insulin-Dependent Diabetes Mellitus))
2. Incidence (New cases, incidence rate)
3. Prevalence (Prevalence rate, frequency)
4. Mortality (Death, fatality)
5. T1D (Type 1 Diabetes; Diabetes Mellitus, Type 1)
6. IDDM (Insulin-Dependent Diabetes Mellitus, Type 1 Diabetes Mellitus, Juvenile Diabetes)

Original population-based studies of type 1 diabetes (T1D) incidence, prevalence, or mortality were included. Studies were excluded if they did not report relevant outcome data (for example, reviews, conference abstracts without sufficient data, or studies not involving a T1D population).

Two independent reviewers screened all titles and abstracts in Covidence, and any disagreements were resolved by a third reviewer. Full texts of potentially eligible articles were subsequently assessed for inclusion. When available, unpublished registry and study data were included. These were provided by in-country researchers from Australia, Costa Rica, Denmark, Egypt, Georgia, Laos, Mauritius, Moldova, New Zealand, Northern Ireland, Norway, Portugal, and Scotland.

A total of 18,182 studies were screened, and 151 studies were included for data extraction. Data from were extracted into a standardized form (covering study design, setting, population characteristics, and relevant T1D outcomes). From these, 53 additional studies fulfilled inclusion requirements and were incorporated into the Index.

APPENDIX 2: REFERENCES FOR INCIDENCE, PREVALENCE, AND MORTALITY

Country	Children Incidence study (Pub Year)	Adult Incidence study (Pub Year)	Mortality study (Pub Year)	Prevalence study (Pub Year)
Algeria	Touhami (2019) [1] Khater (2020) [2]			
Armenia	Navasardyan (2014) [3]			
Australia	National Diabetes Services Scheme (2025) [4] (personal communication)	National Diabetes Services Scheme (2025) [4] (personal communication)	Harding (2014) [5] Lain (2024) [6] Ruiz (2022) [7]	National Diabetes Services Scheme (2025) [4] personal communication)
Austria	Nagl (2023) [8]		Patterson (2007) [9]	
Azerbaijan	Ahmadov (2018) [10]			
Bangladesh	Zabeen (2021) [11]			
Belgium	Patterson (2019) [12]			IQED (2017)
Bolivia	Duarte (2017) [13]		Duarte (2017) [13]	
Bosnia and Herzegovina	Bukara (2023) [14]			
Brazil	Negrato (2017) [15]		Gomes (2017) [PMID: 28251285] [16]	
Bulgaria			Patterson (2007) [DOI: 10.1007/s00125-007-0824-8] [9]	
Burkina Faso	Sagna (2024) [17]	Sagna (2024) [17]	Sagna (2024) [17]	Sagna (2024) [17]
Cameroon			Katte (2022) [18]	
Canada	Fox (2018) [19] Cohen (2022) [20] Cummings (2020) [21]			
Chile	Tampe (2024) [22]			
China	Liu(2023) DRCP [23] Chen (2022)	Weng (2018) [DOI: 10.1136/bmj.j5295] [24]	Liu (2021) [25] Lu (2021)[26]	
Colombia	Cespedes (2020) [33]			

Costa Rica	Javier Calvo MD and Erick Richmond MD, personal communication Erick Richmond (2025) [34]			
Croatia	Rojnic Putarek (2015) [35]	Roglic (1995) [36]	Morrish (2001) [29]	
Cuba			Collado (1997) [37] Morrish (2001) [29]	
Cyprus	Mousa (2020) [38]			
Czechia	Cinek (2022) [39]			
Democratic Republic of the Congo			Muyer (2010) [40]	
Denmark	Registry	Registry (Denmark)	Patterson (2007) [DOI: 10.1007/s00125-007-0824-8] [9] registry data Ruiz (2022) [7] Sandahl (2017) [41]	Registry (2022)
Dominican Republic	Morla (2022) [42]			
Egypt	Prof. Mourad Alfay and Dr Yasmine Elhenawy personal communication (Ismailia, Port Said and Luxor Governorates, Egypt) [43]			Prof. Mourad Alfay and Dr Yasmine Elhenawy personal communication (Ismailia, Port Said and Luxor Governorates, Egypt) [43]
Eritrea	Mebrahtu (2021) [44]	Mebrahtu (2021) [44]		
Estonia	Mattson (2024) [45]		Podar (2000) [46]	
Ethiopia	Alemu (2009) [47]	Alemu (2009) [47]		
Fiji	Ogle (2016) [48]			Ogle (2012) [49]
Finland	Arffman et al. FinDM database on diabetes in Finland. Finnish Institute for Health and Welfare (THL). Discussion Paper 19/2020. 28 pages. Helsinki, Finland 2020. http://urn.fi/URN:ISBN:978-952-343-492-9	Lammi (2007); [50] Arffman et al. FinDM database on diabetes in Finland. Finnish Institute for Health and Welfare (THL).	Groop (2018) [51] Hartjusalalo [52, 53] Patterson (2007) [DOI: 10.1007/s00125-007-0824-8] [9] Podar (2000) [46] Arffman et al. FinDM database on diabetes in Finland. Finnish Institute for	Arffman et al. FinDM database on diabetes in Finland. Finnish Institute for Health and Welfare (THL). Discussion Paper 19/2020.

		Discussion Paper 19/2020. 28 pages. Helsinki, Finland 2020.http://urn.fi/URN:ISBN:978-952-343-492-9	Health and Welfare (THL). Discussion Paper 19/2020. 28 pages. Helsinki, Finland 2020.http://urn.fi/URN:ISBN:978-952-343-492-9	28 pages. Helsinki, Finland 2020.http://urn.fi/URN:ISBN:978-952-343-492-9
France	Piffaretti (2019) [54]		Donzeau (2022) [55] Lestradet (1981) [56]	
Gabon	Pambou-Damiens (2020) [57]			
Georgia	Georgia Ministry of Health			Georgia Ministry of Health
Germany	Baechle (2023) DRCP [58] Kamrath (2025)[59]		Morrish (2001) [29] Patterson (2007) [9]	Stahl-Pehe (2022)
Ghana			Ameyaw (2017) [60]	
Greece	Mamoulakis (2018) [61]			
Hong Kong	Tung (2020) [27]	Luk (2020) [28]	Morrish (2001) [29]	
Hungary	Barkai (2020) [62]		Patterson (2007) [9]	
Iceland	Samuelsson (2019) [63]			
India	Jensen (2021) [64]		Madhu (2024) [65]	
Ireland	Mckenna (2021) [66] Roche (2023) [67]	Gajewska (2020) [68]		Gajewska (2020) [68]
Iran (Islamic Republic of)	Hashemipour (2023) [69]	Pishdad (2005) [70]		
Israel	Blumenfeld (2024) [71]		Laron-Kenet (2001) [72]	
Italy	Marigliano (2025) [73]	Giorda (2023) [74]	Bruno (2009) [DOI: 10.1016/j.numecd.2008.03.010] [75]	Marigliano (2025) [73]
Japan	Nishioka (2020) [76]	Nishioka (2020) [76]	Morimoto (2013) [77] Nishimura (1998) [78] Otani (2015) [79]	
Kazakhstan	Beisembinova (2021) [80]			
Kuwait	Al-Abdulrazzaq (2022) [81]			
Laos	Action4Diabetes, Fiona Ooi personal communication [82]			Action4Diabetes, Fiona Ooi personal

				communication [82]
Latvia			Ruiz (2022) [7]	
Libya	Khashebi (2023) [83]	Kadiki (1996) [84]		
Lithuania	Patterson (2019) [12]	Ostraukas (2011) [85]	Patterson (2007) [9] Podar (2000) [46]	
Luxembourg	Patterson (2019) [12]			
North Macedonia	Patterson (2019) [12]			
Maldives	Majeed (2020) [86]			Majeed (2019)
Mali	Sandy (2021) [87]	Sandy (2021) [87]	Sandy (2021) [87] Sidibe (1999) [88]	Sandy (2021) [87]
Malta	Formosa (2012) [89]			
Mauritius	Health Records Division, Ministry of Health and Wellness, Republic of Mauritius, personal communication Dr S. Kowlessur [90]			
Mexico	Wacher (2020) [91]			
Moldova	Dr Natalia Palarie, personal communication [92]			
Montenegro	Patterson (2019) [12]			
Netherlands	Spaans (2015) [93]			Fazeli (2011)
New Zealand	KIWI Diabetes Network, personal communication Martin deBock		Yu (2024) [94]	Wu (2023) [95]
Norway	Patterson (2019) [9]		Gagnum (2015) [96] Patterson (2007) [DOI: 10.1007/s00125-007-0824-8] [9]	
Pakistan	Condie (2020) [97]		Condie et al. (2020) [97]	
Poland	Niechcial, (2024) [98]		Morrish (2001) [29]	
Portugal	National Diabetes Program, Directorate-General of Health and Shared Services of the			National Diabetes Program, Directorate-

	Ministry of Health (SPMS), and Pediatric Endocrinology and Diabetology Society of the Portuguese Society of Pediatrics, personal communication Sónia do Vale [99]			General of Health and Shared Services of the Ministry of Health (SPMS), and Pediatric Endocrinology and Diabetology Society of the Portuguese Society of Pediatrics, personal communication Sónia do Vale [99]
Qatar	Haris (2021) [100]			Haris (2021) [100]
Republic of Korea	Chae (2020) [101]			
Romania	Vlad (2021) [102]			
Russian Federation	Dedov (2021) [103]			Dedov (2021) [103]
Rwanda	Marshall (2015) [104]	Marshall (2015) [104]	Marshall (2017) [105]	
Saudi Arabia	Habeb (2011) [106]			
Serbia	Vorgucin (2022) [107]			Stankovic (2021) [108]
Slovakia	Patterson (2009) [109]			
Slovenia	Patterson (2019) [12]			
Spain	Gonzalez (2018) [110] Novoa (2020) [111] Herrero (2022) [112] Benitez (2014) [113] Oritz-Marron (2021) [114] Iriarte (2023) [115] Fernandez-Ramos (2017) [116]	Goday (1992); [117] Forga (2018); [118] Morales-Perez (2000); [119] Iriarte (2023); [115] Rodríguez Escobedo (2023) [120]	Diana [121] Ruiz (2022) [7]	
Sudan	Saad (2020) [122]		Elamin (1992) [123]	Saad (2020) [122]

Sweden	Waernbaum (2023) [124]	Dahlquist (2011); [125] Rawshani (2014) [126]	Dahlquist (2005) [127] Hallstrom (2022) [128] Nystrom (1992) [129] Patterson (2007) [DOI: 10.1007/s00125-007-0824-8] [9] Waernbaum (2006) [130]	
Switzerland	Patterson (2019) [12]		Morrish (2001) [29]	
Taiwan	Shih (2021) [30]		Lin (2014) [31]	Sheen (2019) [32]
Thailand	Rittiphairoj (2022) [131]			Rittiphairoj (2022) [131]
Turkey	Dundar (2023) [132]			Yesilkaya (2013)
United Kingdom	Thomson (2023) [133] Harvey (2021) [134] Northern Ireland Childhood Diabetes Register, Chris Patterson personal communication [135] Scottish Diabetes Surveys, Sarah Wild personal communication [136]	Rafferty (2021); [137] Thomson (2023) [133]	Evans-Cheung (2018) [138] Laing (1999) [139] Livingstone (2015) [140] Morgan (2018) [141] Morrish (2001) [29] Patterson (2007) [DOI: 10.1007/s00125-007-0824-8] [9] Reilly (2020) [142] Roper (2002) [143] Ruiz (2022) [7] Soedamah-Muthu (2006) [144] Warner (1998) [145]	Unpublished
United Republic of Tanzania	Jasem (2019) [146]			
United States of America	Wagenknecht (2023) [147]	Rogers (2017); [148] Lawrence (2021) [149]	Lawrence (2021) [150] Miller (2016) [151] Nishimura (2001) [152] Reynolds (2018) [153] Ruiz (2022) [7] Secrest (2010) [154, 155] The Diabetes Control and Complications Trial (DCCT) (2016) [DOI: 10.2337/dc15-2399] [156]	Lawrence (2021) [157]

US Virgin Islands	Washington (2013) [158]		Washington (2014) [159]	
Uzbekistan	Rakhimova (2018) [160]		Rakhimova (2018) [160]	
Yemen	Gunaid (2022) [161]			

For four countries, (Egypt, Georgia, Italy, and Russian Federation), incidence was back-calculated by the model from prevalence data. By default, the model uses incidence, standardized mortality ratios (SMR), and background demographic data as input variables to estimate the number of prevalent cases. However, if the number of prevalent cases is known and all other input parameters except incidence are held constant, the model can be iteratively applied to identify the incidence value that reproduces the observed prevalence as the model output.

References

1. Touhami, M., et al., *Évolution épidémiologique du diabète de type 1 chez l'enfant : données du registre du département d'Oran, Algérie, 1973–2017*. Revue d'Épidémiologie et de Santé Publique, 2019. 67(6): p. 369-374.
2. Khater, S., et al., *Very High Incidence of Type 1 Diabetes Among Children Aged Under 15 Years in Tlemcen, Northwest Algeria (2015-2018)*. Journal of Clinical Research in Pediatric Endocrinology, 2020.
3. Navasardyan, L.V., *Epidemiology of type 1 diabetes in children and adolescents in the republic of Armenia*. The New Armenian Medical Journal, 2014. 8(3): p. 89-94.
4. *National Diabetes Services Scheme Australia*. Personal communication, Dianna Magliano.
5. Harding, J.L., et al., *Mortality Trends Among People With Type 1 and Type 2 Diabetes in Australia: 1997–2010*. Diabetes Care, 2014. 37(9): p. 2579 LP-2586.
6. Lain, S.J., et al., *Excess Mortality in an Inception Cohort of Childhood Diabetes Diagnosed 1990–2010*. Pediatric Diabetes, 2024. 2024(1): p. 1844752.
7. Ruiz, P.L.D., et al., *Mortality trends in type 1 diabetes: a multicountry analysis of six population-based cohorts*. Diabetologia, 2022.
8. Nagl, K., et al., *Ongoing Increase in Incidence of Diabetes in Austrian Children and Adolescents (1989–2021): Results from a Nationwide Registry*. Pediatric Diabetes, 2023. 2023(1): p. 4616903.
9. Patterson, C.C., et al., *Early mortality in EURODIAB population-based cohorts of type 1 diabetes diagnosed in childhood since 1989*. Diabetologia, 2007. 50(12): p. 2439-2442.
10. Ahmadov, G.A., et al., *Epidemiology of childhood-onset type 1 diabetes in Azerbaijan: Incidence, clinical features, biochemistry, and HLA-DRB1 status*. Diabetes Res Clin Pract, 2018. 144: p. 252-259.

11. Zabeen, B., et al., *Incidence of diabetes in children and adolescents in Dhaka, Bangladesh*. J Pediatr Endocrinol Metab, 2021. 34(4): p. 509-515.
12. Patterson, C.C., et al., *Trends and cyclical variation in the incidence of childhood type 1 diabetes in 26 European centres in the 25 year period 1989–2013: a multicentre prospective registration study*. Diabetologia, 2019. 62(3): p. 408-417.
13. Duarte Gómez, E., et al., *Incidence and Mortality Rates and Clinical Characteristics of Type 1 Diabetes among Children and Young Adults in Cochabamba, Bolivia*. Journal of Diabetes Research, 2017. 2017(CVcD).
14. Bukara-Radujkovic, G., V. Miljkovic, and O. Ljuboja, *Evidence of increasing incidence of type 1 diabetes and ketoacidosis among children in the Republic of Srpska in period 2017-2022 with special focus on COVID-19 global pandemic years*. Front Public Health, 2023. 11: p. 1264099.
15. Negrato, C.A., et al., *Increasing incidence of type 1 diabetes between 1986 and 2015 in Bauru, Brazil*. Diabetes Research and Clinical Practice, 2017. 127: p. 198-204.
16. Gomes, M.B., et al., *Cause-specific mortality in a cohort of Brazilian patients with type 1 diabetes*. Acta diabetologica, 2017. 54(6): p. 535-542.
17. Sagna, Y., et al., *Incidence, prevalence, and mortality of type 1 diabetes in children and youth in Burkina Faso 2013-2022*. Diabetes Res Clin Pract, 2024. 207: p. 111086.
18. Katte, J.C., et al., *Mortality amongst children and adolescents with type 1 diabetes in sub-Saharan Africa: The case study of the Changing Diabetes in Children program in Cameroon*. Pediatr Diabetes, 2022. 23(1): p. 33-37.
19. Fox, D.A., et al., *Type 1 diabetes incidence and prevalence trends in a cohort of Canadian children and youth*. Pediatric Diabetes, 2018. 19(3): p. 501-505.
20. Cohen, A., et al., *Increasing Incidence of Type 1 and Type 2 Diabetes Among Canadian Children*. Can J Diabetes, 2022. 46(2): p. 189-195.
21. Cummings, E., M. Flemming, and P. Talbot. *Trends in incidence of type 1 diabetes in children and adolescents over 25 years in Nova Scotia Canada: 1994-2018*. in *Abstract for the 46th Annual Conference of the International Society for Pediatric and Adolescent Diabetes (ISPAD)*. Virtual Pediatric Diabetes. 2020.
22. Tampe, I., et al., *Incidence of type 1 diabetes in Chilean children between 2006 and 2021: significant increase during the COVID-19 pandemic*. Acta Diabetol, 2024. 61(1): p. 29-34.
23. Liu, C., et al., *Association between Covid-19 vaccination and incidence of type 1 diabetes in China: Evidence from 14.14 million registered residents between 2007 and 2021*. Diabetes Res Clin Pract, 2023. 201: p. 110723.
24. Weng, J., et al., *Incidence of type 1 diabetes in China, 2010-13: population based study*. BMJ, 2018. 360: p. j5295-j5295.

25. Liu, C., et al., *Incidence of Type 1 Diabetes May Be Underestimated in the Chinese Population: Evidence From 21.7 Million People Between 2007 and 2017*. Diabetes Care, 2021. 44(11): p. 2503-2509.
26. Lu, C.L., et al., *Overall and Cause-Specific Mortality in Patients With Type 1 Diabetes Mellitus: A Population-Based Cohort Study in Taiwan From 1998 Through 2014*. J Epidemiol, 2021. 31(9): p. 503-510.
27. Tung, J.Y., et al., *Increasing incidence of type 1 diabetes among Hong Kong children and adolescents: The Hong Kong Childhood Diabetes Registry 2008 to 2017*. Pediatr Diabetes, 2020. 21(5): p. 713-719.
28. Luk, A.O.Y., et al., *Secular trends in incidence of type 1 and type 2 diabetes in Hong Kong: A retrospective cohort study*. PLoS medicine, 2020. 17(2): p. e1003052-e1003052.
29. Morrish, N.J., et al., *Mortality and causes of death in the WHO Multinational Study of Vascular Disease in Diabetes*. Diabetologia, 2001. 44 Suppl 2: p. S14-21.
30. Shih, W.L., et al., *Increased Incidence of Pediatric Type 1 Diabetes With Novel Association With Coxsackievirus A Species in Young Children but Declined Incidence in Adolescents in Taiwan*. Diabetes Care, 2021. 44(7): p. 1579-1585.
31. Lin, W.-H., et al., *Incidence of and mortality from Type I diabetes in Taiwan from 1999 through 2010: a nationwide cohort study*. PloS one, 2014. 9(1): p. e86172-e86172.
32. Sheen, Y.-J., et al., *Trends in prevalence and incidence of diabetes mellitus from 2005 to 2014 in Taiwan*. Journal of the Formosan Medical Association = Taiwan yi zhi, 2019. 118 Suppl: p. S66-S73.
33. Cespedes, C., et al., *Changes in the incidence of diabetes mellitus type 1 in children under the age of 15 in the city of Bogota, Colombia*. Endocrinol Diabetes Nutr (Engl Ed), 2020. 67(4): p. 289-291.
34. Calvo, J. and E. Richmond, (Costa Rica). Personal communication.
35. Rojnic Putarek, N., et al., *Incidence of type 1 diabetes mellitus in 0 to 14-yr-old children in Croatia--2004 to 2012 study*. Pediatr Diabetes, 2015. 16(6): p. 448-53.
36. Roglić, G., et al., *Incidence of IDDM during 1988-1992 in Zagreb, Croatia*. Diabetologia, 1995. 38(5): p. 550-554.
37. Collado-Mesa, F., et al., *Mortality of childhood-onset IDDM patients. A cohort study in Havana City Province, Cuba*. Diabetes care, 1997. 20(8): p. 1237-1241.
38. Mousa, U., et al., *The Incidence and Demographic Distribution of Type 1 Diabetes Mellitus in Children Aged 16 or Younger Between 2000 and 2016 in Cyprus*. J Clin Res Pediatr Endocrinol, 2020. 12(2): p. 175-179.
39. Cinek, O., et al., *Type 1 diabetes incidence increased during the COVID-19 pandemic years 2020-2021 in Czechia: Results from a large population-based pediatric register*. Pediatr Diabetes, 2022. 23(7): p. 956-960.

40. Muyer, M.T., et al., *Mortality of young patients with diabetes in Kinshasa, DR Congo*. Diabetic Medicine, 2010. 27(4): p. 405-411.
41. Sandahl, K., et al., *Increased mortality in a Danish cohort of young people with Type 1 diabetes mellitus followed for 24 years*. Diabetic Medicine, 2017. 34(3): p. 380-386.
42. Morla, E., et al., *Incidence of type 1 diabetes in children in Dominican Republic, 2010-2019: A national collaborative study*. Pediatr Diabetes, 2022. 23(7): p. 976-981.
43. Alf, M. and Y. Elhenawy, *Ismailia, Port Said and Luxor Governorates, (Egypt)*. Personal communication.
44. Mebrahtu, G., et al., *High incidence of type 1 diabetes in adolescents and young adults in Eritrea*. Diabetic medicine : a journal of the British Diabetic Association, 2021: p. e14544-e14544.
45. Mattson, S., et al. *The Incidence of Type 1 Diabetes Among Estonian Children in 2007-2022 in Comparison with the Data From 1983 to 2006 and the Impact of the Covid-19 Pandemic*. in *HORMONE RESEARCH IN PAEDIATRICS*. 2024. KARGER ALLSCHWILERSTRASSE 10, CH-4009 BASEL, SWITZERLAND.
46. Podar, T., et al., *Mortality in patients with childhood-onset type 1 diabetes in Finland, Estonia, and Lithuania: follow-up of nationwide cohorts*. Diabetes care, 2000. 23(3): p. 290-294.
47. Alemu, S., et al., *Insulin-requiring diabetes in rural Ethiopia: should we reopen the case for malnutrition-related diabetes?* Diabetologia, 2009. 52(9): p. 1842-1845.
48. Ogle, G.D., et al., *Incidence and prevalence of diabetes in children aged <15yr in Fiji, 2001-2012*. Pediatric Diabetes, 2016. 17(3): p. 222-226.
49. Ogle, G.D., *Developing countries and global perspectives*. 2012(May): p. 1-14.
50. Lammi, N., et al., *A high incidence of type 1 diabetes and an alarming increase in the incidence of type 2 diabetes among young adults in Finland between 1992 and 1996*. Diabetologia, 2007. 50(7): p. 1393-1400.
51. Groop, P.-H.H., et al., *Excess mortality in patients with type 1 diabetes without albuminuria-aeparating the contribution of early and late risks*. Diabetes care, 2018. 41(4): p. 748-754.
52. Harjutsalo, V., et al., *Incidence of Type 1 Diabetes in Finland*. JAMA, 2013. 310(4): p. 427-428.
53. Harjutsalo, V., C. Forsblom, and P.-H. Groop, *Time trends in mortality in patients with type 1 diabetes: nationwide population based cohort study*. BMJ (Clinical research ed.), 2011. 343: p. d5364-d5364.
54. Piffaretti, C., et al., *Trends in childhood type 1 diabetes incidence in France, 2010-2015*. Diabetes Res Clin Pract, 2019. 149: p. 200-207.

55. Donzeau, A., et al., *Time trend in excess mortality in children with type 1 diabetes from 1987 to 2016 in mainland France*. *Pediatr Diabetes*, 2022. 23(1): p. 38-44.
56. Lestradet, H., et al., *Long-term study of mortality and vascular complications in juvenile-onset (type I) diabetes*. *Diabetes*, 1981. 30(3): p. 175-179.
57. Pambou Damiens, A., et al., *Type 1 diabetes mellitus in Gabon: A study of epidemiological aspects*. *International Journal of Pediatrics and Adolescent Medicine*, 2019. 6(3): p. 87-91.
58. Baechle, C., et al., *Incidence and presentation of new-onset type 1 diabetes in children and adolescents from Germany during the COVID-19 pandemic 2020 and 2021: Current data from the DPV Registry*. *Diabetes Res Clin Pract*, 2023. 197: p. 110559.
59. Kamrath, C., et al., *Wave in Pediatric Type 1 Diabetes Incidence After the Emergence of COVID-19: Peak and Trough Patterns in German Youth-A Population-Based Study From the Prospective Multicenter DPV Registry*. *Diabetes Care*, 2025.
60. Ameyaw, E., et al., *Clinical profile of diabetes at diagnosis among children and adolescents at an endocrine clinic in Ghana*. *World Journal of Diabetes*, 2017. 8(9): p. 429-429.
61. Mamoulakis, D., et al., *Incidence of childhood Type 1 diabetes mellitus in Crete*. *Diabet Med*, 2018.
62. Barkai, L., et al., *Changes in the incidence and prevalence of type 1 and type 2 diabetes among 2 million children and adolescents in Hungary between 2001 and 2016 - a nationwide population-based study*. *Arch Med Sci*, 2020. 16(1): p. 34-41.
63. Samuelsson, U., et al., *Geographical variation in the incidence of type 1 diabetes in the Nordic countries: A study within NordicDiabKids*. *Pediatr Diabetes*, 2020. 21(2): p. 259-265.
64. Jensen, E.T., et al., *Comparison of the incidence of diabetes in United States and Indian youth: An international harmonization of youth diabetes registries*. *Pediatr Diabetes*, 2021. 22(1): p. 8-14.
65. Madhu, S.V., et al., *Mortality in type 1 diabetes mellitus: A single centre experience from the ICMR - Youth onset diabetes registry in India*. *Diabetes Res Clin Pract*, 2024. 217: p. 111868.
66. McKenna, A., et al., *Incidence of childhood type 1 diabetes mellitus in Ireland remains high but no longer rising*. *Acta Paediatr*, 2021. 110(7): p. 2142-2148.
67. Roche, E.F., et al., *The incidence of type 1 diabetes in children under 15 years of age is rising again-a nationwide study*. *Eur J Pediatr*, 2023. 182(10): p. 4615-4623.
68. Gajewska, K.A., et al., *Prevalence and incidence of type 1 diabetes in Ireland: a retrospective cross-sectional study using a national pharmacy claims data from 2016*. *BMJ open*, 2020. 10(4): p. e032916-e032916.

69. Hashemipour, M., et al., *Trends in incidence rates of childhood type 1 diabetes mellitus: A retrospective study in Isfahan province, Iran*. J Diabetes Investig, 2023. 14(3): p. 376-386.
70. Pishdad, G.R., *Low Incidence of Type 1 Diabetes in Iran*. Diabetes Care, 2005. 28(4): p. 927 LP-928.
71. Blumenfeld, O., et al., *The COVID-19 Pandemic Increased the Incidence of New-Onset Type One Diabetes in Children*. Children (Basel), 2024. 11(2).
72. Laron-Kenet, T., et al., *Mortality of patients with childhood onset (0-17 years) type I diabetes in Israel: A population-based study*. Diabetologia, 2001. 44(SUPPL. 3): p. 81-86.
73. Marigliano, M., et al., *Unmet Needs of Italian Centers for pediatric diabetes care: analysis of a Survey among pediatric diabetologists facing the National screening program for Type 1 Diabetes*. Italian Journal of Pediatrics, 2025.
74. Giorda, C.B., et al., *Increased incidence of type 1 diabetes in 2 years of COVID-19 pandemic*. Acta Diabetol, 2023. 60(4): p. 587-589.
75. Bruno, G., et al., *Short-term mortality risk in children and young adults with type 1 diabetes: The population-based Registry of the Province of Turin, Italy*. Nutrition, Metabolism and Cardiovascular Diseases, 2009. 19(5): p. 340-344.
76. Nishioka, Y., et al., *Incidence and seasonality of type 1 diabetes: a population-based 3-year cohort study using the National Database in Japan*. BMJ open diabetes research & care, 2020. 8(1).
77. Morimoto, A., et al., *Cause-specific mortality trends in a nationwide population-based cohort of childhood-onset type 1 diabetes in Japan during 35 years of follow-up: the DERI Mortality Study*. Diabetologia, 2013. 56(10): p. 2171-2175.
78. Nishimura, R., et al., *Puberty, IDDM, and death in Japan*. Diabetes Epidemiology Research International Study Group. Diabetes care, 1998. 21(10): p. 1674-1679.
79. Otani, T., H. Yokoyama, and Y. Uchigata, *Changes in the prognosis of Japanese patients who developed type 1 diabetes before the age of 30 years*. Diabetes Research and Clinical Practice, 2015. 109(2): p. 434-439.
80. Beisembinova, N., et al., *Diabetes and diabetic retinopathy in kazakhstan from 2013-2018*. Current Pediatric Research, 2021. 25(7): p. 685.
81. Al-Abdulrazzaq, D., et al., *Higher rates of diabetic ketoacidosis and admission to the paediatric intensive care unit among newly diagnosed children with type 1 diabetes in Kuwait during the COVID-19 pandemic*. Diabetes Metab Res Rev, 2022. 38(3): p. e3506.
82. Ooi, F., *Action4Diabetes (Laos)*. Personal communication.
83. Khashebi, R.M., C.C. Patterson, and M.S. Shebani, *The Incidence Trend of Type 1 Diabetes among Children and Adolescents 0-14 Years of Age in the West, South, and Tripoli Regions of Libya (2009-2018)*. J Clin Res Pediatr Endocrinol, 2023. 15(4): p. 356-364.

84. Kadiki, O.A., M.R.S. Reddy, and A.A. Marzouk, *Incidence of insulin-dependent diabetes (IDDM) and non-insulin-dependent diabetes (NIDDM) (0–34 years at onset) in Benghazi, Libya*. Diabetes Research and Clinical Practice, 1996. 32(3): p. 165-173.
85. Ostrauskas, R., et al., *The incidence of type 1 diabetes mellitus among 15-34 years aged Lithuanian population: 18-year incidence study based on prospective databases*. BMC Public Health, 2011. 11(1): p. 813-813.
86. Majeed, N.A., et al., *Incidence, prevalence and mortality of diabetes in children and adolescents aged under 20 years in the Republic of Maldives*. J Paediatr Child Health, 2020. 56(5): p. 746-750.
87. Sandy, J.L., et al., *Rapid increases in observed incidence and prevalence of Type 1 diabetes in children and youth in Mali, 2007–2016*. Pediatric Diabetes, 2021. 22(4): p. 545-551.
88. Sidibe, A.T., et al., *Le diabète juvénile au Mali*. Revue française d'endocrinologie clinique, nutrition et métabolisme, 1999. 40(6): p. 513-521.
89. Formosa, N., N. Calleja, and J. Torpiano, *Incidence and modes of presentation of childhood type 1 diabetes mellitus in Malta between 2006 and 2010*. Pediatr Diabetes, 2012. 13(6): p. 484-8.
90. Kowlessur, S., *Health Records Division, Ministry of Health and Wellness, Republic of Mauritius (Maruritius)*. Personal communication.
91. Wachter, N.H., et al., *Type 1 diabetes incidence in children and adolescents in Mexico: Data from a nation-wide institutional register during 2000-2018*. Diabetes Res Clin Pract, 2020. 159: p. 107949.
92. Palarie, N., (Moldova). Personal communication.
93. Spaans, E.A., et al., *The incidence of type 1 diabetes is still increasing in the Netherlands, but has stabilised in children under five (Young DUDEs-1)*. Acta Paediatr, 2015. 104(6): p. 626-9.
94. Yu, D., et al., *All-cause, premature, and cardiovascular death attributable to socioeconomic and ethnic disparities among New Zealanders with type 1 diabetes 1994-2019: a multi-linked population-based cohort study*. BMC Public Health, 2024. 24(1): p. 298.
95. Wu, R., et al., *Prevalence and incidence of type 1 diabetes in children aged 0-14 years old in New Zealand in 2021*. J Paediatr Child Health, 2023. 59(3): p. 519-525.
96. Gagnum, V., et al., *All-cause mortality in a nationwide cohort of childhood-onset diabetes in Norway 1973-2013*. Diabetologia, 2015. 58(8): p. 1779-1786.
97. Condie, A.M., T.V. Allen, and G.D. Ogle, *Incidence and characteristics of childhood- and youth-onset diabetes in the Qalandarabad area in northern Pakistan*. Diabetes Research and Clinical Practice, 2020. 163: p. 108155-108155.

98. Niechcial, E., et al., *Increasing trend of childhood type 1 diabetes incidence: 20-year observation from Greater Poland Province, Poland*. *Acta Diabetol*, 2024. 61(12): p. 1609-1617.
99. Vale, S.d., *National Diabetes Program, Directorate-General of Health and Shared Services of the Ministry of Health (SPMS), and Pediatric Endocrinology and Diabetology Society of the Portuguese Society of Pediatrics (Portugal)*. Personal communication.
100. Haris, B., et al., *Epidemiology, genetic landscape and classification of childhood diabetes mellitus in the State of Qatar*. *J Diabetes Investig*, 2021. 12(12): p. 2141-2148.
101. Chae, H.W., et al., *Incidence and Prevalence of Type 1 Diabetes Mellitus among Korean Children and Adolescents between 2007 and 2017: An Epidemiologic Study Based on a National Database*. *Diabetes Metab J*, 2020. 44(6): p. 866-874.
102. Vlad, A., et al., *Increased Incidence of Type 1 Diabetes during the COVID-19 Pandemic in Romanian Children*. *Medicina (Kaunas)*, 2021. 57(9).
103. Dedov, I., et al., *Epidemiological characteristics of diabetes mellitus in the Russian Federation: clinical and statistical analysis according to the Federal diabetes register data of 01.01. 2021*. *Diabetes mellitus*, 2021. 24(3): p. 204-221.
104. Marshall, S.L., et al., *Prevalence and incidence of clinically recognized cases of Type 1 diabetes in children and adolescents in Rwanda, Africa*. *Diabetic Medicine*, 2015. 32(9): p. 1186-1192.
105. Marshall, S.L., et al., *Mortality and natural progression of type 1 diabetes patients enrolled in the Rwanda LFAC program from 2004 to 2012*. *International Journal of Diabetes in Developing Countries*, 2017. 37(4): p. 507-515.
106. Habeb, A.M., et al., *High incidence of childhood type 1 diabetes in Al-Madinah, North West Saudi Arabia (2004–2009)*. *Pediatric Diabetes*, 2011. 12(8): p. 676-681.
107. Vorgucin, I., et al., *Incidence of Type 1 Diabetes Mellitus and Characteristics of Diabetic Ketoacidosis in Children and Adolescents during the First Two Years of the COVID-19 Pandemic in Vojvodina*. *Medicina (Kaunas)*, 2022. 58(8).
108. Stankovic, S., et al., *First report on the nationwide prevalence of paediatric type 1 diabetes in Serbia and temporal trends of diabetes ketoacidosis at diagnosis-a multicentre study*. *J Pediatr Endocrinol Metab*, 2021. 34(2): p. 225-229.
109. Patterson, C.C., et al., *Incidence trends for childhood type 1 diabetes in Europe during 1989–2003 and predicted new cases 2005–20: a multicentre prospective registration study*. *The Lancet*, 2009. 373(9680): p. 2027-2033.
110. Mayoral Gonzalez, B., et al., *Epidemiology of type 1 diabetes in Asturias: 2002-2011*. *Endocrinol Diabetes Nutr (Engl Ed)*, 2018. 65(2): p. 68-73.
111. Novoa, Y., et al., *Epidemiology of childhood-onset type 1 diabetes in Gran Canaria (2006-2018)*. *Endocrinol Diabetes Nutr (Engl Ed)*, 2020. 67(10): p. 658-664.

112. Hernandez Herrero, M., et al., *[New diagnoses of type 1 diabetes mellitus in children during the COVID-19 pandemic. Regional multicenter study in Spain]*. Endocrinol Diabetes Nutr, 2022. 69(9): p. 709-714.
113. Gimeno Benitez, A., et al., *[Incidence of childhood type I diabetes in Extremadura, Spain, 2003-2007]*. Semergen, 2014. 40(4): p. 177-82.
114. Ortiz-Marron, H., et al., *Evolution of the incidence of type 1 diabetes mellitus in the Community of Madrid, 1997-2016*. An Pediatr (Engl Ed), 2021. 95(4): p. 253-259.
115. Goni Iriarte, M.J., et al., *Incidence of type 1 diabetes in Navarra, 2009-2020. Evidence of a stabilization*. Endocrinol Diabetes Nutr (Engl Ed), 2023. 70(2): p. 80-87.
116. Fernández-Ramos, C., et al., *Incidence of childhood-onset type 1 diabetes in Biscay, Spain, 1990–2013*. Pediatric Diabetes, 2017. 18(1): p. 71-76.
117. Goday, A., et al., *Incidence of Type 1 (insulin-dependent) diabetes mellitus in Catalonia, Spain*. Diabetologia, 1992. 35(3): p. 267-271.
118. Forga, L., et al., *Endocrinología , Diabetes y Nutrición Incidence of type 1 diabetes mellitus in Navarre stabilized in the last eight years –* 2018. 65(5): p. 274-279.
119. Morales-Peréz, F.M., J. Barquero-Romero, and M. Pérez-Miranda, *Incidence of Type I diabetes among children and young adults (0- 29 years) in the province of Badajoz, Spain during 1992 to 1996*. Acta pædiatrica., 2000. 89(1): p. 101-104.
120. Rodriguez Escobedo, R., E. Delgado Alvarez, and E.L. Menendez Torre, *Incidence of type 1 diabetes mellitus in Asturias (Spain) between 2011 and 2020*. Endocrinol Diabetes Nutr (Engl Ed), 2023. 70(3): p. 189-195.
121. Magliano, D.J., *SIDIAP (Information System for Research in Primary Care)*. Database for Catalonia, Spain, Private Communication.
122. Saad, F.M., et al., *Incidence and prevalence of type 1 diabetes mellitus in children and adolescents aged 6 months-19 years in Khartoum State, Sudan*. Sudanese journal of paediatrics, 2020. 20(2): p. 163-169.
123. Elamin, A., et al., *Clinical pattern of childhood Type 1 (insulin-dependent) diabetes mellitus in the Sudan*. Diabetologia, 1992. 35(7): p. 645-648.
124. Waernbaum, I., et al., *The incidence of childhood-onset type 1 diabetes, time trends and association with the population composition in Sweden: a 40 year follow-up*. Diabetologia, 2023. 66(2): p. 346-353.
125. Dahlquist, G.G., L. Nyström, and C.C. Patterson, *Incidence of Type 1 Diabetes in Sweden Among Individuals Aged 0–34 Years, 1983–2007*. Diabetes Care, 2011. 34(8): p. 1754 LP-1759.
126. Rawshani, A., et al., *The incidence of diabetes among 0 – 34 year olds in Sweden : new data and better methods Diabetes Incidence Study in Sweden*. 2014: p. 1375-1381.

127. Dahlquist, G. and B. Kallen, *Mortality in childhood-onset type 1 diabetes: a population-based study*. Diabetes care, 2005. 28(10): p. 2384-2387.
128. Hallstrom, S., et al., *Risk factors, mortality trends and cardiovascular diseases in people with Type 1 diabetes and controls: A Swedish observational cohort study*. Lancet Reg Health Eur, 2022. 21: p. 100469.
129. Nystrom, L., et al., *Mortality of all incident cases of diabetes mellitus in Sweden diagnosed 1983-1987 at age 15-34 years. Diabetes Incidence Study in Sweden (DISS) Group*. Diabetic medicine : a journal of the British Diabetic Association, 1992. 9(5): p. 422-427.
130. Waernbaum, I., et al., *Excess mortality in incident cases of diabetes mellitus aged 15 to 34 years at diagnosis: A population-based study (DISS) in Sweden*. Diabetologia, 2006. 49(4): p. 653-659.
131. Rittiphairoj, T., et al., *Incidence and prevalence of type 1 diabetes and diabetic ketoacidosis in children and adolescents (0-19 years) in Thailand (2015-2020): A nationwide population-based study*. Lancet Reg Health West Pac, 2022. 21: p. 100392.
132. Dundar, I., et al., *Type 1 Diabetes Incidence Trends in a Cohort of Turkish Children and Youth*. Turk Arch Pediatr, 2023. 58(5): p. 539-545.
133. Thomson, I., et al., *Type 1 diabetes incidence in Scotland between 2006 and 2019*. Diabet Med, 2023. 40(8): p. e15069.
134. Harvey, J.N., et al., *The changing incidence of childhood-onset type 1 diabetes in Wales: Effect of gender and season at diagnosis and birth*. Diabetes Res Clin Pract, 2021. 175: p. 108739.
135. Patterson, C., *Northern Ireland Childhood Diabetes Register (Northern Ireland)*. Personal communication.
136. Wild, S., *Scottish Diabetes Surveys (Scotland)*. Personal communication.
137. Rafferty, J., et al., *A retrospective epidemiological study of type 1 diabetes mellitus in wales, UK between 2008 and 2018*. Int J Popul Data Sci, 2021. 6(1): p. 1387.
138. Evans-Cheung, T.C., et al., *Mortality and acute complications in children and young adults diagnosed with Type 1 diabetes in Yorkshire, UK: a cohort study*. Diabetic Medicine, 2018. 35(1): p. 112-120.
139. Laing, S.P., et al., *The British Diabetic Association Cohort Study, I: all-cause mortality in patients with insulin-treated diabetes mellitus*. Diabetic Medicine : a Journal of the British Diabetic Association, 1999. 16(6): p. 459-465.
140. Livingstone, S.J., et al., *Estimated life expectancy in a Scottish cohort with type 1 diabetes, 2008-2010*. JAMA - Journal of the American Medical Association, 2015. 313(1): p. 37-44.
141. Morgan, E., et al., *Mortality in type 1 diabetes diagnosed in childhood in Northern Ireland during 1989-2012: A population-based cohort study*. Pediatric Diabetes, 2018. 19(1): p. 166-170.

142. O'Reilly, J.E., et al., *Time trends in deaths before age 50 years in people with type 1 diabetes: a nationwide analysis from Scotland 2004-2017*. Diabetologia, 2020. 63(8): p. 1626-1636.
143. Roper, N.A., et al., *Cause-specific mortality in a population with diabetes: South tees diabetes mortality study*. Diabetes Care, 2002. 25(1): p. 43-48.
144. Soedamah-Muthu, S.S., et al., *All-cause mortality rates in patients with type 1 diabetes mellitus compared with a non-diabetic population from the UK general practice research database, 1992-1999*. Diabetologia, 2006. 49(4): p. 660-666.
145. Warner, D.P., et al., *Mortality and diabetes from a population based register in Yorkshire 1978-93*. Archives of disease in childhood, 1998. 78(5): p. 435-438.
146. Jasem, D., et al., *Incidence, prevalence and clinical manifestations at onset of juvenile diabetes in Tanzania*. Diabetes Res Clin Pract, 2019. 156: p. 107817.
147. Wagenknecht, L.E., et al., *Trends in incidence of youth-onset type 1 and type 2 diabetes in the USA, 2002-18: results from the population-based SEARCH for Diabetes in Youth study*. Lancet Diabetes Endocrinol, 2023. 11(4): p. 242-250.
148. Rogers, M.A.M., et al., *Fluctuations in the incidence of type 1 diabetes in the United States from 2001 to 2015: a longitudinal study*. BMC medicine, 2017. 15(1): p. 199-199.
149. Lawrence, J.M., et al., *Incidence and predictors of type 1 diabetes among younger adults aged 20 – 45 years : The diabetes in young adults (DiYA) study*. Diabetes Research and Clinical Practice, 2021. 171: p. 108624-108624.
150. Lawrence, J.M., et al., *Demographic Correlates of Short-Term Mortality Among Youth and Young Adults With Youth-Onset Diabetes Diagnosed From 2002 to 2015: The SEARCH for Diabetes in Youth Study*. Diabetes Care, 2021. 44(12): p. 2691-2698.
151. Miller, R.G., et al., *A contemporary estimate of total mortality and cardiovascular disease risk in young adults with type 1 diabetes: The pittsburgh epidemiology of diabetes complications study*. Diabetes Care, 2016. 39(12): p. 2296-2303.
152. Nishimura, R., et al., *Mortality trends in type 1 diabetes. The Allegheny County (Pennsylvania) Registry 1965-1999*. Diabetes care, 2001. 24(5): p. 823-827.
153. Reynolds, K., et al., *Mortality in youth-onset type 1 and type 2 diabetes: The SEARCH for Diabetes in Youth study*. Journal of Diabetes and its Complications, 2018. 32(6): p. 545-549.
154. Secrest, A.M., et al., *All-cause mortality trends in a large population-based cohort with long-standing childhood-onset type 1 diabetes: the Allegheny County type 1 diabetes registry*. Diabetes care, 2010. 33(12): p. 2573-2579.
155. Secrest, A.M., et al., *Cause-specific mortality trends in a large population-based cohort with long-standing childhood-onset type 1 diabetes*. Diabetes, 2010. 59(12): p. 3216-3222.

156. Diabetes, C., I. Complications Trial /Epidemiology of Diabetes, and G. Complications Study Research, *Mortality in Type 1 Diabetes in the DCCT/EDIC Versus the General Population*. Diabetes care, 2016. 39(8): p. 1378-1383.
157. Lawrence, J.M., et al., *Trends in Prevalence of Type 1 and Type 2 Diabetes in Children and Adolescents in the US, 2001-2017*. JAMA, 2021. 326(8): p. 717-727.
158. Washington, R.E., et al., *Incidence of type 1 and type 2 diabetes in youth in the US Virgin Islands, 2001-2010*. Pediatric Diabetes, 2013. 14(4): p. 280-287.
159. Washington, R.E., et al., *All-cause mortality in a population-based type 1 diabetes cohort in the U.S. Virgin Islands*. Diabetes research and clinical practice, 2014. 103(3): p. 504-509.
160. Rakhimova, G.N., et al., *Epidemiological data of type 1 diabetes mellitus in children in Uzbekistan, 1998-2014*. Pediatric Diabetes, 2018. 19(1): p. 158-165.
161. Gunaid, A.A., et al., *Incidence of type 1 diabetes among children and adolescents during peace and war times in Yemen*. Pediatr Diabetes, 2022. 23(3): p. 310-319.
162. Magliano, D., (Denmark). Personal communication.
163. Arffman, M., et al., *FinDM database on diabetes in Finland*. 2020(January): p. 28-28.
164. Georgia Ministry of Health (Georgia). Personal communication.
165. deBock, M., *KIWIdiab Diabetes Network (New Zealand)*. Personal communication.
166. Schober, E., et al., *Increasing incidence of IDDM in Austrian children: a nationwide study 1979–1993*. Diabetes Care, 1995. 18(9): p. 1280-1283.
167. Svensson, J., et al., *Increased Risk of Childhood Type 1 Diabetes in Children Born After 1985*. Diabetes Care, 2002. 25(12): p. 2197 LP-2201.
168. Tuomilehto, J., et al., *Comparison of incidence of IDDM in childhood between Estonia and Finland, 1980–1988*. Diabetes care, 1991. 14(11): p. 982-988.
169. Tuomilehto, J., et al., *Record-high incidence of Type I (insulin-dependent) diabetes mellitus in Finnish children*. Diabetologia, 1999. 42(6): p. 655-660.
170. Barat, P., et al., *The growing incidence of type 1 diabetes in children: The 17-year French experience in Aquitaine*. Diabetes & Metabolism, 2008. 34(6): p. 601-605.
171. Lévy-Marchal, C., *[Evolution of the incidence of IDDM in childhood in France]*. Revue d'epidemiologie et de sante publique, 1998. 46(3): p. 157-163.
172. Michaelis, D., E. Jutzi, and L. Vogt, *Epidemiology of insulin-treated diabetes mellitus in the East-German population: differences in long-term trends between incidence and prevalence rates*. Diabete Metab, 1993. 19(1 Pt 2): p. 110-5.
173. Helgason, T., R. Danielsen, and A.V. Thorsson, *Incidence and prevalence of type 1 (insulin-dependent) diabetes mellitus in Icelandic children 1970-1989*. Diabetologia, 1992. 35(9): p. 880-3.
174. Patterson, C., *Variation and trends in incidence of childhood diabetes in Europe*. EURODIAB ACE Study Group, in *The lancet*. 2000: [London]. p. 873-876.

175. Roche, E.F., et al., *Incidence of type 1 diabetes mellitus in children aged under 15 years in the Republic of Ireland*. J Pediatr Endocrinol Metab, 2002. 15(8): p. 1191-4.
176. Roche, E.F., et al., *Is the incidence of type 1 diabetes in children and adolescents stabilising? The first 6 years of a National Register*, in *European journal of pediatrics*. 2016: Berlin. p. 1913-1919.
177. Patterson, C.C., D.J. Carson, and D.R. Hadden, *Epidemiology of childhood IDDM in Northern Ireland 1989-1994: low incidence in areas with highest population density and most household crowding*. Northern Ireland Diabetes Study Group. Diabetologia, 1996. 39(9): p. 1063-9.
178. Van Wouwe, J.P., et al., *Variation by ethnicity in incidence of diabetes type 1 and clinical condition at onset in the Netherlands*. Eur J Pediatr, 2002. 161(10): p. 559-60.
179. Joner, G. and O. Søvik, *The incidence of Type 1 (insulin-dependent) diabetes mellitus 15–29 years in Norway 1978–1982*. Diabetologia, 1991. 34(4): p. 271-274.
180. Skrivarhaug, T., et al., *Incidence of type 1 diabetes in Norway among children aged 0–14 years between 1989 and 2012: has the incidence stopped rising? Results from the Norwegian Childhood Diabetes Registry*. Diabetologia, 2014. 57(1): p. 57-62.
181. Hagglof, B., G. Holmgren, and S. Wall, *Incidence of insulin-dependent diabetes mellitus among children in a North-Swedish population 1938-1977*. Hum Hered, 1982. 32(6): p. 408-17.
182. Schoenle, E.J., et al., *Epidemiology of Type I diabetes mellitus in Switzerland: steep rise in incidence in under 5 year old children in the past decade*. Diabetologia, 2001. 44(3): p. 286-289.
183. Zhao, H.X., et al., *Incidence of childhood-onset Type 1 diabetes mellitus in Devon and Cornwall, England, 1975–1996*. Diabetic Medicine, 1999. 16(12): p. 1030-1035.
184. Gardner, S.G., et al., *Rising incidence of insulin dependent diabetes in children aged under 5 years in the Oxford region: time trend analysis*. BMJ, 1997. 315(7110): p. 713 LP-717.
185. Patterson, C.C., et al., *Geographical variation in the incidence of diabetes mellitus in Scottish children during the period 1977-1983*. Diabet Med, 1988. 5(2): p. 160-5.
186. Staines, A., et al., *The epidemiology of diabetes mellitus in the United Kingdom: The Yorkshire regional childhood diabetes register*. Diabetologia, 1993. 36(12): p. 1282-1287.
187. Podar, T., et al., *Increasing incidence of childhood-onset type I diabetes in 3 Baltic countries and Finland 1983-1998*. Diabetologia, 2001. 44 Suppl 3: p. B17-20.

188. Teeäär, T., et al., *Increasing incidence of childhood-onset type 1 diabetes mellitus among Estonian children in 1999-2006. Time trend analysis 1983-2006*, in *Pediatric diabetes*. 2010: [Copenhagen, DK] :. p. 107-110.
189. Soltesz, G., et al., *Rising incidence of type 1 diabetes in Hungarian children (1978-1987)*. *Hungarian Childhood Diabetes Epidemiology Group*. *Diabet Med*, 1990. 7(2): p. 111-4.
190. Jarosz-Chobot, P., et al., *Rapid increase in the incidence of type 1 diabetes in Polish children from 1989 to 2004, and predictions for 2010 to 2025*. *Diabetologia*, 2011. 54(3): p. 508-515.
191. Szalecki, M., et al., *Epidemiology of type 1 diabetes in Polish children: A multicentre cohort study*. *Diabetes Metab Res Rev*, 2018. 34(2).
192. Deja G, P.-S.A., Fabin K, Zarebska J, Polanska J, Jarosz-Chobot P., *Incidence rate of DT1 in Poland still increasing: New trend*. *Pediatr Diabetes*, 2021. 22: 25–105.
193. Michalkova, D.M., et al., *Incidence and prevalence of childhood diabetes in Slovakia (1985-1992)*. *Slovak Childhood Diabetes Epidemiology Study Group*. *Diabetes Care*, 1995. 18(3): p. 315-20.
194. Skordis, N., et al., *Epidemiology of Type 1 diabetes mellitus in Cyprus: rising incidence at the dawn of the 21st century*. *Hormones*, 2012. 11(1): p. 86-93.
195. Zung, A., et al., *Increase in the incidence of type 1 diabetes in Israeli children following the Second Lebanon War*. *Pediatr Diabetes*, 2012. 13(4): p. 326-33.
196. Group, I.I.R.S., *[Incidence of IDDM between the ages 0-17 years in Israel in 1998--the Israel IDDM Registry Study Group--IIRSG]*. *Harefuah*, 2002. 141: 789-791,858.
197. Gesuita, R., et al., *Trends and cyclic variation in the incidence of childhood type 1 diabetes in two Italian regions over 33 years and during the COVID-19 pandemic*. *Diabetes Obes Metab*, 2023. 25(6): p. 1698-1703.
198. Bruno, G., et al., *Age-Period-Cohort Analysis of 1990–2003 Incidence Time Trends of Childhood Diabetes in Italy*. *Diabetes*, 2010. 59(9): p. 2281 LP-2287.
199. Mazzella, M., et al., *Incidence of Type I Diabetes in the Liguria Region, Italy: Results of a prospective study in a 0- to 14-year age-group*. *Diabetes Care*, 1994. 17(10): p. 1193 LP-1196.
200. Bruno, G., et al., *Comparison of incidence of insulin-dependent diabetes mellitus in children and young adults in the Province of Turin, Italy, 1984-91*, in *Diabetic medicine*. 1997: [Oxford] :. p. 964-969.
201. Bruno, G., et al., *Incidence, prevalence, costs and quality of care of type 1 diabetes in Italy, age 0–29 years: The population-based CINECA-SID ARNO Observatory, 2002–2012*. *Nutrition, Metabolism and Cardiovascular Diseases*, 2016. 26(12): p. 1104-1111.
202. Schranz, A.G., *Trends in incidence of childhood type 1 diabetes in Malta*. *Diabetes Care*, 1998. 21(1): p. 194-5.

203. Radošević, B., et al., *The incidence of type 1 diabetes in Republic of Srpska (Bosnia and Herzegovina) and Slovenia in the period 1998–2010*. *Pediatric Diabetes*, 2013. 14(4): p. 273-279.
204. Tzaneva, V., V. Iotova, and G.J. Bruining, *Increase in IDDM incidence in Bulgarian children (1974-1995)*. *Journal of Pediatric Endocrinology and Metabolism*, 1998. 11: p. 725-732.
205. Raicevic, M., et al., *Trends in nationwide incidence of pediatric type 1 diabetes in Montenegro during the last 30 years*. *Front Endocrinol (Lausanne)*, 2022. 13: p. 991533.
206. Kocova, M., et al., *A cold spot of IDDM incidence in Europe. Macedonia*. *Diabetes Care*, 1993. 16(9): p. 1236-40.
207. Vukovic, R., et al., *First report on the nationwide incidence of type 1 diabetes and ketoacidosis at onset in children in Serbia: a multicenter study*. *Eur J Pediatr*, 2018. 177(8): p. 1155-1162.
208. Sipetic, S., et al., *Rising incidence of Type 1 diabetes in Belgrade children aged 0–14 years in the period from 1982 to 2005*. *Journal of Endocrinological Investigation*, 2013. 36(5): p. 307-312.
209. Ajlouni, K., et al., *Incidence of insulin-dependent diabetes mellitus in Jordanian children aged 0–14 y during 1992–1996*. *Acta Paediatrica*, 1999. 88(s427): p. 11-13.
210. Shaltout, A.A., et al., *Incidence of type 1 diabetes has doubled in Kuwaiti children 0-14 years over the last 20 years*. *Pediatric diabetes*, 2017. 18(8): p. 761-766.
211. Kadiki, O.A. and R.B. Roaeid, *Incidence of type 1 diabetes in children (0-14 years) in Benghazi Libya (1991-2000)*. *Diabetes Metab*, 2002. 28(6 Pt 1): p. 463-7.
212. Kadiki, O.A. and S.E. Moawad, *Incidence and prevalence of type 1 diabetes in children and adolescents in Benghazi, Libya*. *Diabet Med*, 1993. 10(9): p. 866-9.
213. Alyafei, F., et al., *Incidence of type 1 and type 2 diabetes, between 2012-2016, among children and adolescents in Qatar*. *Acta Biomed*, 2018. 89(S5): p. 7-10.
214. Zalutskaya, A., et al., *Did the Chernobyl incident cause an increase in Type 1 diabetes mellitus incidence in children and adolescents?* *Diabetologia*, 2004. 47(1): p. 147-148.
215. Shiryaeva, T.Y.e., E.A. Andrianova, and Y.I. Suntsov, *Type 1 diabetes mellitus in children and adolescents of Russian Federation: key epidemiology trends*. *Diabetes mellitus*, 2013. 16(3): p. 21-29.
216. Kondrashova, A., et al., *A six-fold gradient in the incidence of type 1 diabetes at the eastern border of Finland*. *Annals of Medicine*, 2005. 37(1): p. 67-72.
217. Pronina, E.A., et al., *A 10-year (1996-2005) prospective study of the incidence of Type 1 diabetes in Moscow in the age group 0-14 years, in Diabetic medicine*. 2008: [Oxford] :. p. 956-959.

218. Shubnikov, E., et al., *Low incidence of childhood IDDM in district of Novosibirsk (Russia)*. Diabetes Care, 1992. 15(7): p. 915-7.
219. Timchenko, O.I., et al., *[The prevalence of diabetes mellitus in children of different regions of Ukraine]*. Tsitol Genet, 1996. 30(6): p. 70-3.
220. Huen, K.F., et al., *Epidemiology of diabetes mellitus in children in Hong Kong: the Hong Kong childhood diabetes register*. Journal of Pediatric Endocrinology and Metabolism, 2000. 13(3): p. 297-302.
221. Tseng, C.H., *Incidence of type 1 diabetes mellitus in children aged 0-14 years during 1992-1996 in Taiwan*. Acta Paediatr, 2008. 97(4): p. 392-3.
222. Craig, M.E., et al., *The rising incidence of childhood type 1 diabetes in New South Wales, Australia*. J Pediatr Endocrinol Metab, 2000. 13(4): p. 363-72.
223. Taplin, C.E., et al., *The rising incidence of childhood type 1 diabetes in New South Wales, 1990–2002*. Medical Journal of Australia, 2005. 183(5): p. 243-246.
224. Haynes, A., et al., *Incidence of childhood onset type 1 diabetes in Western Australia from 1985 to 2016: Evidence for a plateau*. Pediatric Diabetes, 2018. 19(4): p. 690-692.
225. Flint, S.A., et al., *Evidence of a plateau in the incidence of type 1 diabetes in children 0-4 years of age from a regional pediatric diabetes center; Auckland, New Zealand: 1977-2019*. Pediatr Diabetes, 2021. 22(6): p. 854-860.
226. Willis, J., et al., *Type 1 diabetes diagnosed before age 15 years in Canterbury, New Zealand: A 50 year record of increasing incidence*. Pediatr Diabetes, 2022. 23(3): p. 301-309.
227. Willis, J.A., et al., *Incidence of type 1 diabetes mellitus diagnosed before age 20 years in Canterbury, New Zealand over the last 30 years*. J Pediatr Endocrinol Metab, 2002. 15(5): p. 637-43.
228. Blanchard, J.F., et al., *Incidence and prevalence of diabetes in children aged 0-14 years in Manitoba, Canada, 1985-1993*, in *Diabetes care*. 1997: [Alexandria, VA, etc.] :. p. 512-515.
229. Siemiatycki, J., et al., *The distribution of type I (insulin-dependent) diabetes mellitus by age, sex, secular trend, seasonality, time clusters, and space-time clusters: evidence from Montreal, 1971-1983*. Am J Epidemiol, 1986. 124(4): p. 545-60.
230. Newhook, L.A., et al., *Recent incidence of type 1 diabetes mellitus in children 0–14 years in Newfoundland and Labrador, Canada climbs to over 45/100,000: a retrospective time trend study*. BMC Research Notes, 2012. 5(1): p. 628-628.
231. Vehik, K., et al., *Increasing Incidence of Type 1 Diabetes in 0- to 17-Year-Old Colorado Youth*. Diabetes Care, 2007. 30(3): p. 503 LP-509.
232. Divers, J., et al., *Trends in incidence of type 1 and type 2 diabetes among youths-selected countries and indian reservations, United States, 2002-2015*. 2020. p. 161-65.

233. Lipman, T.H., et al., *Increasing Incidence of Type 1 Diabetes in Youth*. Diabetes Care, 2013. 36(6): p. 1597 LP-1603.
234. Dokheel, T.M., *An epidemic of childhood diabetes in the United States? Evidence from Allegheny County, Pennsylvania*. Pittsburgh Diabetes Epidemiology Research Group. Diabetes Care, 1993. 16(12): p. 1606-11.
235. North, A.F., Jr., K. Gorwitz, and H.A. Sultz, *A secular increase in the incidence of juvenile diabetes mellitus*. J Pediatr, 1977. 91(5): p. 706-10.
236. Patrick, S.L., et al., *IDDM incidence in a multiracial population. The Hawaii IDDM Registry, 1980-1990*. Diabetes Care, 1997. 20(6): p. 983-7.
237. Negrato, C.A., et al., *Temporal trends in incidence of Type 1 diabetes between 1986 and 2006 in Brazil*. J Endocrinol Invest, 2010. 33(6): p. 373-7.
238. Carrasco, E., et al., *One of the lowest validated incidence rates of insulin dependent diabetes mellitus in the Americas: Santiago, Chile, in Diabetes research and clinical practice*. 1996: [Amsterdam] :. p. S153-S157.
239. Torres-Aviles, F., et al., *Clustering of cases of type 1 diabetes in high socioeconomic communes in Santiago de Chile: spatio-temporal and geographical analysis*. Acta Diabetol, 2010. 47(3): p. 251-7.
240. Gong, C., et al., *Trends in childhood type 1 diabetes mellitus incidence in Beijing from 1995 to 2010: a retrospective multicenter study based on hospitalization data*. Diabetes Technol Ther, 2015. 17(3): p. 159-65.
241. Zhang, H., et al., *Increasing incidence of type 1 diabetes in children aged 0–14 years in Harbin, China (1990–2000)*. Primary Care Diabetes, 2008. 2(3): p. 121-126.
242. Zhao, Z., et al., *Rapidly rising incidence of childhood type 1 diabetes in Chinese population: epidemiology in Shanghai during 1997–2011*. Acta Diabetologica, 2014. 51(6): p. 947-953.
243. Shen, S.X., et al., *The incidence of insulin-dependent diabetes mellitus in urban districts of Shanghai (1989-1993)*. J Pediatr Endocrinol Metab, 1996. 9(4): p. 469-73.
244. Wu, H.B., et al., *Rapidly rising incidence of Type 1 diabetes in children and adolescents aged 0–19 years in Zhejiang, China, 2007 to 2013*. Diabetic Medicine, 2016. 33(10): p. 1339-1346.
245. Fu, H., et al., *Shanghai, China, has the lowest confirmed incidence of childhood diabetes in the world*. Diabetes Care, 1994. 17(10): p. 1206-8.
246. Kim, J.H., et al., *Increasing incidence of type 1 diabetes among Korean children and adolescents: analysis of data from a nationwide registry in Korea*. Pediatr Diabetes, 2016. 17(7): p. 519-524.
247. Group, D.P., *Incidence and trends of childhood Type 1 diabetes worldwide 1990-1999*. Diabet Med, 2006. 23(8): p. 857-66.
248. Tuchinda, C., et al., *The epidemiology of type 1 diabetes in Thai children*. 2002.

249. Panamonta, O., et al., *The rising incidence of type 1 diabetes in the northeastern part of Thailand*. J Med Assoc Thai, 2011. 94(12): p. 1447-50.
250. Patterson, C.C., et al., *Worldwide estimates of incidence, prevalence and mortality of type 1 diabetes in children and adolescents: Results from the International Diabetes Federation Diabetes Atlas, 9th edition*. Diabetes Research and Clinical Practice, 2019. 157(xxxx): p. 107842-107842.
251. Elamin, A., et al., *High incidence of type 1 diabetes mellitus in Sudanese children, 1991-1995*. Ann Saudi Med, 1997. 17(4): p. 478-80.
252. Damiens, A.P., et al., *Type 1 diabetes mellitus in Gabon. A study of epidemiological aspects*. International Journal of Pediatrics and Adolescent Medicine, 2019.

APPENDIX 3: INCIDENCE OVER TIME

1. Study selection

The methodology of study selection is described in Gregory et al. (2022).

Version 1.0 of the Index used 146 studies (Gregory 2022). Twenty-five further studies were added for this Version 3.0 / IDF Diabetes Atlas 11th Edition.

For 37 countries, we have used merged data from two or more studies with the same methodology and the same geography. When study periods overlapped, the study covering the most recent period overall was used for the years where the two studies overlapped.

2. Grouping of countries

Nine geographic groups of similar countries were identified, in the following regions: North-western Europe, North-eastern Europe, South-western Europe, South-eastern Europe, Middle East/North Africa, Hong Kong/Taiwan, Australia/New Zealand, US/Canada, and Latin South America.

Version 1 also had a grouping for Far-eastern Europe/Central Asia, but new data showed that this region's incidence change was very diverse, and at least one study may have been affected by ascertainment in the first years of the study. Therefore, this group was not used in Version 3.0.

There were also individual country data from 18 countries that, due to diversity of country income level, ethnicity, and varying incidence over time patterns, could not be readily combined into geographic groups: China, Japan, Republic of Korea, Thailand, Maldives, Bangladesh, Mexico, US Virgin Islands, Sudan, Mali, Burkina Faso, Gabon, Kazakhstan, Dominican Republic, Laos, Moldova, Costa Rica, Uzbekistan, Belarus, Russia, Ukraine. Groups are listed in **Table 1** and **Section 5** below.

Table 1. Geographic groupings and individual countries with Incidence over Time data

Group number	Region	Countries (n)	Countries with studies (n of studies)	Number of studies	Year of study data: (note, period from 2020 onwards excluded)	Years covered with >+ 2 studies
1	North-western Europe	14	Austria (3) ^{3,4,126} , Belgium ³ , Denmark (2) ^{3,5} , Finland (4) ⁶⁻⁹ , France (3) ¹⁰⁻¹² , Germany (3) ³ , Iceland (3) ^{13,14, 24} , Ireland (4) ^{3,15-17} , Luxembourg ³ ,	39	1938-2019	1953-2019

			Netherlands (3) ^{13,18,19} , Norway (3) ^{3,20,21} , Sweden (4) ^{22–25} , Switzerland (2) ^{3,26} , UK (7) ^{3,27–31,150}			
2	North-eastern Europe	8	Czechia (2) ^{3, 127} , East Germany ³² , Estonia (3) ^{33,34,128} , Hungary (3) ^{3,35,129} , Latvia ³³ , Lithuania (2) ^{3,33} , Poland (5) ^{3,36–38,130} , Slovakia (2) ^{3,39}	19	1960-2019	1970-2019
3	South-western Europe	6	Cyprus ⁴⁰ , Greece ⁴¹ , Israel (2) ^{42,43} , Italy (6) ^{3,44–47,131} 130, Malta (2) ^{48,49} , Spain (6) ^{3,50–53, 132}	18	1984-2019	1985-2019
4	South-eastern Europe	9	Armenia ⁵⁴ , Bosnia & Herzegovina ⁵⁵ , Bulgaria ⁵⁶ , Croatia ³ , Montenegro ³ , Nth Macedonia (2) ^{3,57} , Romania (2) ^{3,133} , Serbia (2) ^{58,59} , Slovenia ³	12	1974-2019	1982-2019
5	Middle East/North Africa	6	Algeria ⁶⁰ , Iran ¹³⁴ , Jordan ⁶¹ , Kuwait ⁶² , Libya (3) ^{63,64,135} , Qatar ⁶⁵	8	1975-2018	1982-2017
7	Hong Kong, Taiwan	2	Hong Kong (2) ^{73,74} , Taiwan (2) ^{75,76}	4	1984-2017	1992-2015
8	Australia/New Zealand	2	Australia (4) ^{77–79,136} , New Zealand (3) ^{80,81,137}	7	1970-2019	1977- 2019
9	Canada/US A	2	Canada (6) ^{82–86,138} , USA (7) ^{87–92,139}	13	1948-2018	1967-2014
10	Latin South America	2	Brazil (2) ^{93,94} , Chile (4) ^{95–97,140}	6	1986-2019	1990- 2015
11	China	1	China (7) ^{98–103,141}	7	1980-2013	Use 1980-2013 as single country

12	Japan		<i>Removed ss new data not consistent with older data</i>			
13	Republic of Korea	1	Rep. Korea (4) ¹⁰⁶⁻¹⁰⁹	4	1987-2016	Use 1987-2016 as single country
14	Thailand	1	Thailand (3) ^{110,111,142}	3	1991 -2005	Use 1991 -2005 as single country
15	Maldives	1	Maldives (1) ¹¹²	1	2009-2018	Use 2009-2018 as single country
16	Bangladesh	1	Bangladesh (2) ^{113,143}	2	2011-2018	Use 2009-2018 as single country
17	Mexico	1	Mexico (1) ¹¹⁴	1	2000-2018	Use 2000-2018 as single country
18	US Virgin Islands	1	US Virgin Islands (1) ¹¹⁵	1	2001-2010	Use 2001-2020 as single country
19	Sudan	1	Sudan (1) ¹¹⁶	1	1991-1995	Use 1991-1995 as single country
20	Burkina Faso	1	Burkina Faso ¹⁴⁴	1	2013-2019	Single country?
21	Gabon*	1	Gabon* (1) ¹¹⁸	1	2011-2017	Use 2011-2017 as single country
22	Mali*	1	Mali* (1) ¹¹⁷	1	2007-2016	Use 2007-2016 as single country
23	Dominican Republic	1	Dominican Republic (1) ¹⁴⁵	1	2010-2019	Use 2010-2019 as single country
24	Laos	1	Laos (1) ¹⁴⁶	1	2017-2019	Use 2017-2019

						as single country
25	Costa Rica	1	Costa Rica (1) ¹⁴⁷	1	2008-2015	Use 2008-2015 as single country
26	Kazakhstan	1	Kazakhstan (1) ¹⁴⁸	1	2015-2019	Use 2015-2019 as single country
27	Uzbekistan	1	Uzbekistan ⁷²	1	1997-2014	Use 1997-2014 as single country
28	Moldova	1	Moldova (1) ¹⁴⁹	1	2011-2019	Use 2011-2019 as single country
	All other countries	No specific data				

* Burkina Faso, Mali, and Gabon incidence rises are very likely to be confounded by improving diagnosis (i.e. less dying undiagnosed)

Note that there are no Incidence over Time data for large parts of Central, Western and Southern Asia, the Pacific, the Caribbean and Central America, and sub-Saharan Africa.

3. Lines of best fit of annual incidence change for each geographic group

A line of best fit of annual incidence change was calculated for each of Groups 1-10. The line of best fit was only calculated for a particular year when there are two or more studies in that group. **Table 1** lists the years the line was calculated for each group.

For each study, the annualised year-on-year incidence ratio was first calculated at the midpoint of each pair of consecutive years. The logarithms of these ratios were then regressed against year using local quadratic least squares regression with smoothing parameter 0.90 to produce a line of best fit.

Studies were not individually weighted for numbers of incident cases. However, a sensitivity analysis in Gregory (2022) comparing the above technique to a modification that included inverse variance weighting, in a subset of studies from the EURODIAB dataset for which sufficient data was available. This produced no substantial change in the estimated line of best fit.

The curves for each geographic grouping are shown below: in **Section 8** below

Finally, a line of best fit was also calculated from the data from all countries for the period 1985-2015, to give a “global average” curve.

This curve is shown in **Section 9** below.

If data were missing in a series (e.g. there were measured incidences every two years), incidences were interpolated in a straight line from the known points at either end of the period.

4. Estimates for each country

Incidence data were estimated for a given country and year using the best available data as follows:

Country scenarios	Belong to a Geographic group	Have country level Incidence over Time data (IOT Value)	Have Children incidence data (Children Value)	Example	Estimation method
A	Yes	Yes	Yes	Austria	Use (IOT Value), apply Geographic group curve until most recent year of data, then apply mean annual percent change of the last three years of data each year until 2025
B	Yes	No	Yes	New Zealand	Use (Children Value), apply Geographic group curve until most recent year of data, then apply mean annual percent change of the last three years of data each year until 2025
C	No	Yes	Yes	Mali	Use (IOT Value), apply Global Geographic group curve until 2019, then apply mean annual percent change of the last three years of data each year until 2025
D	No	No	Yes	Japan	Use (Children Value), apply Global Geographic group curve until 2019, then apply mean annual percent change of the last three years of data each year until 2025
E	No	No	No	Afghanistan	Use extrapolation country, follow A, B or C as appropriate

5. Excluded studies due to overlapping geographies

For Finland, the Parvianen et al. (2020)¹¹⁹ study, with different methodology, was excluded in favour of the Harjutsalo et al. (2013)⁹ - Toumilehto et al. (1999)⁶ - Somersalo et al. (1955)¹²⁰ study series with similar methodologies.

For Sweden, the EURODIAB Stockholm study (Patterson et al. 2019)³ was excluded in favour of the whole-country study series Samuelsson et al. (2020)²⁴, Berhan et al. (2011)²², and Nyström et al. (1990)²³ with similar methodologies.

For Croatia, the whole-country data from Rojnic Putarek et al. (2015)¹²¹ and Stipancic et al. (2008)¹²² were excluded in favour of the EURODIAB Zagreb study (Patterson et al, 2019)³ as the latter had a longer study period.

For Romania, the whole-country data of Vlad et al. (2018)¹²³ was excluded in favour of the EURODIAB Bucharest study (Patterson et al. 2019)³ as the latter had a longer study period and measured ascertainment.

For Australia, the whole-country data from Haynes et al. (2020)¹²⁴ and Haynes et al. (2015)¹²⁵ was excluded in favour of the New South Wales data from Taplin et al. (2005)⁷⁸ and Craig et al (2000)⁷⁷, and the Western Australian data from Haynes et al. (2018)⁷⁹, as the latter studies had a longer study period.

For US, Colorado data was available from 1978-1988 and 2002-2004 from Vehik et al. (2007)⁸⁷. Colorado was also one of the five study sites in the combined SEARCH study data from 2002-2015 (Divers et al., 2020)⁸⁸. Both studies were included as there was minimal overlap and Colorado was only a small part of the SEARCH data.

For Republic of Korea, there was whole-country data from 1995-2016 from Kim et al. (2016)¹⁰⁹ and Chae et al. (2020)¹⁰⁶, as well as Seoul data from 1985-1998 (Ko et al., 1994)¹⁰⁷ and the DIAMOND study (2006)¹⁰⁸. Both were used as there was minimal overlap.

6. List of merged studies

Austria (whole country): Schober et al. (1995)⁴ from 1980-1993 and Nagl et al. (2023)¹²⁶ from 1989-2019 were merged with (Patterson (2019)³ from 1989-2013.

Australia (New South Wales): NDSS (personal communication)¹³⁶ was merged with Craig et al. (2000)⁷⁷ from 1990-1996 and Taplin et al. (2005)⁷⁸ from 1997-2002.

Brazil (Bauru): Negrato et al. (2010)⁹³ from 1986-2006 was merged with Negrato et al. (2017)⁹⁴ from 2007-2015.

Canada: Siemiatycki et al (1988)⁸⁴ from 1971-1985, Blanchard et al (1997)⁸³ from 1985-1993, Newhook et al (2012)⁸⁵ from 1987-2010, Fox et al (2018)⁸² from 2002-2013 and Cummings et al (2021)⁸⁶ from 1994-2018 were merged with Cohen et al (2022)¹³⁸ from 2002-2010

Chile (Santiago): Carrasco et al. (1996)⁹⁷ from 1990-2005, Torres-Aviles et al. (2010)⁹⁶ from 2000-2015 and Garfias et al (2020)⁹⁵ from 2006-2014 were merged with Tampe et al (2024)¹⁴⁰ from 2006-2019

China: Fu et al (1994)¹⁰³ from 1980-1991, Shui-xian et al (1996)¹⁰² from 1989-1993, Zhang et al (2008)⁹⁹ from 1990-2000, Zhao et al (2014)¹⁰⁰ from 1997-2011, Gong et al (2015)⁹⁸ from 1995-2010 and Wu et al (2016)¹⁰¹ from 2007-2013 were merged with Liu et al (2023)¹⁴¹ from 2007-2021

Czechia: Cinek et al (2022)¹²⁷ from 2005-2019 was merged with Patterson et al (2019)³ from 1989-2013.

China (Shanghai): Liu et al (2023)¹⁴¹ from 2007-2019 and Fu et al. (1994)¹⁰³ from 1980-1991 was merged with Shui-Xian et al. (1996)¹⁰² from 1989-1993.

Denmark (whole country): Svensson et al. (2002)⁵ from 1970-2000 was merged with Patterson et al. (2019)³ from 1989-2013, and then registry data till 2019.

Estonia (whole country): Podar et al. (2001)³³ from 1983-1998 and Teeäär et al. (2010)³⁴ from 1999-2006 were merged with Mattson et al (2024)¹²⁸ from 2007-2019

Finland (whole country): Reunanen et al (1982)⁸ from 1970-1979, Tuomilehto et al. (1991)⁷ from 1965-1984, Tuomilehto et al. (1999)⁶ and from 1987-1996 were merged with Harjutsalo et al. (2013)⁹ from 2006-2011, and then Registry data to 2023.

France: Levy-Marchal et al (1998)¹¹ from 1988 -1995 Barat et al (2008)¹⁰ from 1988-2004 were merged with Pifaretti et al (2019)¹² from 2010-2015

Hong Kong (whole country): Huen et al. (2000)⁷³ from 1984-1996 was merged with Tung et al. (2020)⁷⁴ from 2008-2017.

Hungary (excluding Budapest): Soltész et al. (1990)³⁵ from 1978-1987 and Barkai et al (2020)¹²⁹ from 2001-2016 were merged with Patterson et al. (2019)³ from 1989-2013.

Iceland (whole country): (Helgason et al. (1992)¹⁴ from 1980-1999 and Sameuelsen et al (2020)²⁴ was from 2006 to 2011 were merged with EURODIAB ACE Study Group (2000)¹³ from 1989-1994.

Ireland (whole country): Patterson et al. (1996)¹⁵ from 1989-1994, Roche et al. (2002)¹⁶ from 1997, Roche et al. (2016)¹⁷ from 2008-2009 were merged with Patterson (2019)³ from 2008-2013.

Israel (whole country): Israel IDDM Registry Study Group (2002)⁴² from 1989-1993 was merged with Zung et al. (2012)⁴³ from 2002-2007.

Italy: Mazella et al (1994) from 1987-1991, Bruno et al (1997)⁴⁶ from 1984-1991, Bruno (2002)⁴⁵ from 2002-2012, Bruno et al (2010)⁴⁴ from 1990-2003 and Gesuita et al (2023)¹³¹ were merged with Patterson et al (2019)³ from 1989-2013

Libya: Kadiki et al (1993)⁶⁴ from 1991-2000 and Kadiki et al (2002)⁶³ from 1991-2000 were merged with Khashebi et al (2023) from 2009-2018.

Lithuania (whole country): Podar et al. (2001)³³ from 1983-1998 was merged with Patterson et al. (2019)³ from 1999-2013.

Malta (whole country): Schranz et al. (1998)⁴⁸ from 1980-1996 was merged with Formosa et al. (2012)⁴⁹ from 2006-2010.

Netherlands (whole country): van Wouwe et al. (2002)¹⁹ from 1996-1999 and Spaans et al. (2015)¹⁸ from 2010-2011 were merged with the EURODIAB ACE Study group (2000)¹³ from 1989-2004.

New Zealand: Willis et al (2002)⁸¹ from 1970 to 1999 and Flint et al (2021)⁸⁰ from 1977-2019 were merged with Willis et al (2022)¹³⁷ from 1970-2019.

North Macedonia (whole country): Kocova et al. (1993)⁵⁷ from 1985-1991 was merged with Patterson (2019) from 1994-2013.

Norway (whole country): Joner et al. (1989)²⁰ from 1973-1982 was merged with Skrivarhaug et al. (2014)²¹ from 2004-2012 and Patterson et al. (2019)³ from 1989-2013.

Poland: Jarosz-Chobot et al (2011)³⁷ from 1989-2004, Szalecki et al (2018)³⁸, from 2010-2014, Deja et al (2020)³⁶ from 1989-2019 and Niechal et al (2024) from 1998-2018 were merged with Patterson et al (2019)³ from 1989-2013

Republic of Korea (whole country): Kim et al. (2016)¹⁰⁹ from 1995-2015 was merged with Chae et al. (2020)¹⁰⁶ from 2008-2016.

Republic of Korea (Seoul): Ko et al. (1994)¹⁰⁷ from 1985-1998 was merged with DIAMOND Project Group (2006)¹⁰⁸ from 1990-1991.

Romania: Vlad et al (2021)¹³³ from 2015-2019 was merged with Patterson et al (2019)³ from 1989-2013

Serbia: Sipetic et al (2013)⁵⁹ from 1982 to 2005 was merged with Vuckovic et al (2018)⁵⁸ from 2007-2017

Slovakia (whole country): Michalkova et al. (1995)³⁹ from 1985-1992 was merged with Patterson et al. (2019)³ from 1994-2003.

Spain: Gimeno Benitez et al (2014)⁵² from 2003-2007, Fernandez-Ramos et al (2017)⁵⁰ from 1990-2013, Forga et al (2018)⁵³ from 2009-2016,, Novoa et al (2020)⁵¹ from 2006-2018 and Ortiz-Marron et al (2021)¹³² from 1997-2016 were merged with Patterson et al (2019)³ from 1989-2013.

Sweden (whole country): Hagglof (1982)²⁵ from 1938-1977, Nyström et al. (1990)²³ from 1978-1987 and Berhan et al (2011)²² from 1978-2007 was merged with Samuelsson et al. (2020)²⁴ from 2006-2011.

Switzerland (whole country): Schoenle et al. (2001)²⁶ from 1983-1999 was merged with Patterson et al. (2019)³ from 1994-2013.

Taiwan: Tseng (2008)⁷⁵ from 1992-1996 was merged with Sheen et al (2019)⁷⁵ from 2005-2014

Thailand (North East): Tuchinda et al. (2002)¹¹⁰ from 1991-1995 and Panamonta et al. (2011)¹¹¹ from 1996-2005 were merged with Rittiphairoj et al (2022)¹⁴² from 2015-2019

United Kingdom (Oxford): Thomson et al (2023)¹⁵⁰ from 2006-2019, Harvey et al (2021)³¹ from 1990-2019, Patterson et al. (2019)³ from 1985-1986, Zhao et al (1999)²⁷ from 1975-1996, Staines et al (1993)³¹ from 1978-1990 and Patterson (1988)²⁹ from 1977-1983 was merged with Gardner et al. (1997)²⁸ from 1994-1995.

USA: North et al (1977)⁹² from 1959-1972, Dokheel et al (1993)⁹¹ from 1965-1989, Patrick et al (1997)⁸⁹ from 1980-1990, Lipman et al (2013)⁹⁰ from 2005 and Divers et al (2020)⁸⁸ from 2002-2015 were merged with Wangenknecht (2013)¹³⁹ from 2002-2018.

7. Geographic groupings

Group 1: North-western Europe - Austria, Belgium, Channel Islands, Denmark, Faroe Islands, Finland, France, Germany, Greenland, Guernsey, Iceland, Ireland, Isle of Man, Italy, Jersey, Liechtenstein, Luxembourg, Monaco, Netherlands, Norway, San Marino, Sweden, Switzerland, United Kingdom

Group 2: North-eastern Europe - Czechia, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia

Group 3: South-western Europe - Andorra, Cyprus, Greece, Israel, Malta, Portugal, Spain

Group 4: South-eastern Europe - Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Montenegro, North Macedonia, Romania, Serbia, Slovenia

Group 5: Middle East/North Africa - Algeria, Bahrain, Egypt, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Qatar, Saudi Arabia, State of Palestine, Syria, Tunisia, United Arab Emirates

Group 6: Far Eastern Europe/Central Asia – *Removed as data not consistent*

Group 7: Hong Kong/Taiwan – Hong Kong/Macao/Taiwan

Group 8: Australia/New Zealand – Australia, New Zealand

Group 9: Canada/USA - Canada, USA

Group 10: Latin South America - Argentina, Bolivia (Bolivarian Republic of), Brazil, Chile, Colombia, Ecuador, Paraguay, Peru, Uruguay, Venezuela

Group 11: China

Group 12: Japan, *Removed as new data not consistent with older data*

Group 13: Republic of Korea

Group 14: Thailand

Group 15: Maldives

Group 16: Bangladesh

Group 17: Mexico

Group 18: US Virgin Islands

Group 19: Sudan

Group 20: Burkina Faso

Group 21: Gabon

Group 22: Mali

Group 23: Dominican Republic

Group 24: Laos

Group 25: Costa Rica

Group 26: Kazakhstan

Group 27: Uzbekistan

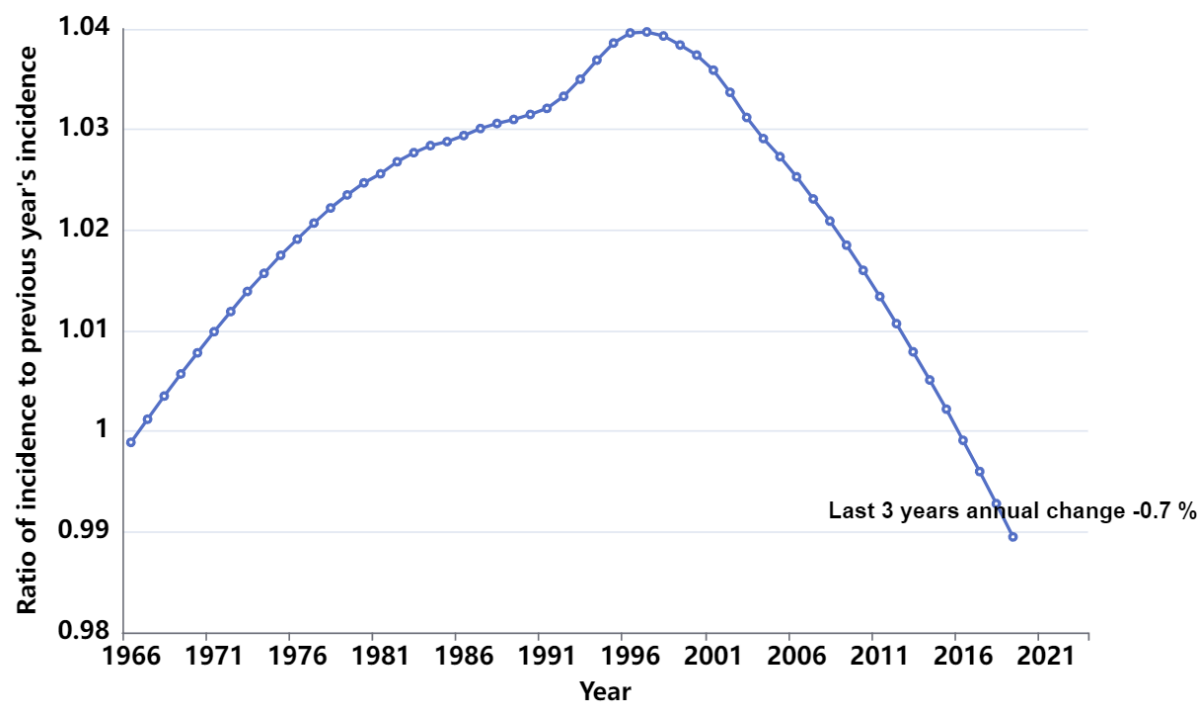
Group 28: Moldova

All other countries: Afghanistan, American Samoa, Angola, Antigua and Barbuda, Armenia, Aruba, Azerbaijan, Bahamas, Barbados, Belarus, Belize, Benin, Bermuda, Bhutan, Botswana, British Virgin Islands, Brunei Darussalam, Burkina Faso, Burundi, Cambodia, Cameroon, Cape Verde, Cayman Islands, Central African Republic, Chad, Comoros, Congo, Costa Rica, Côte d'Ivoire, Cuba, Curaçao, Democratic People's Republic of Korea, Democratic Republic of the Congo, Djibouti, Dominica, Dominican Republic, El Salvador, Equatorial Guinea, Eritrea, Eswatini, Ethiopia, Fiji, French Polynesia, Gambia, Georgia, Ghana, Grenada, Guam, Guatemala, Guernsey, Guinea, Guinea-Bissau, Guyana, Haiti, Honduras, India, Indonesia, Iran (Islamic Republic of), Iraq, Jamaica, Jersey, Kazakhstan, Kenya, Kiribati, Kosovo, Kyrgyzstan, Laos, Lesotho, Liberia, Madagascar, Malawi, Malaysia, Marshall Islands, Mauritania, Mauritius, Mayotte, Micronesia (Federated States of), Mongolia, Mozambique, Myanmar, Namibia, Nauru, Nepal, New Caledonia, Nicaragua, Niger, Nigeria, Niue, Northern Mariana Islands, Pakistan, Palau, Panama, Papua New Guinea, Philippines, Puerto Rico, Russian Federation, Rwanda, Samoa, Sao Tome and Principe, Senegal, Seychelles, Sierra Leone, Singapore, Solomon Islands, Somalia, South Africa, South Sudan, Sri Lanka,

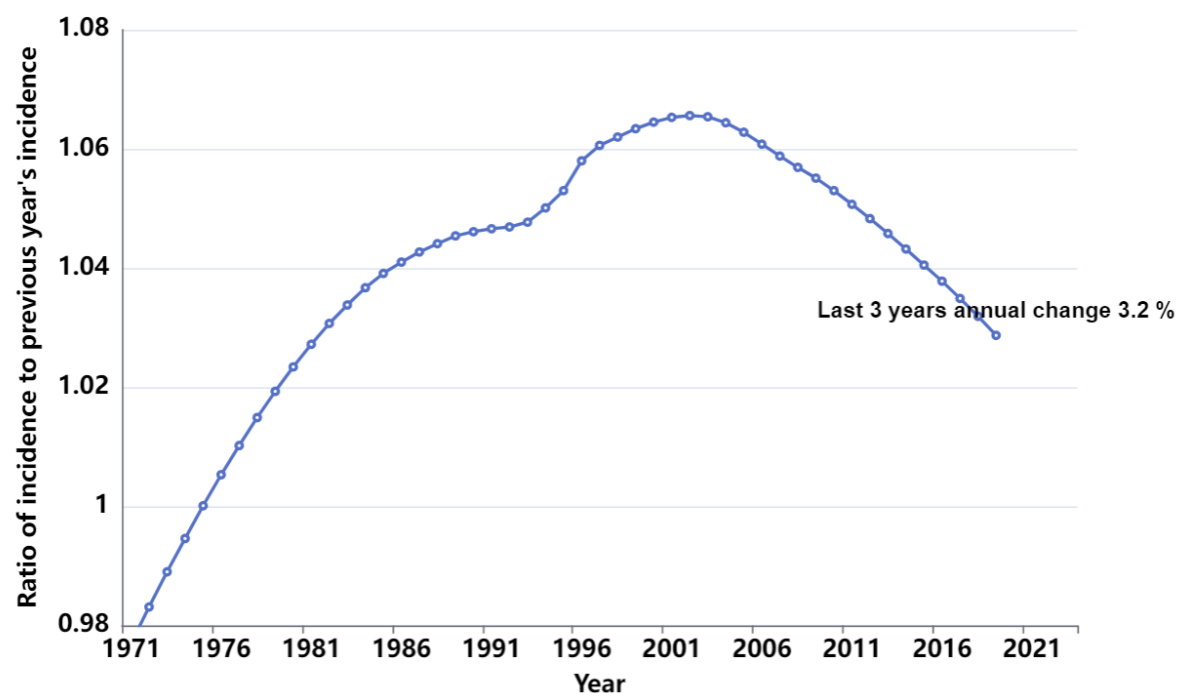
St Kitts and Nevis, St Lucia, St Vincent and the Grenadines, Suriname, Tajikistan, Timor L'Este, Togo, Tonga, Trinidad and Tobago, Turkey, Turkmenistan, Tuvalu, Uganda, Ukraine, United Republic of Tanzania, Vanuatu, Viet Nam, Yemen, Zambia, Zimbabwe

8. Line of best fit for the nine geographic regions with multiple countries

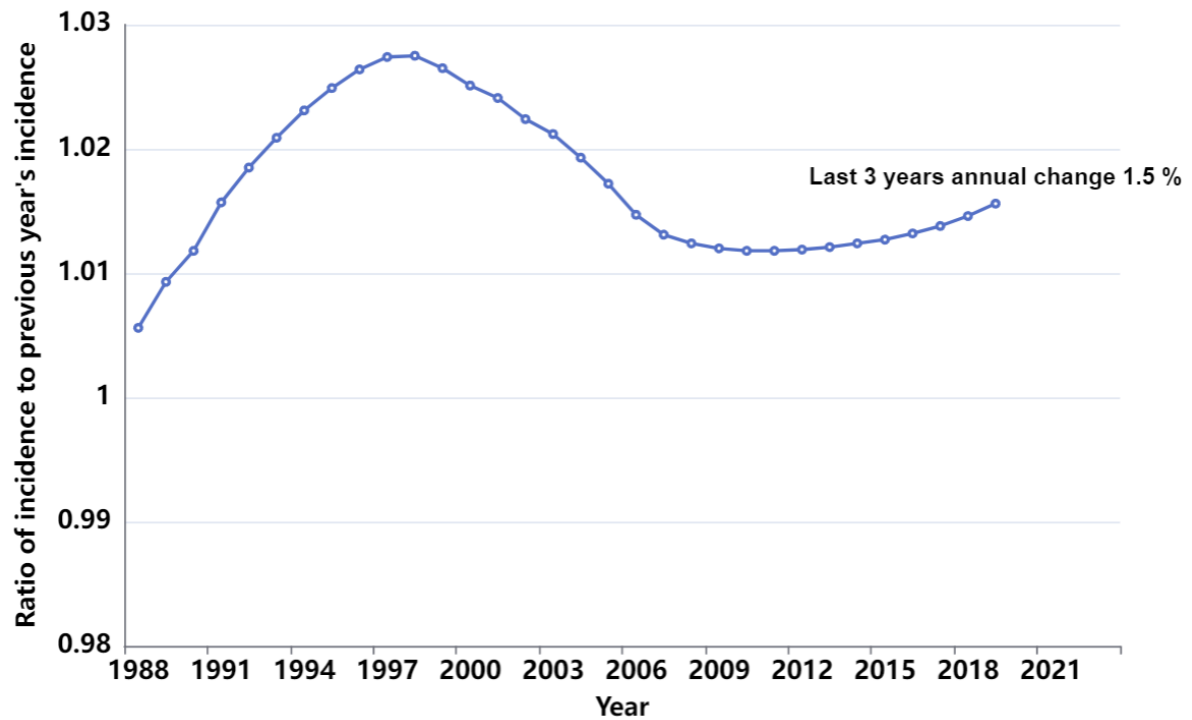
Group 1 - North-western Europe



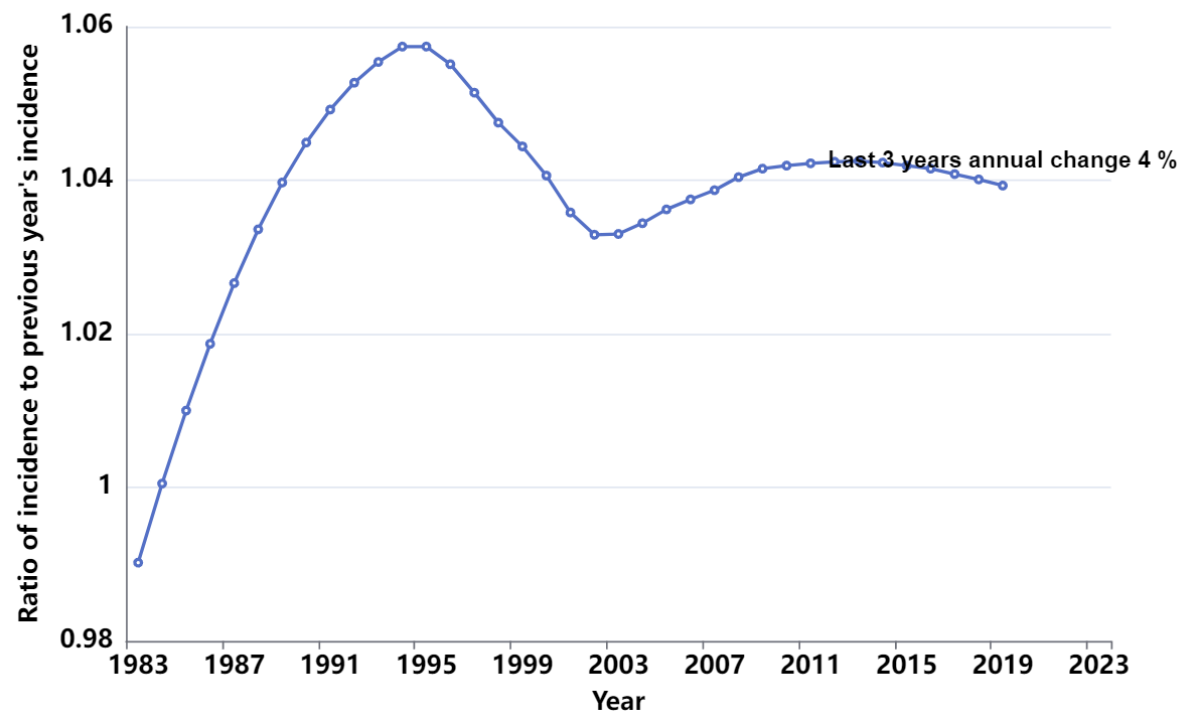
Group 2 - North-eastern Europe



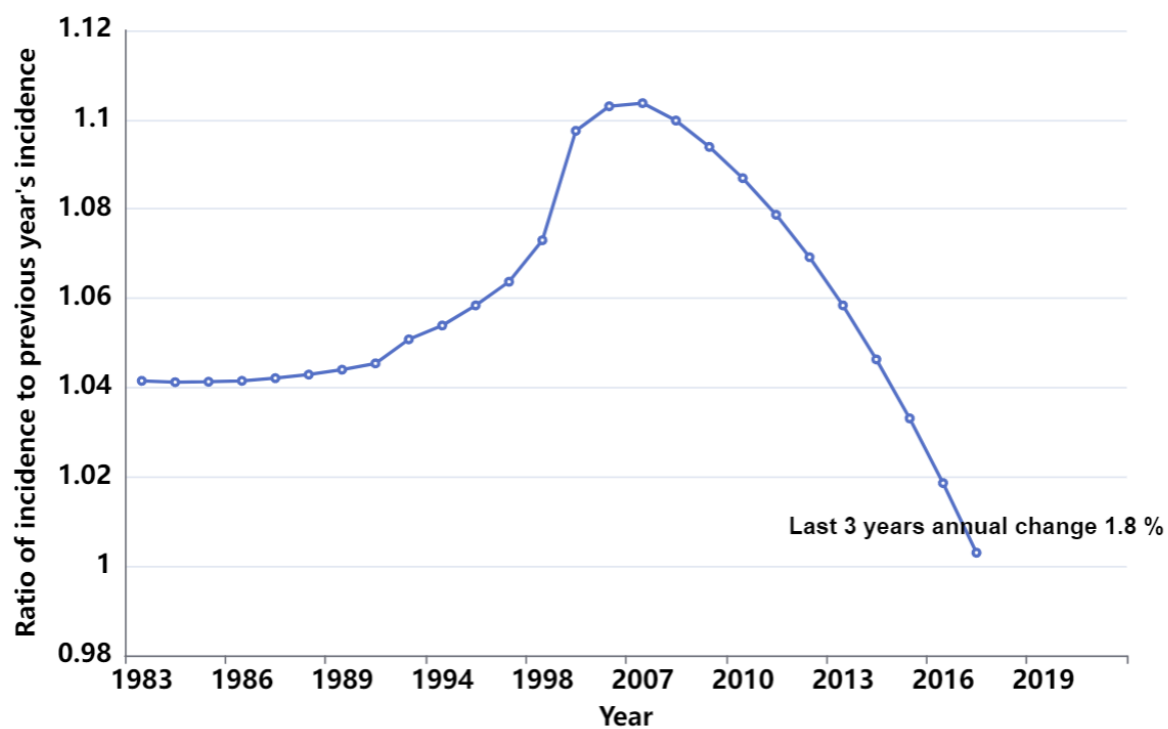
Group 3 - South-western Europe



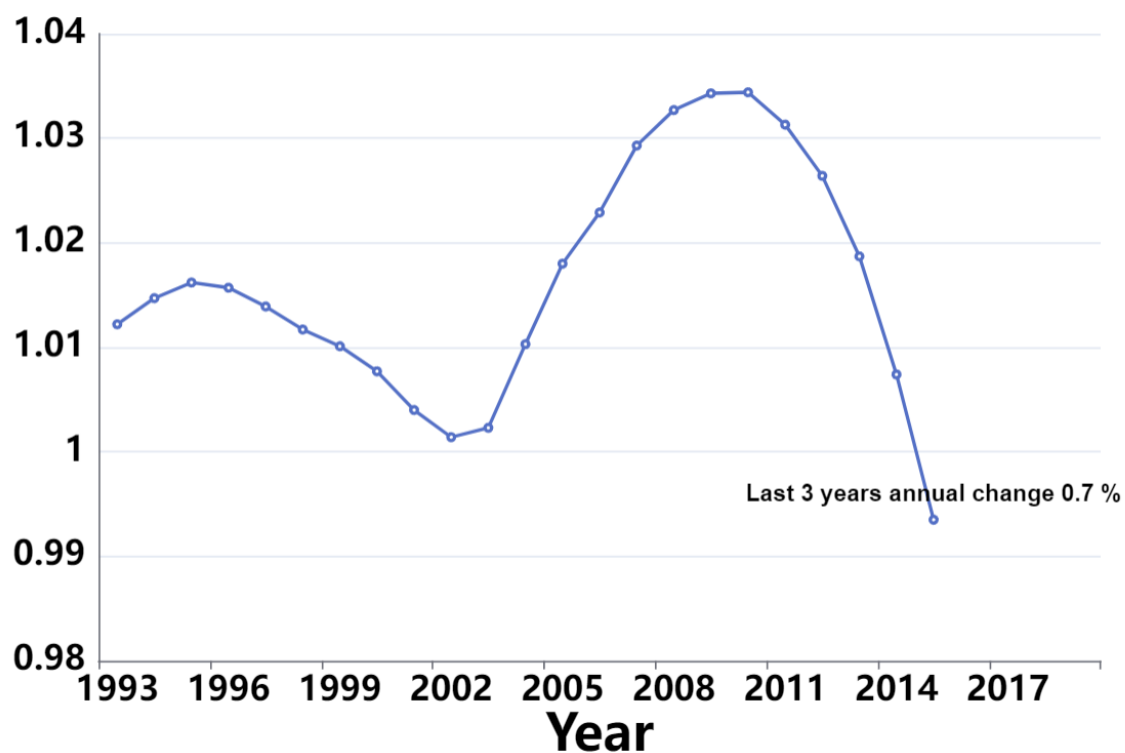
Group 4 - South-eastern Europe



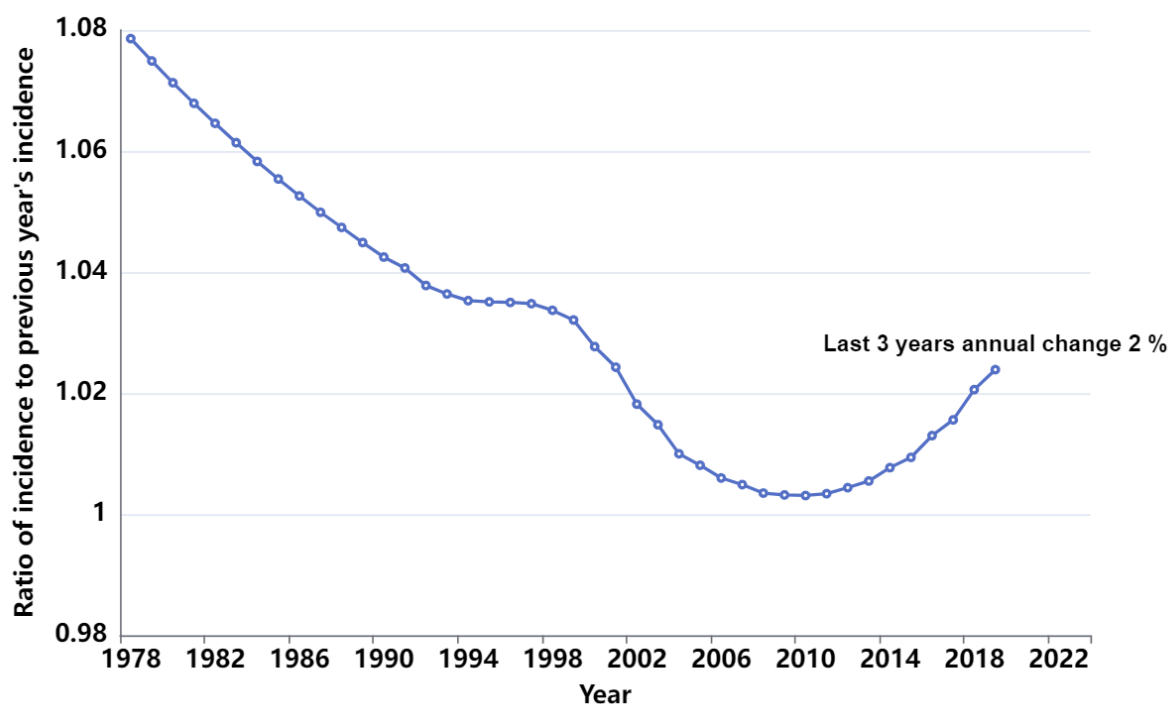
Group 5 - Middle East, North Africa



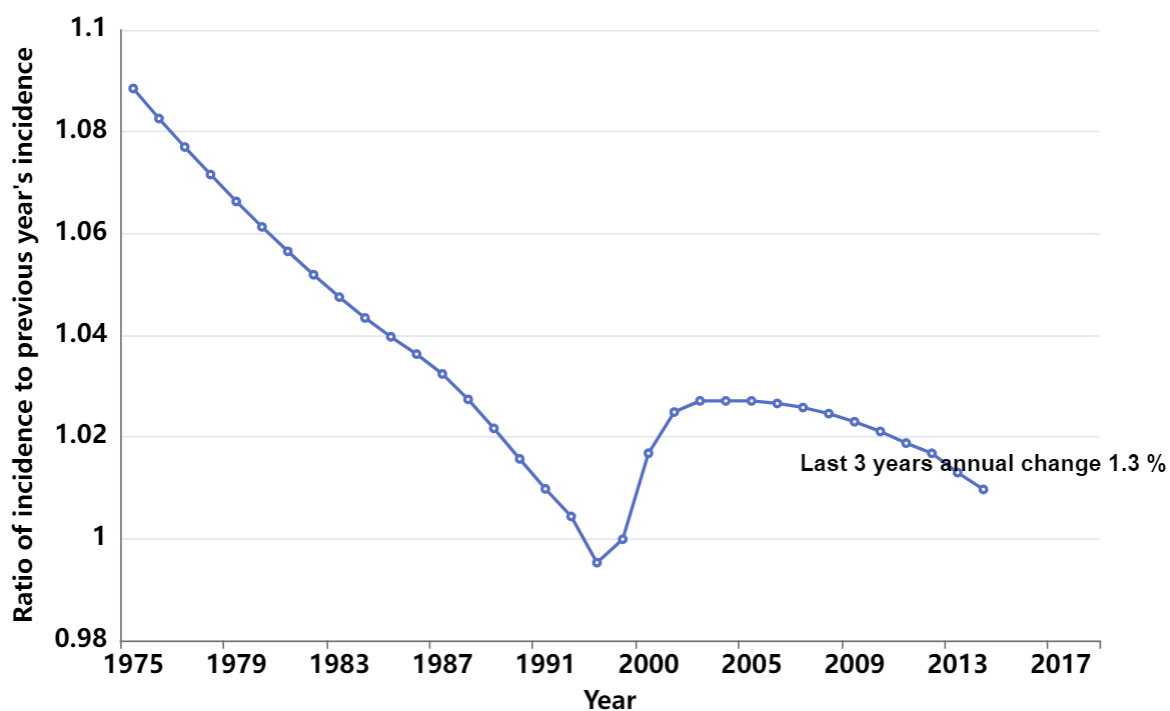
Group 7 - Hong Kong, Taiwan



Group 8 - Australia, New Zealand

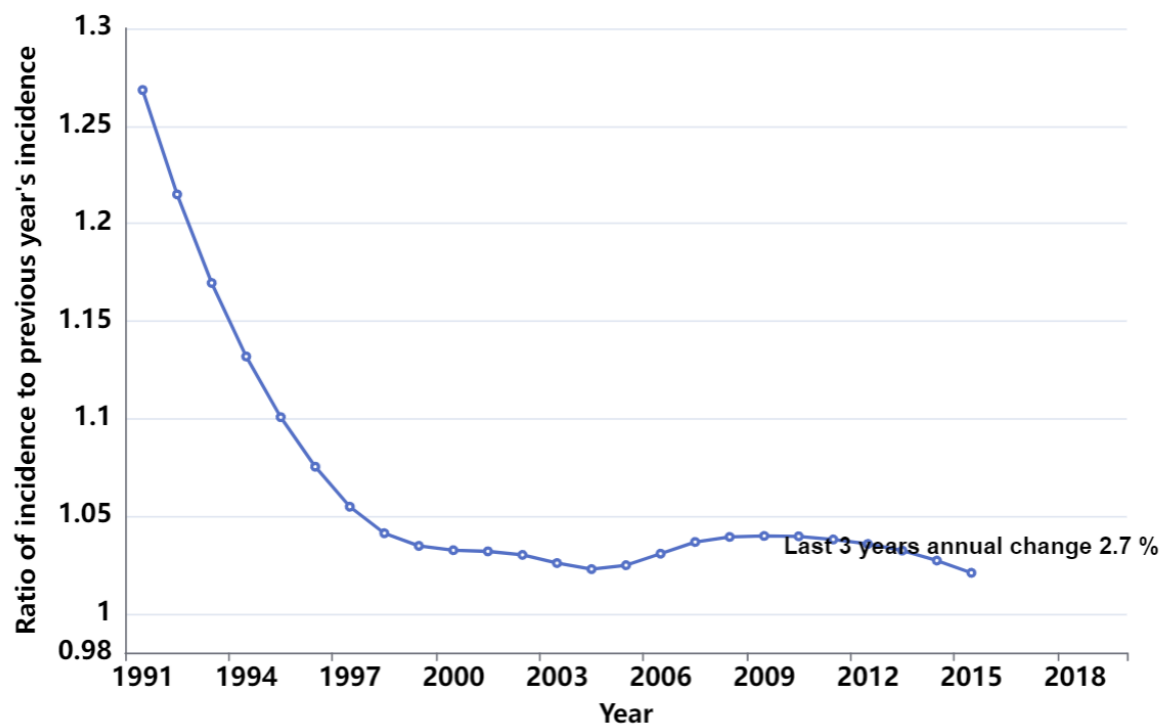


Group 9 - Canada, USA

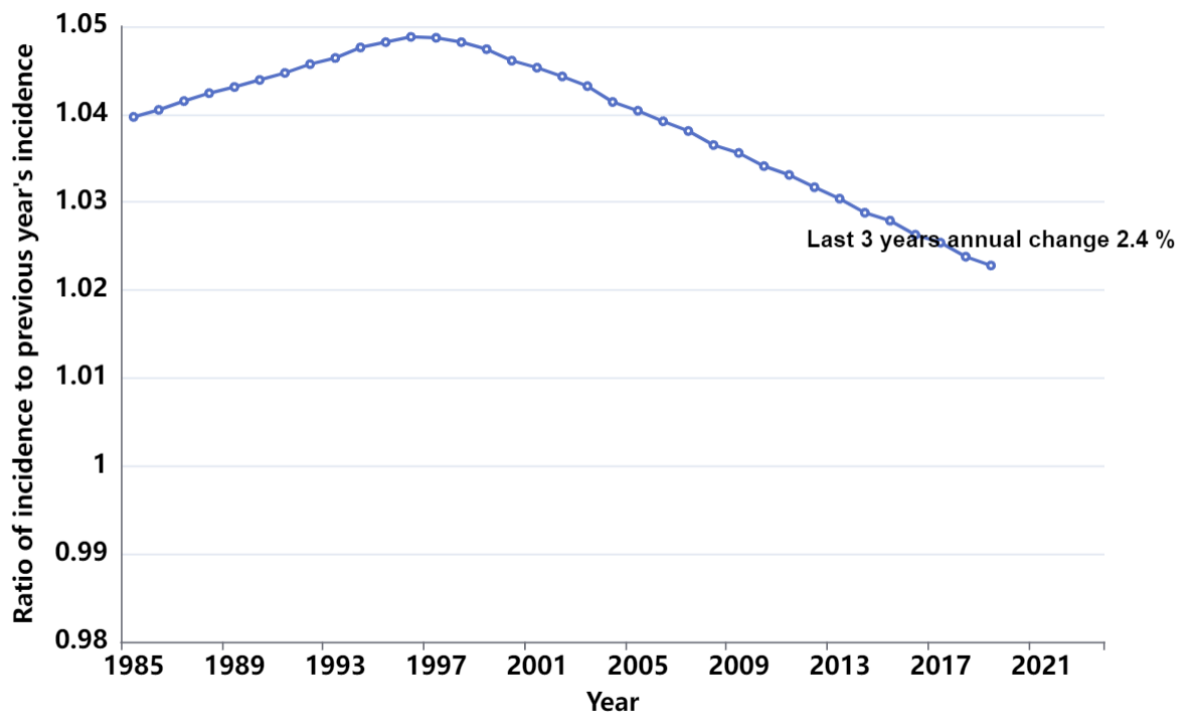


The U-shape in the incidence rates is presumably due to the sparsity of Canada/USA data at this point in the mid-1990s, with only two available studies, both from Canada, from different provinces, with only three data points in total between 1993 and 1999.

Group 10 - Latin South America



9. Average of year-on-year incidence change for all countries for 1985-2019 – “Global curve”



10. References

- 1 Ogle GD, James S, Dabelea D, *et al.* Global estimates of incidence of type 1 diabetes in children and adolescents: Results from the International Diabetes Federation Atlas, 10th Edition. *Diabetes Res Clin Pract* 2021; 109083.
- 2 IDF Diabetes Atlas Group. IDF Diabetes Atlas. 2021. <https://diabetesatlas.org/resources/#> (accessed Nov 29, 2021).
- 3 Patterson CC, Harjutsalo V, Rosenbauer J, *et al.* Trends and cyclical variation in the incidence of childhood type 1 diabetes in 26 European centres in the 25 year period 1989–2013: a multicentre prospective registration study. *Diabetologia* 2019; 62: 408–17.
- 4 Schober E, Schneider U, Waldhör T, Tuomilehto J, Group ADIS. Increasing incidence of IDDM in Austrian children: a nationwide study 1979–1993. *Diabetes Care* 1995; 18: 1280–3.
- 5 Svensson J, Carstensen B, Molbak AG, *et al.* Increased risk of childhood type 1 diabetes in children born after 1985. *Diabetes Care* 2002; 25: 2197–201.
- 6 Tuomilehto J, Karvonen M, Pitkaniemi J, *et al.* Record-high incidence of Type I (insulin-dependent) diabetes mellitus in Finnish children. *Diabetologia* 1999; 42: 655–60.
- 7 Tuomilehto J, Rewers M, Reunanen A, *et al.* Increasing trend in Type 1 (insulin-dependent) diabetes mellitus in childhood in Finland - Analysis of age, calendar time and birth cohort effects during 1965 to 1984. *Diabetologia* 1991; 34: 282–7.
- 8 Reunanen A, Akerblom HK, Käär ML. Prevalence and ten-year (1970-1979) incidence of insulin-dependent diabetes mellitus in children and adolescents in Finland. *Acta Paediatr Scand* 1982; 71: 893–9.
- 9 Harjutsalo V, Sund R, Knip M, Groop P-H. Incidence of type 1 diabetes in Finland. *JAMA* 2013; 310: 427–8.
- 10 Barat P, Valade A, Brosselin P, Alberti C, Maurice-Tison S, Lévy-Marchal C. The growing incidence of type 1 diabetes in children: The 17-year French experience in Aquitaine. *Diabetes Metab* 2008; 34: 601–5.
- 11 Lévy-Marchal C. [Evolution of the incidence of IDDM in childhood in France]. *Rev Epidemiol Sante Publique* 1998; 46: 157–63.
- 12 Piffaretti C, Mandereau-Bruno L, Guilmin-Crepon S, Choleau C, Coutant R, Fosse-Edorh S. Trends in childhood type 1 diabetes incidence in France, 2010–2015. *Diabetes Res Clin Pract* 2019; 149: 200–7.
- 13 EURODIAB ACE Study Group. Variation and trends in incidence of childhood diabetes in Europe. EURODIAB ACE Study Group. *Lancet (London, England)* 2000; 355: 873–6.
- 14 Helgason T, Danielsen R, Thorsson A V. Incidence and prevalence of type 1 (insulin-dependent) diabetes mellitus in Icelandic children 1970-1989. *Diabetologia* 1992; 35: 880–3.
- 15 Patterson CC, Carson DJ, Hadden DR. Epidemiology of childhood IDDM in Northern Ireland 1989-1994: low incidence in areas with highest population density and most household crowding. Northern Ireland Diabetes Study Group. *Diabetologia* 1996; 39: 1063–9.
- 16 Roche EF, Menon A, Gill D, Hoey HMCV. Incidence of type 1 diabetes mellitus in children aged under 15 years in the Republic of Ireland. *J Pediatr Endocrinol Metab* 2002; 15: 1191–4.
- 17 Roche EF, McKenna AM, Ryder KJ, Brennan AA, O'Regan M, Hoey HM. Is the incidence of type 1 diabetes in children and adolescents stabilising? The first 6 years of a National Register. *Eur J Pediatr* 2016; 175: 1913–9.

- 18 Spaans EAJM, Gusdorf LMA, Groenier KH, *et al.* The incidence of type 1 diabetes is still increasing in the Netherlands, but has stabilised in children under five (Young DUDEs-1). *Acta Paediatr* 2015; 104: 626–9.
- 19 Van Wouwe JP, Verkerk PH, Mattiazzo GF, El Mokadem N, HiraSing RA. Variation by ethnicity in incidence of diabetes type 1 and clinical condition at onset in the Netherlands. *Eur J Pediatr* 2002; 161: 559–60.
- 20 Joner G, Sovik O. Increasing incidence of diabetes mellitus in Norwegian children 0–14 years of age 1973–1982. *Diabetologia* 1989; 32: 79–83.
- 21 Skriverhaug T, Stene LC, Drivvoll AK, Strøm H, Joner G. Incidence of type 1 diabetes in Norway among children aged 0–14 years between 1989 and 2012: Has the incidence stopped rising? Results from the Norwegian Childhood Diabetes Registry. *Diabetologia* 2014; 57: 57–62.
- 22 Berhan Y, Waernbaum I, Lind T, Möllsten A, Dahlquist G. Thirty years of prospective nationwide incidence of childhood type 1 diabetes: The accelerating increase by time tends to level off in Sweden. *Diabetes* 2011; 60: 577–81.
- 23 Nyström L, Dahlquist G, Rewers M, Wall S. The Swedish childhood diabetes study. An analysis of the temporal variation in diabetes incidence 1978–1987. *Int J Epidemiol* 1990; 19: 141–6.
- 24 Samuelsson U, Westerberg L, Aakesson K, *et al.* Geographical variation in the incidence of type 1 diabetes in the Nordic countries: A study within NordicDiabKids. *Pediatr Diabetes* 2020; 21: 259–65.
- 25 Hägglöf B, Holmgren G, Wall S. Incidence of insulin-dependent diabetes mellitus among children in a North-Swedish population 1938–1977. *Hum Hered* 1982; 32: 408–17.
- 26 Schoenle EJ, Lang-Muritano M, Gschwend S, *et al.* Epidemiology of Type I diabetes mellitus in Switzerland: Steep rise in incidence in under 5 year old children in the past decade. *Diabetologia* 2001; 44: 286–9.
- 27 Zhao HX, Stenhouse E, Soper C, *et al.* Incidence of childhood-onset Type 1 diabetes mellitus in Devon and Cornwall, England, 1975–1996. *Diabet Med* 1999; 16: 1030–5.
- 28 Gardner SG, Bingley PJ, Sawtell PA, Weeks S, Gale EAM. Rising incidence of insulin dependent diabetes in children aged under 5 years in the Oxford region: Time trend analysis. *Br Med J* 1997; 315: 713–7.
- 29 Patterson CC, PG Smith, J Webb. Geographic variation in the incidence of diabetes mellitus in Scottish Children during the period 197701983. *Diabet Med* 1988; 5: 160–5.
- 30 Harvey JN, Hibbs R, Maguire MJ, O’Connell H, Gregory JW. The changing incidence of childhood-onset type 1 diabetes in Wales: Effect of gender and season at diagnosis and birth. *Diabetes Res Clin Pract* 2021; 175: 108739.
- 31 Staines A, Bodansky HJ, Lilley HEB, Stephenson C, McNally RJQ, Cartwright RA. The epidemiology of diabetes mellitus in the United Kingdom: The Yorkshire regional childhood diabetes register. *Diabetologia* 1993; 36: 1282–7.
- 32 Michaelis D, Jutzi E, Vogt L. Epidemiology of insulin-treated diabetes mellitus in the East-German population: differences in long-term trends between incidence and prevalence rates. *Diabetes & Metab* 1993; 19: 110–115.
- 33 Podar T, Solntsev A, Karvonen M, *et al.* Increasing incidence of childhood-onset type I diabetes in 3 Baltic countries and Finland 1983–1998. *Diabetologia* 2001; 44: B17–20.
- 34 Teeäär T, Liivak N, Heilman K, *et al.* Increasing incidence of childhood-onset type 1 diabetes mellitus among Estonian children in 1999–2006. Time trend analysis 1983–2006. *Pediatr Diabetes* 2010; 11: 107–10.
- 35 Soltész G, Madácsy L, Békefi D, Dankó I. Rising incidence of type 1 diabetes in Hungarian children (1978–1987). Hungarian Childhood Diabetes Epidemiology Group. *Diabet Med* 1990; 7: 111–4.

- 36 Deja G, Pyziak-Skupien A, Fabin K, Zarebska J, Polanska J, Jarosz-Chobot P. Incidence rate of DT1 in Poland still increasing: New trend. *Pediatr Diabetes* 2021; 22: 25–105.
- 37 Jarosz-Chobot P, Polanska J, Szadkowska A, *et al.* Rapid increase in the incidence of type 1 diabetes in Polish children from 1989 to 2004, and predictions for 2010 to 2025. *Diabetologia* 2011; 54: 508–15.
- 38 Szalecki M, Wysocka-Mincewicz M, Ramotowska A, *et al.* Epidemiology of type 1 diabetes in Polish children: A multicentre cohort study. *Diabetes Metab Res Rev* 2018; 34: 1–6.
- 39 Michalková DM, Černay J, Danková A, Rusnák M, Fandáková K. Incidence and prevalence of childhood diabetes in Slovakia (1985-1992). *Diabetes Care* 1995; 18: 315–20.
- 40 Skordis N, Efsthathiou E, Kyriakides TC, *et al.* Epidemiology of type 1 diabetes mellitus in Cyprus: rising incidence at the dawn of the 21st century. *Hormones (Athens)* 2012; 11: 86–93.
- 41 Mamoulakis D, Vrouvaki F, Louvari V, Galanakis E. Incidence of childhood Type 1 diabetes mellitus in Crete. *Diabet Med* 2018; 35: 1210–5.
- 42 Israel IDDM Registry Study Group. [Incidence of IDDM between the ages 0-17 years in Israel in 1998--the Israel IDDM Registry Study Group--IIRSG]. *Harefuah* 2002; 141: 789-791,858.
- 43 Zung A, Blumenfeld O, Shehadeh N, *et al.* Increase in the incidence of type 1 diabetes in Israeli children following the Second Lebanon War. *Pediatr Diabetes* 2012; 13: 326–33.
- 44 Bruno G, Maule M, Merletti F, *et al.* Time Trends of Childhood Diabetes in Italy The RIDI Study. *Diabetes* 2010; 59: 2281–7.
- 45 Bruno G, Pagano E, Rossi E, *et al.* Incidence, prevalence, costs and quality of care of type 1 diabetes in Italy, age 0–29 years: The population-based CINECA-SID ARNO Observatory, 2002–2012. *Nutr Metab Cardiovasc Dis* 2016; 26: 1104–11.
- 46 Bruno G, Merletti F, De Salvia A, Lezo A, Arcari R, Pagano G. Comparison of incidence of insulindependent diabetes mellitus in children and young adults in the Province of Urin, Italy, 1984-91. *Diabet Med* 1997; 14: 964–9.
- 47 Mazzella M, Cotellessa M, Bonassi S, *et al.* Incidence of Type I Diabetes in the Liguria Region, Italy: Results of a prospective study in a 0- to 14-year age-group. *Diabetes Care* 1994; 17: 1193–6.
- 48 Schranz AG. Trends in incidence of childhood type 1 diabetes in Malta. *Diabetes Care.* 1998; 21: 194–5.
- 49 Formosa N, Calleja N, Torpiano J. Incidence and modes of presentation of childhood type 1 diabetes mellitus in Malta between 2006 and 2010. *Pediatr Diabetes* 2012; 13: 484–8.
- 50 Fernández-Ramos C, Arana-Arri E, Jiménez-Huertas P, Vela A, Rica I. Incidence of childhood-onset type 1 diabetes in Biscay, Spain, 1990–2013. *Pediatr Diabetes* 2017; 18: 71–6.
- 51 Nóvoa Y, de La Cuesta A, Caballero E, *et al.* Epidemiology of childhood-onset type 1 diabetes in Gran Canaria (2006–2018). *Endocrinol Diabetes y Nutr (English ed)* 2020; 67: 658–64.
- 52 Gimeno Benítez A, Luengo Pérez LM, Suero Villa P, Suero Villa S, Sánchez Vega J. Incidencia de la diabetes tipo 1 infantil en Extremadura, 2003-2007. *Semergen* 2014; 40: 177–82.
- 53 Forga L, Tamayo I, Berrade S, Ibáñez B, Rodríguez Erdozain RM, Goñi MJ. Incidencia de diabetes tipo 1 en Navarra (2009-2016): mayor en la zona sur de la comunidad TT - Incidence of type 1 diabetes in Navarre (2009-2016): higher in the southern regions of the autonomous community. *An Sist Sanit Navar* 2018; 41: 69–74.

- 54 Navasardyan L. Epidemiology of type 1 diabetes in children and adolescents in the Republic of Armenia. *New Armen Med J* 2014; 8: 89–94.
- 55 Radošević B, Bukara-Radujković G, Miljković V, Pejić S, Bratina N, Battelino T. The incidence of type 1 diabetes in Republic of Srpska (Bosnia and Herzegovina) and Slovenia in the period 1998-2010. *Pediatr Diabetes* 2013; 14: 273–9.
- 56 Tzaneva V, Iotova V, Bruining GJ. Increase in IDDM incidence in Bulgarian children (1974-1995). *J Pediatr Endocrinol Metab* 1998; 11: 725–32.
- 57 Kocova M, Trucco M, Konstantinova M, Dorman JS. A cold spot of IDDM incidence in Europe: Macedonia. *Diabetes Care* 1993; 16: 1236–40.
- 58 Vuković R, Jesić MD, Vorgućin I, *et al.* First report on the nationwide incidence of type 1 diabetes and ketoacidosis at onset in children in Serbia: a multicenter study. *Eur J Pediatr* 2018; 177: 1155–62.
- 59 Sipetić S, Maksimović J, Vlajinac H, *et al.* Rising incidence of Type 1 diabetes in Belgrade children aged 0-14 years in the period from 1982 to 2005. *J Endocrinol Invest* 2013; 36: 307–12.
- 60 Touhami M, Zennaki A, Bouchetara A, *et al.* Epidemiological Evolution of Type 1 Diabetes in Children: Data from the Register of the Department of Oran, Algeria, 1973–2017. *Rev Epidemiol Sante Publique* 2019; 67: 369–74.
- 61 Ajlouni K, Qusous Y, Khawaldeh A, *et al.* Incidence of insulin-dependent diabetes mellitus in Jordanian children aged 0–14 y during 1992–1996. *Acta Paediatr* 1999; 88: 11–3.
- 62 Shaltout AA, Wake D, Thanaraj TA, *et al.* Incidence of type 1 diabetes has doubled in Kuwaiti children 0-14 years over the last 20 years. *Pediatr Diabetes* 2017; 18: 761–6.
- 63 Kadiki OA, Roaeid RBM. Incidence of type 1 diabetes in children (0-14 years) in Benghazi Libya (1991-2000). *Diabetes Metab* 2002; 28: 463–7.
- 64 Kadiki OA, Moawad SE. Incidence and prevalence of diabetes in children and adolescents in Benghazi, Libya. *Diabetologia* 1993; 10: 866–9.
- 65 Alyafei F, Soliman AT, Alkhalaf F, *et al.* Incidence of type 1 and type 2 diabetes, between 2012-2016, among children and adolescents in Qatar. *Acta Biomed* 2018; 89: 7–10.
- 66 Zalutskaya A, Bornstein SR, Mokhort T, Garmaev D. Did the Chernobyl incident cause an increase in Type 1 diabetes mellitus incidence in children and adolescents? [6]. *Diabetologia* 2004; 47: 147–8.
- 67 Shiryaeva TY, Andrianova EA, Suntsov YI. Type 1 diabetes mellitus in children and adolescents of Russian Federation: key epidemiology trends. *Diabetes Mellit* 2013; : 21–9.
- 68 Kondrashova A, Reunanen A, Romanov A, *et al.* A six-fold gradient in the incidence of type 1 diabetes at the eastern border of Finland. *Ann Med* 2005; 37: 67–72.
- 69 Pronina EA, Petraikina EE, Antsiferov MB, *et al.* A 10-year (1996-2005) prospective study of the incidence of Type 1 diabetes in Moscow in the age group 0-14 years. *Diabet Med* 2008; 25: 956–9.
- 70 Shubnikov E, Podar T, Tuomilehto J, Nikitin Y. Low Incidence of Childhood IDDM in District of Novosibirsk (Russia). *Diabetes Care* 1992; 15: 915–7.
- 71 Timchenko OI, GS Kozachok, EI Turos EO. The prevalence of diabetes mellitus in children of different regions of Ukraine. *Tsitol Genet* 1996; 30: 70–3.
- 72 Rakhimova GN, Alimova NU, Ryaboshan A, Waldman B, Ogle GD, Ismailov SI. Epidemiological data of type 1 diabetes mellitus in children in Uzbekistan, 1998-2014. *Pediatr Diabetes* 2018; 19: 158–65.
- 73 Huen KF, Low LC, Wong GW, *et al.* Epidemiology of diabetes mellitus in children in Hong Kong: the Hong Kong childhood diabetes register. *J Pediatr Endocrinol Metab* 2000; 13: 297–302.

- 74 Tung JY ling, Kwan EY wai, But BW man, *et al.* Increasing incidence of type 1 diabetes among Hong Kong children and adolescents: The Hong Kong Childhood Diabetes Registry 2008 to 2017. *Pediatr Diabetes* 2020; 21: 713–9.
- 75 Tseng C-H. Incidence of type 1 diabetes mellitus in children aged 0-14 years during 1992-1996 in Taiwan. *Acta Paediatr.* 2008; 97: 392–3.
- 76 Sheen YJ, Hsu CC, Jiang Y Der, Huang CN, Liu JS, Sheu WHH. Trends in prevalence and incidence of diabetes mellitus from 2005 to 2014 in Taiwan. *J Formos Med Assoc* 2019; 118: S66–73.
- 77 Craig ME, Howard NJ, Silink M, Chan A. The rising incidence of childhood type 1 diabetes in New South Wales, Australia. *J Pediatr Endocrinol Metab* 2000; 13: 363–72.
- 78 Taplin CE, Craig ME, Lloyd M, *et al.* The rising incidence of childhood type 1 diabetes in New South Wales, 1990-2002. *Med J Aust* 2005; 183: 243–6.
- 79 Haynes A, Bulsara MK, Jones TW, Davis EA. Incidence of childhood onset type 1 diabetes in Western Australia from 1985 to 2016: Evidence for a plateau. *Pediatr Diabetes* 2018; 19: 690–2.
- 80 Flint SA, Gunn AJ, Hofman PL, *et al.* Evidence of a plateau in the incidence of type 1 diabetes in children 0–4 years of age from a regional pediatric diabetes center; Auckland, New Zealand: 1977–2019. *Pediatr Diabetes* 2021; 22: 854–60.
- 81 Willis JA, Scott RS, Darlow BA, *et al.* Incidence of type 1 diabetes mellitus diagnosed before age 20 years in Canterbury, New Zealand over the last 30 years. *J Pediatr Endocrinol Metab* 2002; 15: 637–43.
- 82 Fox DA, Islam N, Sutherland J, Reimer K, Amed S. Type 1 diabetes incidence and prevalence trends in a cohort of Canadian children and youth. *Pediatr Diabetes* 2018; 19: 501–5.
- 83 Blanchard JF, Dean H, Anderson K, Wajda A, Ludwig S, Depew N. Incidence and prevalence of diabetes in children aged 0-14 years in Manitoba, Canada, 1985-1993. *Diabetes Care* 1997; 20: 512–5.
- 84 Siemiatycki J, Colle E, Campbell S, Dewar R, Aubert D, Belmonte MM. Incidence of IDDM in Montreal by ethnic group and by social class and comparisons with ethnic groups living elsewhere. *Diabetes* 1988; 37: 1096–102.
- 85 Newhook LA, Penney S, Fiander J, Dowden J. Recent incidence of type 1 diabetes mellitus in children 0-14 years in Newfoundland and Labrador, Canada climbs to over 45/100,000: A retrospective time trend study. *BMC Res Notes* 2012; 5: 1.
- 86 Cummings E, Flemming M, Talbot P. Trends in incidence of type 1 diabetes in children and adolescents over 25 years in Nova Scotia Canada: 1994-2018. *Pediatr Diabetes* 2021; 22: 25–105.
- 87 Vehik K, Hamman RF, Lezotte D, *et al.* Increasing incidence of type 1 diabetes in 0- to 17-year-old Colorado youth. *Diabetes Care* 2007; 30: 503–9.
- 88 Divers J, Mayer-Davis EJ, Lawrence JM, *et al.* Trends in Incidence of Type 1 and Type 2 Diabetes Among Youths — Selected Counties and Indian Reservations, United States, 2002–2015. *MMWR Morb Mortal Wkly Rep* 2020; 69: 161–5.
- 89 Patrick SL, Kadohiro JK, Waxman SH, *et al.* IDDM incidence in a multiracial population: The Hawaii IDDM Registry, 1980-1990. *Diabetes Care* 1997; 20: 983–7.
- 90 Lipman TH, Ratcliffe SJ, Cooper R, Levitt Katz LE. Population-based survey of the prevalence of type 1 and type 2 diabetes in school children in Philadelphia. *J Diabetes* 2013; 5: 456–61.
- 91 Dokheel TM. An Epidemic of Childhood Diabetes in the United States?: Evidence from Allegheny County, Pennsylvania. *Diabetes Care* 1993; 16: 1606–11.
- 92 North AFJ, Gorwitz K, Sultz HA. A secular increase in the incidence of juvenile diabetes mellitus. *J Pediatr* 1977; 91: 706–10.

- 93 Negrato CA, Dias JPL, Teixeira MF, *et al.* Temporal trends in incidence of type 1 diabetes between 1986 and 2006 in Brazil. *J Endocrinol Invest* 2010; 33: 373–7.
- 94 Negrato CA, Lauris JRP, Saggioro IB, *et al.* Increasing incidence of type 1 diabetes between 1986 and 2015 in Bauru, Brazil. *Diabetes Res Clin Pract* 2017; 127: 198–204.
- 95 Garfias CP, Borzutzky A, Ugarte MF, García HJ, Phingsthorn M, García HG. Mandatory notifications of type 1 diabetes incident cases in Chilean children, 2006 to 2014: A population-based study. *Pediatr Diabetes* 2020; 21: 48–52.
- 96 Torres-Avilés F, Carrasco E, Icaza G, Pérez-Bravo F. Clustering of cases of type 1 diabetes in high socioeconomic communes in Santiago de Chile: Spatio-temporal and geographical analysis. *Acta Diabetol* 2010; 47: 251–7.
- 97 Carrasco E, Perez F, Calvillan M, *et al.* [Incidence of insulin-dependent diabetes mellitus in Santiago, Chile (1990-1993)]. *Rev Med Chil* 1996; 124: 561–6.
- 98 Gong C, Meng X, Jiang Y, Wang X, Cui H, Chen X. Trends in childhood type 1 diabetes mellitus incidence in Beijing from 1995 to 2010: a retrospective multicenter study based on hospitalization data. *Diabetes Technol Ther* 2015; 17: 159–65.
- 99 Zhang H, Xia W, Yu Q, *et al.* Increasing incidence of type 1 diabetes in children aged 0–14 years in Harbin, China (1990–2000). *Prim Care Diabetes* 2008; 2: 121–6.
- 100 Zhao Z, Sun C, Wang C, *et al.* Rapidly rising incidence of childhood type 1 diabetes in Chinese population: epidemiology in Shanghai during 1997–2011. *Acta Diabetol* 2014; 51: 947–53.
- 101 Wu HB, Zhong JM, Hu RY, *et al.* Rapidly rising incidence of Type 1 diabetes in children and adolescents aged 0–19 years in Zhejiang, China, 2007 to 2013. *Diabet Med* 2016; 33: 1339–46.
- 102 Shui-xian S, Hong-bing W, Zhao-wen C, *et al.* The incidence of insulin-dependent diabetes mellitus in urban districts of Shanghai (1989–1993). *J Pediatr Endocrinol Metab* 1996; 9: 469–73.
- 103 Fu H, Shen SX, Chen ZW, *et al.* Shanghai, China, has the lowest confirmed incidence of childhood diabetes in the world. *Diabetes Care* 1994; 17: 1206–8.
- 104 Kawasaki E, Matsuura N, Eguchi K. Type 1 diabetes in Japan. *Diabetologia* 2006; 49: 828–36.
- 105 Onda Y, Sugihara S, Ogata T, *et al.* Incidence and prevalence of childhood-onset Type 1 diabetes in Japan: the T1D study. *Diabet Med* 2017; 34: 909–15.
- 106 Chae HW, Seo GH, Song K, *et al.* Incidence and prevalence of type 1 diabetes mellitus among Korean children and adolescents between 2007 and 2017: An epidemiologic study based on a national database. *Diabetes Metab J* 2020; 44: 866–74.
- 107 Ko KW, Yang SW, Cho NH. The incidence of IDDM in Seoul from 1985 to 1988. *Diabetes Care* 1994; 17: 1473–5.
- 108 The DIAMOND Project Group. Incidence and trends of childhood Type 1 diabetes worldwide 1990–1999. *Diabet Med* 2006; 23: 857–66.
- 109 Kim JH, Lee CG, Lee YA, Yang SW, Shin CH. Increasing incidence of type 1 diabetes among Korean children and adolescents: analysis of data from a nationwide registry in Korea. *Pediatr Diabetes* 2016; 17: 519–24.
- 110 Tuchinda C, Likitmaskul S, Unachak K, Panamonta O, Patarakijavanich N, Chetthakul T. The epidemiology of type 1 diabetes in Thai children. *J Med Assoc Thai* 2002; 85: 648–52.
- 111 Panamonta O, Thamjaroen J, Panamonta M, Panamonta N, Suesirisawat C. The rising incidence of type 1 diabetes in the northeastern part of Thailand. *J Med Assoc Thai* 2011; 94: 1447–50.

- 112 Majeed NA, Shiruhana SA, Maniam J, Eigenmann CA, Siyan A, Ogle GD. Incidence, prevalence and mortality of diabetes in children and adolescents aged under 20 years in the Republic of Maldives. *J Paediatr Child Health* 2020; 56: 746–50.
- 113 Zabeen B, Maniam J, Balsa AMM, *et al.* Incidence of diabetes in children and adolescents in Dhaka, Bangladesh. *J Pediatr Endocrinol Metab* 2021; 34: 509–15.
- 114 Wachter NH, Gómez-Díaz RA, Ascencio-Montiel I de J, Rascón-Pacheco RA, Aguilar-Salinas CA, Borja-Aburto VH. Type 1 diabetes incidence in children and adolescents in Mexico: Data from a nation-wide institutional register during 2000–2018. *Diabetes Res Clin Pract* 2020; 159: 107949.
- 115 Washington RE, Orchard TJ, Arena VC, Laporte RE, Tull ES. Incidence of type 1 and type 2 diabetes in youth in the US Virgin Islands, 2001-2010. *Pediatr Diabetes* 2013; 14: 280–7.
- 116 Elamin A, Ghalib M, Eltayeb B. High incidence of type I diabetes mellitus in Sudanese children, 1991-1995. *Ann Saudi Med* 1997; 17: 478–80.
- 117 Sandy JL, Besançon S, Sidibé AT, Minkailou M, Togo A, Ogle GD. Rapid increases in observed incidence and prevalence of Type 1 diabetes in children and youth in Mali, 2007–2016. *Pediatr Diabetes* 2021; 22: 545–51.
- 118 Pambou Damiens A, Ganga –Zandzou PS, Tsoucka Ibounde E, *et al.* Type 1 diabetes mellitus in Gabon: A study of epidemiological aspects. *Int J Pediatr Adolesc Med* 2019; 6: 87–91.
- 119 Parviainen A, But A, Siljander H, Knip M. Decreased incidence of type 1 diabetes in young finnish children. *Diabetes Care* 2020; 43: 2953–8.
- 120 Somersalo O. Studies of childhood diabetes. I. Incidence in Finland. *Ann Paediatr Fenn*; 1: 239–49.
- 121 Rojnic Putarek N, Ille J, Spehar Uroic A, *et al.* Incidence of type 1 diabetes mellitus in 0 to 14-yr-old children in Croatia - 2004 to 2012 study. *Pediatr Diabetes* 2015; 16: 448–53.
- 122 Stipancic G, La Grasta Sabolic L, Malenica M, Radica A, Skrabic V, Tiljak MK. Incidence and trends of childhood Type 1 diabetes in Croatia from 1995 to 2003. *Diabetes Res Clin Pract* 2008; 80: 122–7.
- 123 Vlad A, Serban V, Green A, *et al.* Time Trends, Regional Variability and Seasonality Regarding the Incidence of Type 1 Diabetes Mellitus in Romanian Children Aged 0-14 Years, Between 1996 and 2015. *J Clin Res Pediatr Endocrinol* 2018; 10: 92–9.
- 124 Haynes A, Bulsara MK, Bergman P, *et al.* Incidence of type 1 diabetes in 0 to 14 year olds in Australia from 2002 to 2017. *Pediatr Diabetes* 2020; 21: 707–12.
- 125 Haynes A, Bulsara MK, Bower C, Jones TW, Davis EA. Regular peaks and troughs in the Australian incidence of childhood type 1 diabetes mellitus (2000–2011). *Diabetologia* 2015; 58: 2513–6.
- 126 Nagl K, Waldhör T, Hofer SE, Blauensteiner N, Fritsch M, Fröhlich-Reiterer E, Rami-Merhar B. Ongoing Increase in Incidence of Diabetes in Austrian Children and Adolescents (1989–2021): Results from a Nationwide Registry. *Pediatric Diabetes*. 2023;2023(1):4616903.
- 127 Cinek O, Slavenko M, Pomahacova R, Venhacova P, Petruzalkova L, Skvor J, *et al.* Type 1 diabetes incidence increased during the COVID-19 pandemic years 2020-2021 in Czechia: Results from a large population-based pediatric register. *Pediatr Diabetes*. 2022;23(7):956-60.
- 128 Mattson S, Kool P, Heilman K, Einberg Ü, Liivak N, Shor R, *et al.*, editors. The Incidence of Type 1 Diabetes Among Estonian Children in 2007-2022 in Comparison with the Data From 1983 to 2006 and the Impact of the Covid-19 Pandemic. HORMONE

RESEARCH IN PAEDIATRICS; 2024: KARGER ALLSCHWILERSTRASSE 10, CH-4009 BASEL, SWITZERLAND.

129 Barkai L, Kiss Z, Rokszin G, Abonyi-Toth Z, Jermendy G, Wittmann I, Kempler P. Changes in the incidence and prevalence of type 1 and type 2 diabetes among 2 million children and adolescents in Hungary between 2001 and 2016 - a nationwide population-based study. *Arch Med Sci.* 2020;16(1):34-41.

130 Niechcial E, Michalak M, Skowronska B, Fichna P. Increasing trend of childhood type 1 diabetes incidence: 20-year observation from Greater Poland Province, Poland. *Acta Diabetol.* 2024;61(12):1609-17.

131 Gesuita R, Rabbone I, Marconi V, De Sanctis L, Marino M, Tiberi V, et al. Trends and cyclic variation in the incidence of childhood type 1 diabetes in two Italian regions over 33 years and during the COVID-19 pandemic. *Diabetes Obes Metab.* 2023;25(6):1698-703.

132 Ortiz-Marron H, Del Pino Valero V, Esteban-Vasallo M, Zorrilla Torras B, Ordobas Gavin M. Evolution of the incidence of type 1 diabetes mellitus in the Community of Madrid, 1997-2016. *An Pediatr (Engl Ed).* 2021;95(4):253-9.

133 Vlad A, Serban V, Timar R, Sima A, Botea V, Albai O, et al. Increased Incidence of Type 1 Diabetes during the COVID-19 Pandemic in Romanian Children. *Medicina (Kaunas).* 2021;57(9).

134 Hashemipour M, Maracy M, Javanmard SH, Zamaneh F, Mostofizadeh N, Hovsepian S. Trends in incidence rates of childhood type 1 diabetes mellitus: A retrospective study in Isfahan province, Iran. *J Diabetes Investig.* 2023;14(3):376-86.

135 Khashebi RM, Patterson CC, Shebani MS. The Incidence Trend of Type 1 Diabetes among Children and Adolescents 0-14 Years of Age in the West, South, and Tripoli Regions of Libya (2009-2018). *J Clin Res Pediatr Endocrinol.* 2023;15(4):356-64.

136 National Diabetes Services Scheme Australia. Personal communication.

137 Willis J, Cunningham-Tisdall C, Griffin C, Scott R, Darlow BA, Owens N, et al. Type 1 diabetes diagnosed before age 15 years in Canterbury, New Zealand: A 50 year record of increasing incidence. *Pediatr Diabetes.* 2022;23(3):301-9.

138 Cohen A, Mok E, Simard M, Dube M, Larocque I, Plante C, et al. Increasing Incidence of Type 1 and Type 2 Diabetes Among Canadian Children. *Can J Diabetes.* 2022;46(2):189-95.

139 Wagenknecht LE, Lawrence JM, Isom S, Jensen ET, Dabelea D, Liese AD, et al. Trends in incidence of youth-onset type 1 and type 2 diabetes in the USA, 2002-18: results from the population-based SEARCH for Diabetes in Youth study. *Lancet Diabetes Endocrinol.* 2023;11(4):242-50.

140 Tampe I, Garfias C, Borzutzky A, Slaibe L, Garcia H. Incidence of type 1 diabetes in Chilean children between 2006 and 2021: significant increase during the COVID-19 pandemic. *Acta Diabetol.* 2024;61(1):29-34.

141 Liu C, Guo MN, Chai Z, Xin Z, Chen G, Zimmet PZ, Yang JK. Association between Covid-19 vaccination and incidence of type 1 diabetes in China: Evidence from 14.14 million registered residents between 2007 and 2021. *Diabetes Res Clin Pract.* 2023;201:110723.

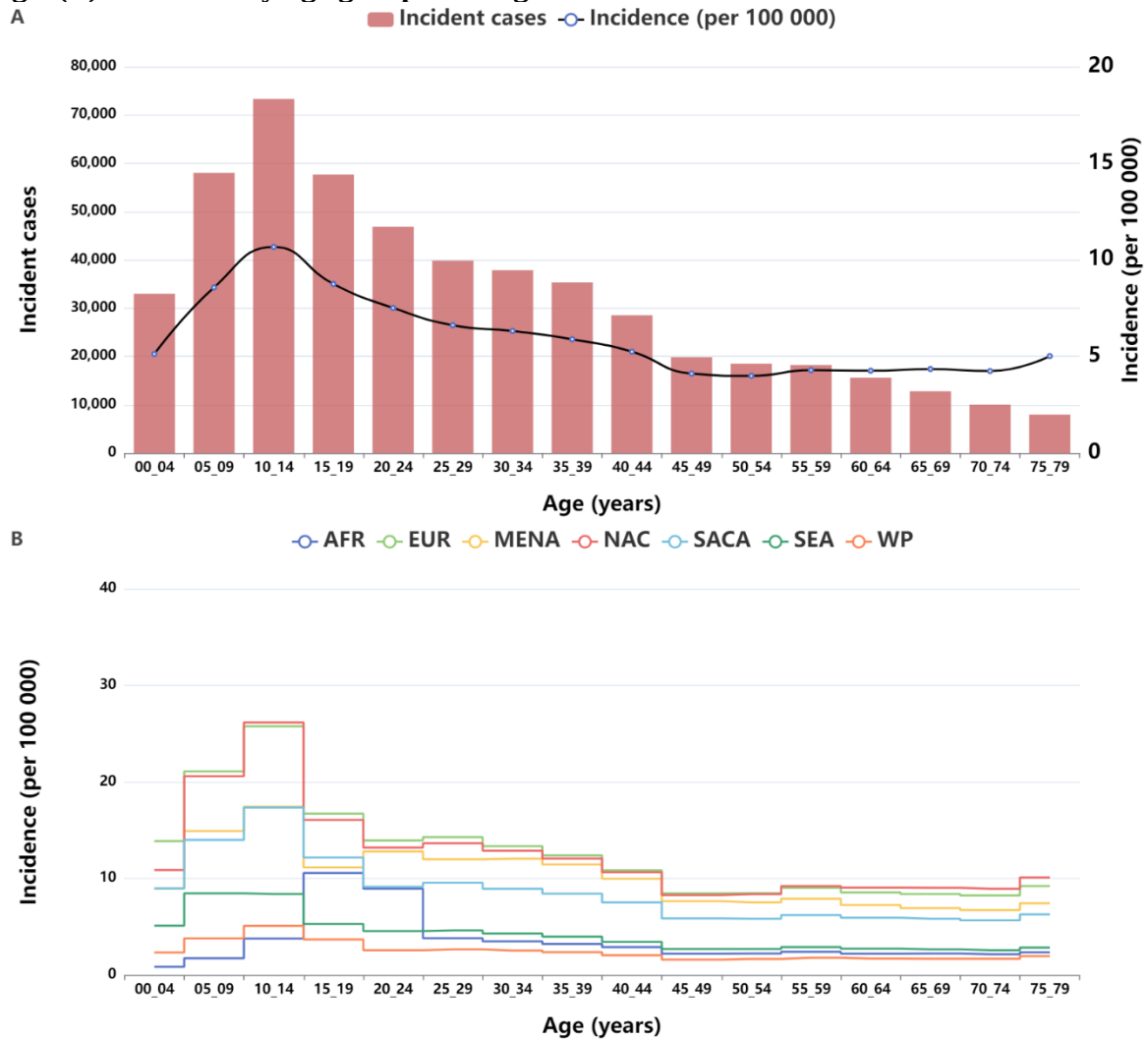
142 Rittiphairoj T, Owais M, Ward ZJ, Reddy CL, Yeh JM, Atun R. Incidence and prevalence of type 1 diabetes and diabetic ketoacidosis in children and adolescents (0-19 years) in Thailand (2015-2020): A nationwide population-based study. *Lancet Reg Health West Pac.* 2022;21:100392.

143 Patterson CC, Karuranga S, Salpea P, Saeedi P, Dahlquist G, Soltesz G, Ogle GD. Worldwide estimates of incidence, prevalence and mortality of type 1 diabetes in children and adolescents: Results from the International Diabetes Federation Diabetes Atlas, 9th edition. *Diabetes Research and Clinical Practice.* 2019;157(xxxx):107842-.

- 144 Sagna Y, Bagbila W, Sawadogo N, Savadogo PPC, Zoungrana L, Sere L, et al. Incidence, prevalence, and mortality of type 1 diabetes in children and youth in Burkina Faso 2013-2022. *Diabetes Res Clin Pract.* 2024;207:111086.
- 145 Morla E, Ibrahim A, Ogle GD, James S, Maniam J, Almanzar R, et al. Incidence of type 1 diabetes in children in Dominican Republic, 2010-2019: A national collaborative study. *Pediatr Diabetes.* 2022;23(7):976-81.
- 146 Ooi F. Action4Diabetes (Laos). Personal communication.
- 147 Calvo J, Richmond E. (Costa Rica). Personal communication.
- 148 Beisembinova N, Kosherbayeva L, Balmukhanova A, Hailey D, Tolganbayeva K, Seyduanova L. Diabetes and diabetic retinopathy in kazakhstan from 2013-2018. *Current Pediatric Research.* 2021;25(7):685.
- 149 Palarie N. (Moldova). Personal communication.
- 150 Thomson I, Anderson N, Bath L, Kiff S, Patterson C, Philip S, et al. Type 1 diabetes incidence in Scotland between 2006 and 2019. *Diabet Med.* 2023;40(8):e15069.

APPENDIX 4: ADULT INCIDENCE

Figure 1: Type 1 diabetes incidence, 2025 (A) Global incident cases and incidence, by age. (B) Incidence by age group and region.



APPENDIX 5: MORTALITY MODEL

1. Background and objective

The data and the method of the mortality model from the Index Version 1.0 (Gregory 2022, Ogle 2023) were updated. In the current study, this work has the following updates:

Updating and expanding the set of studies from 48 to 57, including more recent studies. The 57 studies cover 39 countries. This translates into 150 country-year pairs of data.

Estimating SMR by age, so that for each of the 150 country-year pairings with at least one observed SMR, we had estimates of SMR for all age cohorts, as well as an “age-standardised SMR” (aSMR) that was the population weighted average of all age cohorts.

Estimating SMR over time, so that for each of the 39 countries with at least one observed SMR, we had an estimate of aSMR for each year from 1960 to 2023. Mortality was then assumed to be stable until 2025.

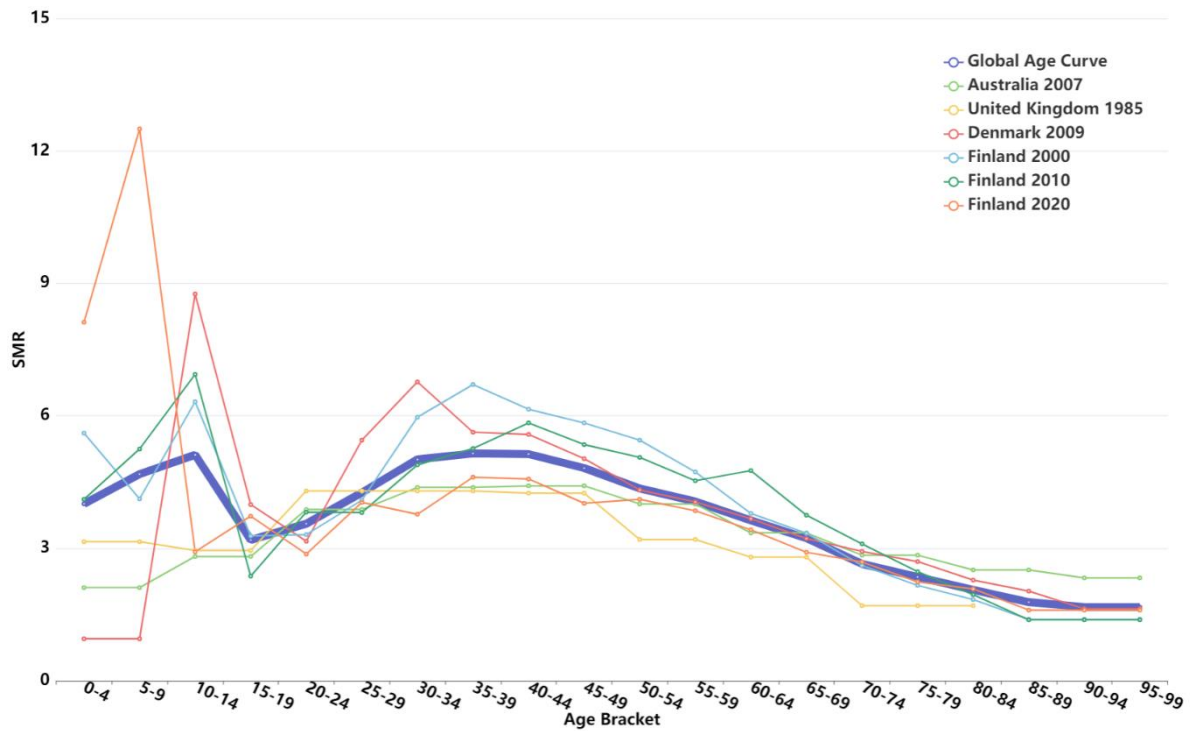
Estimating SMR across countries based on a number of country characteristics, so that for each of the 163 countries without any reported SMR data, we could estimate their aSMR based on those country characteristics.

Adjusting for standard of care, by predicting SMRs for both minimal and non-minimal levels of care and then calculating an overall SMR for each country using the proportions of different levels of care referred to in Lancet Commission Report 2020, Supplementary materials², with some adjustments for change in those proportions over time.

2. Estimating SMR by age

Global age curve of SMR is derived of data from 6 country-years. It is observed that there are two peaks, one at age bracket 10-14 and one at around 35-39. The first peak can be explained by excess mortality due to DKA.

Figure 1 - SMR distribution by age



4. Estimating SMR over time

A single Random Forest model was trained with the 150 country-year aSMRs as responses. Then the model is used to estimate aSMRs for all 202 countries. Figure 2, 3 and 4 show three countries with estimated and observed SMRs.

Figure 2 - Estimated vs observed SMR for United States

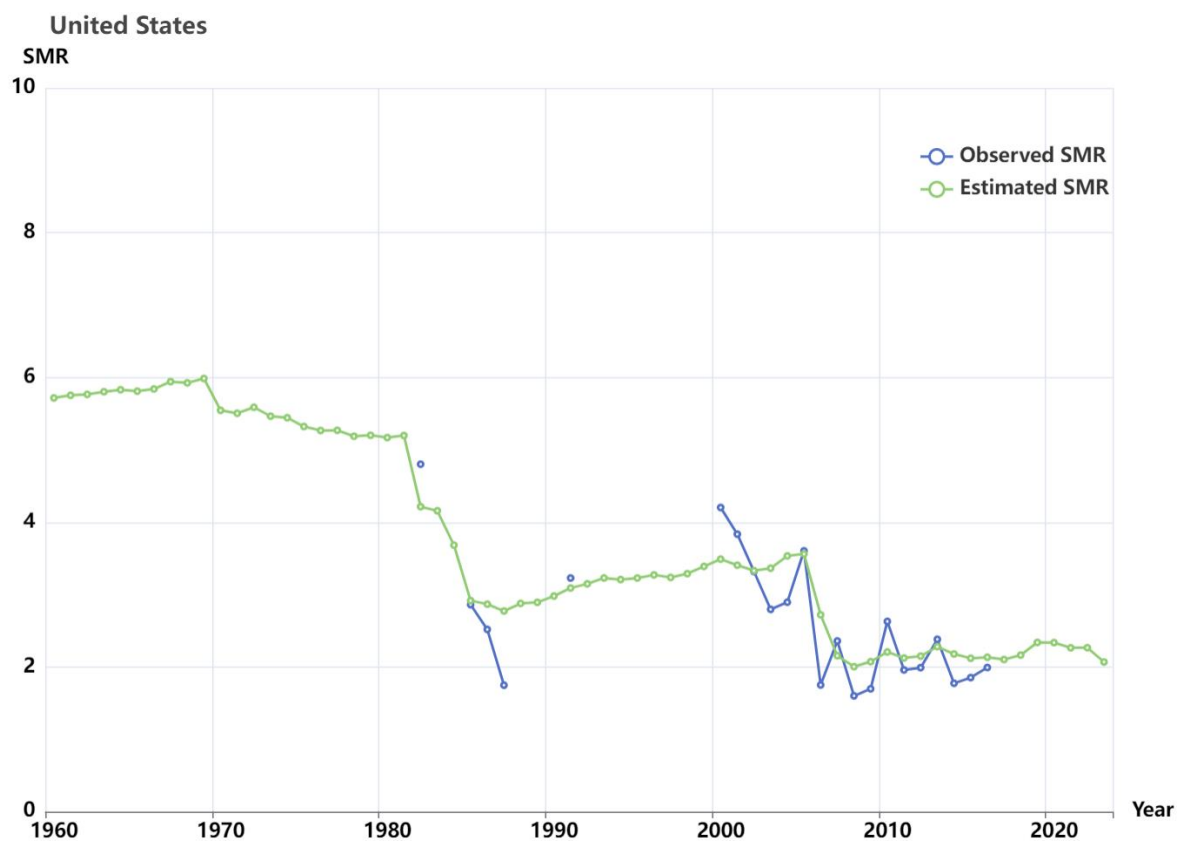


Figure 3 - Estimated vs observed SMR for United Kingdom

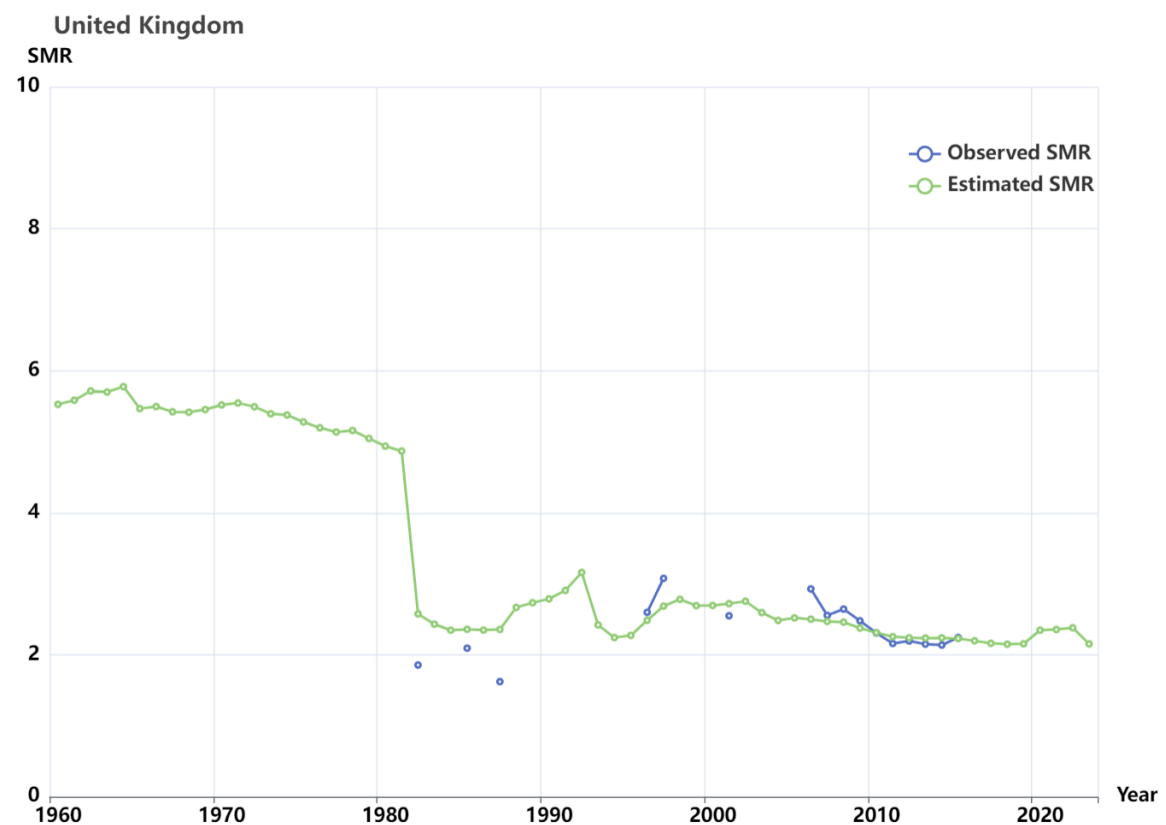


Figure 4 - Estimated vs observed SMR for Australia

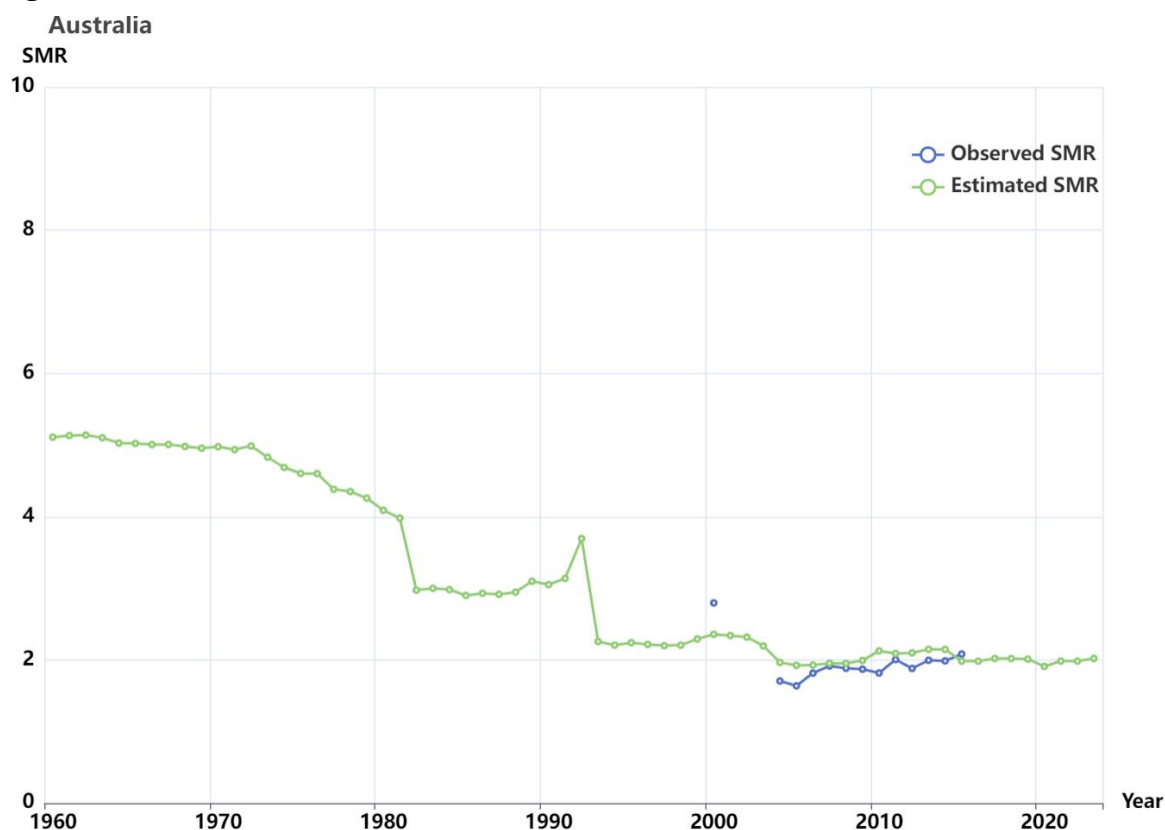


Table 1 – Estimated mortality due to T1D by region (2025)

Region	T1D-associated mortality				
	<25 non-diagnosis	<25 early mortality	<25 total mortality	25+ early mortality	Total
Global	29,821 (22,667-38,744)	16,208 (10,305-24,904)	46,029 (32,973-63,648)	127,473 (76,144-201,730)	173,516 (109,088-265,538)
African	9,992 (7,583-12,906)	6,974 (4,567-10,412)	16,966 (12,150-23,318)	15,006 (9,996-21,799)	31,988 (22,163-45,120)
Europe	1,041 (798-1,356)	561 (319-917)	1,602 (1,117-2,273)	33,379 (18,364-54,077)	34,986 (19,481-56,337)
Middle East and North Africa	7,523 (5,712-9,810)	3,293 (2,079-5,038)	10,816 (7,791-14,849)	17,487 (11,236-26,370)	28,301 (19,015-41,213)
	326	485	810	17,250	18,058

North America and Caribbean	(244- 413)	(261- 813)	(506- 1,226)	(8,612- 29,862)	(9,118- 31,110)
South and Central America	1,993 (1,520- 2,585)	889 (525- 1,438)	2,882 (2,044- 4,022)	11,294 (6,787- 17,747)	14,174 (8,847- 21,770)
Southeast Asia	6,249 (4,780- 8,225)	3,318 (2,134- 5,177)	9,567 (6,913- 13,402)	21,663 (14,464- 33,220)	31,225 (21,330- 46,786)
Western Pacific	2,697 (2,031- 3,450)	688 (420- 1,109)	3,386 (2,451- 4,559)	11,394 (6,685- 18,655)	14,785 (9,133- 23,201)

APPENDIX 6: DIAGNOSIS RATES AND LEVELS OF CARE

For background information on this section, see Gregory et al. (2022).

Table 1 – Proportions of all new clinical cases of T1D < 25 years of age who are diagnosed by year

	Proportions diagnosed: raw midpoint mean			
	Before 2000	2000-2010	2010-2020	2020-2030
By region (excluding high income countries)				
East Asia & Pacific	76%	80%	84%	87%
Europe & Central Asia	84%	90%	92%	94%
Latin America & Caribbean	73%	82%	88%	92%
Middle East & North Africa	80%	85%	86%	89%
South Asia	72%	77%	85%	89%
Sub-Saharan Africa	40%	54%	67%	76%
By income group				
High income	100%	100%	100%	100%
Upper-middle	77%	84%	88%	92%
Lower-middle	72%	78%	83%	87%
Low income	41%	50%	65%	73%

Table 2 - Relative proportion of levels of care by income group and year

Year	Income class	Non-minimal care	Minimal care
2030	HIC	100%	0%
2030	UMIC	95%	5%
2030	LMIC	45%	55%
2030	LIC	40%	60%
2020	HIC	95%	5%
2020	UMIC	85%	15%
2020	LMIC	35%	65%
2020	LIC	25%	75%
2010	HIC	90%	10%
2010	UMIC	75%	25%
2010	LMIC	25%	75%
2010	LIC	15%	85%
2000	HIC	85%	15%
2000	UMIC	65%	35%
2000	LMIC	10%	90%
2000	LIC	5%	95%

APPENDIX 7: EXTRAPOLATED COUNTRIES

Table 1 – Country extrapolations

Country of data source	Countries where data extrapolated to
Algeria	Morocco
Chile	Argentina
China	Kyrgyzstan, Mongolia
Colombia	Ecuador, Paraguay, Suriname, Uruguay, French Guiana
Costa Rica	Antigua and Barbuda, Aruba, Bahamas, Barbados, Grenada, Panama, Puerto Rico, St Lucia, St Vincent and the Grenadines, Trinidad and Tobago, Martinique
Dominican Republic	Cuba, Curaçao, Guyana, Haiti, Jamaica, Peru, Venezuela (Bolivarian Republic of)
Eritrea	Djibouti, Somalia
Estonia	Latvia
Fiji	French Polynesia, Guam, Kiribati, Micronesia (Federated States of), New Caledonia, Papua New Guinea, Samoa, Solomon Islands, Tonga, Vanuatu, Niue (Polynesian/Melanesian Fiji incidence used)
Gabon	Benin, Cameroon, Cape Verde, Congo, Côte d'Ivoire, Equatorial Guinea,

	Ghana, Nigeria, Sao Tome and Principe, Senegal
Hong Kong	Macao, Singapore
India	Bhutan, Nepal, Sri Lanka
Iran (Islamic Republic of)	Iraq
Israel	Jordan, Lebanon, State of Palestine, Syria
Laos	Cambodia, Indonesia, Myanmar, Timor L'Este
Libya	Tunisia
Mali	Central African Republic, Chad, Gambia, Guinea, Guinea-Bissau, Liberia, Mauritania, Niger, Sierra Leone, Togo, Western Sahara
Mauritius	Mayotte, Seychelles
Mexico	Belize, El Salvador, Guatemala, Honduras, Nicaragua
North Macedonia	Albania, Kosovo
Poland	Belarus, Ukraine
Qatar	Bahrain
Republic of Korea	Democratic People's Republic of Korea
Romania	Bulgaria
Rwanda	Burundi, Democratic Republic of the Congo
Saudi Arabia	Oman, United Arab Emirates
Sudan	South Sudan
Thailand	Brunei Darussalam, Malaysia,

	Philippines, Viet Nam
United Kingdom	Guernsey, Jersey
United Republic of Tanzania	Angola, Botswana, Comoros, Eswatini, Kenya, Lesotho, Madagascar, Malawi, Mozambique, Namibia, South Africa, Uganda, Zambia, Zimbabwe
Uzbekistan	Afghanistan, Tajikistan, Turkmenistan

APPENDIX 8: MODEL VALIDATION

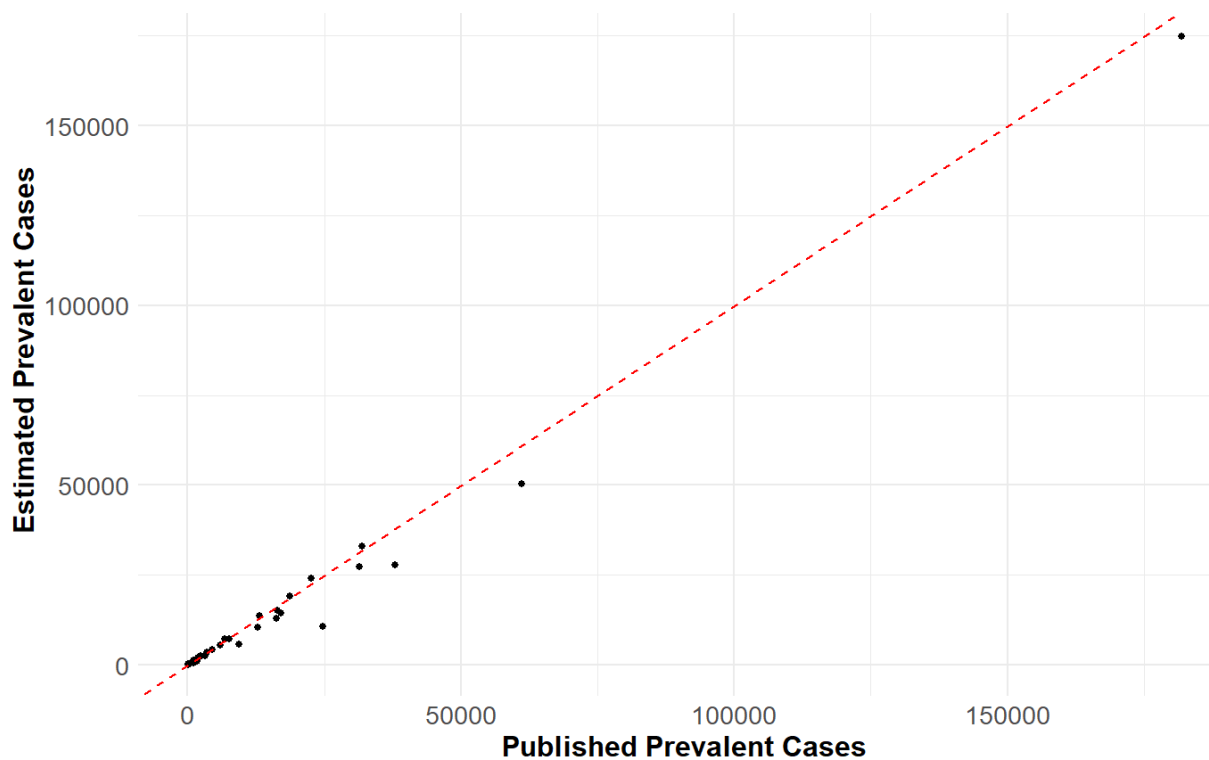
When the T1D Index Version 3.0 modelled prevalence estimates were compared to published prevalence in 28 studies from 27 countries, the median [IQR] per-country variation for the <20 years age group was 8.0 [12.0] %, and for all age groups was 12.5 [15.5] %. Our total estimate of 484,000 for all 27 countries was 11% lower than observed data.

Table 1 – Comparison of estimates with published studies / registry data

Income	Country	Geography	Year	Age bracket	Published prevalent cases	Estimated prevalent cases	Variance	Model Prevalence overwritten
HIC	Australia	whole country	2021	00_19	13,161	13,580	3	Yes
HIC	Belgium	whole country	2017	00_19	4,450	4,163	6	Yes
HIC	Denmark	whole country	2021	00_19	3,474	3,560	2	Yes
HIC	Denmark	whole country	2021	20_59	18,671	19,186	3	
HIC	Denmark	whole country	2021	60_99	9,415	5,753	39	
HIC	Finland	whole country	2023	00_19	7,592	7,266	4	Yes
HIC	Finland	whole country	2023	20_59	31,882	33,020	4	
HIC	Finland	whole country	2023	60_99	12,894	10,433	19	
HIC	Germany	whole country	2020	00_19	37,906	27,656	27	Yes
HIC	Ireland	whole country	2016	00_14	1,846	2,070	12	Yes
HIC	Italy	selection	2022	00_18	16,475	15,096	8	Yes
HIC	Netherlands	whole country	2011	00_19	6,841	7,235	6	Yes
HIC	New Zealand	whole country	2021	00_14	1,209	1,014	16	Yes
HIC	Norway	whole country	2023	00_14	2,236	2,171	3	Yes
HIC	Portugal	whole country	2024	00_14	1,886	1,744	8	Yes
HIC	Portugal	whole country	2024	15_39	24,784	10,767	57	
HIC	Qatar	whole country	2020	00_18	1,096	1,332	22	Yes
HIC	Russia	whole country	2020	00_14	31,407	27,218	13	Yes
HIC	Taiwan	whole country	2014	00_19	2,415	2,554	6	Yes
HIC	UK	Scotland + Wales	2023	00_14	22,539	23,959	6	Yes
HIC	United States	whole country	2017	00_19	181,846	174,935	4	Yes
LIC	Burkina Faso	whole country	2022	00_24	251	292	16	Yes
LIC	Mali	whole country	2016	00_19	215	275	28	Yes
LIC	Sudan	Khartoum	2015	00_19	16,212	12,901	20	Yes
LMIC	Egypt	Ismailia, Port Said,	2023	00_18	61,121	50,332	18	Yes

		LuxorGovernorates					
LMIC	Laos	whole country	2024 00_24	71	150	111	Yes
							Yes
UMIC	Fiji	whole country	2012 00_14	15	16	7	Yes
UMIC	Georgia	whole country	2024 00_17	1,352	1,034	24	
UMIC	Georgia	whole country	2024 60_99	1,041	508	51	
UMIC	Georgia	whole country	2024 00_99	6,048	5,576	8	Yes
UMIC	Maldives	whole country	2018 00_19	70	73	4	Yes
UMIC	Serbia	whole country	2019 00_18	1,735	1,100	37	Yes
UMIC	Thailand	whole country	2015 00_19	3,128	2,577	18	Yes
UMIC	Turkey	whole country	2012 00_17	17,064	14,508	15	
GLOBAL						12.5	

Figure 1 Comparison of published prevalent cases vs estimated prevalent cases



The highest variance is in Laos, as can be seen this can be partly explained by the overall number being very low.

APPENDIX 9: MASTER TABLE WITH CONFIDENCE INTERVALS

Table 1: Supplementary country results

Note: 95% UIs shown in parentheses

Country	Prevalent cases 2025	Incident cases 2025	Incidence per 100,000 <15y 2025	Remaining life expectancy in years, T1D 2025	Missing Prevalent cases 2025	Premature mortality 2025	Prevalent cases 2040
Global	9,500,188 (9,014,873-10,014,056)	513,125 (392,056-666,272)	8 (6.3-10.6)	41 (37-46)	4,084,579 (3,853,519-4,329,108)	173,516 (109,088-265,538)	14,737,077 (11,461,197-19,272,739)
African	377,508 (347,572-409,230)	50,465 (38,283-65,144)	2 (1.5-2.6)	14 (12-18)	605,365 (575,296-636,975)	31,988 (22,163-45,120)	829,478 (523,112-1,266,174)
Europe	2,816,750 (2,686,538-2,954,043)	114,331 (87,512-148,787)	21 (15.7-26.7)	52 (47-57)	857,737 (803,793-917,097)	34,986 (19,481-56,337)	3,866,110 (3,081,378-4,881,856)
Middle East and North Africa	1,492,534 (1,409,694-1,578,377)	98,589 (75,146-128,033)	14 (10.4-17.8)	38 (34-43)	571,582 (542,468-603,727)	28,301 (19,015-41,213)	2,781,820 (2,155,971-3,742,056)
North America and Caribbean	1,898,909 (1,814,843-1,990,698)	66,669 (51,804-86,285)	20 (15.1-25.2)	56 (50-62)	504,070 (466,165-544,438)	18,058 (9,118-31,110)	2,550,915 (2,119,671-3,181,561)
South and Central America	827,014 (784,721-870,877)	46,315 (35,316-60,009)	14 (10.4-17.6)	42 (37-48)	378,537 (358,614-399,178)	14,174 (8,847-21,770)	1,277,881 (980,569-1,674,170)
Southeast Asia	1,054,287 (991,029-1,120,750)	78,722 (60,218-103,618)	7 (5.6-9.7)	30 (26-34)	849,951 (808,828-890,531)	31,225 (21,330-46,786)	1,801,582 (1,308,654-2,451,834)
Western Pacific	1,033,186 (980,476-1,090,081)	58,034 (43,778-74,397)	4 (2.9-5)	46 (42-51)	317,339 (298,354-337,163)	14,785 (9,133-23,201)	1,629,291 (1,291,842-2,075,088)
High-income countries	4,875,959 (4,657,260-5,108,154)	184,471 (142,211-239,442)	25 (19-32)	57 (51-62)	1,189,442 (1,103,690-1,282,032)	47,899 (24,975-80,190)	6,754,782 (5,529,217-8,448,112)
Upper-middle income countries	2,475,373 (2,344,599-2,613,668)	146,426 (111,249-189,138)	9 (6.6-11.2)	44 (39-49)	1,000,003 (947,401-1,055,998)	39,768 (25,120-61,147)	4,056,755 (3,156,132-5,288,231)
Lower-middle income countries	1,815,156 (1,704,680-1,931,022)	142,791 (108,578-186,341)	6 (4.3-7.4)	30 (26-34)	1,344,702 (1,277,367-1,413,571)	59,554 (40,596-87,500)	3,215,347 (2,316,061-4,449,433)
Low-income countries	333,700 (308,334-361,212)	39,438 (30,019-51,351)	3 (2.6-4.4)	16 (13-19)	550,433 (525,061-577,507)	26,295 (18,397-36,702)	710,193 (459,787-1,086,963)
Afghanistan	14,553	1,716	5	16	17,225	948	30,473

	(13,525-15,701)	(1,280-2,223)	(3.7-6.5)	(13-20)	(16,360-18,195)	(654-1,332)	(20,475-45,148)
Albania	3,626	214	13	50	1,481	45	5,604
	(3,439-3,811)	(163-282)	(10.3-17.7)	(46-55)	(1,412-1,552)	(27-68)	(4,488-7,345)
Algeria	198,288	12,629	40	44	59,733	2,882	350,581
	(187,229-208,648)	(9,647-16,446)	(30.6-52.1)	(39-48)	(56,737-63,284)	(1,893-4,301)	(280,742-457,656)
Angola	15,012	1,688	2	21	16,833	815	36,753
	(13,978-16,132)	(1,281-2,205)	(1.7-3)	(17-25)	(16,014-17,671)	(557-1,172)	(24,242-54,870)
Antigua and Barbuda	74	5	8	45	35	1	125
	(70-78)	(3-6)	(6.1-10.3)	(40-50)	(33-38)	(1-2)	(98-161)
Argentina	90,932	5,441	20	44	36,288	1,409	154,481
	(86,535-95,938)	(4,138-7,256)	(14.9-26)	(40-49)	(34,581-38,195)	(901-2,080)	(119,189-208,797)
Armenia	3,490	220	13	43	1,655	67	5,054
	(3,305-3,668)	(165-284)	(9.4-16.1)	(39-48)	(1,574-1,739)	(43-98)	(3,825-6,688)
Aruba	90	5	8	45	36	2	123
	(85-94)	(4-7)	(6.4-10.7)	(41-51)	(33-38)	(1-3)	(96-163)
Australia	117,929	4,207	27	64	17,569	732	172,239
	(113,218-123,023)	(3,169-5,431)	(20.4-35)	(59-69)	(16,103-19,008)	(345-1,315)	(144,525-211,206)
Austria	27,625	1,072	22	54	8,509	415	35,018
	(26,344-28,975)	(808-1,411)	(16.5-28.8)	(49-59)	(7,937-9,095)	(251-657)	(27,972-44,340)
Azerbaijan	9,976	594	9	43	4,238	151	16,590
	(9,485-10,523)	(459-754)	(7.1-11.7)	(39-48)	(4,011-4,463)	(95-223)	(12,823-21,575)
Bahamas	353	19	8	43	115	6	525
	(334-371)	(15-25)	(6.2-10.5)	(37-50)	(105-125)	(4-10)	(403-698)
Bahrain	8,244	439	42	58	504	38	16,087
	(7,852-8,665)	(337-572)	(32.5-55.3)	(53-63)	(455-557)	(22-62)	(13,247-20,531)
Bangladesh	26,835	2,131	2	30	18,208	819	48,302
	(25,218-28,367)	(1,579-2,686)	(1.3-2.2)	(25-34)	(17,391-19,101)	(542-1,159)	(34,291-66,057)
Barbados	236	13	8	45	88	5	339
	(223-249)	(10-17)	(6-10.7)	(40-51)	(83-95)	(3-7)	(254-450)
Belarus	28,886	1,681	34	46	13,643	447	44,610
	(27,339-30,471)	(1,293-2,194)	(26.2-44.5)	(41-51)	(12,902-14,416)	(254-726)	(34,768-57,992)
Belgium	40,140	1,147	18	62	9,081	297	50,445
	(38,402-41,889)	(883-1,490)	(13.7-23.1)	(57-67)	(8,430-9,749)	(128-518)	(42,522-60,569)
Belize	400	16	4	38	214	7	524
	(381-422)	(12-20)	(3-4.9)	(33-43)	(204-226)	(5-11)	(398-654)
Benin	4,334	575	2	16	4,732	303	10,960
	(4,008-4,706)	(446-744)	(1.5-2.5)	(13-21)	(4,465-4,999)	(209-437)	(7,269-17,038)
Bhutan	597	39	8	32	416	16	941
	(565-632)	(29-51)	(6.1-10.5)	(28-36)	(396-436)	(10-23)	(707-1,239)
Bolivia	3,404	279	3	27	2,585	120	5,883

	(3,203-3,626)	(208-362)	(2.4-4.1)	(22-31)	(2,456-2,726)	(79-176)	(4,013-8,098)
Bosnia and Herzegovina	6,277	360	22	47	3,826	122	9,048
	(5,965-6,601)	(276-470)	(16.5-28.1)	(43-52)	(3,645-4,013)	(69-181)	(6,979-11,946)
Botswana	1,411	114	2	32	1,073	35	2,826
	(1,330-1,499)	(89-147)	(1.8-3)	(28-37)	(1,023-1,125)	(24-50)	(2,103-3,876)
Brazil	517,290	28,927	22	41	246,389	9,271	774,460
	(490,185-544,802)	(22,102-37,389)	(17.1-28.9)	(35-47)	(233,322-259,605)	(5,776-14,365)	(590,800-1,015,511)
Brunei Darussalam	141	10	3	50	11	1	283
	(132-149)	(8-13)	(2.4-4)	(45-55)	(10-12)	(1-2)	(224-374)
Bulgaria	9,543	551	15	49	3,882	176	13,906
	(9,064-10,052)	(416-715)	(11.5-19.8)	(44-54)	(3,633-4,138)	(101-289)	(10,707-18,336)
Burkina Faso	606	111	0	14	634	66	1,997
	(552-661)	(83-143)	(0.2-0.3)	(11-17)	(596-679)	(46-92)	(1,239-2,943)
Burundi	3,079	501	2	11	7,393	366	7,625
	(2,805-3,356)	(379-639)	(1.3-2.3)	(8-14)	(7,065-7,730)	(258-508)	(4,635-11,686)
Cambodia	613	61	1	22	537	30	1,150
	(573-657)	(46-76)	(0.4-0.6)	(17-26)	(510-566)	(21-42)	(759-1,643)
Cameroon	9,404	1,161	2	19	8,925	592	22,069
	(8,728-10,132)	(867-1,494)	(1.4-2.4)	(15-23)	(8,458-9,434)	(402-808)	(13,895-32,073)
Canada	250,506	8,670	39	60	49,236	2,206	354,532
	(240,100-261,387)	(6,645-11,418)	(29.9-51.4)	(55-66)	(45,227-53,381)	(1,105-3,682)	(293,192-443,172)
Cape Verde	228	20	2	29	159	8	421
	(214-244)	(16-25)	(1.6-2.7)	(25-33)	(151-166)	(6-12)	(303-577)
Central African Republic	283	62	1	12	608	34	880
	(251-315)	(46-79)	(0.4-0.7)	(9-14)	(571-648)	(24-48)	(532-1,329)
Chad	1,260	224	1	9	2,237	167	3,182
	(1,139-1,386)	(166-280)	(0.4-0.7)	(7-12)	(2,101-2,379)	(115-227)	(1,852-4,768)
Chile	42,558	2,272	20	57	7,687	352	74,164
	(40,586-44,610)	(1,731-2,901)	(15.2-25.4)	(52-62)	(7,111-8,303)	(189-574)	(59,944-93,173)
China	626,423	37,407	5	47	217,544	9,065	1,010,984
	(593,614-662,827)	(28,156-47,802)	(3.6-6.1)	(42-51)	(205,857-229,732)	(5,692-14,224)	(804,078-1,283,961)
Colombia	49,960	2,891	9	45	21,936	722	85,434
	(47,590-52,401)	(2,200-3,727)	(6.6-11.2)	(39-50)	(20,837-23,095)	(446-1,090)	(66,645-110,311)
Comoros	364	39	2	21	443	21	751
	(340-392)	(30-49)	(1.8-3)	(17-25)	(422-465)	(14-30)	(506-1,063)
Congo	2,128	252	2	21	1,865	117	5,232
	(1,973-2,285)	(194-327)	(1.5-2.5)	(18-25)	(1,764-1,973)	(80-163)	(3,605-7,809)
Costa Rica	4,956	249	8	50	1,763	57	7,902
	(4,719-5,202)	(189-327)	(6.2-10.7)	(44-55)	(1,674-1,859)	(35-90)	(6,297-10,173)

Croatia	11,784 (11,201-12,412)	666 (517-874)	33 (25.3-42.8)	52 (48-57)	4,054 (3,784-4,329)	199 (113-309)	17,623 (13,604-23,441)
Cuba	6,553 (6,250-6,873)	286 (220-368)	5 (3.7-6.2)	46 (41-51)	3,401 (3,229-3,586)	119 (71-191)	8,042 (6,315-10,163)
Curaçao	118 (112-124)	5 (4-6)	5 (3.8-6.4)	49 (44-55)	34 (31-37)	2 (1-3)	151 (120-193)
Cyprus	3,052 (2,930-3,193)	103 (80-136)	13 (10-17.2)	57 (52-61)	749 (700-799)	37 (21-58)	3,994 (3,275-5,009)
Czechia	33,743 (32,227-35,558)	1,605 (1,235-2,071)	28 (21.5-36)	53 (48-57)	9,935 (9,222-10,635)	530 (334-849)	46,664 (37,286-60,010)
Côte d'Ivoire	9,994 (9,297-10,790)	1,275 (942-1,638)	2 (1.4-2.5)	18 (15-21)	10,188 (9,649-10,757)	665 (462-935)	23,348 (14,877-35,347)
Democratic People's Republic of Korea	12,699 (11,922-13,484)	915 (694-1,194)	6 (4.3-7.3)	27 (23-32)	10,141 (9,602-10,739)	508 (344-726)	18,518 (13,348-25,694)
Democratic Republic of the Congo	25,911 (23,684-28,153)	3,692 (2,815-4,891)	2 (1.2-2.1)	13 (10-17)	53,078 (50,659-55,805)	2,458 (1,709-3,485)	67,416 (39,594-103,129)
Denmark	31,401 (30,077-32,779)	1,129 (863-1,481)	33 (24.8-42.6)	62 (57-67)	7,540 (6,998-8,056)	261 (108-453)	42,063 (35,076-51,999)
Djibouti	1,883 (1,767-2,022)	164 (122-209)	13 (10-17.1)	22 (17-27)	1,757 (1,662-1,856)	84 (57-124)	3,194 (2,069-4,524)
Dominican Republic	6,717 (6,408-7,088)	358 (273-457)	5 (3.6-6)	41 (36-46)	2,979 (2,815-3,142)	113 (72-173)	9,821 (7,436-12,675)
Ecuador	16,878 (16,031-17,781)	1,032 (803-1,345)	9 (6.8-11.3)	43 (37-49)	7,142 (6,761-7,527)	253 (159-388)	29,515 (22,874-38,648)
Egypt	203,020 (191,001-214,911)	13,005 (9,808-16,963)	16 (11.8-20.5)	33 (29-37)	73,467 (69,578-77,879)	4,304 (2,892-6,280)	382,543 (287,869-529,457)
El Salvador	5,396 (5,101-5,671)	233 (181-294)	4 (3.1-5)	35 (30-41)	3,876 (3,664-4,086)	116 (73-175)	6,758 (5,197-8,565)
Equatorial Guinea	719 (672-769)	72 (55-94)	2 (1.4-2.5)	26 (22-31)	485 (459-511)	28 (19-41)	1,693 (1,159-2,444)
Eritrea	7,423 (6,901-8,012)	900 (672-1,159)	13 (9.8-16.9)	17 (14-21)	12,526 (11,928-13,138)	539 (375-753)	16,650 (10,884-24,446)
Estonia	5,381 (5,103-5,682)	299 (229-382)	42 (32.1-53.6)	49 (43-54)	1,940 (1,816-2,075)	99 (60-157)	7,606 (5,780-9,832)
Eswatini	450	57	2	17	779	33	792

Ethiopia	(416-486) 17,807	(43-73) 2,259	(1.8-3.1) 1	(14-21) 15	(743-821) 36,032	(22-46) 1,467	(479-1,174) 44,721
Fiji	(16,357-19,335) 125	(1,707-2,839) 9	(0.4-0.7) 2	(12-19) 33	(34,464-37,658) 71	(1,019-2,040) 4	(28,979-65,092) 195
Finland	(118-131) 55,538	(7-12) 1,504	(1.1-1.9) 64	(30-37) 64	(67-75) 9,408	(2-5) 296	(144-265) 69,719
France	(53,487-57,792) 178,585	(1,129-1,949) 6,413	(48.1-83.1) 18	(59-69) 58	(8,650-10,243) 58,850	(112-565) 1,862	(59,514-83,113) 226,944
French Guiana	(170,047-187,087) 288	(4,866-8,315) 19	(13.3-22.7) 9	(53-64) 50	(55,363-62,574) 52	(1,017-2,979) 3	(187,678-275,520) 573
French Polynesia	(274-304) 14	(14-24) 1	(6.5-11) 0	(44-56) 57	(48-56) 2	(2-5) 0	(451-769) 22
Gabon	(14-15) 1,054	(1-1) 97	(0.3-0.5) 2	(53-62) 32	(2-2) 578	(0-0) 30	(17-27) 2,556
Gambia	(986-1,126) 243	(74-125) 32	(1.5-2.5) 1	(28-36) 15	(547-610) 272	(21-43) 19	(1,838-3,647) 540
Georgia	(223-262) 7,594	(24-40) 352	(0.4-0.7) 16	(12-19) 43	(255-287) 2,871	(14-27) 102	(336-800) 11,900
Germany	(7,179-8,033) 341,380	(270-458) 9,563	(12-20.3) 22	(39-48) 53	(2,729-3,019) 96,982	(61-154) 4,460	(9,511-15,719) 416,216
Ghana	(326,358-357,793) 10,899	(7,157-12,416) 1,348	(16.2-28) 2	(48-58) 16	(90,980-103,324) 12,187	(2,644-6,845) 788	(331,280-516,541) 22,677
Greece	(10,024-11,798) 24,031	(1,027-1,735) 906	(1.5-2.5) 18	(13-20) 59	(11,476-12,894) 8,304	(542-1,120) 279	(14,538-33,790) 30,872
Grenada	(23,088-25,224) 96	(698-1,182) 6	(13.9-23.5) 8	(55-64) 37	(7,792-8,884) 56	(154-460) 2	(25,159-38,536) 137
Guam	(91-102) 7	(4-7) 0	(6.2-10.3) 0	(32-42) 48	(53-59) 2	(2-3) 0	(104-180) 12
Guatemala	(7-8) 15,774	(0-1) 757	(0.3-0.5) 4	(42-55) 34	(2-2) 9,502	(0-0) 339	(10-16) 22,241
Guernsey	(14,950-16,668) 355	(569-972) 10	(3-5) 28	(29-40) 62	(9,019-10,063) 75	(213-502) 4	(16,456-28,893) 403
Guinea	(341-370) 1,275	(7-13) 166	(22-36.7) 1	(57-66) 16	(70-81) 1,162	(2-6) 91	(340-483) 2,757
Guinea-Bissau	(1,177-1,381) 196	(126-215) 25	(0.4-0.7) 1	(13-20) 16	(1,086-1,243) 222	(63-129) 16	(1,718-4,207) 403
Guyana	(181-212) 416	(19-32) 26	(0.4-0.7) 5	(13-19) 35	(209-236) 189	(11-21) 10	(261-608) 581
Haiti	(393-438) 4,699	(20-34) 389	(3.5-6) 5	(31-40) 22	(177-201) 5,213	(6-15) 212	(426-796) 7,005
Honduras	(4,365-5,011) 9,029	(291-498) 427	(3.5-5.9) 4	(18-27) 33	(4,963-5,495) 6,480	(142-309) 209	(4,756-10,086) 12,833
	(8,581-9,511)	(321-549)	(2.8-4.8)	(29-38)	(6,151-6,814)	(137-304)	(9,319-16,735)

Hong Kong	4,557 (4,362-4,761)	178 (132-227)	5 (3.5-6)	63 (58-68)	692 (634-750)	37 (20-61)	5,879 (4,808-7,311)
Hungary	31,381 (29,733-32,918)	1,604 (1,224-2,063)	31 (23.4-39.4)	48 (44-53)	11,033 (10,294-11,863)	660 (391-1,046)	40,544 (30,469-53,658)
Iceland	1,444 (1,384-1,498)	42 (31-54)	18 (13.3-23)	65 (60-70)	180 (164-198)	8 (3-14)	1,836 (1,572-2,208)
India	987,311 (927,974-1,049,712)	73,567 (56,348-96,996)	8 (6.2-10.7)	30 (26-34)	798,932 (760,114-837,064)	29,068 (19,885-43,692)	1,688,563 (1,227,407-2,296,669)
Indonesia	12,341 (11,629-13,108)	935 (700-1,181)	1 (0.4-0.6)	35 (31-40)	6,180 (5,857-6,512)	283 (186-413)	24,070 (18,012-31,965)
Iran (Islamic Republic of)	141,997 (134,268-149,888)	9,214 (6,860-11,899)	16 (12.1-21)	43 (37-47)	46,535 (43,766-49,389)	2,245 (1,470-3,351)	243,954 (188,728-320,523)
Iraq	70,018 (65,898-74,256)	5,343 (4,114-6,980)	16 (12.1-20.5)	38 (34-42)	20,708 (19,615-21,924)	1,176 (798-1,737)	145,355 (110,389-195,220)
Ireland	26,326 (25,185-27,628)	1,040 (792-1,336)	34 (25.8-43.5)	55 (51-61)	7,332 (6,780-7,873)	371 (212-559)	33,855 (27,320-41,439)
Israel	23,707 (22,636-24,854)	1,146 (881-1,492)	18 (14.2-24)	59 (54-65)	3,446 (3,181-3,707)	179 (90-296)	39,839 (32,707-50,895)
Italy	185,825 (177,454-193,657)	5,685 (4,348-7,439)	19 (14.7-25.1)	56 (51-61)	73,716 (69,333-78,482)	2,997 (1,731-4,588)	210,478 (167,573-259,599)
Jamaica	1,694 (1,606-1,787)	83 (63-107)	5 (3.6-6.1)	38 (34-43)	900 (848-950)	35 (22-53)	2,068 (1,542-2,675)
Japan	81,792 (78,198-85,433)	3,453 (2,643-4,503)	6 (4.4-7.6)	63 (58-68)	14,518 (13,170-15,860)	731 (382-1,266)	114,362 (93,546-141,455)
Jersey	564 (539-589)	16 (12-21)	28 (21.5-36.8)	58 (53-62)	129 (118-140)	7 (4-11)	638 (523-774)
Jordan	26,450 (25,081-27,807)	1,493 (1,125-1,943)	19 (14-24.2)	41 (38-45)	10,526 (10,027-11,007)	416 (278-590)	45,307 (36,086-59,170)
Kazakhstan	24,692 (23,306-26,178)	1,827 (1,374-2,383)	13 (9.8-17)	43 (38-49)	9,665 (9,168-10,209)	360 (219-557)	52,008 (39,393-70,024)
Kenya	22,063 (20,375-23,851)	2,674 (2,057-3,487)	2 (1.8-3.1)	17 (14-21)	31,009 (29,413-32,629)	1,618 (1,124-2,329)	42,607 (26,796-64,319)
Kiribati	4 (4-5)	0 (0-1)	0 (0.3-0.5)	23 (19-27)	4 (4-4)	0 (0-0)	8 (5-11)
Kosovo	2,335 (2,224-2,453)	140 (107-180)	14 (10.4-17.4)	51 (47-55)	717 (682-756)	24 (15-36)	4,041 (3,237-5,151)
Kuwait	30,263 (28,854-31,624)	1,337 (1,017-1,731)	43 (32.9-56)	61 (56-65)	1,779 (1,608-1,978)	107 (58-176)	52,707 (43,427-65,854)

Kyrgyzstan	2,714 (2,549-2,886)	231 (176-301)	5 (3.5-5.9)	30 (26-34)	1,365 (1,292-1,445)	82 (55-118)	5,132 (3,794-7,185)
Laos	146 (136-156)	27 (21-35)	1 (0.4-0.6)	28 (24-33)	203 (193-214)	10 (7-14)	312 (223-426)
Latvia	7,085 (6,723-7,480)	410 (313-538)	42 (32.1-55.2)	44 (39-50)	3,023 (2,823-3,235)	165 (99-253)	9,015 (6,615-12,233)
Lebanon	12,882 (12,244-13,551)	710 (549-945)	19 (14.6-25.2)	40 (36-45)	6,659 (6,370-6,978)	258 (168-375)	19,777 (15,674-26,195)
Lesotho	760 (699-822)	107 (81-142)	2 (1.8-3.2)	14 (12-17)	1,532 (1,454-1,607)	73 (50-105)	1,395 (849-2,212)
Liberia	386 (352-422)	64 (49-83)	1 (0.4-0.7)	11 (8-13)	653 (613-692)	52 (37-72)	552 (297-955)
Libya	29,536 (27,870-31,202)	1,833 (1,428-2,406)	36 (28.4-47.8)	42 (37-47)	8,586 (8,115-9,127)	418 (260-640)	53,608 (43,163-70,021)
Lithuania	7,885 (7,481-8,340)	482 (370-629)	32 (24.3-41.3)	45 (40-50)	3,112 (2,899-3,351)	173 (102-259)	10,713 (7,921-14,129)
Luxembourg	2,387 (2,295-2,484)	69 (53-90)	18 (13.8-23.4)	63 (58-68)	387 (354-418)	16 (7-27)	3,153 (2,678-3,752)
Macao	478 (456-499)	19 (15-25)	5 (3.6-6.1)	62 (57-66)	47 (43-51)	3 (2-5)	655 (547-801)
Madagascar	10,573 (9,721-11,469)	1,459 (1,132-1,875)	2 (1.8-2.9)	12 (9-15)	23,048 (21,915-24,112)	1,124 (784-1,553)	21,298 (13,672-32,901)
Malawi	7,871 (7,260-8,516)	1,025 (785-1,322)	2 (1.8-3)	18 (15-21)	14,447 (13,810-15,125)	551 (390-768)	18,661 (11,951-27,829)
Malaysia	11,043 (10,422-11,672)	824 (632-1,045)	3 (2.5-4.1)	44 (40-49)	2,224 (2,094-2,375)	145 (92-212)	24,071 (19,015-30,831)
Maldives	515 (486-545)	37 (28-48)	11 (8.5-14.5)	51 (47-54)	111 (105-116)	4 (3-6)	999 (806-1,308)
Mali	1,546 (1,425-1,676)	277 (207-359)	1 (0.4-0.7)	15 (12-18)	2,191 (2,065-2,321)	166 (118-233)	3,867 (2,422-5,947)
Malta	2,589 (2,489-2,690)	83 (63-106)	29 (21.8-36.9)	59 (54-64)	655 (609-700)	28 (16-47)	3,241 (2,655-3,979)
Martinique	285 (272-299)	14 (11-18)	8 (6.1-10.3)	55 (49-60)	101 (94-109)	5 (3-7)	373 (292-476)
Mauritania	502 (467-541)	58 (44-73)	1 (0.4-0.7)	24 (20-28)	321 (302-342)	24 (17-34)	1,269 (867-1,783)
Mauritius	4,291 (4,043-4,543)	275 (210-366)	13 (9.6-16.7)	33 (29-37)	3,766 (3,587-3,958)	145 (95-210)	5,542 (4,030-7,779)
Mayotte	1,015 (955-1,073)	77 (59-101)	12 (8.9-15.3)	34 (31-38)	744 (713-778)	30 (21-42)	2,404 (1,830-3,340)
Mexico	124,895 (119,161-131,796)	4,721 (3,536-5,970)	4 (2.9-5)	40 (35-46)	67,277 (63,547-71,019)	2,165 (1,321-3,309)	159,684 (122,041-203,613)

Micronesia (Federated States of)	4	0	0	22	3	0	6
	(4-4)	(0-0)	(0.3-0.5)	(19-26)	(3-3)	(0-0)	(4-8)
Moldova	3,145	254	15	35	1,730	103	4,601
	(2,948- 3,344)	(193-326)	(11-18.7)	(31-39)	(1,643-1,831)	(66-150)	(3,340-6,182)
Mongolia	1,455	111	5	37	545	30	2,819
	(1,379- 1,537)	(84-144)	(3.5-6)	(33-41)	(514-578)	(20-45)	(2,125-3,765)
Montenegro	1,701	95	26	45	815	34	2,338
	(1,616- 1,780)	(73-124)	(20-34)	(40-50)	(771-857)	(21-51)	(1,836-3,053)
Morocco	146,159	9,917	40	35	73,956	3,591	233,744
	(138,456- 154,192)	(7,470- 12,770)	(30.2-51.5)	(31-39)	(70,474- 77,756)	(2,491- 5,097)	(180,020- 318,736)
Mozambique	12,371	1,579	2	16	21,217	966	29,122
	(11,431- 13,358)	(1,181- 2,036)	(1.7-2.9)	(13-19)	(20,225- 22,211)	(679-1,347)	(18,637- 44,122)
Myanmar	1,826	179	1	22	1,820	91	3,227
	(1,700- 1,950)	(136-225)	(0.4-0.6)	(18-27)	(1,728-1,913)	(62-132)	(2,153-4,589)
Namibia	1,422	133	2	26	1,386	53	2,984
	(1,326- 1,523)	(102-173)	(1.8-3)	(22-31)	(1,321-1,455)	(36-77)	(2,050-4,199)
Nepal	18,763	1,569	8	26	16,389	695	32,243
	(17,655- 20,062)	(1,194- 2,048)	(6.2-10.6)	(22-30)	(15,627- 17,176)	(469-1,001)	(22,860- 45,641)
Netherlands	68,097	2,045	20	61	16,380	708	81,782
	(65,293- 70,991)	(1,566- 2,672)	(15.4-26.3)	(56-65)	(15,176- 17,641)	(363-1,181)	(68,055- 98,147)
New Caledonia	14	1	0	51	3	0	23
	(13-15)	(1-1)	(0.3-0.5)	(45-57)	(3-3)	(0-0)	(18-30)
New Zealand	17,978	583	19	59	2,609	136	25,368
	(17,207- 18,797)	(437-779)	(14.2-25.4)	(54-65)	(2,405-2,826)	(70-224)	(20,621- 32,331)
Nicaragua	5,436	267	4	32	4,681	143	7,380
	(5,145- 5,738)	(205-343)	(3-4.9)	(28-37)	(4,459-4,942)	(93-206)	(5,531-9,664)
Niger	1,739	302	1	10	2,833	221	4,153
	(1,577- 1,913)	(221-385)	(0.4-0.7)	(8-13)	(2,668-3,017)	(156-310)	(2,322-6,530)
Nigeria	63,248	9,388	2	11	83,986	6,314	125,523
	(57,758- 69,141)	(7,148- 12,044)	(1.5-2.5)	(9-15)	(78,800- 89,480)	(4,280- 9,036)	(71,633- 202,016)
Niue	0	0	0	41	0	0	0
	(0-0)	(0-0)	(0.4-0.5)	(36-47)	(0-0)	(0-0)	(0-0)
North Macedonia	2,381	137	13	50	946	33	3,675
	(2,259- 2,503)	(103-178)	(10.1-17.4)	(46-54)	(900-999)	(19-51)	(2,877-4,864)
Norway	37,452	1,173	37	66	6,961	170	51,069
	(35,789- 38,981)	(899- 1,518)	(28.2-47.6)	(62-71)	(6,469-7,534)	(54-320)	(42,875- 61,604)
Oman	37,813	2,169	58	59	1,893	118	79,251

	(35,900-39,790)	(1,677-2,838)	(45.1-76.3)	(55-65)	(1,731-2,064)	(62-190)	(65,448-104,318)
Pakistan	25,659	2,217	1	25	17,974	940	46,749
	(24,118-27,427)	(1,648-2,825)	(0.8-1.4)	(21-30)	(17,060-18,949)	(634-1,381)	(32,410-65,104)
Panama	4,100	235	8	49	922	49	7,046
	(3,899-4,292)	(178-305)	(6-10.4)	(43-56)	(858-995)	(29-76)	(5,571-9,280)
Papua New Guinea	351	32	0	23	314	15	668
	(328-374)	(24-41)	(0.3-0.5)	(19-28)	(297-331)	(10-21)	(447-928)
Paraguay	6,219	413	9	40	2,653	104	11,141
	(5,905-6,577)	(321-533)	(6.7-11.1)	(35-45)	(2,524-2,791)	(68-153)	(8,337-14,820)
Peru	19,920	1,043	5	41	9,820	335	30,215
	(18,872-20,952)	(775-1,333)	(3.5-6)	(36-46)	(9,347-10,367)	(222-514)	(23,183-38,610)
Philippines	31,888	2,902	3	27	12,530	1,062	58,260
	(29,757-33,995)	(2,199-3,704)	(2.4-4.1)	(23-32)	(11,696-13,472)	(706-1,542)	(41,119-79,850)
Poland	134,165	6,988	34	53	32,265	1,642	191,782
	(127,442-140,559)	(5,366-9,212)	(25.9-44.5)	(48-59)	(29,712-35,299)	(882-2,722)	(150,997-252,354)
Portugal	33,889	1,125	21	55	15,428	508	41,260
	(32,399-35,394)	(872-1,479)	(16.2-27.4)	(50-61)	(14,570-16,374)	(283-798)	(32,750-52,317)
Puerto Rico	2,798	135	8	52	1,012	47	3,569
	(2,663-2,940)	(101-173)	(6.2-10.6)	(46-57)	(944-1,083)	(27-72)	(2,754-4,597)
Qatar	13,766	815	42	65	422	29	27,106
	(13,125-14,504)	(623-1,042)	(31.7-53.1)	(61-70)	(379-468)	(14-48)	(22,502-33,696)
Republic of Korea	33,975	1,612	6	65	2,865	192	51,390
	(32,307-35,612)	(1,241-2,085)	(5-8.3)	(60-69)	(2,551-3,176)	(97-339)	(42,424-63,872)
Romania	26,436	1,582	15	47	11,035	509	38,313
	(24,984-27,858)	(1,197-2,055)	(11.5-19.7)	(42-52)	(10,368-11,798)	(310-804)	(28,893-50,698)
Russian Federation	333,034	16,830	21	44	119,075	5,386	497,020
	(316,068-351,850)	(13,045-21,720)	(16.1-26.9)	(39-50)	(111,889-127,756)	(3,049-8,605)	(371,873-654,297)
Rwanda	4,399	507	2	18	7,522	311	9,303
	(4,078-4,762)	(380-657)	(1.3-2.2)	(15-22)	(7,205-7,896)	(212-433)	(6,054-13,636)
Samoa	8	1	0	27	5	0	13
	(7-8)	(1-1)	(0.3-0.5)	(23-31)	(5-5)	(0-0)	(9-18)
Sao Tome and Principe	83	10	2	23	69	4	189
	(78-90)	(7-12)	(1.5-2.5)	(19-26)	(65-73)	(3-6)	(124-270)
Saudi Arabia	236,780	13,631	59	58	13,139	841	477,312
	(225,210-249,167)	(10,695-17,546)	(46.2-75.7)	(53-64)	(11,870-14,655)	(443-1,517)	(395,598-614,644)
Senegal	6,838	753	2	22	5,331	339	15,575

	(6,383-7,331)	(576-971)	(1.5-2.5)	(19-27)	(5,037-5,636)	(238-479)	(10,907-21,899)
Serbia	13,950	542	15	45	5,299	188	21,194
	(13,202-14,743)	(424-702)	(11.7-19.4)	(41-49)	(5,040-5,567)	(116-287)	(16,436-27,913)
Seychelles	460	29	12	39	191	11	689
	(436-488)	(22-37)	(9.2-15.6)	(34-45)	(178-206)	(7-17)	(503-936)
Sierra Leone	763	100	1	17	887	56	1,708
	(700-824)	(74-131)	(0.4-0.8)	(13-21)	(839-942)	(38-79)	(1,075-2,567)
Singapore	4,076	159	5	65	285	16	6,014
	(3,880-4,256)	(122-202)	(3.5-5.8)	(60-70)	(259-315)	(7-28)	(5,107-7,301)
Slovakia	19,310	1,136	37	50	5,603	319	29,280
	(18,336-20,310)	(869-1,499)	(28.6-49.3)	(45-55)	(5,213-6,050)	(188-489)	(22,703-38,591)
Slovenia	5,648	306	27	52	2,074	103	8,455
	(5,364-5,914)	(235-398)	(20.8-35.1)	(47-56)	(1,944-2,199)	(64-160)	(6,509-11,111)
Solomon Islands	30	3	0	25	21	1	60
	(28-31)	(2-3)	(0.3-0.5)	(21-29)	(20-22)	(1-2)	(41-82)
Somalia	21,218	4,641	13	7	75,024	4,177	45,394
	(19,012-23,718)	(3,531-5,979)	(9.6-16.2)	(5-9)	(71,519-78,865)	(2,946-5,758)	(26,288-78,134)
South Africa	32,253	2,774	2	26	35,882	1,306	58,542
	(29,969-34,433)	(2,076-3,532)	(1.8-3)	(22-31)	(34,072-37,661)	(845-1,951)	(40,066-84,101)
South Sudan	10,120	2,356	13	6	41,051	2,061	18,786
	(9,067-11,330)	(1,759-3,087)	(9.9-17.3)	(5-8)	(39,228-42,865)	(1,484-2,825)	(10,150-33,651)
Spain	192,956	5,940	24	65	49,400	1,388	242,846
	(185,465-201,354)	(4,565-7,718)	(18.5-31.3)	(60-70)	(46,047-53,005)	(534-2,443)	(200,823-296,103)
Sri Lanka	15,975	1,104	8	33	12,129	477	24,992
	(15,088-16,889)	(829-1,422)	(6.1-10.4)	(29-37)	(11,608-12,682)	(326-695)	(18,553-33,141)
St Lucia	148	9	8	36	91	4	207
	(141-156)	(7-11)	(6.1-10.3)	(31-41)	(86-96)	(2-6)	(150-275)
St Vincent and the Grenadines	74	5	8	33	54	2	100
	(70-78)	(4-6)	(6.3-10.5)	(29-38)	(51-56)	(1-3)	(72-134)
State of Palestine	11,449	770	18	37	5,203	221	22,216
	(10,795-12,121)	(573-973)	(13.7-23.3)	(33-41)	(4,916-5,549)	(146-316)	(16,953-29,184)
Sudan	100,571	9,765	13	15	131,992	6,414	210,222
	(93,208-109,040)	(7,493-12,913)	(9.8-16.8)	(12-19)	(126,201-138,370)	(4,476-9,002)	(134,523-331,623)
Suriname	537	36	9	37	288	12	907
	(509-567)	(27-47)	(6.4-11.1)	(32-42)	(273-304)	(7-18)	(676-1,220)
Sweden	84,525	2,311	39	66	13,221	437	104,591
	(81,117-88,212)	(1,763-3,042)	(29.9-51.5)	(62-71)	(12,082-14,471)	(139-850)	(90,556-124,414)
Switzerland	21,091	620	13	57	7,261	294	24,568
	(20,221-21,985)	(482-804)	(9.9-16.5)	(53-62)	(6,814-7,766)	(171-444)	(20,363-30,014)
Syria	45,328	3,366	19	25	48,374	1,678	82,046

	(42,483-48,296)	(2,588-4,369)	(14.3-24.2)	(21-30)	(46,047-50,721)	(1,146-2,361)	(59,268-114,845)
Taiwan	26,862	706	6	59	9,478	284	28,155
	(25,712-27,924)	(539-911)	(4.5-7.6)	(54-65)	(8,813-10,154)	(130-492)	(22,568-34,124)
Tajikistan	4,746	395	5	32	2,269	118	9,454
	(4,495-5,047)	(296-510)	(3.8-6.5)	(28-37)	(2,149-2,389)	(78-170)	(7,004-13,080)
Thailand	21,795	1,412	3	34	6,119	499	36,083
	(20,366-23,275)	(1,087-1,798)	(2.5-4.1)	(29-39)	(5,674-6,646)	(329-762)	(25,820-49,709)
Timor L'Este	52	5	1	24	38	2	112
	(49-56)	(4-7)	(0.4-0.6)	(20-28)	(36-41)	(1-3)	(76-157)
Togo	751	106	1	14	1,008	70	1,768
	(685-820)	(79-136)	(0.4-0.7)	(11-17)	(952-1,064)	(48-98)	(1,119-2,663)
Tonga	4	0	0	33	2	0	6
	(4-4)	(0-0)	(0.3-0.5)	(29-38)	(2-2)	(0-0)	(4-8)
Trinidad and Tobago	1,254	72	8	40	510	29	1,678
	(1,187-1,327)	(53-92)	(6-10.3)	(35-46)	(474-549)	(18-43)	(1,197-2,242)
Tunisia	43,071	2,898	37	35	21,209	1,093	66,929
	(40,679-45,797)	(2,142-3,730)	(27.1-47.1)	(31-40)	(20,160-22,472)	(735-1,594)	(49,676-88,955)
Turkey	207,079	11,998	22	51	48,040	1,778	405,087
	(196,996-218,670)	(9,187-15,846)	(17-29.4)	(47-55)	(45,747-50,496)	(1,100-2,820)	(323,727-532,716)
Turkmenistan	3,685	265	5	38	1,329	72	6,598
	(3,476-3,903)	(199-341)	(3.8-6.4)	(33-42)	(1,253-1,418)	(45-107)	(4,933-8,694)
US Virgin Islands	183	12	24	46	56	4	272
	(173-194)	(9-15)	(18.6-30.8)	(41-51)	(52-60)	(2-6)	(207-352)
Uganda	19,550	2,339	2	17	29,563	1,385	43,861
	(18,092-20,982)	(1,812-3,060)	(1.8-3)	(15-21)	(28,223-31,052)	(989-1,930)	(29,885-67,145)
Ukraine	117,850	7,139	34	41	69,073	2,456	172,433
	(111,005-124,631)	(5,533-9,117)	(26.6-43.8)	(36-46)	(65,651-73,529)	(1,558-3,870)	(129,694-222,766)
United Arab Emirates	85,248	4,286	59	66	2,184	138	171,210
	(81,150-89,654)	(3,290-5,579)	(45.3-76.8)	(62-70)	(1,972-2,424)	(72-232)	(141,614-215,744)
United Kingdom	347,869	10,998	28	60	79,726	3,394	429,678
	(333,137-363,099)	(8,395-14,358)	(21.6-36.9)	(54-65)	(73,395-86,097)	(1,623-5,965)	(353,212-516,673)
United Republic of Tanzania	26,948	3,102	2	21	32,245	1,446	67,249
	(25,135-28,874)	(2,335-4,001)	(1.7-2.9)	(18-25)	(30,753-33,851)	(999-2,063)	(44,841-97,771)
United States of America	1,512,851	52,563	27	57	379,578	13,349	2,021,584
	(1,445,570-1,586,218)	(41,085-67,979)	(21.2-35)	(51-63)	(349,829-411,601)	(6,472-23,620)	(1,693,647-2,514,021)
Uruguay	3,229	170	9	51	850	39	4,954

	(3,083-3,394)	(132-220)	(6.8-11.3)	(46-57)	(793-914)	(23-64)	(3,976-6,280)
Uzbekistan	16,400	1,285	5	33	8,025	428	31,314
	(15,547-17,347)	(992-1,659)	(3.8-6.4)	(28-38)	(7,613-8,461)	(282-643)	(22,878-42,245)
Vanuatu	12	1	0	27	8	0	24
	(11-13)	(1-1)	(0.3-0.5)	(23-31)	(7-8)	(0-1)	(18-33)
Venezuela (Bolivarian Republic of)	15,577	880	5	35	8,518	376	21,469
	(14,741-16,509)	(655-1,128)	(3.6-6.2)	(29-41)	(8,023-9,029)	(234-573)	(16,281-28,408)
Viet Nam	24,544	2,279	3	28	10,949	908	44,303
	(22,919-26,302)	(1,678-2,948)	(2.4-4.2)	(23-33)	(10,194-11,765)	(606-1,323)	(30,027-62,297)
Western Sahara	65	6	1	25	49	3	123
	(61-70)	(5-8)	(0.5-0.8)	(22-29)	(46-51)	(2-4)	(83-176)
Yemen	11,439	1,036	3	24	9,512	446	24,643
	(10,748-12,136)	(781-1,341)	(2.4-4.1)	(21-29)	(9,026-9,984)	(303-631)	(18,159-35,432)
Zambia	8,735	984	2	21	10,211	456	19,998
	(8,105-9,389)	(741-1,272)	(1.7-3)	(18-25)	(9,718-10,748)	(318-648)	(13,362-30,228)
Zimbabwe	5,866	780	2	17	8,801	429	13,015
	(5,422-6,360)	(595-998)	(1.8-3.1)	(14-20)	(8,392-9,212)	(294-611)	(8,416-19,604)

APPENDIX 10: PROJECTION FROM 2020 TO 2040

Table 1 – Projected prevalent cases by region

Region	2020	2025	2030	2035	2040
Global	7,846,757 (7,438,499- 8,271,875)	9,500,194 (9,014,873- 10,014,062)	11,332,296 (10,166,909- 12,709,338)	13,133,935 (10,856,092- 16,131,520)	14,737,076 (11,461,191- 19,272,738)
African	260,231 (238,435- 283,885)	377,512 (347,573- 409,230)	522,737 (412,362- 651,645)	679,292 (461,582- 970,576)	829,480 (523,113- 1,266,173)
Europe	2,453,556 (2,337,973- 2,571,800)	2,816,750 (2,686,539- 2,954,050)	3,199,610 (2,914,764- 3,527,267)	3,559,651 (3,007,711- 4,247,078)	3,866,107 (3,081,376- 4,881,855)
Middle East and North Africa	1,099,710 (1,035,195- 1,167,160)	1,492,534 (1,409,694- 1,578,377)	1,923,527 (1,715,300- 2,196,920)	2,362,093 (1,945,008- 2,984,757)	2,781,822 (2,155,968- 3,742,058)
North America and Caribbean	1,688,967 (1,613,438- 1,771,139)	1,898,908 (1,814,843- 1,990,698)	2,127,889 (1,965,565- 2,319,747)	2,348,721 (2,043,477- 2,754,920)	2,550,915 (2,119,670- 3,181,561)
South and Central America	684,736 (650,604- 722,284)	827,014 (784,720- 870,876)	985,628 (885,222- 1,109,258)	1,140,587 (935,919- 1,405,742)	1,277,881 (980,570- 1,674,170)
Southeast Asia	832,195 (781,900- 885,538)	1,054,287 (991,028- 1,120,750)	1,319,139 (1,142,455- 1,508,372)	1,582,227 (1,237,704- 2,002,217)	1,801,581 (1,308,654- 2,451,835)
Western Pacific	827,361 (780,953- 870,070)	1,033,188 (980,477- 1,090,082)	1,253,767 (1,131,242- 1,396,128)	1,461,364 (1,224,692- 1,766,230)	1,629,289 (1,291,840- 2,075,087)

APPENDIX 11: OTHER FIGURES

Figure 1: Estimated size of global type 1 diabetes population 2025 (thousands) by region (depicted in variwide graph where area is proportional to numerical value)

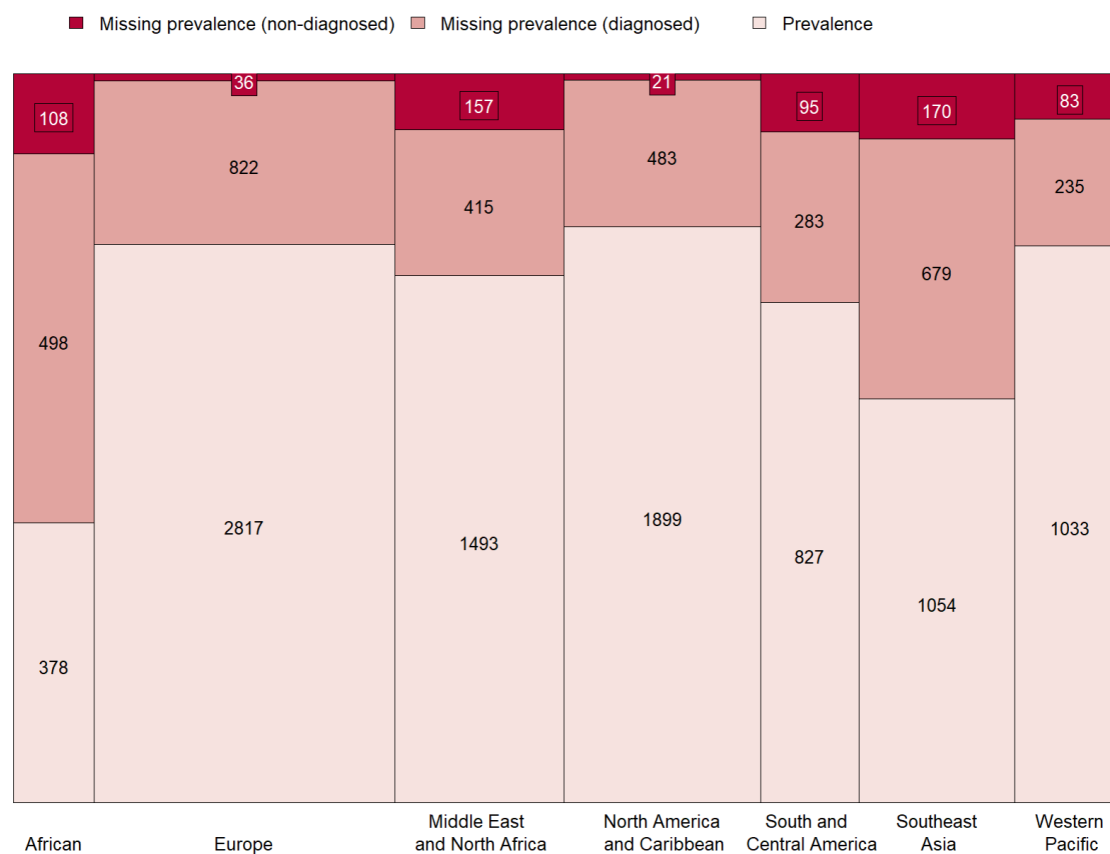


Figure 2: Prevalence and missing prevalence due to type 1 diabetes in four example countries by age group (2025)

