

CO1.6: Disease-based indicators: prevalence of diabetes and asthma among children

Definitions and methodology

This indicator presents information on the prevalence of two diseases that are relatively common among children: diabetes, and asthma. Data on the prevalence of diabetes are presented through one measure:

- *Estimated number of children (0-19) with type 1 diabetes, per 100,000 children.* The data concern “type 1 diabetes” only (i.e. do not include children with “type 2 diabetes”) as the former is the predominant type of diabetes among children and adolescents. Estimates of the prevalence of type 1 diabetes among children come from the International Diabetes Federation, and refer to 2021. The number of children aged under 20 comes from the United Nations Population Division World Population Prospects (2019 Revision).

Data on the prevalence of asthma can be presented through two measures:

- *The proportion (%) of children age 6-7 whose parents report that the child has ever had asthma,* that is, the proportion of children aged 6-7 with parents who responded positively to the question “Has your child ever had asthma?”
- *The proportion (%) of children age 13-14 self-report that they have ever had asthma,* that is, the proportion of children with parents who responded positively to the question “Have you ever had asthma?”

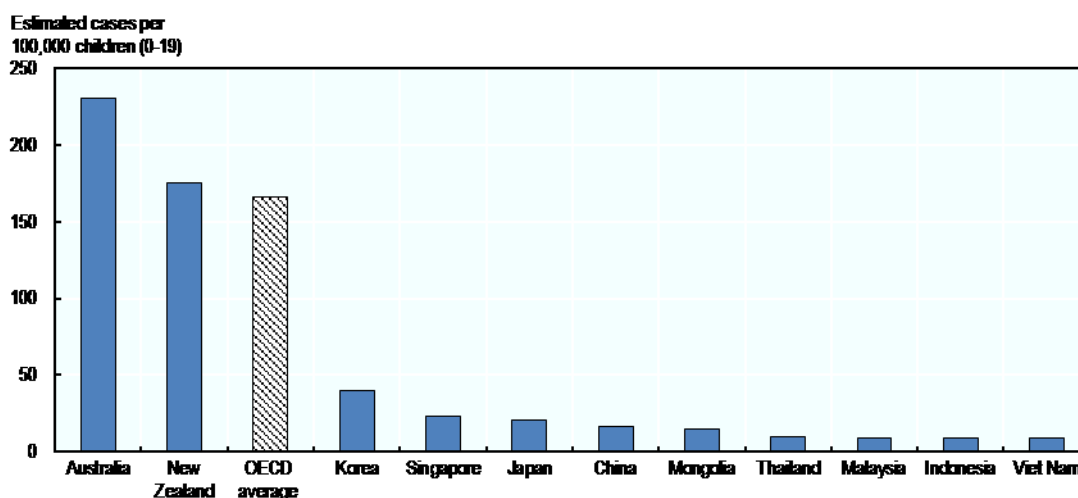
In both cases the data in the 1990s and early 2000s on asthma came from studies associated with the International Study of Asthma and Allergies in Childhood (ISAAC). Unfortunately, the country coverage of the latest Global Asthma Network (GAN I) collected in the late 2010s from 27 centres in 14 countries in the world is currently too limited. No chart will be shown below.

Key findings

The prevalence of type 1 diabetes among children is generally very low in the covered Asia/Pacific countries, though there are a couple of clear exceptions (Chart CO1.6.A). Current estimates suggest that in all of China, Indonesia, Japan, Malaysia, Mongolia, Singapore, Thailand and Viet Nam, fewer than 25 in 100,000 children aged 0-19 suffer from type 1 diabetes, with rates falling below 10 children per 100,000 in Indonesia, Malaysia, Thailand and Viet Nam. These are rates that are extremely low in comparison to the average for OECD countries (166 children per 100,000), for example. Rates in Australia and New Zealand are much higher – with the estimate for the former 230 children per 100,000, and the latter 175 children per 100,000 – though in both cases these rates are not actually too different from the OECD average.

<i>Other relevant indicators:</i> CO1.1 Infant mortality; CO1.2 Life expectancy at birth; CO1.3 Low birth weight; CO1.4 Vaccination rates

Chart CO1.6.A. **Estimated prevalence of type 1 diabetes in children, 2021**
Estimated number of children (0-19) per 100,000 with type 1 diabetes



a) The OECD average refers to the unweighted average across OECD member countries in 2020 population aged 0 to 19.

Sources: [International Diabetes Federation \(IDF\) http://www.diabetesatlas.org/](http://www.diabetesatlas.org/); OECD average: OECD Population Statistics 2020; United Nations, Department of Economic and Social Affairs, Population Division (2019). World Population Prospects 2019.

Sources: [Australia, Japan, Korea, New Zealand, Singapore, Thailand, Viet Nam: Lai et al. \(2009\)](#); OECD average: [OECD Family Database Indicator CO1.6](#)

Early 2000, the prevalence of asthma among young children (age 6-7) varied across Asia/Pacific countries from fewer than 10% in Korea, Thailand and Viet Nam to around 25% in Japan and Australia, and as high as 30% in New Zealand. The picture was generally similar for slightly older children aged 13-14. The prevalence of asthma varied from around 5% China, Korea and Viet Nam, to over 32% in New Zealand.

Unfortunately, the country coverage of the latest Global Asthma Network (GAN I) collected in the late 2010s from 27 centres in 14 countries in the world is currently too limited (Global Asthma Network, 2021).

Comparability and data issues

Estimates of the prevalence of type 1 diabetes are taken from the International Diabetes Federation (IDF) Diabetes Atlas (7th edition), published in 2015. The data published in the Diabetes Atlas were collected by the IDF through a search of the scientific literature for population-based studies on the incidence or prevalence of type 1 diabetes in children aged 0-14. In most cases, estimates of the prevalence of type 1 diabetes were derived from register-based data on the *incidence* of new cases each year. In some countries no (good quality) information was found available, in which case estimates were based on rates extrapolated from nearby or similar countries. As such, the estimates shown in Chart CO1.6.A should be read as estimates only. For more detail on the methods used and the limitations of the IDF data, see [Patterson et al \(2014\)](#).

Data on asthma in the early 2000s was taken from Phase 3 of the International Study of Asthma and Allergies in Childhood (ISAAC). Information on Asthma symptoms was collected through written questionnaires completed by parents for children age 6 to 7 and

self-completed by those aged 13 to 14. The first phase of the ISAAC study was conducted between 1992 and 1996, the second phase between 1998 and 2004, and the third phase between 2000 and 2003. This last ISAAC phase covered 56 countries in total, including all of the Asia/Pacific countries covered. Unfortunately, the country coverage of the latest Global Asthma Network (GAN I) collected in the late 2010s from 27 centres in 14 countries in the world is currently too limited to be shown here.

Sources and further reading:

C., Guariguata, L., Dahlquist, G., Soltész, G., Ogle, G., & Silink, M. (2014), "Diabetes in the young—a global view and worldwide estimates of numbers of children with type 1 diabetes", *Diabetes research and clinical practice*, Vol. 103, No. 2, 161-175.

Lai CKW, Beasley R, Crane J, Foliaki S, Shah J, Weiland S, and the ISAAC Phase Three Study Group (2009), "Global variation in the prevalence and severity of asthma symptoms: Phase Three of the International Study of Asthma and Allergies in Childhood (ISAAC)", *Thorax*, Vol. 64, pp. 476–483; Patterson,

Global Asthma Network (2021), "Worldwide trends in the burden of asthma symptoms in school-aged children: Global Asthma Network Phase I cross-sectional study", *Lancet* 2021; 398: 1569–80