

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 2017. 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 are 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 on asthma come from studies associated with the International Study of Asthma and Allergies in Childhood (ISAAC), and cover 2002 or around. Unfortunately, these are the latest available internationally comparable data on the prevalence of asthma (Garcia-Marcos and Pacheco-Gonzalez, 2015).

Key findings

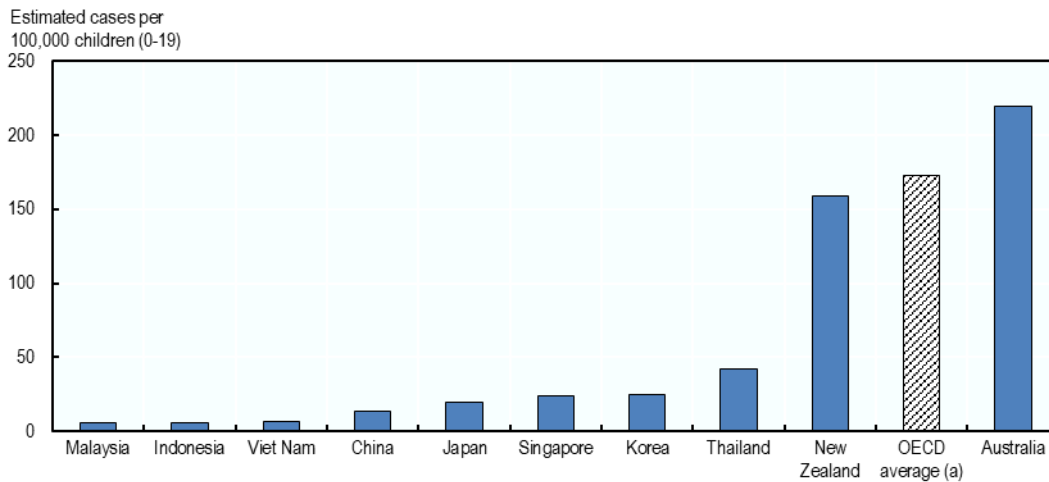
The prevalence of type 1 diabetes among children is generally very low in the covered Asia/Pacific countries, though there are a couple of clear exceptions (Chart CO1.6.A). Current estimates suggest that in all of China, Indonesia, Japan, Korea, Malaysia, Singapore and Viet Nam, fewer than 25 in 100,000 children aged 0-19 suffer from type 1 diabetes, with rates falling below 6 children per 100,000 in Indonesia and Malaysia. These are rates that are extremely low in comparison to the average for OECD countries (173 children per 100,000), for example. Rates in Australia and New Zealand are much higher – with the estimate for the former 220 children per 100,000, and the latter 159 children per 100,000 – though in both cases these rates are not actually too different from the OECD average.

The prevalence of asthma among young children (age 6-7) varies across Asia/Pacific countries (Chart CO1.6.B). In some of the covered Asia/Pacific countries, rates are relatively low – in 2002, in Korea, Thailand and Viet Nam, fewer than 10% of children aged 6-7 had parents that reported they had ever suffered from asthma, slightly below than the average for OECD countries (13%). However, in Japan and Australia roughly 25% of children aged 6-

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

7 had parents that reported they had ever suffered from asthma, while in New Zealand this was as high as 30%.

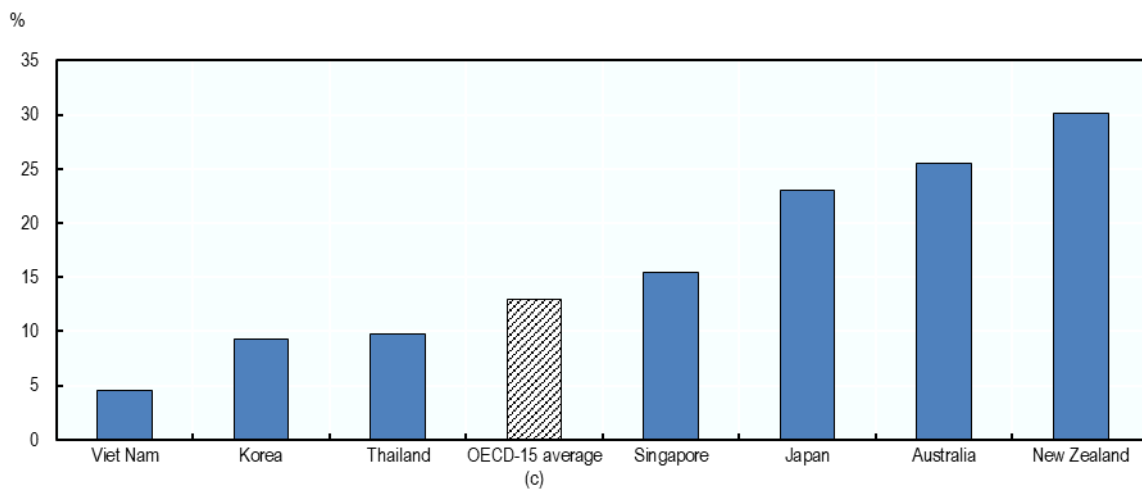
Chart CO1.6.A. Estimated prevalence of type 1 diabetes in children, 2017
 Estimated number of children (0-19) per 100,000 with type 1 diabetes



a) The OECD average refers to the unweighted average across OECD member countries with available and comparable data. See OECD Family Database Indicator CO1.6 (<http://www.oecd.org/els/family/database.htm>) for more detail.

Sources: [International Diabetes Federation \(IDF\) http://www.diabetesatlas.org/](http://www.diabetesatlas.org/); OECD average: [OECD Family Database Indicator CO1.6](http://www.oecd.org/els/family/database.htm)

Chart CO1.6.B. Prevalence of asthma in children age 6-7, 2002
 Proportion (%) of children age 6-7 whose parents report that the child has ever had asthma



a) The results concern asthma symptoms as reported by parents

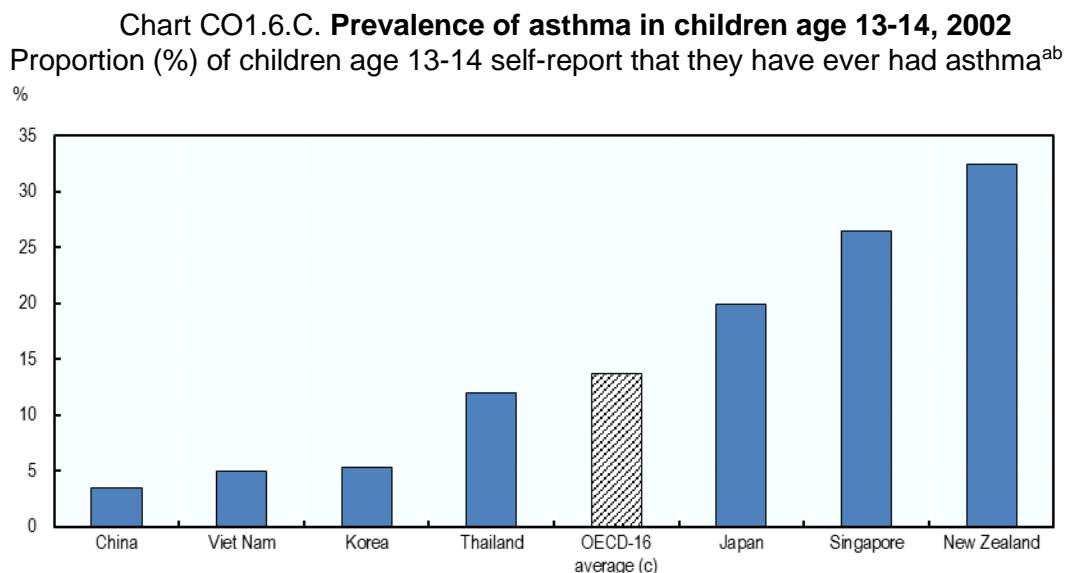
b) Data reflect studies based on particular regions/urban centres: Australia - Melbourne; Japan - Fukuoka; Korea - Provincial Korea and Seoul; New Zealand - Auckland, Bay of Plenty, Christchurch and Nelson; Singapore - Singapore; Thailand - Bangkok, Chantaburi, Chiang Mai, Chiangrai, Khon Kaen, and Nakorn Pathom; Viet Nam - Ho Chi Minh City

c) The OECD-15 average refers to the unweighted average across the 15 OECD member countries with available and comparable data. See OECD Family Database Indicator CO1.6 (<http://www.oecd.org/els/family/database.htm>) for more detail.

Sources: [Australia, Japan, Korea, New Zealand, Singapore, Thailand, Viet Nam: Lai et al. \(2009\)](#); OECD average: [OECD Family Database Indicator CO1.6](http://www.oecd.org/els/family/database.htm)

The picture is generally similar for slightly older children aged 13-14 (Chart CO1.6.C). Again, the prevalence of asthma is relatively low in some of the covered Asia/Pacific

countries. In 2002, in Thailand, only about 10-12% of children aged 13-14 reported that they had ever had asthma, while China, Korea and Viet Nam these rates were as low as around 5%. However, in Japan just under 20% of children aged 13-14 self-reported that they had ever had asthma, while in Singapore this was about 27% and in New Zealand just over 32%.



a) Self-reported asthma symptoms

b) Data reflect studies based on particular regions/urban centres: China - Beijing, Guangzhou, Tibet, Tong Zhou and Wulumuqi; Japan - Fukuoka; Korea - Provincial Korea and Seoul; New Zealand - Auckland, Bay, Christchurch, Nelson and Wellington; Singapore - Singapore; Thailand - Bangkok, Chantaburi, Chiang Mai, Chiangrai, Khon Kaen, and Nakorn Pathom; Viet Nam - Ho Chi Minh City

c) The OECD-16 average refers to the unweighted average across the 16 OECD member countries with available and comparable data. See OECD Family Database Indicator CO1.6 (<http://www.oecd.org/els/family/database.htm>) for more detail.

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

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 was taken from Phase 3 of the International Study of Asthma and Allergies in Childhood (ISAAC). Information on Asthma symptoms presented here 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. The last phase covered 56 countries in total, including all of the Asia/Pacific countries covered here. It is important to note that the data provided in Charts CO1.6.B and CO1.6.C refer to particular regions/urban centres, only (see notes to Chart CO1.6.B and Chart CO1.6.C). For more detail, see [Lai et al \(2009\)](#).

Sources and further reading: 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, 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.