

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

### Definitions and methodology

This indicator presents two childhood disease-based indicators: asthma and diabetes. The information on diabetes concerns “type 1 diabetes” rather than “type 2 diabetes”, as the former is the predominant type of diabetes among children and adolescents (<http://www.who.int/diabetes/en>). Estimates of the prevalence of type 1 diabetes come from the International Diabetes Federation, and cover 2015.

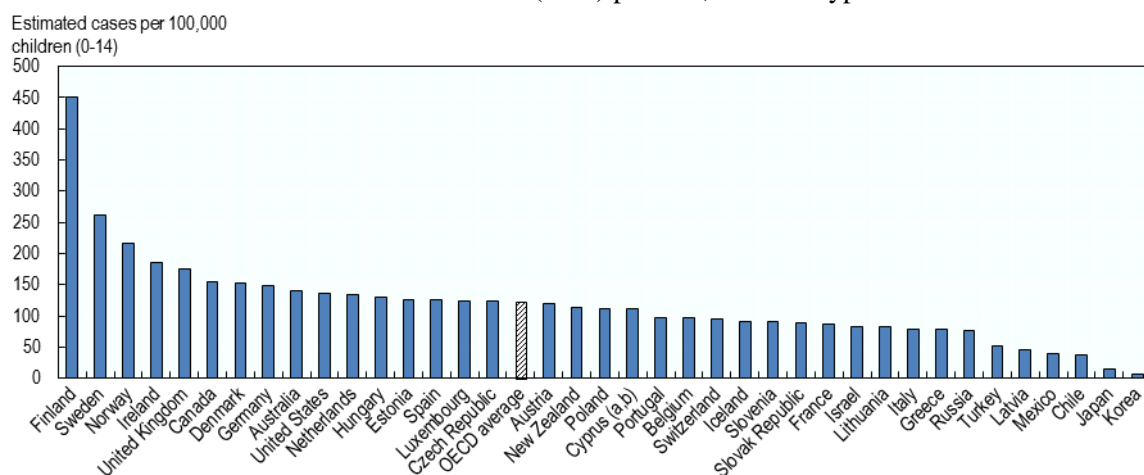
Asthma is characterized by attacks of breathlessness and wheezing, which often start in childhood but which can affect people of all ages (<http://www.who.int/respiratory/asthma/definition/en>). The data here concern estimates on the percentage of children of a specified age who suffered from an asthmatic attack at some point in their lives. Data on the prevalence of Asthma come from International Study of Asthma and Allergies in Childhood, and cover 2002 or around. Unfortunately, this is the latest available internationally comparable data on the prevalence of asthma (Garcia-Marcos and Pacheco-Gonzalez, 2015).

### Key findings

Chart CO1.6.A shows estimates of the incidence of type 1 diabetes among children age 0 to 14. On average across the OECD, there are an estimated 123 cases of type 1 diabetes per 100,000 children under the age of 15. Finland has exceptionally high estimated levels of type 1 diabetes among children, with just under 450 cases per 100,000 children. This is almost 4 times the OECD average, and is over 70% higher than the estimate for the country with the second highest level of type 1 diabetes, Sweden. The East Asian and Latin American OECD countries (Chile, Japan, Korea and Mexico) have the lowest estimated levels of type 1 diabetes in children. In Korea, as few as 6.2 children per 100,000 are estimated as having type 1 diabetes.

**Chart LMF1.2.A. Estimated prevalence of type 1 diabetes in children, 2015**

Estimated number of children (0-14) per 100,000 with type 1 diabetes



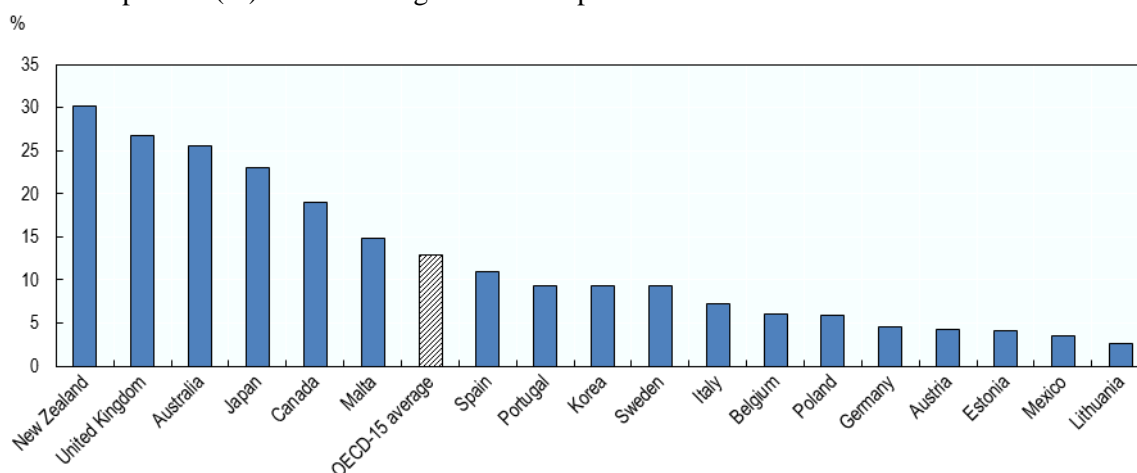
a) Footnote by Turkey: The information in this document with reference to « Cyprus » relates to the southern part of the Island. There is no single authority representing both Turkish and Greek Cypriot people on the Island. Turkey recognizes the Turkish Republic of Northern Cyprus (TRNC). Until a lasting and equitable solution is found within the context of United Nations, Turkey shall preserve its position concerning the “Cyprus issue”.

Other relevant indicators: CO1.1: Infant mortality; CO1.3: Low birth weight; and, CO1.7: Obesity among children aged 10.

b) Footnote by all the European Union Member States of the OECD and the European Commission: The Republic of Cyprus is recognized by all members of the United Nations with the exception of Turkey. The information in this document relates to the area under the effective control of the Government of the Republic of Cyprus.  
 Source: International Diabetes Federation (IDF) <http://www.diabetesatlas.org/>

In 2002, and on average across the 15 OECD countries with available comparable data, 13% of children aged 6-to-7 were reported as having had an asthma attack at some point in their lives (Chart CO1.6.B). The countries with the highest prevalence of asthma included the English speaking countries (Australia, Canada, New Zealand, and the United Kingdom) and Japan, with prevalence rates above 20%. The lowest rates were in Austria and Germany (4.2% and 4.5%, respectively) Estonia (4.1%) and Mexico, where only around 3.5% of 6-to-7 year olds were reported as ever having had asthma.

**Chart CO1.6.B. Prevalence of asthma in children age 6-7, 2002 or around**  
 Proportion (%) of children age 6-7 whose parents that the child has ever had asthma<sup>ab</sup>



a) The results concern asthma symptoms as reported by parents.

b) Data reflect studies based on particular regions/urban centres: Australia - Melbourne; Austria - Kunten and Urfahr-Umgebung; Belgium - Antwerpen; Canada - Saskatoon; Estonia - Tallinn; Germany - Munster; Italy - Emilia-Romagna, Empoli, Firenze, Milano, Roma and Torino; Japan - Fukuoka; Korea - Provincial data Seoul; Lithuania - Kaunas; Mexico - Cuernavaca; New Zealand - Auckland, Bay, Christchurch and Nelson; Poland - Krakow and Poznan; Portugal: Funchal, Lisbon, and Portimao; Spain - Bilbao, Cartagena, Castilla, Madrid, Pamplona, and Valencia; and the United Kingdom - Sunderland.

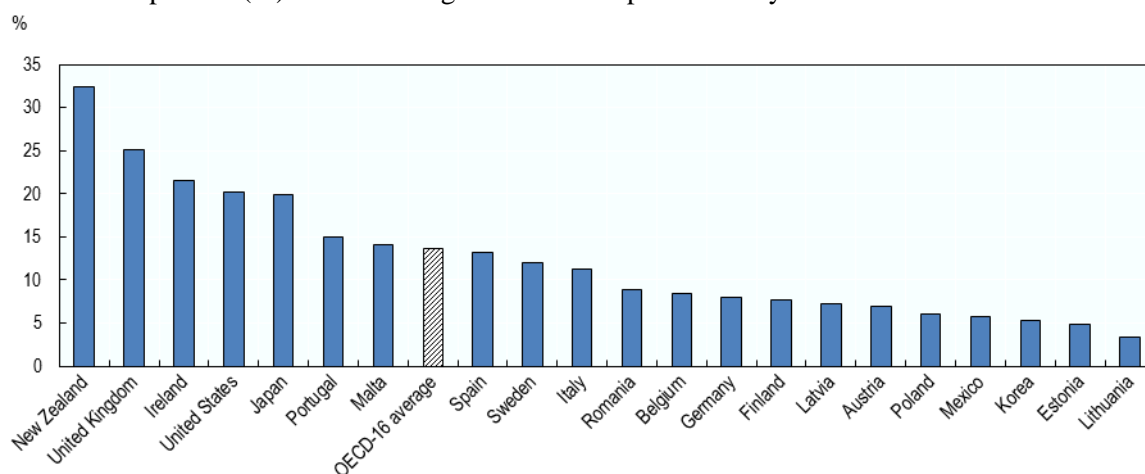
Source: International Study of Asthma and Allergies in Childhood (ISAAC) (<http://thorax.bmj.com/supplemental>).

Rates of asthma in children aged 13-14 are fairly similar (Chart C01.6.C). In 2002, and on average across OECD countries with available data, about 14% of children aged 13-14 reported ever having had asthma. Again, the countries with the highest prevalence of asthma included the English-speaking OECD countries (Ireland, New Zealand, the United Kingdom and the United States) and Japan, with prevalence rates around or above 20%. The lowest rates among 13-14 year olds, meanwhile, were in Mexico (5.7%), Korea (5.4%) and Estonia (4.8%).

### Comparability and data issues

Estimates of the prevalence of type 1 diabetes were taken from the International Diabetes Federation (IDF) Diabetes Atlas (7<sup>th</sup> edition), published in 2015. The IDF carried out a search of the scientific literature to compile information on the incidence and prevalence of type 1 diabetes in children across countries. In most cases, the studies used were based on registers of newly diagnosed cases. 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.

**Chart CO1.6.C. Prevalence of asthma in children age 13-14, 2002**  
 Proportion (%) of children age 13-14 self-report that they have ever had asthma<sup>ab</sup>



a) Self-reported asthma symptoms

b) Data reflect studies based on particular regions/urban centres: Australia - Melbourne; Austria - Kuntzen and Urfahr-Umgebung; Belgium - Antwerpen; Canada - Saskatoon; Estonia - Tallinn; Germany - Munster; Italy - Emilia-Romagna, Empoli, Firenze, Milano, Roma and Torino; Japan - Fukuoka; Korea - Provincial data Seoul; Lithuania - Kaunas; Mexico - Cuernavaca; New Zealand - Auckland, Bay, Christchurch and Nelson; Poland - Krakow and Poznan; Portugal: Funchal, Lisbon, and Portimao; Spain - Bilbao, Cartagena, Castilla, Madrid, Pamplona, and Valencia; and the United Kingdom - Sunderland.

Source: International Study of Asthma and Allergies in Childhood (ISAAC) (<http://thorax.bmj.com/supplemental>).

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 of which 16 were OECD member countries. The coverage of survey responses within countries in terms of national territory and population coverage is limited (see notes to Chart CO1.6.B and Chart CO1.6.C).

Sources and further reading: International Diabetes Federation (2015) *Diabetes Atlas (7<sup>th</sup> Edition)*. Available on line at: <http://www.diabetesatlas.org/>. Pearce, N. (2007). *Worldwide trends in the prevalence of asthma symptoms: phase III of the International Study of Asthma and Allergies in childhood (ISAAC)*. Available on line at <http://thorax.bmj.com>; Garcia-Marcos, L. & Pacheco-Gonzalez, R. (2015). A sequel of the International Study of Asthma and Allergies in Childhood or a prelude to the Global Asthma Network?. *Jornal de Pediatria*, 91(1), 01-03. <https://dx.doi.org/10.1016/j.jpmed.2014.09.001>