

CO1.7: Overweight at ages 11, 13 and 15, by gender

Definitions and methodology

This indicator uses data from the Health Behaviour in School-aged Children (HBSC) survey 2013/14 to provide information on the proportion of children (11-, 13- and 15-year-olds) that are considered 'overweight' or 'obese' in OECD and EU member countries. Data are presented through one primary measure:

- *Proportion (%) of 11-, 13- and 15-year-olds with a Body Mass Index (BMI) classed as 'overweight' or 'obese' according to the WHO child growth curve standards, by gender.* The BMI data are based on self-reported information from children on their weight (without clothes) and height (without shoes), with the BMI calculated as weight in kilograms divided by height in meters squared (kg/m²). These BMI data are then compared against the WHO's child growth standards – gender-specific empirically-based standards used to monitor child growth. Children with a BMI more than one standard deviation above the gender- and age-specific median (equivalent to a BMI of 25 at 19 years of age) are classified as 'overweight', and those with a BMI more than two standard deviations above the gender- and age-specific median (equivalent to a BMI of 30 at 19 years of age) are classified as 'obese'. (See Inchley *et al.* (2016) and the WHO child growth standards website (<http://www.who.int/childgrowth/standards/en/>) for more information.)

To highlight any differences across socio-economic groups, this indicator also presents information on differences in the proportion of children that are overweight or obese between those whose families score 'high' and 'low' on the HBSC's 'Family Affluence Scale' (FAS). The FAS is a composite measure calculated for each surveyed student based on their response to questions about various household possessions. Children with 'low' and 'high' scores on the FAS are those who score in the bottom and top 20% for their country, respectively, with those in the middle 60% classified as 'medium' affluence (see Inchley *et al.* (2016) for more information).

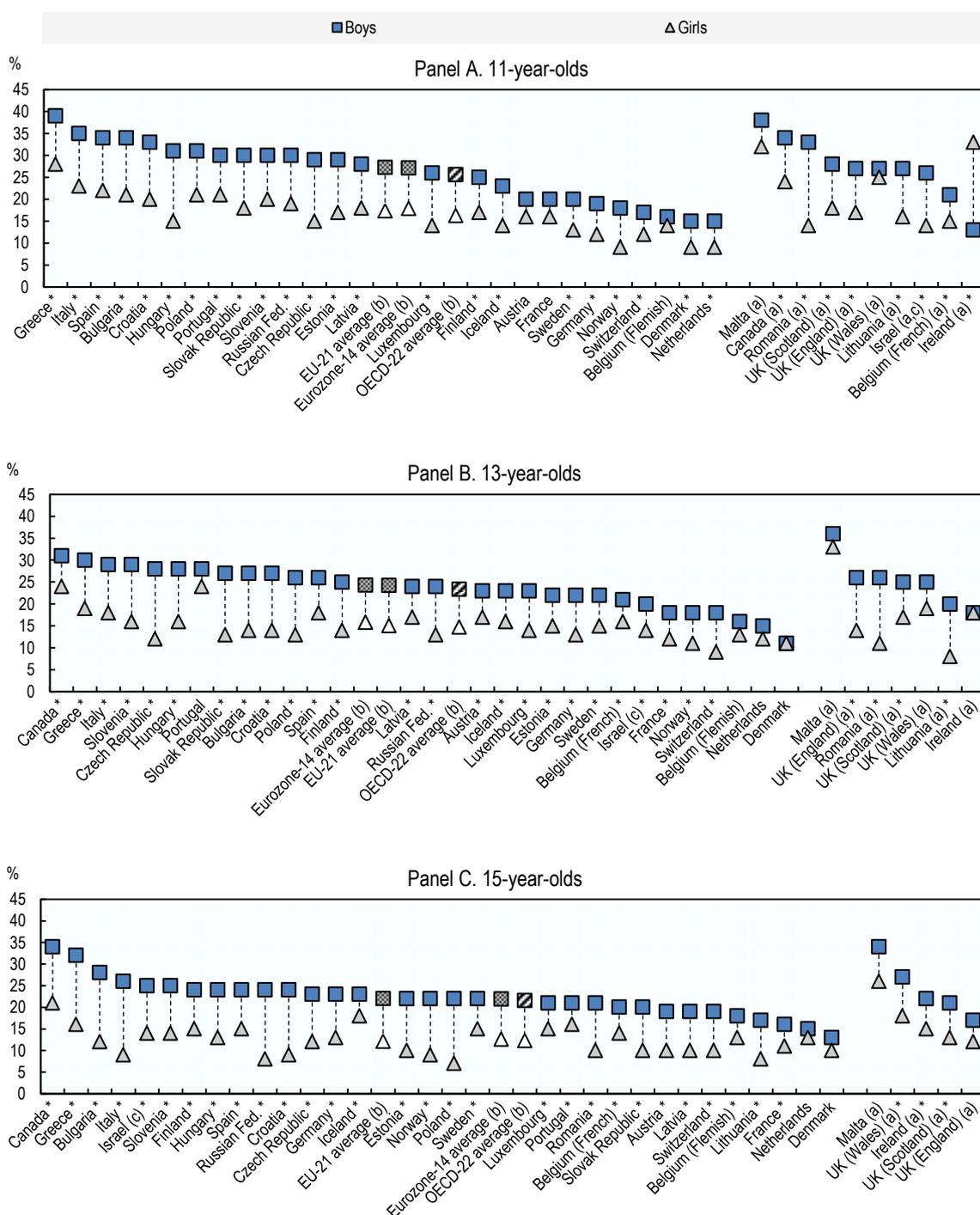
It should be noted that, in some countries, the BMI data suffer from a large number of missing responses (see Inchley *et al.* (2016) and Chart CO1.7.C). Data for countries with a missing data rate of greater than 30% for a given age-group are presented alongside but separately from the remaining countries, and should be interpreted with caution.

Key findings

In many OECD countries, the likelihood that a school-age child will find themselves overweight or obese tends to decrease with age (Chart CO1.8.A). On average across OECD countries with available data for all three age-groups, roughly 26% of 11-year-old boys and 22% of 11-year-old girls have a BMI that place them as 'overweight' or 'obese', compared to 22% of 15-year-olds boys and just over 12% of 15-year-old girls. Decreases with age are often particularly large for girls. In Greece, for instance, the share of girls with a BMI that would place them as 'overweight' or 'obese' decreases by 12 percentage points between the ages of 11 and 15. In Italy and Poland, the share falls by 14 percentage points between the two age groups.

Other relevant indicators: CO1.3: Low birth weight; CO1.5: Breastfeeding rates; CO1.6: Disease-based indicators: prevalence of diabetes and asthma among children.
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Chart CO1.7.A. Overweight and obese at ages 11, 13 and 15 by gender, 2013/14
 Proportion (%) of 11-, 13- and 15-year-olds with a BMI classed as 'overweight' or 'obese' according to the WHO child growth curve standards, by gender



Note: In countries marked with an *, differences between groups are statistically significant at $p < 0.05$. 0 mean less than ± 0.5 .

a) Information on BMI is missing for more than 30% of the age-group sample.

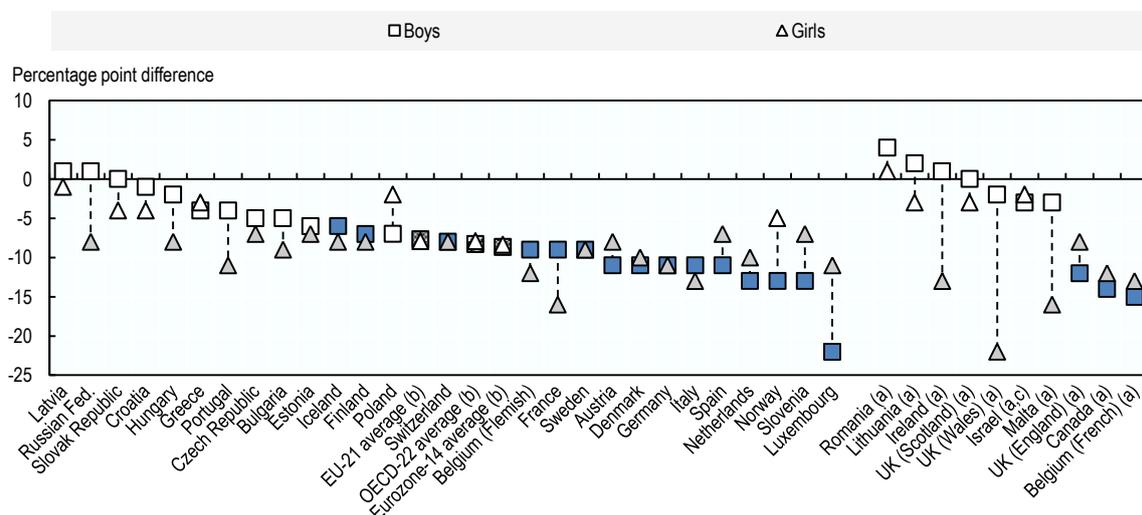
b) The OECD average, the EU average and the Eurozone average exclude any countries with missing data rates for the given age-group of more than 30%. They also exclude the two regions of Belgium.

c) The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.
 Sources: [Health Behaviour in School-aged Children \(HBSC\) study 2013/14, accessed through the European Health Information Gateway](#)

Across OECD countries, boys are generally far more likely to be ‘overweight’ or ‘obese’ than girls (Chart CO1.7.A). In most OECD countries the prevalence of being ‘overweight’ or ‘obese’ is significantly higher among boys across all three age groups, and all countries see a significant difference in at least one of the three age groups. The gender gap tends to increase with age and, among 15-year-olds, is largest in Greece – where the share of 15-year-old boys that are ‘overweight’ or ‘obese’ is 16 percentage points higher than the share of 15-year-old girls – and in Italy, where the gender gap is 17 percentage points.

Many OECD countries see significant differences across socio-economic groups in the prevalence of school-age children being ‘overweight’ or ‘obese’, with children from more disadvantaged backgrounds more likely to find themselves overweight (Chart CO1.7.B). For boys, 15 OECD countries or regions see statically significant linear trends in the prevalence of being ‘overweight’ or ‘obese’ across the HBSC’s family affluence scale (FAS) groups. Differences between boys with ‘high’ and ‘low’ FAS scores are large at around 13 percentage points in the Netherlands, Norway and Slovenia, but are particularly great in Luxembourg, where 11-to-15-year-old boys with low FAS scores are 22 percentage points more likely to be ‘overweight’ or ‘obese’ than 11-to-15-year-old boys with high FAS scores. For girls, 20 OECD countries or regions see statically significant linear trends across the family affluence scale groups, with the gap between those with ‘high’ and ‘low’ FAS scores largest (at 16 percentage points) in France.

Chart CO1.7.B. Overweight and obese at ages 11-to-15 by gender and family affluence, 2013/14
 Percentage point difference between high and low family affluence groups in the proportion (%) of 11-to-15-year-olds with a BMI classed as ‘overweight’ or ‘obese’ according to the WHO child growth curve standards, by gender



Note: Shaded markers represent statistically significant linear trends across family affluence groups ('low', 'medium' and 'high') at $p < 0.05$. Non-shaded markers represent no statistically significant linear trend across family affluence groups at $p < 0.05$. 0 mean less than ± 0.5 .

a) Information on BMI is missing for more than 30% of the age-group sample for any of the three age-groups.

b) The OECD-22 average, the EU-21 average and the Eurozone-14 average exclude any countries with missing data rates of more than 30% for any of the three age-groups. They also exclude the two regions of Belgium.

c) The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

Sources: [Health Behaviour in School-aged Children \(HBSC\) study 2013/14, accessed through the European Health Information Gateway](#)

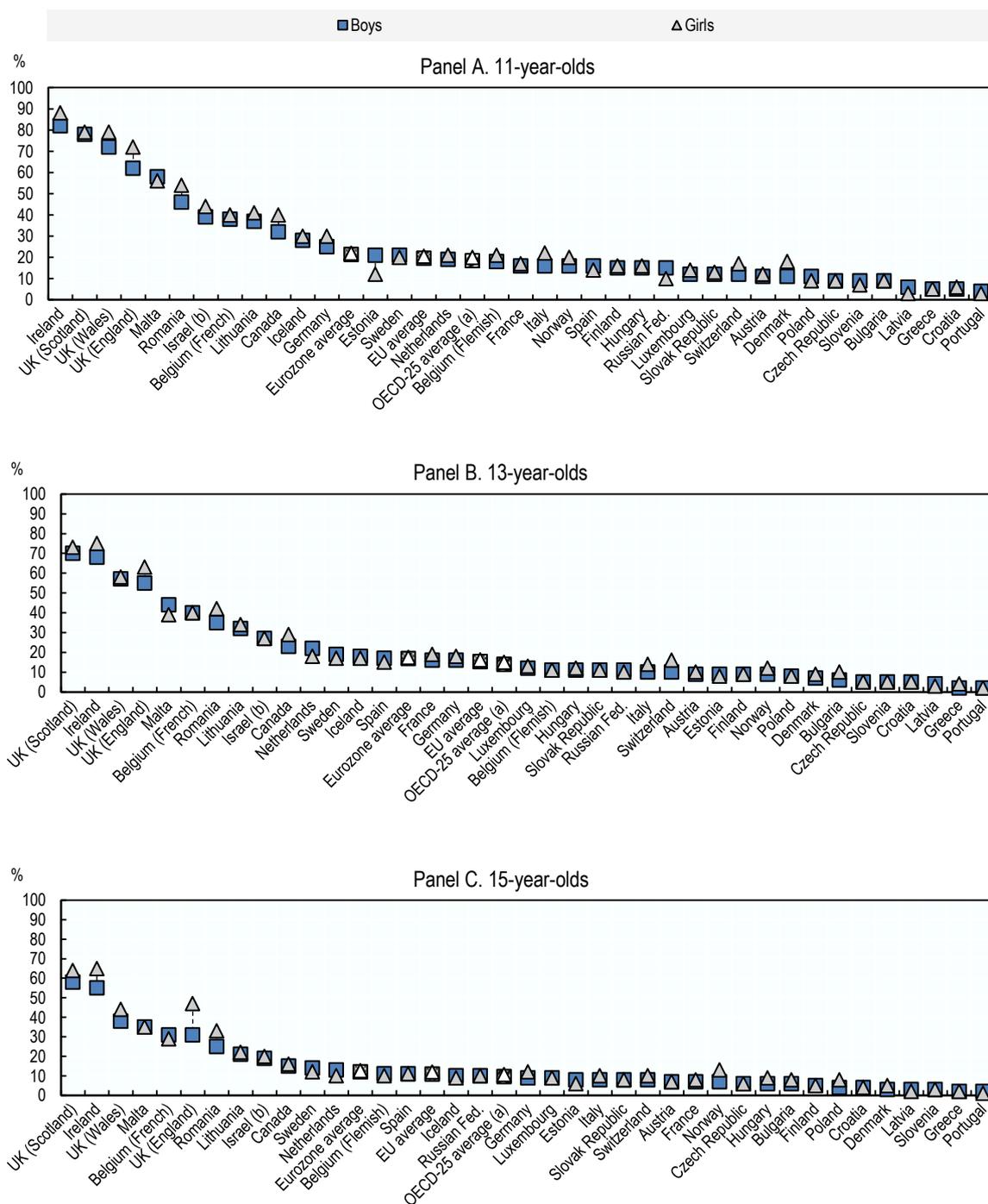
Comparability and data issues

Self-reported data on BMI are taken from the Health Behaviour in School-aged Children survey (HBSC) 2013/14. The last data collection included all OECD countries except Australia, Chile, Japan, Korea, Mexico, New Zealand, Turkey and the United States, although data for Belgium and the United Kingdom are published only after disaggregation by region – for Belgium, data are published separately for Flanders and for the French-speaking regions (Wallonia and Brussels), while for the United Kingdom data are published separately for England, Scotland and Wales (data for Northern Ireland are not included). Sample sizes do vary across countries (the smallest among the OECD countries is in Norway, where the total number of respondents is 3072, and the largest is in Canada, with 12931) but in most OECD countries the sample totals somewhere between 4000 and 6000 respondents.

The HBSC survey is a confidential survey of young people. Sample selection methods differ across countries, and because sample sizes are generally reasonably similar across countries and population sizes differ markedly, the potential for error in sample-representativeness is much larger in, for example, Germany than in the Netherlands. In addition, because the HBSC data are survey-based, data may be subject to response bias. For some countries missing data rates are very high, especially for the younger age groups (see Inchley *et al.* (2016) and Chart CO1.3.C). This is a particular concern when looking to measure the proportion of children that are ‘overweight’ or ‘obese’, as those young people that *are* ‘overweight’ may be especially reluctant to answer survey questions on bodyweight, producing a biased sample and resulting, possibly, in underestimations of the prevalence of obesity. OECD (2015) explored this same issue with data from the previous wave (2009/10) of the HBSC study. They found little evidence of any non-response bias in the HBSC BMI data, and concluded there was either an absence of non-response bias or that, if present, any such bias was small.

Sources and further reading: Inchley, J. *et al.* (2016). Growing up unequal: gender and socioeconomic differences in young people’s health and well-being. Health Behaviour in School-aged Children (HBSC) study: international report from the 2013/2014 survey. World Health Organization Regional Office for Europe, Copenhagen. Elgar *et al.* (2005) Validity of self-reported height and weight and predictors of bias in adolescents. *Journal of Adolescent Health*, 37(5):371:375; Sassi, F., M. Devaux, M. Cecchini and E. Rusticelli (2009) The Obesity Epidemic: Analysis of Past and Projected Future Trends in Selected OECD countries, OECD Health Working Papers, No. 45 (www.oecd.org/els/health/workingpapers); The WHO child growth standards, Geneva: World Health Organization: <http://www.who.int/childgrowth/standards/en/>;

Chart CO1.7.C. Rates of missing BMI data, 2013/14
 Proportion (%) of 11-, 13- and 15-year-olds with missing BMI data, by gender



a) The Eurozone average excludes Belgium, and the OECD-25 and EU averages exclude Belgium and the United Kingdom

b) The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

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