



Socio-economic regional microscope series

Mapping and zooming in on childhood obesity

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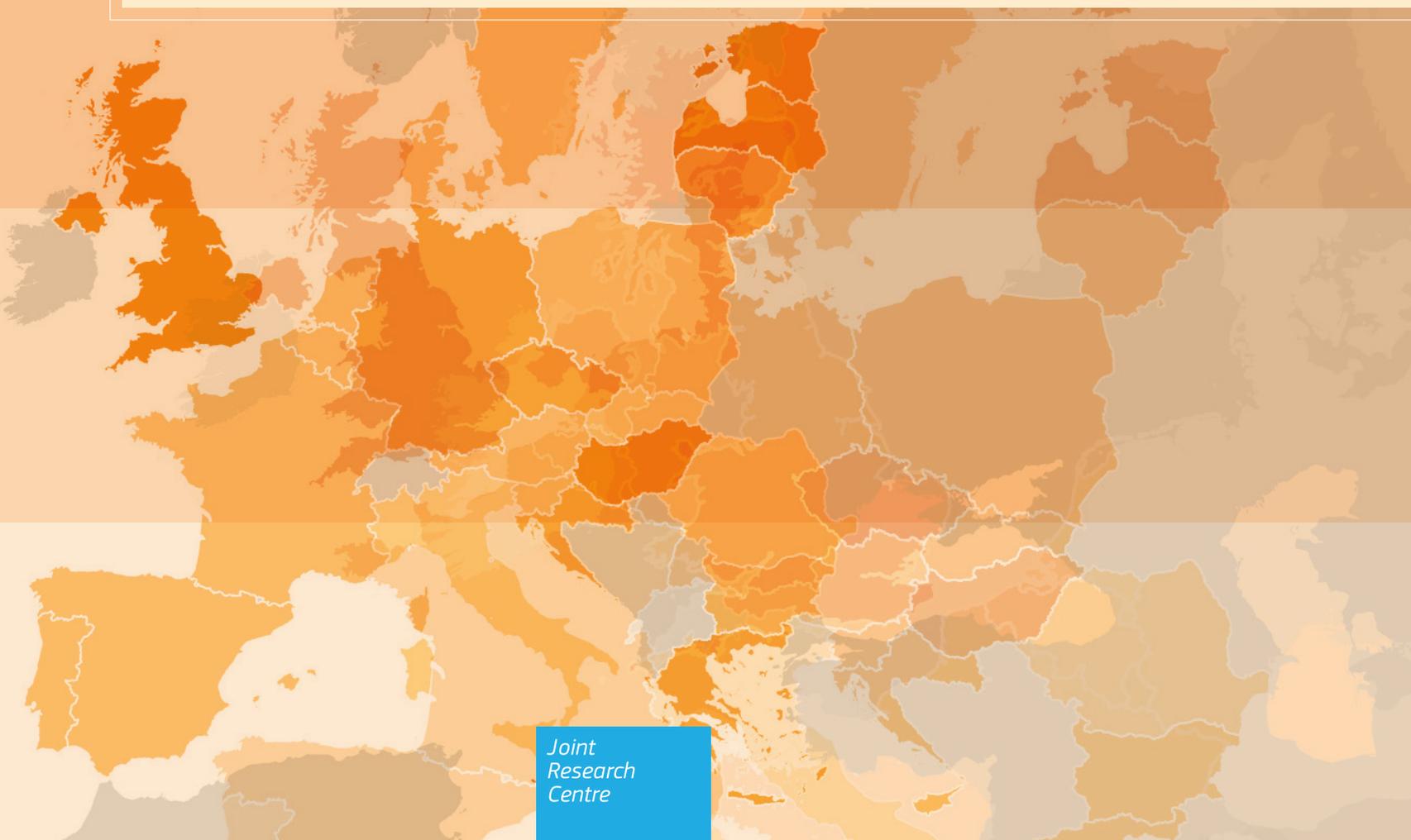


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The Socio-economic regional microscope series

The current political and economic challenges faced by the European Union and its Member States call even more for evidence-informed policies. They also require tailor-made policies, developed using highly sophisticated analyses based not only on country-level data, but rather on regional and sub-regional knowledge.

National averages, in particular, bear the risk to present a misleading picture in countries with significant disparities between different regions and areas.

Looking only at national averages can also limit and delay understanding of the differences between regions and cities – identifying leaders and laggards –, as well as prevent the identification of emerging trends in certain socio-economic indicators. Only a detailed analysis of data at regional and local level can bring these insights.

The Joint Research Centre (JRC) of the European Commission has developed the *Socio-economic regional microscope*. It is a new series of short periodical publications which aims to open-up new areas of analysis, and present the stories which can only be told using regional socio-economic data.

Each report presents EU socio-economic indicators according to a data storytelling principle, using a combination of three key elements: data, visuals (maps), and narrative. Each indicator will therefore be represented through maps at regional level (NUTS2), and in some cases even at the NUTS3 and local level.

The *Socio-economic regional microscope* will also show the breadth of the JRC regional analysis in a wide range of research areas: culture, economics, education, energy, healthcare, research and innovation, tourism, etc.

The reports, data and maps are also available on the Territorial Dashboard website of the JRC Knowledge Centre for Territorial Policies, in the *Thematic Analyses* section: <http://urban.jrc.ec.europa.eu/t-board/indic.html>.

Introduction

Childhood and adolescence are periods of enormous importance to individual development. Beyond the obvious human rights imperative to protect and promote the health of children and adolescents, an investment in these target groups evidently procures population health and the social and economic capital of the decades to come. Although these population groups are among the EU's healthiest and happiest ones, they do face important challenges that need to be tabled and addressed. A look at the current rates of overweight and obesity among children and adolescents in Europe provides a clear picture of such a challenge (Figure 1). Rates can be as high as 39 % in Greece or 38 % in Malta and the variation between countries is considerable, with the lowest rates seen at about 13-15 % among Irish, Danish and Dutch boys.

These worrying figures have prompted EU Member States to prioritise actions in this area, and in 2014 an [EU Action Plan on Childhood Obesity](#) was launched. The JRC supports the European Commission and Member States' efforts in this area. One of the focus areas has been the school setting and how to best explore the school environment to promote health and healthful behaviours. An initial analysis of the school food provision frameworks in Europe¹ detailed all national school food policies in the EU28, Norway, and Switzerland and showed that, while all these countries have school food policies and guidelines in place to define healthful diets and nutritious servings, their standards and implementation varied greatly². The lessons gathered from this analysis were detailed in the JRC report [School food and nutrition in Europe: policies, interventions, and their impact](#)³. The implementation of school food policies through an adequate, health-sensitive procurement process can have clear benefits at multiple levels, and the JRC has also carried out important work in that area. During the Maltese EU Council presidency in 2017, Malta, the JRC, and Directorate-General for Health and Food Safety (DG SANTE) jointly issued a report on [Public Procurement of Food for Health](#)⁴ to facilitate such implementation. Beyond technical support for the procurement process, the report also provides a strong justification for such actions. Benefits are related to health improvements for children attending school, but effects on school performance have also been reported. In addition, a procurement process that is more health-sensitive can also help steer the market, create economies of scale and spill-over effects in other sectors or age groups. Progressive and targeted public procurement of food for health can reward food business operators who provide nutritionally balanced meals and food products, prompting innovation, food reformulation, and social responsibility to achieve better diets and positively impact public health⁵. [The Council Conclusions on Halting Childhood Obesity](#) and the [Committee of the Regions Opinion on Health in Cities](#) have highlighted the importance of this work and invited Member States to consider healthier practices in school settings and beyond. The Committee of the Regions specifically recommends the technical report⁴ to be used by all local and regional authorities that purchase food and food-related services for schools. Obviously, private sector organisations would also benefit from following such guidance.

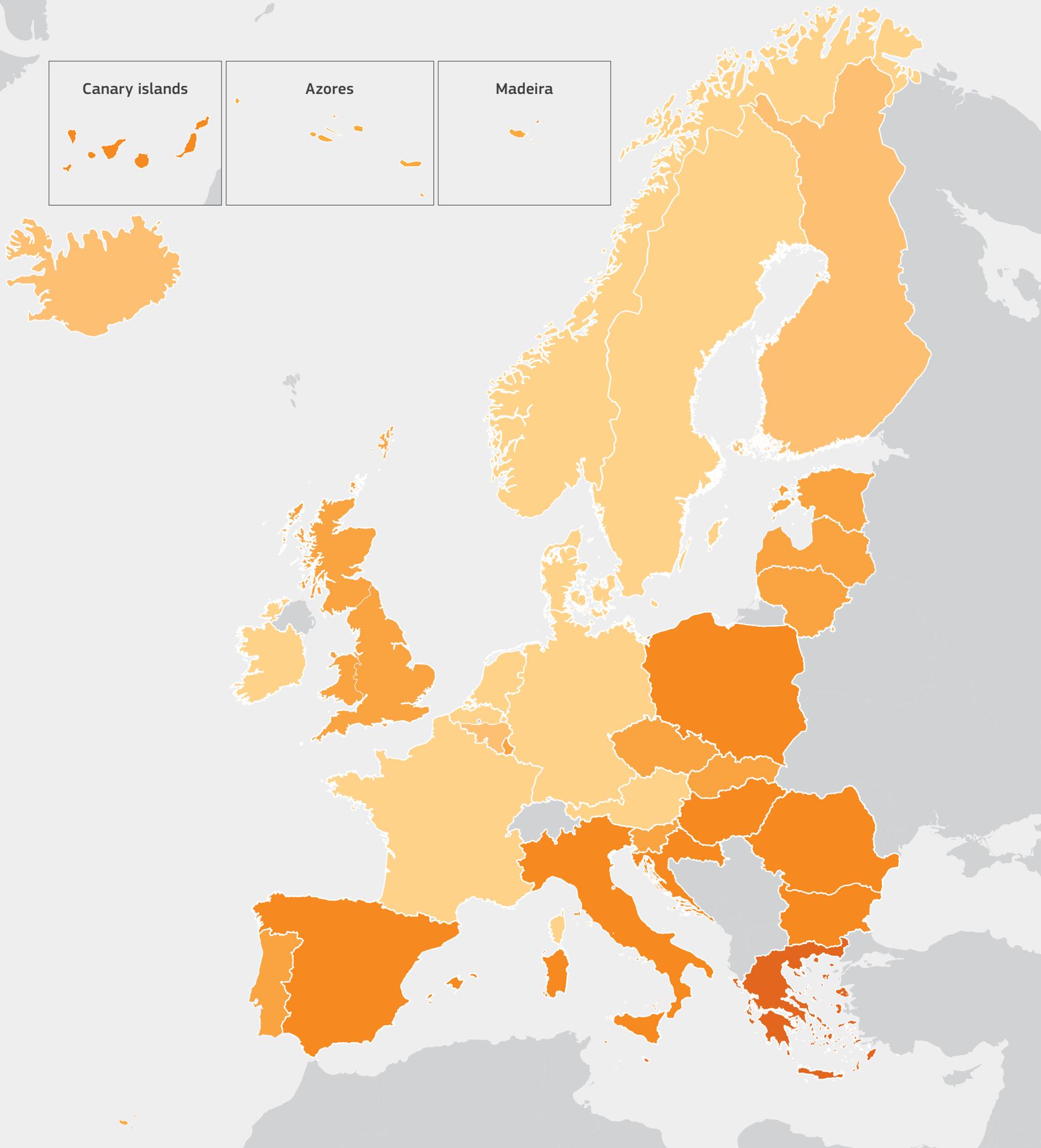
¹ *Mapping of National School Food Policies across the EU28 plus Norway and Switzerland*, <https://ec.europa.eu/jrc/en/news/study-maps-eu-school-food-policies-first-time>

² *Country profiles on national school food policies across the EU28 plus Norway and Switzerland*, <https://ec.europa.eu/jrc/en/publication/brochures-leaflets/country-profiles-national-school-food-policies-across-eu28-plus-norway-and-switzerland>

³ *School food and nutrition in Europe: policies, interventions and their impact*, <https://ec.europa.eu/jrc/en/publication/eur-scientific-and-technical-research-reports/school-food-and-nutrition-europe-policies-interventions-and-their-impact>

⁴ *Public Procurement of Food for Health: technical report on the school setting*, <http://dx.doi.org/10.2760/269508>

⁵ Storcksdieck genant Bonsmann et al., 'Public procurement: a policy tool to promote healthier food environments and choices', *Public Health Panorama*. 2017; 3(4): 649-654, <http://www.euro.who.int/en/publications/public-health-panorama/journal-issues/volume-3,-issue-4,-december-2017/report>



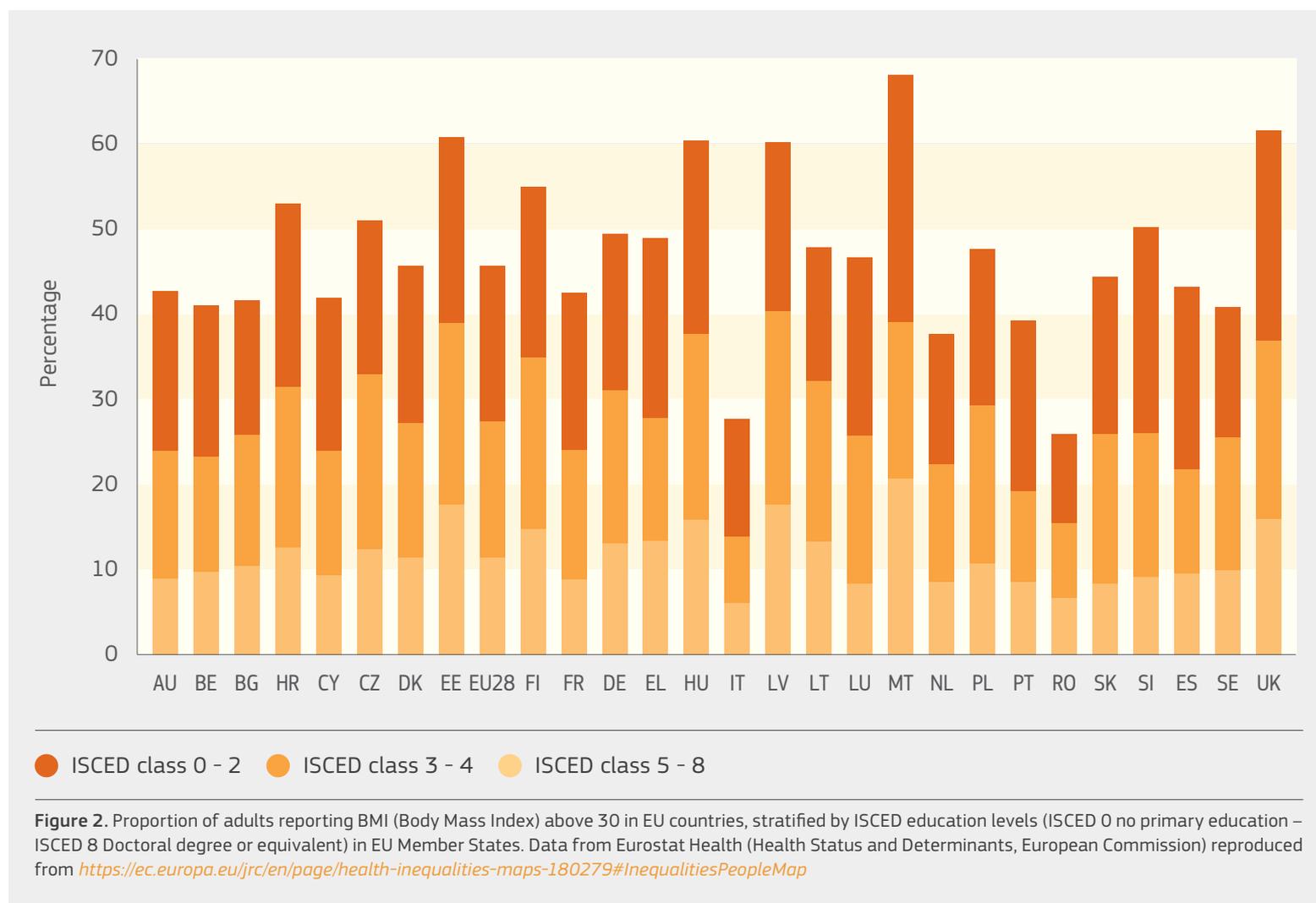
Overweight and obesity (11 year-old boys)

● ≤ 20 ● 21 - 25 ● 26 - 30 ● 31 - 35 ● > 35

Figure 1. Prevalence of childhood overweight and obesity in EU countries, Norway and Iceland. The map is based on self-reported data and is extracted from the HBSC survey (WHO 2013/14, WHO cutoffs) for 11 year-old boys (country-level data was not available for greyed-out areas).

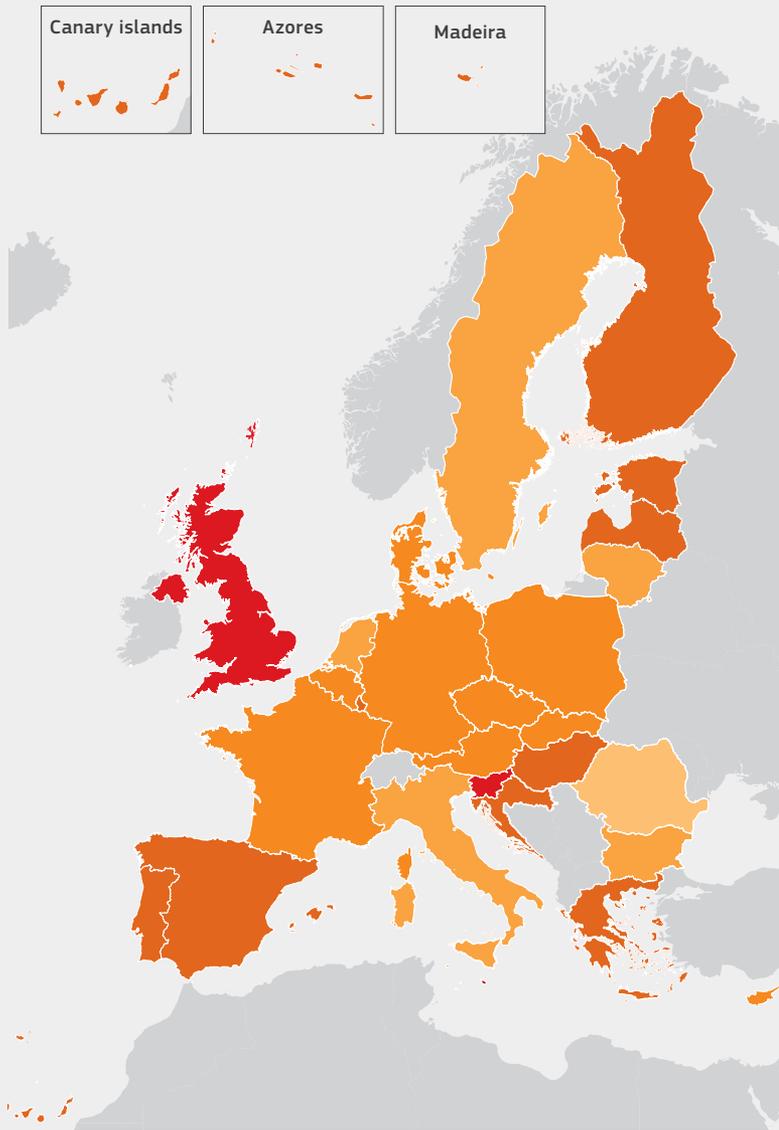
Zooming in: what is behind childhood overweight and obesity?

The variation seen at national level depicted in Figure 1 is of interest as it can help understand what is behind childhood overweight and obesity. Certainly, eating and drinking habits, physical inactivity, and sedentary behaviour are some of the most direct factors associated with this disease. But the obesity epidemic is likewise underlied by many socio-economic and environmental factors. These include urban planning; exposure to marketing of foods high in fat, sugar, and salt; neighbourhood infrastructures; possibilities for active commuting (walking, cycling etc.); education on nutrition; school food policies; parents' occupations and many others, collectively shaping the opportunities for health that children and adolescents have access to. For example, while not immediately obvious from the aggregated analysis of the EU data in Figure 1, levels of obesity are noticeably higher in the less educated segments of the EU population. This can be seen in Figures 2 and 3 that depict the proportion of adults reporting obesity, disaggregated by level of education (International Standard Classification of Education (ISCED) levels where level 1 corresponds to primary education and level 8 to doctoral or equivalent studies). With few exceptions, children belonging to lower socioeconomic status European households also present higher prevalence of overweight and obesity. A comprehensive overview of the dietary and physical activity-related determinants of health inequalities can be found here⁶.

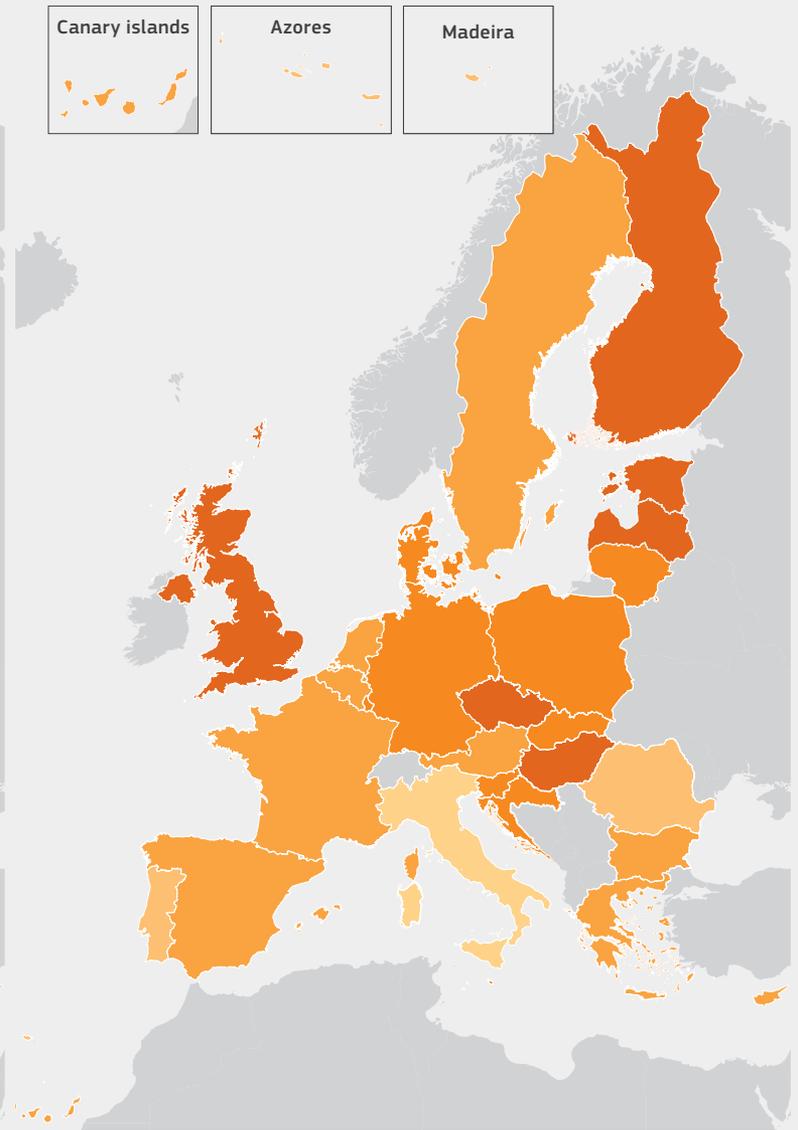


⁶ Health promotion and Disease prevention Knowledge Gateway Health inequalities, <https://ec.europa.eu/jrc/en/health-knowledge-gateway/societal-impacts/inequalities>

3a. ISCED levels 0 - 2



3b. ISCED levels 3 - 4



3c. ISCED levels 5 - 8

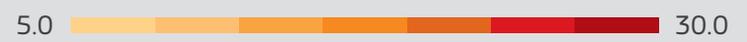
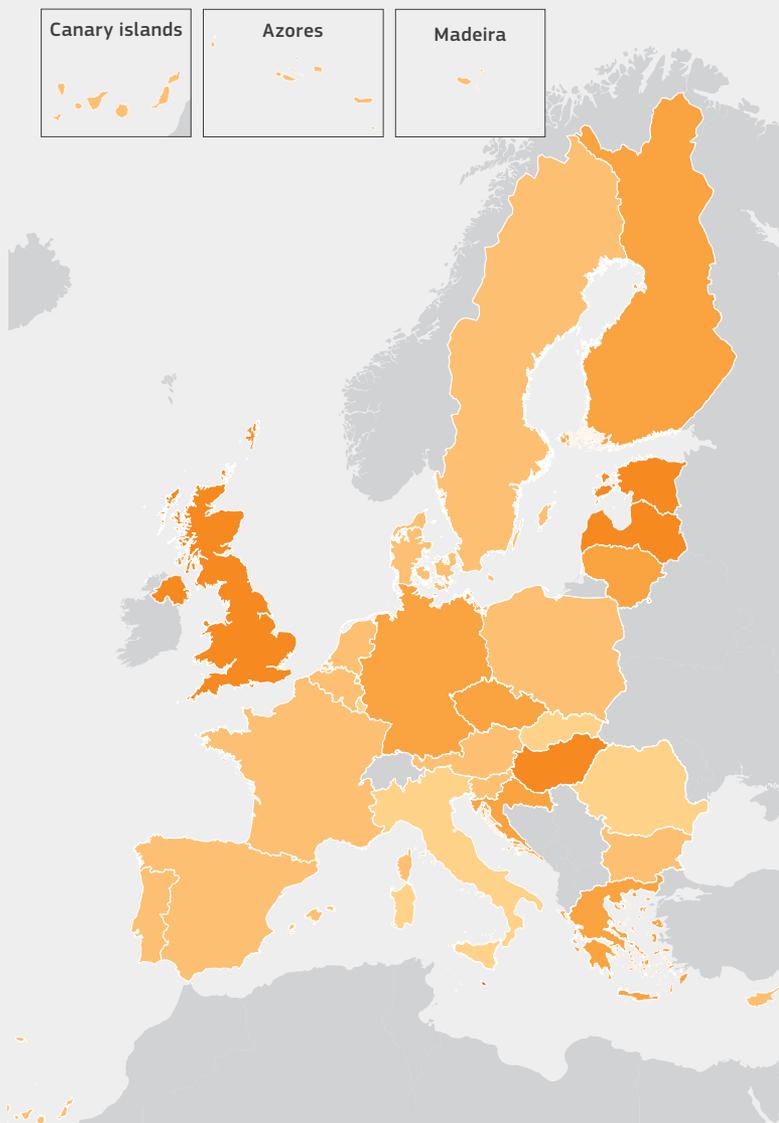


Figure 3. Proportion of adults reporting BMI above 30 in EU countries, stratified by ISCED education levels. Data from Eurostat Health (Health Status and Determinants, European Commission) adapted from <https://ec.europa.eu/jrc/en/page/health-inequalities-maps-180279#InequalitiesPeopleMap>.

3a. ISCED levels 0 - 2: from no primary education to lower secondary education.

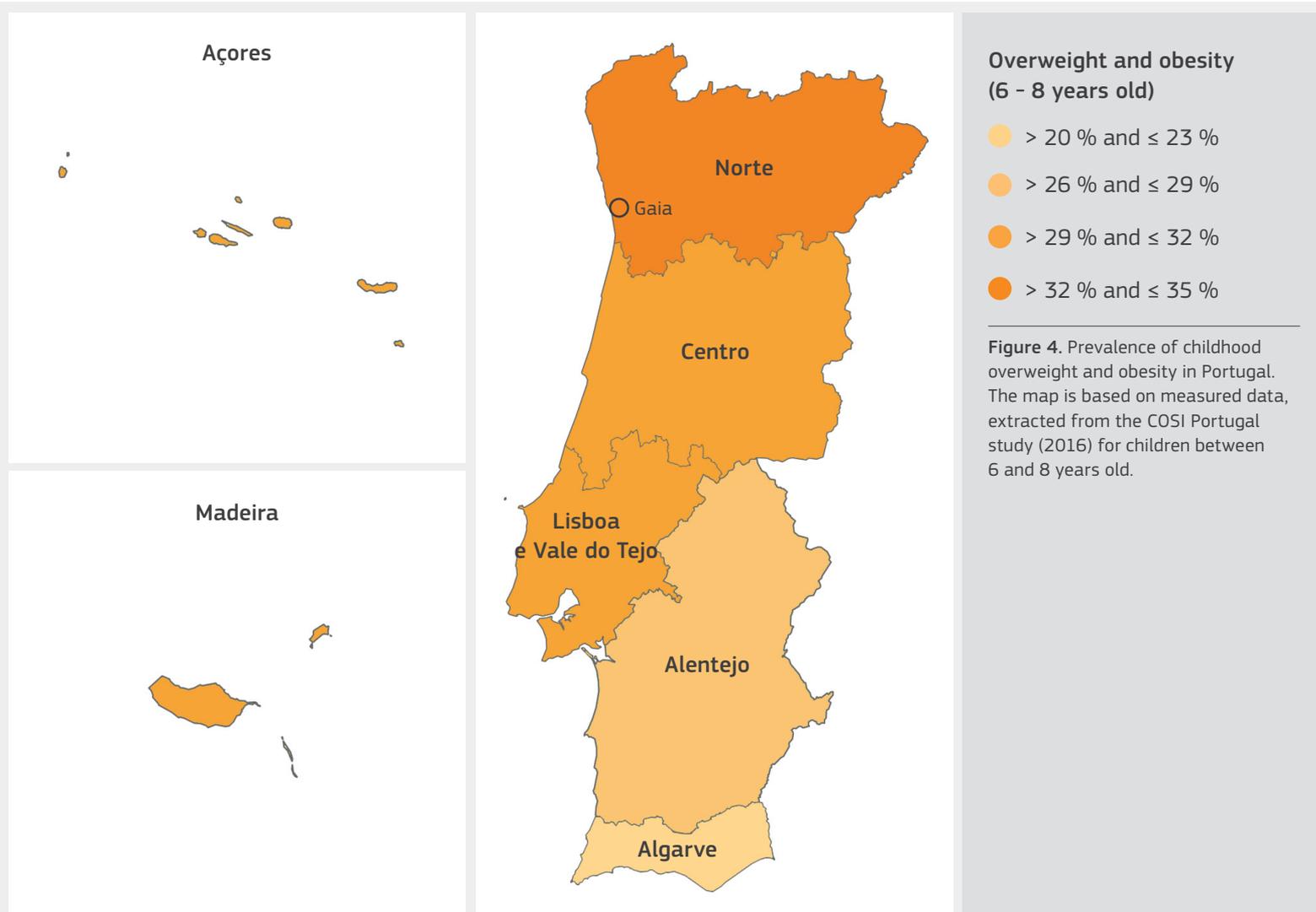
3b. ISCED levels 3 - 4: upper secondary education and post-secondary non-tertiary education.

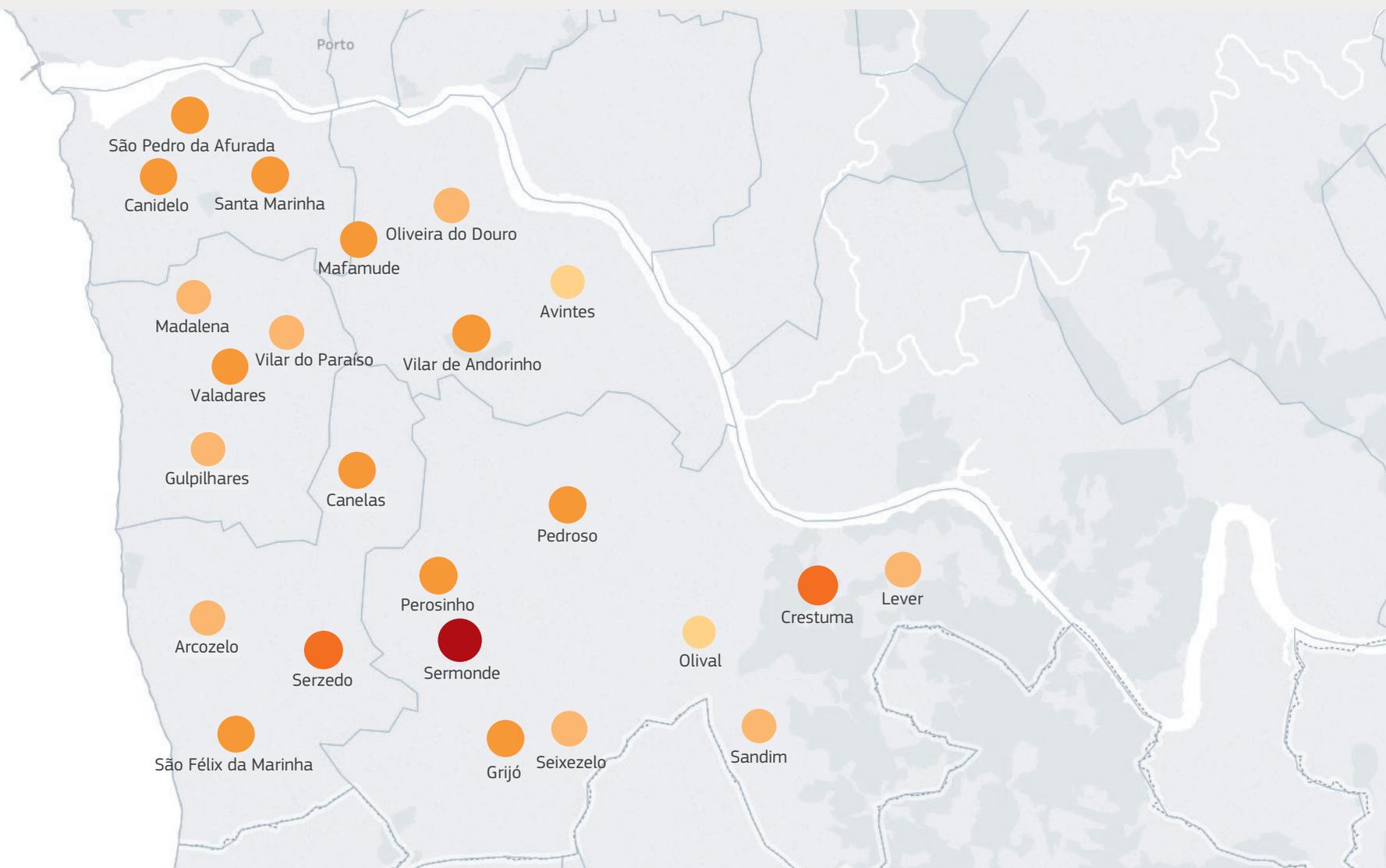
3c. ISCED levels 5 - 8: from short-cycle tertiary education to Doctoral degree or equivalent.

Zooming in: the power of local data

A closer look at disaggregated data by regions can help elucidate the specific underlying factors that may keep children from attaining their best health in those regions. The differences seen at European level are also present at national and regional level. Childhood overweight and obesity data from Portugal and the city of Gaia are presented here as a case in point. Figure 4 shows that at the regional level the prevalence of childhood overweight and obesity in Portugal varies across regions between approximately 21 % and 34 % (2016 data, six- to eight-years-old children). Zooming in, such variation and differences between regions can also exist within municipalities. This is obvious when looking at Figure 5. The municipality of Gaia, in the North region of Portugal, has been conducting for several years now a yearly comprehensive survey among all children attending public pre- and primary school including body measurements of every child. The data obtained allows for a thorough knowledge of its population and in particular its children. Matched to socio economic status and urban infrastructure data, its analyses can also identify possible underlying reasons for the differences in body weight and levers to address these.

Indeed, the analyses of the data and the knowledge and understanding that came with it informed the implementation of targeted measures to promote the health of children in the municipality. For example, all children attending public schools are now offered free breakfast and morning snacks. In line with the recognition of the importance of the school settings, both breakfast and snacks adhere to carefully considered health-related criteria detailed in the Portuguese school food policy. The municipality reports that the introduction of these measures has virtually eliminated the consumption of nutritionally poorer, calorie-dense snacks in schools. The continuous assessment of the children's health status and their body measurements will soon reveal the level of effectiveness of this measure.





Overweight and obesity (%)

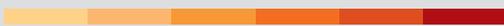
30.0  60.0

Figure 5. Prevalence of childhood overweight and obesity in different municipalities of the city of Gaia. The map is based on measurements made by the Gaia municipality in all children (4-12 y old) attending public school (n=11395, in 2014/15).

It has been said that data is power, and it can be argued that local data is particularly more powerful. As seen in this municipality example, the local data was used to understand the needs of a particularly vulnerable population group. Constituents and stakeholders are likely to be more easily engaged in the problems and the needs of their own families, neighbours and communities. Resources and actions – such as implementing free breakfasts and distributing healthy morning snacks in schools – may therefore be easier to justify and implement, monitor and evaluate at this level. At the same time, every variation observed, differences and trends seen in this type of data are no less rich sources of knowledge than other higher-level data – they can equally feed research and scientific projects and contribute to increasing the knowledge base and better informed policies.

While national, EU, or global data are undoubtedly of great value and usefulness, the example detailed here serves to illustrate the importance and usefulness of collecting data at regional and sub-regional level. Data from other countries, regions, or municipalities across Europe could have been used to tell a similar story. Still, there is room for deepening data collection relevant to children's health and childhood obesity and making it more relevant for local authorities and policy making as well as more easily accessible and comparable. Local data is a worthwhile investment, it can and should be used for evidence-informed and truly tailor-made targeted actions and policies.

Acknowledgements

The JRC is indebted to all colleagues who shared data on childhood overweight and obesity depicted in all maps printed here. They are: Prof. Doutor Eduardo Vítor Rodrigues and Doutora Barbara Camarinha (Gaia), Prof. Doutora Ana Rito (COSI Portugal) and Atle Jåstad (HBSC, WHO Europe). Their openness and the constructive discussions held were priceless. The JRC will continue to work closely with the [Directorate-General for Health and Food Safety \(DG SANTE\)](#) and the [High Level Group on Nutrition and Physical Activity](#) as well as the [EU Platform for Action on Diet, Physical Activity and Health](#) to support the European Commission's [Strategy on nutrition, overweight and obesity-related health issues](#) and the [EU Action Plan on Childhood Obesity 2014-2020](#).

JRC Science for Policy Reports and other selected publications



CHILDHOOD OBESITY

Caldeira, S., Storcksdieck genannt Bonsmann, S., Bakogianni, I., Gauci, C., Calleja, A., Furtado, A., *Public Procurement of Food for Health: Technical Report on the school setting*, 2017, JRC105657
<https://ec.europa.eu/jrc/en/publication/public-procurement-food-health-technical-report-school-setting>



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<http://www.euro.who.int/en/publications/public-health-panorama/journal-issues/volume-3,-issue-4,-december-2017/report>



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<https://doi.org/10.1016/j.foodpol.2017.12.002>

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