



Obesity and inequities

Guidance for addressing inequities
in overweight and obesity





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Written by: Belinda Loring
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Abstract

This policy guidance aims to support European policy-makers to improve the design, implementation and evaluation of interventions and policies to reduce inequities in overweight and obesity. The prevalence of obesity in Europe is rising in many countries, and rising fastest in low socioeconomic population groups. There is a strong relationship between obesity and low socioeconomic status, especially for women. Reducing health inequities is a key strategic objective of Health 2020 – the European policy framework for health and well-being endorsed by the 53 Member States of the WHO European Region in 2012. This guide seeks to assist European policy-makers in contributing to achieving the objectives of Health 2020 in a practical way. It draws on key evidence, including from the *Review of social determinants and the health divide in the WHO European Region*. It sets out options to reduce the unequal distribution of obesity in Europe, through approaches which address the social determinants of obesity and the related health, social and economic consequences of the obesity inequity gradient.

Keywords

HEALTH POLICY

OBESITY

OVERWEIGHT

SOCIAL DETERMINANTS OF HEALTH

SOCIOECONOMIC FACTORS

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Publications

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DK-2100 Copenhagen Ø, Denmark

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ISBN 978 92 890 5048 7

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Edited by Nicole Satterley

Book design by Marta Pasqualato

Printed by AREAGRAPHICA SNC DI TREVISAN GIANCARLO & FIGLI

Cover: © S. Barragán | World Health Organization

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Acknowledgements and contributions

This document was written by Belinda Loring, WHO European Office for Investment for Health and Development, Venice, Italy, and Aileen Robertson, WHO Collaborating Centre for Global Nutrition and Health, Metropolitan University College, Copenhagen, Denmark.

The following people provided helpful comments and expert technical review:

- João Breda, Erio Ziglio, Piroška Ostlin, Åsa Nihlén, Chris Brown, Francesco Zambon, and Sara Barragán Montes, WHO Regional Office for Europe
- Margaret Whitehead, WHO Collaborating Centre for Policy Research on Social Determinants of Health, University of Liverpool, Liverpool, United Kingdom
- Sue Povall, WHO Collaborating Centre for Policy Research on Social Determinants of Health, University of Liverpool, Liverpool, United Kingdom
- Pedro Graça, Directorate-General of Health, Lisbon, Portugal
- Chris Brookes, UK Health Forum, London, United Kingdom
- Charles Price, European Commission Directorate-General for Health & Consumers, Brussels, Belgium
- Nabil Safrany, European Commission Executive Agency for Health and Consumers, Luxembourg.

Further comments were also provided by the European Commission Directorate-General for Health & Consumers, the Executive Agency for Health and Consumers and the European Union Expert Group on Health Inequalities.

This document has been produced with the financial assistance of the European Union. The views expressed herein can in no way be taken to reflect the official opinion of the European Union.

The WHO European Office for Investment for Health and Development of the WHO Regional Office for Europe also wishes to thank the Italian Ministry of Health, the Veneto Region and the Tuscany Region for their long-standing support to the work of the office as well as the financial support for this publication.

Foreword

Overall population health indicators have improved across Europe over recent decades, yet that improvement has not been experienced equally everywhere, or by all. There are widespread inequities in health between and within societies, reflecting the different conditions in which people live. These health inequities offend against the human right to health and are unnecessary and unjust.

Health 2020 is a new value- and evidence-based health policy framework for Europe, supporting action across government and society to promote health and well-being, the reduction of health inequities and the pursuit of people-centred health systems. It was adopted at the 62nd session of the Regional Committee held in Malta in September 2012. Its commitment is to health and well-being as a vital human right, essential to human, social and economic development and a sustainable and equitable Europe. Health is a fundamental resource for the lives of people, families and communities.

To make this vision a reality we need to tackle the root causes of health inequities within and between countries. We know more about these now from the 2013 report of the European review of social determinants of health and the health divide, led by Professor Sir Michael Marmot and his team at the University College London Institute of Health Equity. Yet opportunities to be healthy are far from being equally distributed in our countries, and are closely linked to good upbringing and education, decent work, housing and income support throughout our life course. Today's disease burden is rooted in how we address these social factors that shape current patterns of ill health and lifestyles, and in the way our resources are distributed and utilized.

For these reasons I welcome the publication of this series of policy briefs, which describe practical actions to address health inequities, especially in relation to priority public health challenges facing Europe: tobacco, alcohol, obesity and injury. I hope this series will offer policy-makers and public health professionals the tools and guidance they need to implement the Health 2020 vision and the recommendations of the social determinants review. The policy briefs were prepared in collaboration with the European Union and I would like to express my gratitude for this support and for the recognition that the European Union and WHO both share this common commitment to addressing equity.

Achieving the promise of Health 2020 will depend on successful implementation of the relevant policies within countries. We can and must seize new opportunities to enhance the health and well-being of all. We have an opportunity to promote effective practices and policy innovations among those working to improve health outcomes. The present (often extreme) health inequities across our Region must be tackled and the health gap among and within our European Member States reduced.

Zsuzsanna Jakab WHO Regional Director for Europe

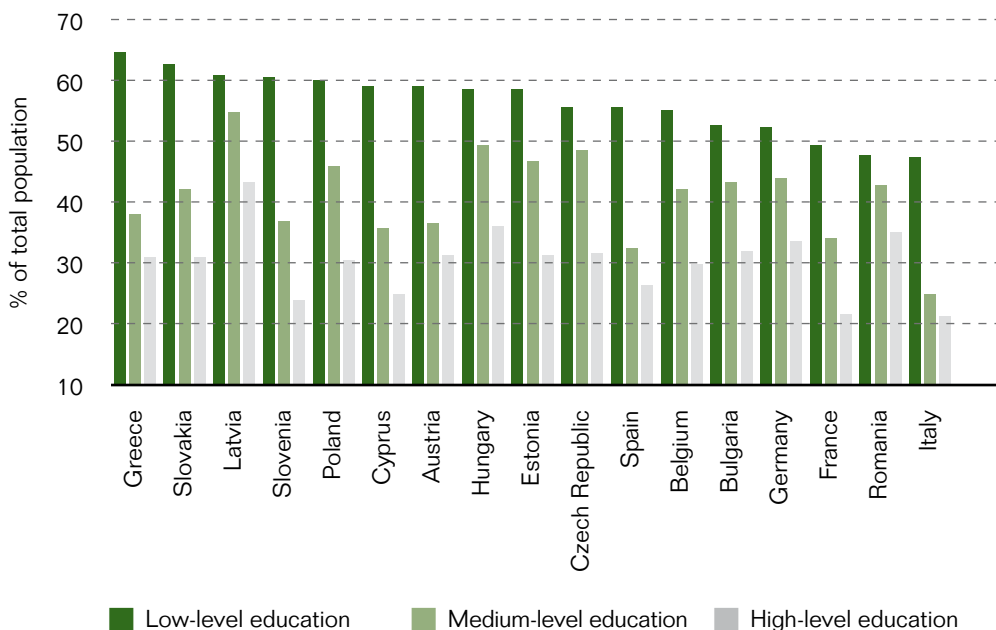
Introduction

Purpose of this guidance

This policy guidance aims to support European policy-makers to improve the design, implementation and evaluation of interventions and policies to reduce inequities in overweight and obesity.

Overweight and obesity are responsible for about 9–12% of deaths in the older European Union (EU) Member States and 16–20% of deaths in the 12 Member States that joined the EU in 2004 and 2007. Similarly, overweight and obesity are responsible for around 10% of the total disease burden (disability adjusted life years (DALYs)) in western and central European countries (1). Between 1990 and 2010 the contribution of overweight to the overall burden of disease increased by 39% in Europe and central Asia (2). The prevalence of obesity in Europe is rising in many countries, and rising fastest in low socioeconomic population groups. European countries with higher income inequality have higher levels of obesity, especially in children (3). There is a strong relationship between obesity and low socioeconomic status, especially for women (Fig. 1). Moreover, obesity in women, especially during pregnancy, contributes to the health risks of their children (3) and this amplifies health inequities across generations.

Fig. 1. Overweight and obesity in women by educational level, 2009



Notes. Low-level education refers to pre-primary, primary and lower-secondary education; medium-level education refers to upper-secondary and post-secondary non-tertiary education; high-level education refers to tertiary education.

Source: Eurostat (4).

Policies and interventions to reverse this trend should stem from multiple levels and sectors – including better joined-up government action between the social, employment, education and health sectors – as well as from retail, agriculture, transport, finance, and the private sector. When developing policies at regional, national and local levels, the equity implications should be considered to ensure that policies (i) do not make inequities worse and (ii) reduce inequities.

This guide draws on key evidence, including from the *Review of social determinants and the health divide in the WHO European Region (5)*. It sets out options to reduce the unequal distribution of obesity in Europe, through approaches which address the social determinants of obesity and the related health, social and economic consequences of the obesity inequity gradient.

Using this guide

This guide provides a framework that policy-makers can apply to their own unique context, in order to consider the processes by which inequities might occur, and to suggest policy interventions that may be helpful in addressing each of these factors. Additional resources are listed at the end of the guide to direct policy-makers to further evidence, promising practices and tools to support policy formulation and evaluation.

Not all European countries have data on the prevalence of obesity that can be disaggregated by socioeconomic factors beyond age and sex. There are very few published studies of interventions to address obesity which focus on equity or the distribution of impacts within the population. A number of European countries do not have weight and height data based on actual measurements or data on the prevalence of obesity. Efforts to improve data collection and its disaggregation will improve the knowledge that is available about how best to reduce inequities in obesity. While waiting for this data to emerge there is urgent need to consider how to reduce inequities in obesity with the evidence available.

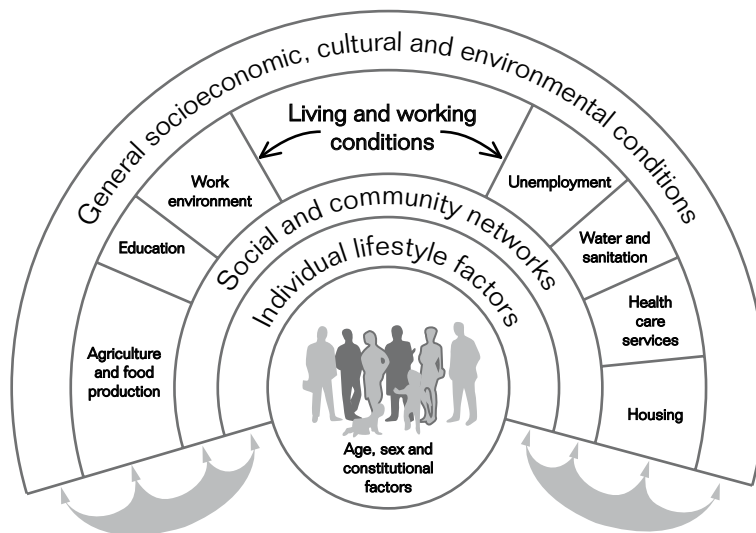
Relevance to other key goals

Reducing health inequities, along with improving governance for health and health equity are key strategic objectives of Health 2020 – the European policy framework for health and well-being endorsed by the 53 Member States of the WHO European Region in 2012. In 2013, European ministers of health recognized the serious inequities in obesity in the Vienna Declaration (6). They acknowledged the need to: promote access to healthy and affordable food; support the most vulnerable groups; intervene across the life course; and address gaps in food system governance. The European Strategy for the Prevention and Control of Noncommunicable Diseases 2012–2016 (7) and the WHO *Global action plan for the prevention and control of noncommunicable diseases 2013–2020* (8) have equity, cross-cutting approaches and life-course considerations as central principles.

Inequities in obesity-related harm in Europe

Health inequities are defined as systematic differences in health that can be avoided by appropriate policy intervention and that are therefore deemed to be unfair and unjust. To be able to devise effective action, it is necessary first to understand the causes of these inequities in health. Health inequities are not solely related to access to health care services; there are many other determinants related to living and working conditions, as well as the overall macro-policies prevailing in a country or region (Fig. 2). Inequities in health are caused by the unequal distribution of these determinants of health, including power, income, goods and services, poor and unequal living conditions, and the differences in health-damaging behaviours that these wider determinants produce.

Fig. 2. The main determinants of health



Source: Dahlgren & Whitehead (9).

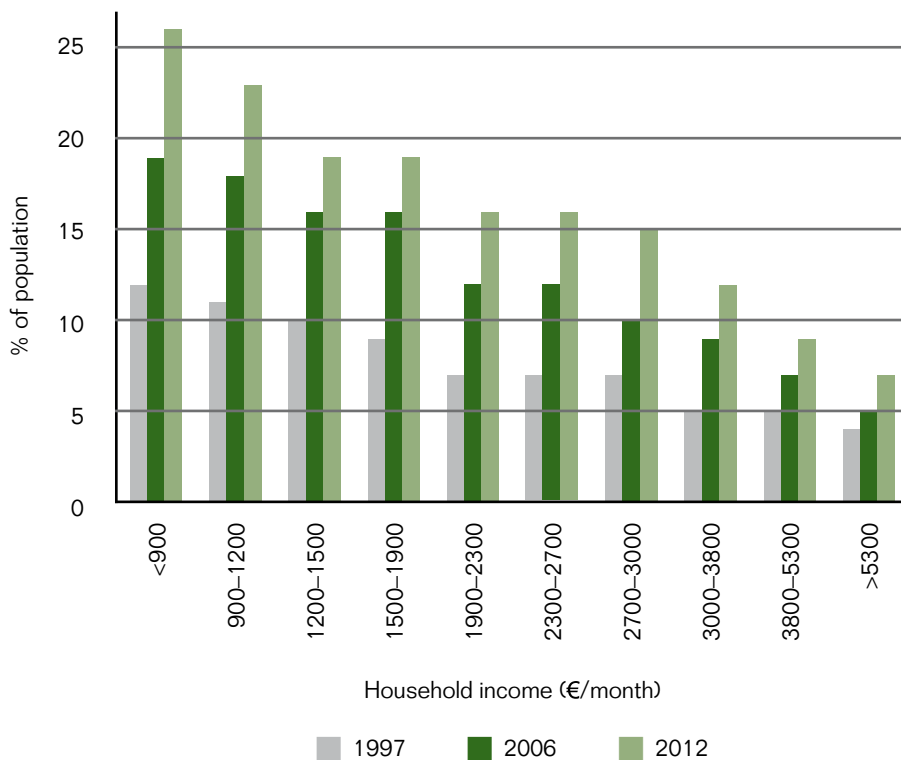
Large socioeconomic, gender and ethnic inequities exist in terms of obesity in Europe. In the EU, 26% of obesity in men and 50% of obesity in women can be attributed to inequalities in educational status (10). Low socioeconomic groups appear to be around two times more likely to become obese (5), putting them at greater risk of type 2 diabetes, ischaemic heart disease and stroke. Much of the premature mortality and loss of healthy years seen in lower socioeconomic groups can be explained by diseases associated with obesity (3).

At a time of significant pressure on public spending, the cost of obesity to the economy is huge, for example in the United Kingdom it is estimated to be around £20 billion per year, taking lost productivity and sick days into account (11). Relative to healthy-weight women, obese women were found to be three to six times more likely to suffer mobility disability (12). Obesity may also result in adverse social impacts, such as discrimination, social exclusion, reduced earnings, taking sick leave from work, and unemployment,

which in turn result in widening inequalities in health and social care. Obesity-related chronic diseases bring about a large drain on health and social care and, in the current climate of austerity, their prevention must be considered a priority.

The steepness of the overweight and obesity inequity gradient varies from country to country (Fig. 1) and women with lower levels of education can be up to five times more likely to be obese than those with higher education (10). This means that obese people in lower socioeconomic groups are getting heavier at a faster rate than people in higher socioeconomic groups. This is clearly illustrated in France (Fig. 3) where, between 1997 and 2012, the lowest income group became obese more than three times faster than those in the two highest income groups. This means the gap is increasing between the poor, who are getting steadily more obese, and the rich, who remain nearer a healthy weight, resulting in an even steeper gradient.

Fig. 3. Adult obesity prevalence in France by household income, 1997–2012



Source: ObÉpi (13).

Obesity in European children is strongly related to the socioeconomic status of their parents (3). Also, in European countries, the higher the level of income inequality, the more overweight children are (3). Mothers in lower socioeconomic groups are more likely to be overweight and less likely to breastfeed. Infants who are not breastfed and who are born to obese mothers with low socioeconomic status are more likely to have poor eating habits and become overweight and, if they fall behind in their cognitive development before the age of 3, they will never catch up again. It is clear that obesity is

increasingly related to poverty and is likely to be passed on to subsequent generations.

Inequities in obesity prevalence according to ethnicity have been observed in many European countries. A study of childhood obesity in immigrant groups in Germany found that socioeconomic and environmental factors explained almost all of the ethnic differences in obesity – especially maternal education levels and excess television viewing (14). In the United Kingdom, the South Asian population has a lower level of physical activity than the white population (15) and in a number of countries Roma populations have higher levels of childhood and adult obesity than non-Roma (3, 16).

The available evidence suggests that increased energy intake – rather than decreased physical activity – is the main driving force behind the obesity epidemic in lower socioeconomic groups. The relative culpability of energy intake (food consumption) versus energy expenditure (physical activity) in gaining weight is sometimes debated, but most studies point to overconsumption of energy-dense foods being the main culprit. The data on physical activity suggest that, although levels have declined, the magnitude of the change is unlikely to explain the dramatic rise in obesity at the lower end of the social spectrum (17, 18).

In Denmark, France, Italy, Netherlands, Norway, Switzerland, Sweden and the United Kingdom between 60% and 100% of weight gain is attributed to dietary excess rather than lack of physical activity (19). Moreover, in the United Kingdom an increase in national food energy supply of only 63 kcals extra per capita per day was registered from 1970 to 1984, compared with an extra 190 kcals per capita per day between 1985 and 2002. This jump towards higher energy intake is due to innovations in food manufacturing and distribution, leading to increased supply of cheap, palatable, energy-dense foods that are much more accessible, convenient and marketed pervasively. Healthy food tends to be less convenient, less accessible and more expensive (20). Socio-demographic changes, such as urbanization and increased participation by women in the workforce, result in less time for meal preparation. Analyses from the United Kingdom (21) indicate that when food prices rose during a 12-month period by a massive 12% in 2007, low-income households were disproportionately affected, with a 1.6% rise in spending on food compared with a 0.3% rise on average. The data also suggest that lower income households responded by buying cheaper food alternatives. Another study found many families with children and single-parent households are substituting fresh fruit and vegetables with cheaper calorie-dense processed food with high levels of saturated fat and sugar (22). Between 2007 and 2012 food became 30% more expensive and those families with young children spent over 15% less on food. Energy-dense foods of poor nutritional value are cheaper than more nutritious foods such as vegetables and fruit, and relatively poor families with children purchase food primarily to satisfy their hunger (3).

In a similar way to the above-mentioned eating patterns, there are marked socioeconomic, gender and ethnic differences in levels of physical activity, whereby low socioeconomic groups are likely to have a more sedentary lifestyle (8). Physical activity levels begin to significantly decrease between ages 11 and 15 in most European countries, especially in girls (23). Boys continue to be significantly more active, suggesting that the

opportunities to participate in physical activity may be gender biased in favour of boys. For example, activities that centre on competition and ability capture boys' interest, whereas girls focus more on health and fitness and this continues into adulthood. It also appears that the level of physical activity decreases as a consequence of becoming obese and not the other way around (24, 25). Even short-term moderate weight gain (0.5–2kg/year) predicts a significant reduction in physical activity. When weight gain precipitates decreased physical activity, a vicious cycle of obese people becoming less active and more obese is perpetuated. Physical activity is very important for both weight management and overall health, so appropriate policies and interventions should be tailored to different needs and abilities in a range of settings.

Key messages

- Significant socioeconomic, gender and ethnic inequities in obesity exist in Europe.
- Socioeconomic inequities in obesity in Europe are widening and the gradient is becoming steeper.
- If obesity prevalence data are only available as population averages, this may conceal increasing levels in disadvantaged groups – therefore, data should be analysed by social group.
- Women and children in low socioeconomic groups are most vulnerable and inequities in obesity are passed on from generation to generation.
- Pre-pregnancy, pregnancy, infancy and early childhood are critical periods for interventions to reduce obesity inequities.
- Physical activity is important for weight management and overall health, so appropriate policies and interventions should be tailored to different needs and abilities in a range of settings.
- Obesity costs national economies billions of euros per year, including lost productivity and sick days. Strategies to address obesity across the social gradient – but especially in low socioeconomic groups – are urgently required to stem these financial losses.

What can be done?

There is growing evidence that a number of strategies can be effective in preventing obesity throughout the life course (26, 27).

- Promote healthy weight before, during and after pregnancy.
- Promote exclusive breastfeeding until 6 months of age, followed by appropriate introduction of a wide variety of foods, including vegetables, to support taste development.
- Promote healthy eating and physical activity through comprehensive preschool and school policies that preferentially include children from low socioeconomic families and actively engage girls in being physically active.
- Restrict marketing of food products high in fat, sugar and salt and beverages high in sugars to children.
- Reduce total fat content by eliminating trans-fats from processed foods.
- Regulate labelling to facilitate consumer knowledge and encourage reformulation of processed foods.
- Use subsidies to incentivize healthy food and taxes to disincentivize less-healthy purchases.
- Offer counselling for dietary change and increased physical activity in primary health care.
- Promote physical activity in workplaces via urban planning, and support active transport, with a focus on increasing walking and cycling.

What is less understood is how effective these strategies are in preventing obesity in groups with low socioeconomic status. There is a need to pose certain questions, as outlined here.

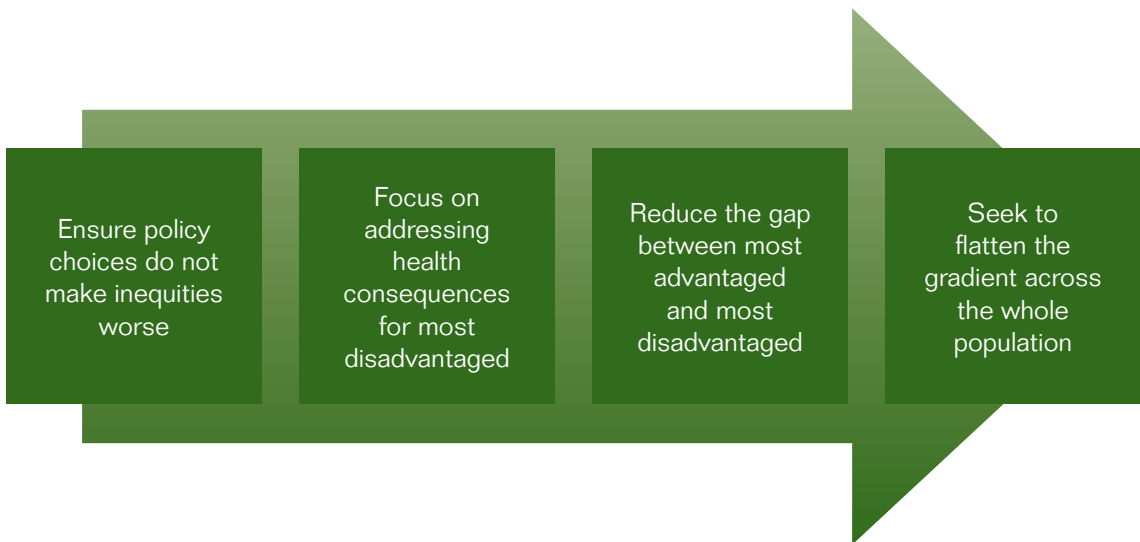
- Which groups have highest obesity prevalence?
- Which groups are likely to benefit most from which strategy?
- How can the intervention be crafted to ensure groups with the highest need benefit most?

If obesity is most prevalent in socially disadvantaged groups, yet interventions are most effective in advantaged groups, there will be less chance of reducing overall prevalence and as a result, obesity inequities are likely to widen.

Step-wise approach

Countries in Europe have very different experiences and capacities to address health inequities; however, no matter what the starting point, something can be done. An incremental approach can be taken to reducing inequities, wherever one begins (Fig. 4).

Fig. 4. Incremental approach to reducing inequities



It is not only the most disadvantaged who suffer a disproportionate burden of obesity. A social gradient exists, especially in women and children, whereby each socioeconomic group is relatively more obese than the next group above them in the social spectrum. In many countries, inequities are widening, which creates a steeper gradient; reducing this gradient requires strategies which combine universal and targeted measures that offer extra support to those with the greatest disadvantage and need.

“First do no harm”

Some public health interventions inadvertently make inequities worse. Unless equity is explicitly taken into consideration, the business-as-usual approach tends to create policies, programmes and services that have a social gradient in their effect. Unfortunately, although this is not the policy-makers’ intent, it means that the most disadvantaged groups receive the least benefit from the policy, and inequities worsen rather than improving (28, 29).

For example, education campaigns, if delivered without any structural support, are likely to widen inequities. Low-income groups are less able to act on new information and lack of money is often their deciding factor when purchasing food. Indeed, surveys show that low-income Europeans know what constitutes a healthy diet (30, 31) and it is the affordability, accessibility and availability of foods that create barriers for them, along with other practical considerations. Obesity strategies based on providing

information alone will be ineffective without measures to enhance the ability of poor and marginalized groups to act on this information. Where information strategies are used, specific effort is needed to ensure the messages are designed with and for the most disadvantaged groups. For example, consumers with low numeracy or literacy skills may be more receptive to pictograms/pictures or traffic-light labelling, compared with detailed numerical nutritional information on food labels (3).

Even in interventions that are assumed to be effective, the impact on different social groups needs to be evaluated to avoid unintended consequences for inequities. For example, there is evidence that food companies increase the price of products that are reformulated to be healthier: beef burgers with 5% fat are more expensive than burgers with 15% fat; and high-fibre cakes are more expensive than regular ones (32). Thus, new healthy choices are likely to remain out of reach for low-income groups.

Key messages

- Few obesity interventions have been evaluated for their effectiveness in low socioeconomic groups.
- Do not assume that what works on the population average will work for everyone – investigate the effect of interventions on different socioeconomic groups.
- Education campaigns alone are less effective in low socioeconomic groups and are likely to make inequities worse.
- People from low-income groups tend not to participate in obesity interventions or drop out early. Interventions need to take greater account of ethnic and social diversity and should be of appropriate duration.
- Population-based policies – such as restrictions on marketing foods high in fat, sugar and salt and sugar-sweetened beverages to children – are likely to have a greater impact on reducing obesity inequalities than interventions targeted at individuals.

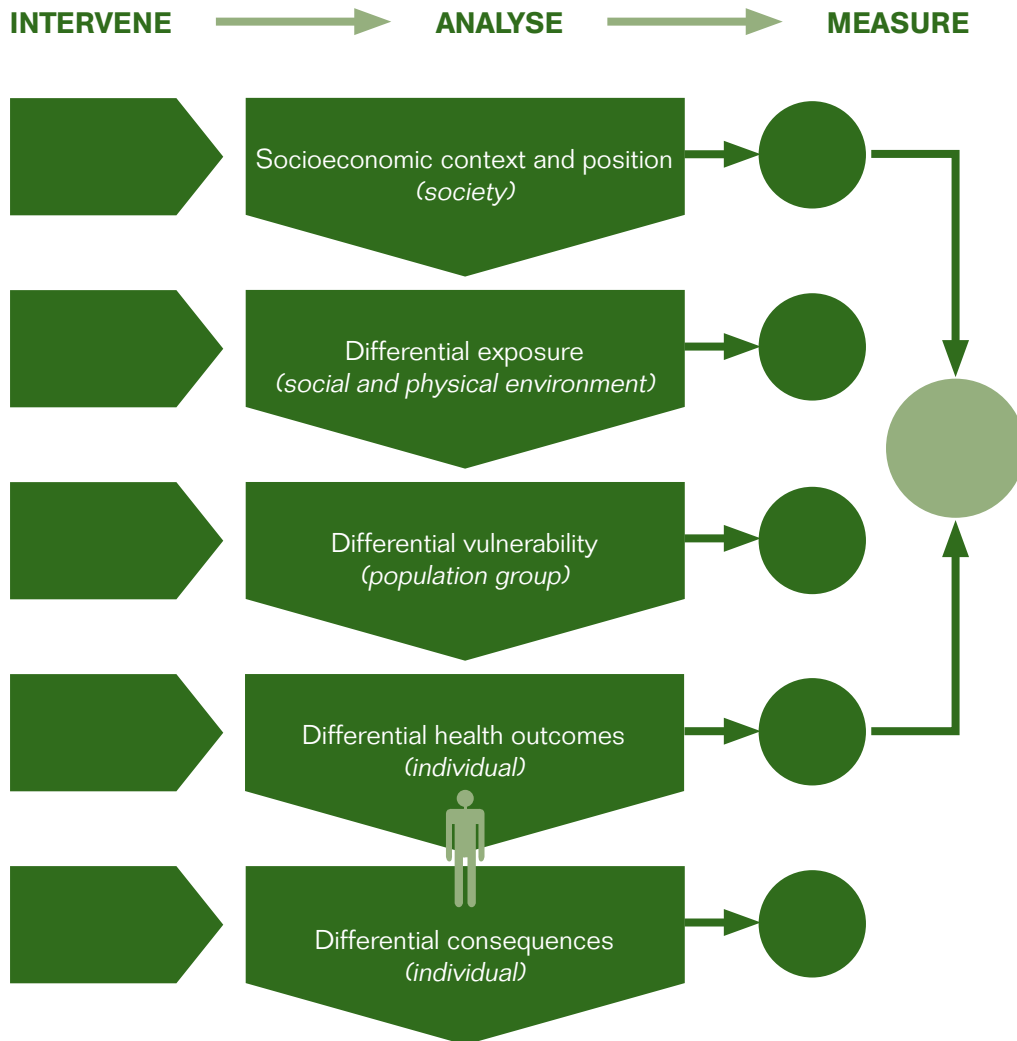
Policy interventions at different levels

Inequities in obesity can arise from factors at many levels. This includes factors in the broader socioeconomic context, different exposures, different vulnerabilities, different experience within the health system, and different consequences from obesity (Fig. 5). For the most disadvantaged in society, inequities exist at all of these levels, leading to compounding disadvantage.

Taking into consideration how inequities in obesity may arise can help to identify where best to intervene using a life-course approach (Fig. 6). For example, poor, socially excluded infants are likely to be born susceptible to developing obesity because of suboptimal conditions during fetal and infant development. This is compounded over the life course by exposure to chronic stress and financial shocks; living in crowded housing with poor cooking facilities and problems with paying bills; and living in poor neighbourhoods where walking or cycling are difficult and access to fresh vegetables

and fruit is poor. Moreover, people in low socioeconomic areas are less able to seek out services.

Fig. 5. Levels at which health inequities can arise and be addressed



Source: Blas & Kurup (33).

A comprehensive approach to reducing inequities in obesity involves a combination of policies that address inequities in the root social determinants, as well as policies that treat the symptoms or attempt to compensate for inequities in the social determinants of health (SDH). This requires a mix of interventions that have short-term actions but a long-term focus, as well as both simple and complex interventions (Fig. 7).

Fig. 6. How inequities in obesity compound over the life course

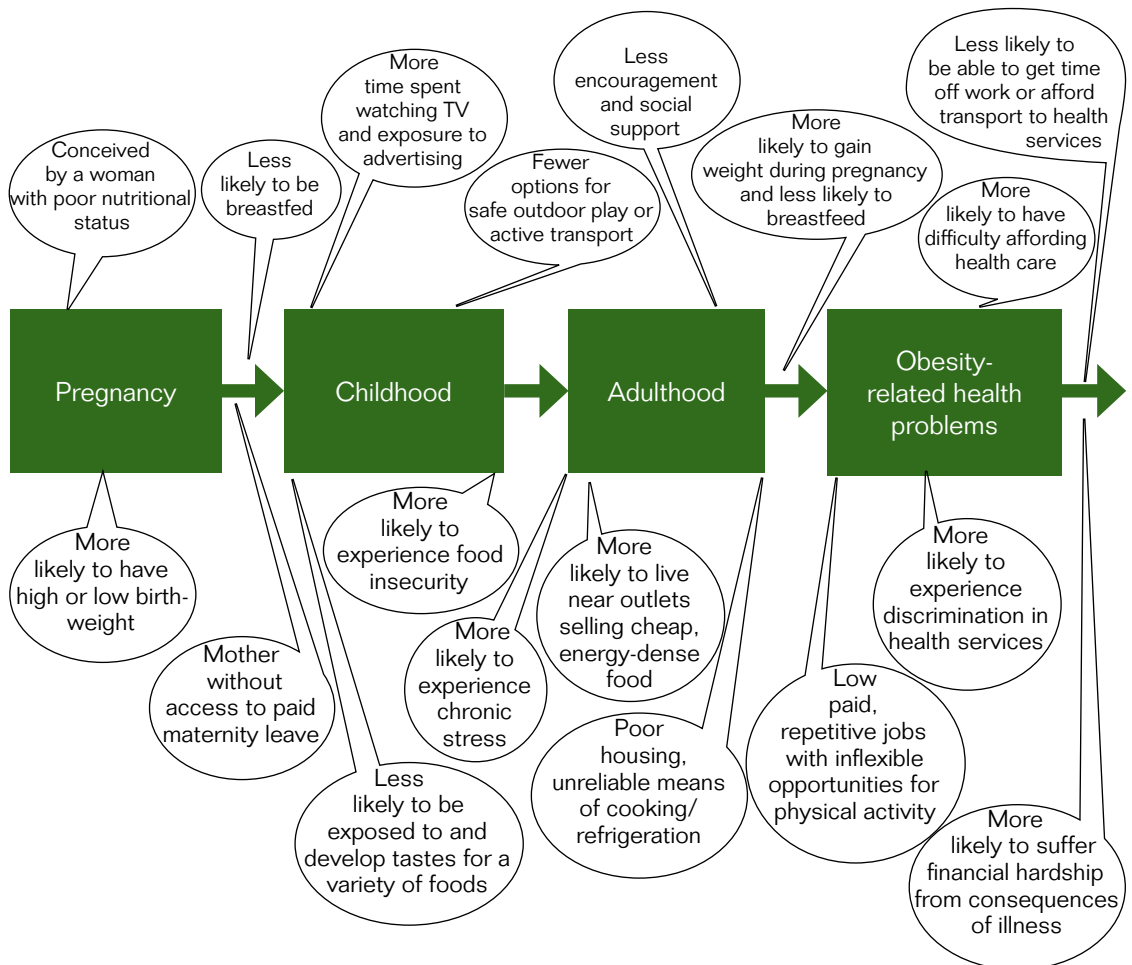
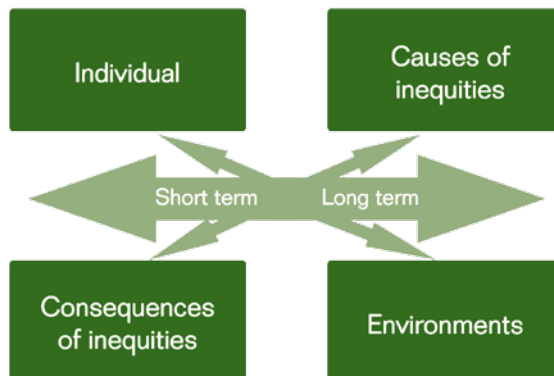


Fig. 7. Addressing inequities requires a combination of policies



For example, at the same time as improving access for low-income groups to antenatal care and parenting support, a need also exists for policies to address environmental

factors: restricting marketing to children; making healthy food cheaper and easier to obtain; ensuring macro-level policies are in place with a long-term focus to reduce poverty (such as minimum wage and social benefits); promoting resilience (such as teaching life skills at school); and reducing social exclusion through community participation. Community-based multi-component interventions that address both individual and social determinants have proved successful in improving diets and increasing physical activity levels in deprived areas in Europe and the United States (14, 15). Boxes 1, 2 and 3 provide a range of examples of projects and initiatives that have been implemented. Successful interventions received long-term funding (5 years) and focused on a range of determinants, including capacity building, community participation, development and systems change, health education, screening, and food preparation and physical activity classes.

Box1. Slovenia: Project Mura

Project Mura in Slovenia was a multisectoral initiative simultaneously addressing individual factors (nutritional education in schools, and a programme for school drop-outs) and upstream social determinants (promoting locally grown vegetables and fruit, improving catering in public institutions and promoting training and employment in healthy tourism) to improve health inequities (34). Between 2001 and 2004 there was a clear shift towards more healthy behaviour in terms of use of fats in food preparation, frequency of eating fried foods and consumption of sugar-sweetened beverages.

Box 2. Israel: National Programme to Promote Active, Healthy Lifestyle

Israel has developed an intersectoral strategy (35) to address the significant socioeconomic and ethnic inequities in obesity, with obesity prevalence being higher in poorer groups and among Arab Israelis. Equity features strongly in the programme, with targets specified by ethnic groups and the most ambitious target set for the group most in need (the strategy aims to reduce obesity by 10% in Jewish adults and 15% in Arab adults). Equity-enhancing components of the strategy include those listed here.

- Population approaches that are likely to benefit low socioeconomic groups, including removing junk foods from schools, taxing unhealthy foods such as those containing trans-fats and/or sugar-sweetened beverages, providing tax breaks on workplace purchases of healthy refreshments, and restricting advertisements for unhealthy foods during children's television programmes.
- Locally-led initiatives in 15 municipalities – chosen according to location, population size, ethnicity and socioeconomic status – to bring about local environmental and policy changes, with a focus on reaching disadvantaged and marginalized populations.
- Incentives for primary care providers to hire health promoters and provide parenting support programmes and programmes for people with type 2 diabetes and obesity. Grants are 50% higher for interventions in socially and/or geographically marginalized communities.
- Health-promoting nursery schools, with edible gardens, and women's walking groups.
- Provision of bicycles and training to disadvantaged young people.

Box 3. Norway: Romsås in Motion

The Romsås in Motion project took a comprehensive approach to increasing physical activity in a low-income, ethnically diverse area (36). The low-cost project simultaneously addressed individual, social and environmental determinants, through walking groups, fitness tests, and improving the availability and safety of walking trails. Physical activity levels increased, and the most deprived participants reported the most positive results. The project has been expanded to focus on nutrition and improving healthy eating.

Socioeconomic context and position

Factors in the global, European or national socioeconomic contexts can influence how the SDH are distributed. This includes factors in the socioeconomic context which influence (i) how food is produced, distributed and consumed in European societies, and (ii) which groups are most at risk of obesity. These factors may be modifiable, or able to be compensated for (see Table 1).

Lowering the price of vegetables and fruit and raising the price of foods high in fat, sugar and salt is likely to benefit low socioeconomic groups most (3, 37, 38). For example, economic modelling in Denmark shows that a combination of reducing tax on vegetables and fruit by 25% and increasing by one third the tax on foods high in fat and sugar is most favourable to people with low incomes (30, 39, 40). Pricing policies appear to have promising potential to improve diets, especially for low-income groups, thereby reducing health inequities (38). Box 4 describes Hungary's pricing policies and their intended impact.

Measures taken by the food industry to improve the composition of their manufactured products – by reducing the fat, sugar and salt content – have the potential to either reduce or increase health inequities (41). For example, if these reformulated products are more expensive compared with their high-fat, -sugar and -salt alternatives, it is likely that they will be purchased mostly by high-income groups and thus risk increasing the inequity gap and steepening the gradient.

Welfare recipients must be able to afford a healthy food basket if socioeconomic inequalities in obesity are to be reduced. There are concerns that welfare levels in Europe are inadequate to support the purchase of healthy food, especially with the economic crisis being compounded by stagnating wages and increasing food prices. For example, in Ireland, 80% of welfare payments are needed to purchase a healthy food basket for a single mother and child (42). Similarly, the number of countries subscribing to the EU's "Food Distribution Programme for the Most Deprived Persons of the Community" is increasing (43).

Table 1. Factors in the socioeconomic context that shape inequities and interventions to consider

Sources/drivers for inequities	Interventions to consider
Levels and distribution of food poverty	<ul style="list-style-type: none"> • Improve income distribution and raise incomes of the poorest groups, through social protection, minimum wages, and redistributive taxation, in order to increase access to improved living conditions and opportunities for a healthy life. • Ensure welfare payments in vouchers or in kind include healthy food (e.g. France’s fruit and vegetable vouchers) (44). • Calculate the cost of a healthy food basket (Box 5) and adjust accordingly the minimum wage levels and social protection floor, especially for families with children.¹ • Invest in early childhood, ensuring every child gets the best start (including high-quality early childhood care and meals in preschools, parenting support, and adequate social protection for children). See Box 6 for an example from the United Kingdom. • Ensure paid parental leave is available. • Provide free (or subsidized) school meals for children (as is the case in Finland). • Implement public food procurement policies to reinvest in national economies and protect national food security. • Set up active workforce programmes and promotion of lifelong opportunities for education and skills training.
Social exclusion/marginalization	<ul style="list-style-type: none"> • Include nutrition and obesity inequities in the EU national social reports as part of the European Platform against Poverty and Social Exclusion. • Implement better collaboration between sectors dealing with unemployment, social protection and health. • Implement community empowerment and skill development programmes in communities with high levels of obesity, especially those that include immigrants and low-income mothers. • Involve people from excluded groups in the development of policies that allow them to participate (e.g. in urban and peri-urban food initiatives such as the EU Sustainable Food in Urban Communities network (45)).

¹ A methodology to support Member States to develop a costed healthy food basket is being developed in collaboration with WHO.

Table 1. contd

Sources/drivers for inequities	Interventions to consider
High prices of vegetables, fruit and reformulated products compared with low prices of energy-dense, low-nutrient, processed food	<ul style="list-style-type: none"> • Encourage production of vegetables and fruit, and allocate surplus to school schemes or low-income groups. • Address fiscal policies (e.g. removal of value-added tax) in order to lower price of vegetables and fruit and increase prices of foods high in fat, sugar and salt and sugar-sweetened beverages.
The composition and marketing of food products available (for sale) in Europe	<ul style="list-style-type: none"> • Regulate against use of trans-fat in foods. • Regulate with regard to fat, sugar and salt composition through nutrient profiling. • Regulate portion size of sugar-sweetened beverages to children. • Encourage food manufacturers to make healthier reformulated products available at same price as energy-dense alternatives. • Restrict marketing of high-fat, -sugar and -salt foods and sugar-sweetened beverages to children.
Traditional gender norms about teenage girls and women not participating in organized physical activity	<ul style="list-style-type: none"> • Implement targeted measures to make participation in physical activity more attractive to girls in schools (e.g. Scotland's Girls on the Move programme (46)). • Work with specific ethnic or immigrant groups to address barriers to physical activity in women.

Box 4. Hungary: Public Health Product Tax

Motivated by high levels of obesity and salt consumption, in 2011 Hungary introduced a tax on soft drinks, energy drinks, confectionary, salted snacks, condiments, flavoured alcohol and fruit jams. The aims were to promote healthier food choices by consumers and to promote product reformulation by the industry. Taxes were earmarked for health promotion. The impact is yet to be fully evaluated, but early observations show some product reformulation and reduced consumption of taxed products (47).

Box 5. Slovenia: Healthy Food Basket

Based on national dietary guidelines, Slovenia developed a healthy food basket and calculated its costs. The Government of Slovenia ensured that welfare payments are sufficient to cover the monthly costs of this healthy food basket. Slovenia collects and analyses data on food intake according to socioeconomic status.

Box 6. United Kingdom: Healthy Start

Healthy Start is a United Kingdom-wide government scheme which aims to improve the health of pregnant women and families on benefits or with low incomes. Beneficiaries are sent vouchers that can be used to buy milk, and fresh or frozen fruit and vegetables. Every four weeks 2.6 million Healthy Start vouchers are issued to families across the United Kingdom. Eligible pregnant women and children aged 1–4 years receive one Healthy Start voucher each per week worth £3.10. Infants get two vouchers a week worth a total of £6.20. Women in the programme eat significantly more fruit and vegetables and are more likely to meet the recommended nutrient intakes for iron, folate, calcium and vitamin C (48).

Differential exposures

Certain groups in society have increased exposure to the determinants of obesity due to the food and physical activity environments in which they live and work. This includes differential exposure to both positive and negative influences (Table 2). Child maltreatment is also associated with an increased risk of developing obesity over the life course (49).

People in low-income groups typically live in neighbourhoods with a denser supply of fast food outlets, less availability of fresh vegetables and fruit, and unsafe spaces for physical activity, especially for women and children. Vegetables and fruit can be 30–40% more expensive in poor neighbourhoods (50). The most deprived neighbourhoods have about four times the number of fast food outlets compared with advantaged areas, and low-income schools are more likely to have fast food outlets nearby (51–53). Low socioeconomic groups may experience chaotic living conditions, with inadequate facilities for cooking or safe storage of food. This, together with day-to-day cash flow problems, makes planning, budgeting, storing and preparing healthy meals difficult. For example, lack of access to cooking and food storage facilities is experienced by the Roma population, and probably contributes to higher levels of obesity in Roma children.

School can be an equalizing setting when it comes to promoting healthy eating and active lifestyles of socially disadvantaged children (3, 54). Provision of free vegetables and fruit in schools – as is the case with the EU's School Fruit Scheme (55) – can help improve the dietary intake of children from all social groups. Similar interventions exist in workplaces in Denmark and Finland.

Differential vulnerabilities

Vulnerabilities that contribute to inequities in obesity can be social (such as low self-esteem – for example, causing disadvantaged women to devalue their ability to breastfeed their infant successfully) or biological (for example, infants born – with high or low birth-weight – to an obese mother are more likely to develop obesity later in life) (3). There is a clear social gradient in breastfeeding, with the youngest and most

socially deprived mothers least likely to breastfeed (3). Optimum breastfeeding can reduce the risk of obesity in both mother and child; however, it is more difficult for obese women to breast feed successfully due to biological and mechanical barriers, so they require skilled professional support.

Table 2. How differential exposures could occur and interventions to consider

Sources/drivers for inequities	Interventions to consider
<p>Higher exposure to unhealthy food outlets and lower exposure to healthy food choices</p> <p><i>E.g. poor neighbourhoods have an increased density of take-away outlets</i></p>	<ul style="list-style-type: none"> • Encourage urban policy-makers to limit density of fast food outlets (56) in disadvantaged areas and around schools. • Foster promotion of urban food initiatives, including farmers' markets, mobile vans selling fruit and vegetables, grocery collectives and community gardens. • Facilitate partnering with retailers in low-income neighbourhoods to provide healthier food, e.g. providing recipes, removing sweets from check-outs, reducing portion sizes, making sugar-free soft drinks the norm, and running promotions on healthy foods. • Provide free/subsidized healthy meals and snacks in schools (57).
<p>High exposure to advertising of unhealthy foods</p> <p><i>E.g. children in low-income families spend more time watching TV</i></p>	<ul style="list-style-type: none"> • Restrict the marketing of foods high in fat, sugar and salt and sugar-sweetened beverages to children. • Provide high-quality childcare and preschools that are accessible, affordable and acceptable for low socioeconomic families. • Introduce paid parental leave and parenting support programmes.
<p>Access to safe spaces for physical activity</p> <p><i>E.g. low socioeconomic groups have lower access to safe spaces for physical activity</i></p>	<ul style="list-style-type: none"> • Implement urban planning policies that set minimum green space requirements in residential developments, along with adequate lighting, footpaths and cycle ways. • Encourage policies to provide free access to recreation facilities in disadvantaged communities (e.g. using community halls, schools and churches, and/or adding a surcharge to homeowners' rates to keep entry to the local swimming pool free for residents in low-income suburbs, where most residents live in rented homes (58)).

Taste preferences develop early in infancy, and children are probably more receptive to healthy food preferences if persistently exposed to diverse flavours (such as those of vegetables) and taste variations (through breast milk). Infants who are only formula fed, or whose mothers eat a poor-quality diet are less likely to experience a wide range of flavours and are therefore perhaps less likely to develop a taste for vegetables. This continues throughout childhood (but can be countered with various initiatives, such as the Food Dudes programme described in Box 7). School-aged children with low socioeconomic status consume fewer vegetables and more sugar-sweetened beverages (59). Policies such as Latvia's law banning unhealthy food and beverages in preschools and schools (Box 8) or Slovenia's ban on school vending machines (60) will therefore benefit socially disadvantaged children most. Box 9 also provides an example of action effective for low-income population groups. Table 3 lists some drivers for inequities and some interventions that could be implemented to target them.

Box 7. Ireland and United Kingdom: Food Dudes

The Food Dudes Healthy Eating Programme is a school-based intervention, designed to increase consumption of vegetables and fruit among children aged 4–11 years. The programme works by encouraging children to taste fruit and vegetables repeatedly, giving them the opportunity to develop a liking for these foods. Small rewards are given each time the child tries vegetables and fruits, and in the process children come to recategorize themselves as fruit and vegetable eaters. The programme works over 16 days, and has potential to complement the effectiveness of schemes such as the EU School Fruit Scheme (55), especially for socially disadvantaged children. Food Dudes has proven to be effective in schools of all socioeconomic levels and the effects are greatest in children with the lowest fruit and vegetable consumption before the intervention (61).

Box 8. Latvia: improving the food environment in schools to protect the children most vulnerable to obesity

In August 2006, regulations were adopted by the Cabinet of Ministers to restrict the marketing of beverages and foods of limited nutritional value (such as soft drinks, confectionery, chewing gum and savoury snacks containing specific additives) in preschool institutions and schools, and to create conditions for making healthy foods easily available (60). The legislation bans the sale of food products that contain 1.25 g or more of salt (0.5 g or more of sodium) to every 100 g of food product. This includes potatoes and corn chips, as well as salted nuts and salty snacks. This legislation also reminds schools to promote the consumption of dairy products. According to a poll conducted by the Ministry of Health, population support for these measures is strong.

Box 9. Portugal’s Programme Obesity Zero (POZ): a community-based intervention to reduce childhood obesity in low-income families (62)

Portugal has one of the highest rates of childhood obesity in Europe, and low-income children are particularly at risk. POZ was a multi-component, community-, family- and school-based childhood obesity intervention. A total of 266 overweight children aged 6–10 years from low-income families in five Portuguese municipalities were assigned to the intervention. Parents and children attended four individual nutrition and physical activity counselling sessions, a one-day healthy cooking workshop and two extracurricular sessions in school, providing nutrition education. After six months, children showed reductions in waist circumference and body mass index (BMI), higher fibre consumption, and decreased intake of sugary soft drinks. Improvements in physical activity levels and (reduced) screen time were also observed. The findings suggested that POZ is a promising intervention programme at municipality level, to tackle childhood overweight and obesity in low-income families.

Table 3. How differential vulnerabilities could occur and interventions to consider

Sources/drivers for inequities	Interventions to consider
Women in low socioeconomic circumstances are more vulnerable to developing obesity than men	<ul style="list-style-type: none"> • Pay special attention to overweight adolescent girls, taking into account that self-esteem tends to be lower in girls. • Improve self-esteem and reduce social isolation of low-income and young women, especially mothers. • Provide culturally and physically safe spaces for free physical activity that are acceptable to young low-income women, including childcare facilities.
Children in low socioeconomic circumstances are more likely to be born to obese mothers, and acquire a limited range of food tastes in infancy	<ul style="list-style-type: none"> • Implement measures to improve access to and acceptability of antenatal care for socially disadvantaged women. • Introduce home visiting and parenting programmes for low-income parents, such as Sure Start in the United Kingdom (63).
Obese women in low socioeconomic circumstances are less likely to breastfeed	<ul style="list-style-type: none"> • Take into account that breastfeeding support programmes specially geared to obese women can be effective in low-income groups, and cash payments can increase participation (3). • Introduce paid maternity leave for six months. • Increase breastfeeding education, breastfeeding promotion packs, skilled professional support and early mother–infant bonding in order to help to increase breastfeeding initiation rates for low-income obese mothers.

Differential health outcomes

In addition to differential exposures and vulnerabilities that put groups at greater risk of becoming obese, various health system factors can also cause certain groups to experience poorer health outcomes related to obesity (Table 4). Inequities exist in access to health care services throughout Europe, including for the prevention and treatment of weight problems, which could explain why certain groups fare less well. For example, in primary care in Spain, adults of lower socioeconomic status are less likely to be counselled about increasing their level of physical activity (64).

Table 4. How differential health outcomes could occur and interventions to consider

Sources/drivers for inequities	Interventions to consider
Cost barriers to accessing health services	<ul style="list-style-type: none"> • Offer both universal and targeted health services, as these are based around primary health care and more sensitive to service users' perceptions. • Ensure the removal of financial barriers for those who cannot pay (user charges, transport costs).
Non-financial barriers to accessing services	<ul style="list-style-type: none"> • Simplify eligibility requirements and support provided to those without documentation. • Deliver services (including dietary and physical activity counselling) in community settings (e.g. churches). • Recruit providers from diverse ethnic and socioeconomic backgrounds. • Employ peer mediators with the same background, providing initiatives such as "health in your own language" services and mother-to-mother support groups (65).
Different treatment within the health care system	<ul style="list-style-type: none"> • Improve equity training for staff (including gender and cultural sensitivity). • Carry out routine performance monitoring of service delivery by socioeconomic status, linked to indicators and provider incentives. • Avoid providing health or sports services in judgemental or patronizing ways, such as those that favour people with elite abilities.

Table 4. contd

Sources/drivers for inequities	Interventions to consider
Higher rates of genetic predisposition or co-morbidities	<ul style="list-style-type: none"> • Apply different thresholds for screening and intervention, as appropriate for different ethnic groups (e.g. body mass index). • Using participatory methods, work with ethnic groups to develop culturally appropriate dietary and physical activity guidelines and interventions. • Take a comprehensive people-centred approach to primary health care, integrating services to respond to multiple needs in non-judgemental ways.

People in different ethnic or socioeconomic groups require different participatory approaches to support them to change their eating habits and activity levels, and not to feel excluded from the business-as-usual approaches applied within many universal health care systems (66). The most socially isolated women are least willing to seek parenting and early childhood support (3). It is essential to learn how health services can be less judgemental and discriminating so that the uptake of antenatal and early childhood services by those most in need can increase. Different ethnic groups have different risks of obesity-related health conditions (13) and health services must seek to understand the range of risk profiles, preferences and perceptions of different ethnic and social groups, in order to respond equitably to their needs (67). Box 10 discusses this in the context of Roma population.

Box 10. Bulgaria, Romania, Serbia, Slovakia, the former Yugoslav Republic of Macedonia and Ukraine: Roma Health Mediators programme

Roma Health Mediators are members of the Roma community who are trained to liaise between the community and the health system (68). They have improved health service utilization among Roma populations, especially for pregnant women and children – both of which represent critical periods for obesity prevention. They have helped service users to obtain identification and insurance documents, provided health education to Roma children and adults, and improved health care provider knowledge and attitudes about Roma. The project works to advance the health and human rights of Roma people by building the capacity of Roma civil society leaders and organizations, as well as providing employment for the (mostly female) Roma Health Mediators.

Differential consequences

Obesity can have adverse social and economic consequences, in addition to poorer health outcomes. Inequities in the prevalence of obesity mean that these consequences will disproportionately affect low socioeconomic groups, especially women. These consequences can include a worsening of low self-esteem and social exclusion. There

is a compounding effect of different forms of exclusion and discrimination (e.g. racism, gender discrimination and stigmatism) for people with obesity. Obese children are more likely to be victims of bullying at school. Obese women are less likely to be upwardly socially mobile and more likely to be unemployed or suffer absenteeism from work due to ill health (3, 69, 70). Weight-related discrimination has been reported both in the workplace and in relation to marriage, widening economic inequities for low-income women even further. There is also evidence that people of ethnic minorities experience obesity-related stigmatization (13). Obesity independently contributes to reduced social and economic participation (see an example of France’s attempt to combat this in Box 11) and so obese individuals are less likely to be able to contribute to improving the economy, especially during times of austerity. Table 5 shows how differential consequences could occur and interventions to consider in order to combat them.

Box 11. France: legislation to reduce socioeconomic consequences of obesity discrimination

In France, obese people wishing to take out a mortgage or loan often had to pay more insurance because they are more at risk of ill health. In 2006, an agreement on insuring and borrowing with a substandard health risk was made between the Government, patients’ associations and financial organizations. This agreement provides new guarantees (in terms of information, confidentiality, the funding of extra premiums, coverage of the risk of disability, and so on), making it easier for obese people to obtain insurance and credit.

Table 5. How differential consequences could occur and interventions to consider

Sources/drivers for inequities	Interventions to consider
<p>Discrimination and stigma</p> <p><i>E.g. social stigma of obesity can compound existing marginalization of vulnerable groups, leading to worsened social exclusion</i></p>	<ul style="list-style-type: none"> • Screen policies to avoid exacerbating stigma and marginalization of obese people. • Provide economic empowerment, skills training and personal development for low-income women to compensate for discrimination. • Ensure gender-sensitive anti-discrimination policies and equal opportunity employment legislation. • Implement broad interventions to improve social inclusion of marginalized ethnic and socioeconomic groups.

Key policy recommendations

- Most low-income people in Europe know what constitutes a healthy diet. Rather than lack of knowledge, the priority is to address affordability, accessibility, availability and practicalities relating to healthy food.
- Interventions to address obesity at a population level are more likely to be effective than interventions at an individual level, especially for groups of low socioeconomic status.
- Universal policies to improve eating habits, and modifying environments to encourage physical activity are important, but the more deprived groups may require extra measures to benefit from these policies, such as:
 - interventions to address self-esteem, lack of skills and consider the needs and perceptions of disadvantaged women;
 - programmes to help children develop a taste for vegetables, in addition to providing free meals/vegetables and fruit in schools.
- People on low incomes are more price sensitive than those on higher incomes. Taxing foods high in fat, sugar and salt and removing tax on vegetables and fruit are likely to reduce inequities.
- It is important to develop and assess the cost of the contents of a national healthy food basket to help decide the minimum wage and social benefit levels.
- Initiatives to restrict marketing of unhealthy food high in fat, sugar and salt and sugary beverages to children may contribute to reducing inequities, due to the higher exposure and vulnerability of disadvantaged children to marketing.
- Measures to improve the composition of processed foods (e.g. reducing fat, sugar and salt content) have the potential to reduce inequalities, on the condition that their cost is the same, or less than, unhealthy alternatives.
- With a low income, buying unhealthy food may be the most feasible option. Interventions are needed to:
 - increase social protection and income support, to cover the cost of buying a healthy food basket;
 - ring-fence support for food, for example through vouchers for vegetables and fruit;
 - reduce availability and marketing of unhealthy food in disadvantaged areas and schools;
 - promote local supply of vegetables and fruit through initiatives which include the active participation of disadvantaged groups.
- Pregnancy and early childhood are critical periods for intervention on inequities in obesity. Priority interventions include:
 - paying maternity leave for six months to support exclusive breastfeeding for that period;
 - increasing antenatal care attendance for socially deprived and young women by using participatory methods to address their needs and perceptions;
 - supporting skilled breastfeeding and complementary feeding, tailored to the specific needs of disadvantaged obese mothers, including teenagers, and their families;
 - providing free or subsidized healthy meals (including breakfasts), along with vegetables and fruit in schools and early childhood centres.

Key policy recommendations contd

- Differential access to and treatment within the health system contribute to inequities in obesity. Actions to address this include:
 - offering comprehensive health and social support through primary care, maternal and child health services, and social services, addressing service users' perceptions and needs;
 - involving marginalized and low socioeconomic groups in the design, delivery and evaluation of services to ensure success.
- New measures are required to address the gender gap in physical activity. This includes: improving physical activity participation of girls at school; improving the physical and cultural safety of spaces for physical activity; and working with disadvantaged girls and women to remove barriers to their physical activity.
- A balanced portfolio of action is needed, aiming for a mix of long- and short-term impacts, addressing the root social causes and consequences of inequities and acting at both individual and environmental levels.
- A system of monitoring and evaluation should be developed (incorporating measured, not self-reported heights and weights) to measure: obesity levels in different socioeconomic groups; social determinants of obesity; and relative success of a range of policies and interventions.

Checklist: are you on track?

1. Do you routinely measure prevalence of obesity (using measured heights and weights as opposed to self-reported data) by gender, ethnicity and socioeconomic group (education, income, occupation)?
2. Have you identified which groups experience most harm (health and/or social) from obesity, and are they clearly prioritized in your strategies and plans?
3. Do you routinely assess the equity impact of obesity prevention policies before they are implemented?
4. Can the most marginalized groups in society meaningfully participate in decision-making processes about appropriate obesity prevention policies?
5. Do you have robust policies in place with the following specific goals?
 - To increase the price of sugar-sweetened beverages and foods high in fat, sugar and salt.
 - To ban marketing of sugar-sweetened beverages and foods high in fat, sugar and salt to children.
 - To provide free or heavily subsidized preschool and school fruit and vegetable schemes, meals and/or healthy snacks.
 - To provide workplace interventions to help weight loss via more physical activity and healthy eating.

Checklist: are you on track? contd

6. Do you have effective policies in place to address the root social determinants of inequities in obesity? Such measures should include:
 - social protection, especially for families with children and the unemployed;
 - high-quality early childhood education and parenting support;
 - active labour force programmes for women and unemployed people, including skills development;
 - policies to reduce social exclusion;
 - policies to reduce household overcrowding and improve meal planning skills;
 - the improvement of psychosocial working conditions for low-income workers.
7. Do you evaluate the impact of all obesity prevention and treatment interventions on different social groups?
8. Have you set targets for reducing obesity levels in different social groups?
9. Is there clear accountability and leadership for reducing inequities in obesity levels?

Where to find out more

Policy options for addressing obesity

- **Vienna Declaration on Nutrition and Noncommunicable Diseases in the Context of Health 2020** (6).
- **Global Action Plan for the Prevention and Control of Noncommunicable Diseases 2013–2020** (8).
- **Action plan for implementation of the European Strategy for the Prevention and Control of Noncommunicable Diseases 2012–2016** (7).
- **WHO European Action Plan for Food and Nutrition Policy 2007–2012** (71).
- **Focusing on obesity through a health equity lens. A collection of innovative approaches and promising practices by European and international health promotion bodies to counteract obesity and improve health equity** (72).
- **WHO European Database on Nutrition, Obesity and Physical Activity (NOPA)** (73).
- **Eurostat**. European Commission Statistical Office of the European Union (public health database) (74).
- **International Association for the Study of Obesity data portal** (75).

Actions to reduce health inequities through action on SDH

- **Equity, social determinants of health and public health programmes** (33).
- **Review of social determinants and the health divide in the WHO European Region: final report** (5).
- **Strategic review of health inequalities in England post-2010 (Marmot Review). Task group 8: priority public health conditions. Final report** (76).
- **Resource of health system actions on socially determined health inequalities**. WHO Regional Office for Europe online database (77).
- **Action:SDH**. A global electronic discussion platform and clearing house of actions to improve health equity through addressing the SDH (78).
- **European Portal for Action on Health Inequalities**. An Equity Action partnership information resource on health equity and SDH in Europe, including a database of policy initiatives (79).

Policy equity assessment tools

- **Health inequalities impact assessment. An approach to fair and effective policy making. Guidance, tools and templates (80).**
- **Methodological guide to integrate equity into health strategies, programmes and activities (81).**
- **Tools and approaches for assessing and supporting public health action on the social determinants of health and health equity (82).**

Data disaggregation and tools

- **Equity in Health project interactive atlases. WHO Regional Office for Europe online resource (83).**
- **Handbook on health inequality monitoring with a special focus on low- and middle-income countries (84).**
- **Moving forward equity in health: monitoring social determinants of health and the reduction of health inequalities (85).**

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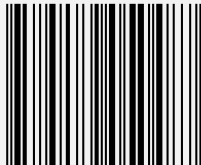
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ISBN 978-9-289-05048-7



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