OBESITY KEY ANALYSIS

1. Obesity is a complex multifactorial noncommunicable disease defined by excessive adiposity that can impair health. Obesity is also one of the key risk factors for many noncommunicable diseases (NCD) such as coronary heart disease, hypertension and stroke, certain types of cancer, type 2 diabetes, gallbladder disease, dyslipidaemia, osteoarthritis and gout, and pulmonary diseases, including sleep apnoea. Obesity is the most important modifiable risk factor for type 2 diabetes. In addition, people living with obesity often experience mental health issues alongside different degrees of functional limitations, i.e. obesity-related disability and suffer from social bias, prejudice and discrimination. Obesity has a number of root drivers and determinants. These include genetics, biology, access to health care, mental health, diet, sociocultural factors, economics, environments, and commercial interests, amongst others.

2. Body mass index (BMI) is a surrogate marker of adiposity calculated as weight (kg)/height² (m²). The BMI categories for defining obesity vary by age and sex in infants, children and adolescents. For adults, obesity is defined by a BMI greater than or equal to 30 kg/m². A BMI ranging from 25 to 29.99 kg/m² is also associated with increase disease risk and is referred to as pre-obesity. This continuum of risk is acknowledged by considering overweight, that includes adults with a BMI greater than 25.00 kg/m². For children 5-19 years obesity is defined by a BMI-for-age greater than two standard deviations above the WHO Growth Reference median. For children under 5 overweight is used as the indicator, defined as weight-for-height greater than two standard deviations above WHO Child Growth Standards median.

3. Globally, the prevalence of overweight and obesity and the number of affected individuals have increased in all age groups and will continue rising during the next decade:

<table>
<thead>
<tr>
<th></th>
<th>2000</th>
<th>2020</th>
<th>2030</th>
</tr>
</thead>
<tbody>
<tr>
<td>Children under 5 with overweight</td>
<td>(5.4%) 33.3 million</td>
<td>(5.7%) 38.9 million</td>
<td>(x %) 39.8 million</td>
</tr>
<tr>
<td>Children 5-19 years with obesity</td>
<td>TBD</td>
<td>(x %) 150 million</td>
<td>(x %) 254 million</td>
</tr>
<tr>
<td>Adults with overweight</td>
<td>TBD</td>
<td>(x %) 1.9 billion</td>
<td>TBD</td>
</tr>
<tr>
<td>Adults with obesity</td>
<td>TBD</td>
<td>(x %) 0.6 million</td>
<td>TBD</td>
</tr>
</tbody>
</table>

4. The following alarming trends are surfacing:
   - Almost half of children under 5 affected by overweight live in Asia and more than one quarter live in Africa.

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1 ICD-11 Code 5B81.
4 Estimates are being updated. They will be provided in the next version of the paper
The prevalence of obesity among children 5-19 years was about 20% or more in several countries in the Pacific, the Eastern Mediterranean, the Caribbean, and the Americas.5

Among adults, rates of obesity are growing most rapidly in middle-income countries, particularly in Southeast Asia and Africa. One in five adults are predicted to have obesity by 2025, with all countries off track to meet targets.

Most of the world’s population live in countries where overweight and obesity kills more adults than underweight.6

5. Overweight and obesity in childhood and adolescence are associated with adverse health consequences later in life. Preventing and controlling excess weight in children and adolescents is important for many reasons:7,8

• Weight loss and maintenance after weight loss are hard to achieve,9 therefore gaining excess weight in childhood and adolescence is likely to lead to overweight and obesity in adulthood.10
• Being overweight in childhood and adolescence affects their immediate health and is associated with greater risk and earlier onset of various NCD such as type 2 diabetes and cardiovascular disease.11-14
• Childhood and adolescent obesity have adverse psychosocial consequences and affects their lowers educational attainment and quality of life, including as a result of stigma and bullying.15,16
• Children with obesity are very likely to remain obese as adults and are also at risk of various NCD in adulthood.
• Children with disability are at greater risk for obesity, particularly those children with intellectual disability.

6. Overweight and obesity in adults are associated with increased all-cause mortality, with a higher proportion of adults with disability being overweight or obese compared to adults without disability. People with obesity have also a four-fold higher risk of developing severe COVID-19 disease than people with no obesity.17

7. People living with obesity are frequently subject to stigma and bias, even amongst health care professionals, which in turn impacts on the support and treatment that they receive.\textsuperscript{18} Overweight and obesity also impair individual’s lifetime educational attainment and labour market outcomes and place a significant burden on health-care systems, family, employers and society as a whole.\textsuperscript{19,20,21}

8. The costs of obesity and obesity-related disease are increasing. It is estimated that the total cost of high BMI to health services globally is US$ 990 billion per year, over 13% of all healthcare expenditure.\textsuperscript{22} Obesity also results in indirect costs such as impaired productivity, disability, lost life years, and reduced quality of life. The combined direct and indirect healthcare costs are estimated at currently approximately 3.3% of total GDP in OECD countries.\textsuperscript{23}

9. In countries with established obesity epidemics, prevalence is higher in low socioeconomic status (SES) groups, driven by social determinants propelled by urbanization, availability of fast food, and lack of spaces for physical activity. In low- and middle-income countries the prevalence is initially highest in urban high SES groups, but rapidly expands to a broader cross-section of society, both urban and rural. Obesity prevention and management would reduce inequity.\textsuperscript{24,25}

**EARLIER WHO WORK ON OBESITY**

10. A 1997 Expert Consultation Report concluded that the fundamental causes of the obesity epidemic worldwide are sedentary lifestyles and high-fat energy-dense diets, both resulting from changes taking place in society and the behavioural patterns of communities as a consequence of increased urbanization and industrialization and the disappearance of traditional lifestyles. The Report recommended (a) the use of public health approaches to the prevention and management of overweight and obesity in populations, namely Improving the knowledge and skills of the community and reducing population exposure to an obesity-promoting environment; (b) an integrated health-care services approach in community settings for the prevention and management of overweight and obesity in at-risk individuals.

11. The 2002 Expert Consultation Report highlighted the importance of: 1) promoting exclusive breastfeeding and assuring of the appropriate micronutrient intake needed to promote optimal linear growth for infants and young children, and 2) restricting the intake of energy-dense, micronutrient-poor foods (e.g. packaged food products), restricting the intake of sugar-sweetened beverages, limiting television viewing and promoting active lifestyle for children and adolescents, among interventions. In addition, the Report also highlighted other measures including limiting the exposure of children to heavy marketing practices, providing the necessary information and skills to make healthy food choices, modifying the environment to enhance physical activity in schools and communities, and creating more opportunities for family interaction.

\textsuperscript{24} Consideration of the evidence on childhood obesity for the Commission on Ending Childhood Obesity: report of the ad hoc working group on science and evidence for ending childhood obesity, Geneva, Switzerland. World Health Organization; Geneva: 2016 https://apps.who.int/iris/handle/10665/206549.
\textsuperscript{25} Wilkinson TM. Obesity, equity and choice. J Med Ethics. 2019 May;45(5):323-328
(e.g. eating family meals). In the countries where undernutrition is prevalent, the Report indicated that
nutrition programmes designed to control or prevent undernutrition need to assess stature in combination
with weight to prevent providing excess energy to children of low weight-for-age but normal weight-for-
height. These recommendations were reflected in the 2004 WHO Diet and Physical Activity Strategy. Following the publication, of the report additional evidence has emerged regarding the complex drivers of obesity, including its role in maternal and foetal health, the role of mental health, sleep, and other factors in obesity risk, and the impact of metabolic changes on sustained weight loss, as well as developments in some clinical treatment options.

12. The 2012 Comprehensive Implementation Plan on Maternal, Infant and Young Child Nutrition established a global target of no increase in childhood overweight through 2025. Key interventions for reducing the risk of unhealthy weight gain in childhood included: (1) addressing early life exposures to improve nutritional status and growth patterns, (2) improving community understanding and social norms, (3) addressing exposure of children to marketing of foods, (4) influencing the food system and food environment, and (5) improving nutrition in neighborhoods.

13. The 2016 Report of the Commission on Ending Childhood Obesity developed a comprehensive, integrated package of recommendations to address childhood obesity, including: (1) implement comprehensive programmes that promote the intake of healthy foods and reduce the intake of unhealthy foods and sugar-sweetened beverages by children and adolescents; (2) implement comprehensive programmes that promote physical activity and reduce sedentary behaviors in children and adolescents; (3) integrate and strengthen guidance for noncommunicable disease prevention with current guidance for preconception and antenatal care, to reduce the risk of childhood obesity; (4) provide guidance on, and support for, healthy diet, sleep and physical activity in early childhood to ensure children grow appropriately and develop healthy habits; (5) implement comprehensive programmes that promote healthy school environments, health and nutrition literacy and physical activity among school-age children and adolescents; (6) provide family-based, multicomponent, lifestyle weight management services for children and young people who living with obesity.

14. This work provides the basis for the following principles and recommendations. Work is currently ongoing to expand the evidence basis and to develop additional policy approaches and service provision models.

GENERAL PRINCIPLES

15. Prevention and management of obesity requires consumption of a healthy and energy balanced diet and adequate physical activity levels. The WHO Guidelines on sugars intake for adults and children recommend a level of consumption of free sugars lower than 10% of total energy, possibly lower than 5%. The WHO Guidelines on physical activity and sedentary behavior for children, adolescents, adults and older adults recommend that children and adolescents do at least 60 minutes a day of moderate to vigorous intensity physical activity across the week and that adults should do at least 150–300 minutes of moderate-intensity aerobic physical activity; or at least 75–150 minutes of vigorous intensity aerobic physical activity; or an equivalent combination of moderate- and vigorous-intensity activity throughout the week.

16. Actions for overweight and obesity prevention and management need to adopt inclusive and systemic approaches from specific areas or actions, including:

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• Whole-of-government and whole-of-society approach, with adequate safeguards against conflicts of interest and actively including representatives of at risk and marginalized populations.
• A life course approach, where primary preventive efforts are likely to have optimal effects if started in early childhood with parental involvement.\(^{30}\)
• Integrated health services which provide a continuum of care, such as health promotion, disease prevention, diagnosis, treatment, rehabilitation and management.

17. Policy makers need to ensure policies can effectively improve on gender and socio-economic equity and are coherent with planetary health. A human right approach is important both to strengthen the rationale for action and to guide policy making and decisions.

18. Overweight and obesity has a causal effect for particular health conditions which can lead to long-term limitations in functioning or disability, but also can be a consequence of the status of particular at-risk populations (e.g. socioeconomic status, disability status).

RECOMMENDED ACTIONS FOR GOVERNMENTS

19. Apply multisectoral and impacting actions and strategies at the different levels of the obesity causal chain as prevention and management of obesity can only be achieved by influencing public policies in domains such as health, food systems, social protection, built environment and physical activity, health literacy and education and develop comprehensive and evidence-informed national actions plans for the prevention and management of obesity in all age groups, with consideration to regulatory mechanisms and legal frameworks.

Health care

20. Provide a continuum of care through implementing health promotion, disease prevention, diagnosis, treatment and management of obesity, as components of Universal Health Coverage. Specific attention should be given to identifying and including at-risk and marginalized populations who may experience barriers in accessing essential health services and specific obesity management services.

21. Include obesity management among the core tasks of primary care. Healthcare benefit plans should include coverage for a range of obesity prevention and management services with guaranteed financial protection.

22. Provide dietary and weight counselling to pregnant women as part of antenatal care, together with physical activity counselling and tobacco cessation, and measure gestational weight gain.

23. Implement the WHO guidelines to support primary healthcare workers to identify and manage children with overweight or obesity\(^{31}\) within the context of national priorities, specifically:
   a) Measure both weight and height of all infants and children aged less than 5 years presented to primary health care facilities, in order to determine their weight-for-height and their nutritional status according to WHO child growth standards.\(^{32,33}\) Comparing a child's weight with norms for its length/height is an effective way to assess for both wasting and overweight.
   b) Provide counselling to parents and caregivers on nutrition and physical activity including promotion and support for exclusive breastfeeding in the first 6 months and continued breastfeeding until 24 months or beyond.\(^{34}\)
   c) Develop an appropriate management plan for management of children with obesity. This can be done by a health worker at primary health-care level if adequately trained, or at a referral clinic or local hospital.


http://dx.doi.org/10.2471/BLT.07.043497

24. Ensure weight management services are equitably offered and progressively realised for people of all ages, including as part of UHC, and that people with obesity have access to trained health care practitioners, weight measurement and screening, nutrition, physical activity psychological support, counselling, pharmacotherapy and surgery.

25. Integrate obesity into multidisciplinary teams to ensure people with obesity get adequate support and treatment, including for the comorbidities of obesity. Provide equitable access to care for all who want/need it.

26. Ensure healthcare workers are trained and equipped to deliver weight management services and include obesity in medical training.

Food systems

27. Improve access to and affordability of healthy diets by taking the following actions:

a) Support the improvement of breastfeeding rates by better protecting breastfeeding (i.e. the first food system) through regulations compliant with the Code of marketing breastmilk substitutes and subsequent resolutions;

b) Build a more coherent and enabling agricultural policy to promote safe, healthy diets sustainably produced, including a reduction in the number of daily calories consumed from fats and sugars, and an increase in the number of daily portions from whole grains, legumes, nuts, vegetables and fruits. This includes encouraging food manufacturers to replace reformulate their products. The ultimate success must be linked to an increase in the consumption of, unprocessed or minimally processed foods;

c) Reshape the food environment (including digital environments) through fiscal and price policies (taxation and incentives) that emphasize consumption of whole grains, legumes, nuts, vegetables and fruit and reduce the demand for products excessive in fats, sugars and salt/sodium;

d) Regulate marketing of foods and beverages high in fats, sugars and salt/sodium including digital marketing;

e) Establish nutrition labelling to support consumers’ understanding of nutrients contents in food, also through easy to understand information at the point of choice (e.g. through front-of-the-pack nutrition labelling or menu labelling);

f) Design public food procurements and service policies, which support procuring, distributing, selling, and/or serving foods that support healthy diets in schools and other public institutions such as government offices, childcare centres, nursing homes, hospitals, health centres, community centres, residential care settings, military bases and prisons.

Social protection and welfare

28. Design social protection programmes (including cash transfers) that facilitate the access to healthy diets and promote sustainability and socioeconomic equity. Such programs can also help reducing gaps across food systems by linking agroecological small-scale producers and food systems’ operators to programmes and creating a virtuous equity promoting system among beneficiaries and providers.

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35 World Health Organization. Obesity. https://www.who.int/health-topics/obesity#tab=tab_3
Furthermore, people from poorer communities may also avoid to put Health first, as they have other concerns in their lives, and they may choose to put any food on the table. Furthermore, children from lower SES families also tend to not have been exposed to healthy foods and hence do not want to eat healthy foods, as they do not like the taste of fruits and vegetables.

**Built environment and physical activity**

28. Engage city level governments in facilitating the access to healthy diets, e.g. through the establishment of fresh food markets and through zoning policies, as well in the promotion of physical activity, e.g. through active mobility. The majority of the world’s population live in environments where proliferation of cheap and available high energy-density food dominates, while opportunities to be physically active are reduced, consequently causing excess weight gain.

29. Adopt and implement WHO’s guidelines and policy recommendations on physical activity and sedentary behaviour. WHO guidelines provide details for different age groups and specific population groups on how much physical activity is needed for good health.

30. Implement the recommended policy actions outlined in the WHO Global Action Plan on Physical activity 2018-2030. The action plan provides recommendations on how countries can (1) create positive social norms and attitudes by enhancing knowledge of the multiple benefits of regular physical activity, according to ability across the life course; (2) create supportive environments that promote and safeguard the rights of all people to have equitable access to safe places and spaces in their cities and communities in which they can engage in regular physical activity; (3) ensure adequate and appropriate programmes and services across key settings which support people of all ages and abilities to engage in regular physical activity as individuals, families and communities; (4) strengthen governance, data systems and investments to implement effective and coordinated international, national and subnational action to increase physical activity and reduce sedentary behaviour.

**Health literacy and education**

31. Develop, adapt and implement food-based dietary guidelines (FBDG). These are, among others, tools for promoting desirable food consumption patterns and improving nutritional well-being. FBDG translate science-based guidance on diet, nutrition and health relationship into food-based guidance and messages, taking into consideration of respective countries’ (or specific population groups’) nutrition situation, food availability, dietary habits and cultural contexts. FBDG also serve as a tool for implementing national nutrition policies and programmes and provide guidance for food and agriculture policies.  

32. Implement campaigns for the promotion of healthy diets and physical activity, as a complement to other actions shaping the food environment and orienting people’s lifestyles. Campaigns cannot be the only response to obesity, as this would imply that obesity is the result of individual choices. Collect behavioural and cultural insights from the social sciences and health humanities as a tool to design behavioural change actions, such as for example programmes to improve cooking skills.

**Statistics**

33. Establish surveillance systems, including weight, height, dietary intake and physical activity levels of individuals of all age groups.

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34. Monitor policy and program implementation in the different sectors, including access to care, quality of care, capacity of health care workers.

**RECOMMENDED ACTIONS FOR OTHER SOCIETAL ACTORS**

**Civil society**

35. Encourage governments to develop ambitious national responses to promote healthy diets and physical activity, contribute to their implementation, assess progress, and amplify the voices of and raise awareness about people living with or affected by obesity.

36. Mobilize the public to increase popular demand for obesity-prevention policies including refinement and streamlining of public information, identification of effective obesity frames for each population, strengthening of media advocacy, building of citizen protest and engagement, and development of a receptive political environment with change agents embedded across organizations and sectors.

**Academia**

37. Consolidate and expand the evidence base for obesity causes and consequences, and for responses at individual, community and societal level, particularly noting the limitations in evidence for particular at-risk groups (i.e. people with disability).

**Economic operators in the food system**

38. Guarantee the access to healthy diets, from production to distribution and promotion. Manufacturers, importers, exporters and suppliers can reformulate their portfolios, particularly the ones with products intended for children (reducing sugars and salt) and reducing portion sizes. All companies can offer healthy diets in their workplace canteens.

**Economic operators in the sports, exercise and recreation industry**

39. Strengthen the promotion and provision of physical activity in the workplace, improve access to gyms, clubs and recreation centres, promote wearable technologies, and support the equipping of schools.40

**RECOMMENDED ACTIONS FOR WHO**

**Guidance and tool development**

40. Expand guidance to healthcare professionals on prevention and management of obesity in all age groups.

41. Translate normative and technical guidance into operational activities and integrated approaches that can be adopted by Member States.

42. Advocate for a universal implementation of its guidance to ensure that all people have access to prevention and care of overweight and obesity, including displaced populations.

43. Document and disseminate the good practices adopted by governments in the response to obesity.

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40 Huang TTK, Cawley JH, Ashe M, Costa SA, Frerichs LM, Zwicker L, et al. Mobilisation of public support for policy actions to prevent...
44. Engage other UN agencies with shared mandates in this area, such as UNICEF and FAO.

45. It is important to emphasize the principle of equity and human rights within health care. Future recommendations should continue to contemplate health equity considerations, e.g., are recommendations aiming to directly or indirectly reduce or prevent social and health inequities and will they promote gender equality and non-discrimination based on any grounds.

46. Future guidance should incorporate considerations for providing services for children and adolescents with obesity and who also have special needs or disabilities derived from other conditions. These considerations may include modifications to mainstream recommendations and training to staff on how to implement the adapted recommendations.

47. Gender stereotypes that may hinder access to treatment as well as gender and sex-specific considerations will need to be considered in future normative work.

48. Future guidance needs to continue to be shaped by the values and preferences of those affected by the recommendations. It will be important to consider how obesogenic environments and cultural attitudes towards food, which are often internalised by children as subjective norms, affect for children, adolescents, their parents and caregivers. In addition, it will be necessary to explore the values and preferences of these stakeholders in relation to their motivation to engage with and adhere to interventions for obesity management, as well as the limitations and restrictions to addressing weight issues across multiple domains (financial, practical, in nutritional knowledge levels and in relation to the obesogenic environment).

**Capacity building of service providers**

49. Contribute to increasing the number of health workers trained in nutrition and the quality of their capacities. Most health care professionals are not adequately trained to address diet and nutrition-related issues with their patients, thus reducing the quality of care and missing important opportunities to ameliorate chronic diseases and improve outcomes in acute illness. Nutrition education is not required training for physicians in many countries. Increasing the number of health care professionals who are trained in treating and managing obesity will improve the level of care and positive outcomes for people with obesity. Capacity building priorities should explicitly address limitations in current service provision (e.g. guidance for mothers of children with disability when breastfeeding is not possible or other disability-related factors limit the understanding and adoption of healthy eating practices).

**Policy dialogue and implementation support**

50. Engage in strategic and policy dialogues with ministries of health and other relevant government entities, making the case for action and for the use of evidence informed and cost-effective policy tools as most appropriate to the country context. WHO will focus its efforts and resources on a number of priority countries with a high burden of overweight and obesity, and who demonstrate a readiness to act.

51. Monitor the adoption of policies and support country policy implementation

**PROPOSED TARGETS**

**Outcome targets**

52. The following outcome targets and indicators have been endorsed by the WHA and the United Nations General Assembly:

a) Halt the rise of obesity in children under 5, adolescents and adults by the year 2025 (against a 2010 baseline).
b) Ending all forms of malnutrition” by the year 2030 (against a 2015 baseline).

c) Overweight in children under 5” is an indicator for SDG target 2.2. For children under 5 years, the targets were extended to 2030 and presented to the WHA in January 2019. The target for childhood overweight is to reach 3% or lower by 2030.44

Intermediate outcome targets

53. The establishment of intermediate outcome targets and process targets might benefit the scale up of action. Intermediate outcome targets are linked to key steps on the causal pathway to the development of


42 WHO Comprehensive Implementation Plan on Maternal, Infant and Young child nutrition.
https://apps.who.int/iris/bitstream/handle/10665/113048/WHO_NMH_NHD_14.1_eng.pdf?ua=1 endorsed by resolution WHA 65.6 Microsoft

https://apps.who.int/iris/handle/10665/94384

obesity. The targets may be related to the quality of the diet and to physical activity levels. Proposed intermediate outcome targets include:

a) In both adults and children, WHO recommends reducing the intake of free sugars to less than 10% of total energy intake (This target is based on a strong recommendation in the WHO guidelines on sugars intake in adults and children published in 2015).
b) Increase the rate of exclusive breastfeeding in first 6 months up to at least 50% (This is one of the six global nutrition targets endorsed by the WHA).45
c) A 15% relative reduction in the global prevalence of physical inactivity in adults and in adolescents by 2030. (This target has already been established by WHA in 2010 and updated in the WHO Global Action Plan on Physical Activity).

Process targets

54. Process targets are related to the presence of WHO recommended policies and the effective coverage of services that would lead to the desired changes in intermediate outcomes (diet and physical activity) and in final outcomes (obesity prevalence). Proposed process targets include:

a) Increasing the coverage of primary health care services that include the diagnosis and management of obesity in children and adolescents.
b) Increasing the nutrition and diet professional density to a minimum level of 10/100,000. Rationale: Indicator already included in the Global Nutrition Monitoring Framework and reported in the Nutrition Landscape Information System. Baseline 2016-17: 2.2/100,000.
d) Increasing the number of countries that provide good-quality physical education in schools of all grades (at least x number of hours/week).

ACTION BY THE EXECUTIVE BOARD

55. The Executive Board is invited to adopt the recommendations for governments, other societal actors and WHO (paragraphs 18 to 47), as well as the proposed targets (paragraphs 48 to 50), and recommend their endorsement at the 75th World Health Assembly.

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46 Nutrition Landscape Information System: GNMF Profile (who.int)