Childhood obesity - a 21st century pandemic?
• Define terms

• Present some data on childhood obesity to help answer the question – is childhood obesity a 21st century pandemic?

• Consider the factors influencing obesity prevalence

• Briefly outline how overweight and obesity can be reduced
Pandemic

Word origin of 'pandemic' - C17: from Late Latin pandēmus, from Greek pandēmos, from pan- + demos the people

Definition of pandemic in English: oxforddictionaries.com
pandemic - adjective
(of a disease) prevalent over a whole country or the world.

Adjective – Collins
prevalent over a whole area, country, etc.; universal; general; over a large region
For children under 5 years of age:

- overweight is weight-for-height greater than 2 standard deviations above WHO Child Growth Standards median*
- obesity is weight-for-height greater than 3 standard deviations above the WHO Child Growth Standards median

* The WHO Child Growth Standards
These standards were developed using data collected in the WHO Multicentre Growth Reference Study.
Overweight and obesity are defined as follows for children aged between 5–19 years:

- Overweight is BMI-for-age greater than 1 standard deviation above the WHO Growth Reference median.
- Obesity is greater than 2 standard deviations above the WHO Growth Reference median.
Prevalence of overweight among boys (5-9 years) BMI > +1 standard deviations above the median (crude estimate) (%)

Prevalence of overweight among girls (5-9 years) BMI > +1 standard deviations above the median (crude estimate) (%)

Africa
Americas
South-East Asia
Europe
Eastern Mediterranean
Western Pacific
Prevalence of overweight among males (aged 10-19 years)
BMI > +1 standard deviations above the median (crude estimate) (%)

Prevalence of overweight among females (aged 10-19 years)
BMI > +1 standard deviations above the median (crude estimate) (%)

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Facing a double burden of disease

• Many low- and middle-income countries are now facing a "double burden" of disease.
• While these countries continue to deal with the problems of infectious diseases and undernutrition, they are also experiencing a rapid upsurge in non-communicable disease risk factors such as obesity and overweight, particularly in urban settings.
• It is not uncommon to find undernutrition and obesity co-existing within the same country, the same community and the same household.
• Children in low- and middle-income countries are more vulnerable to inadequate pre-natal, infant, and young child nutrition.
• At the same time, these children are exposed to high-fat, high-sugar, high-salt, energy-dense, and micronutrient-poor foods, which tend to be lower in cost but also lower in nutrient quality.
• These dietary patterns, in conjunction with lower levels of physical activity, result in sharp increases in childhood obesity while undernutrition issues remain unsolved.
Comparing Boys and Girls – Prevalence of overweight 5-9 years

South-East Asia

Africa

[Graph showing the prevalence of overweight boys and girls in South-East Asia and Africa from 1975 to 2016, with a clear increase over time.]
Comparing Boys and Girls – Prevalence of overweight 10-19 years

South-East Asia

Africa

-1 1 3 5 7 9 11 13 15


South-East Asia males South-East Asia females

Africa males Africa females
Comparing Boys and Girls – Prevalence of overweight 5-9 years

Americas

Western Pacific

[Graph showing the prevalence of overweight among boys and girls in the Americas and Western Pacific from 1975 to 2016.]
Comparing Boys and Girls – Prevalence of overweight 10-19 years

**Americas**

**Western Pacific**
Comparing Boys and Girls – Prevalence of overweight 5-9 years

Europe

Eastern Mediterranean

Europe Boys
Europe Girls
Eastern Mediterranean Boys
Eastern Mediterranean Girls
Comparing Boys and Girls – Prevalence of overweight 10-19 years

Europe

Eastern Mediterranean

[Charts showing the prevalence of overweight among boys and girls in Europe and the Eastern Mediterranean from 1975 to 2016.]
Some recent WHO global estimates

• In 2016, an estimated 41 million children under the age of 5 years were overweight or obese.
• Once considered a high-income country problem, overweight and obesity are now on the rise in low- and middle-income countries, particularly in urban settings.
• In Africa, the number of overweight children under 5 has increased by nearly 50% since 2000.
• Nearly half of the children under 5 who were overweight or obese in 2016 lived in Asia.

• Over 340 million children and adolescents aged 5-19 were overweight or obese in 2016.
• The prevalence of overweight and obesity among children and adolescents aged 5-19 has risen dramatically from just 4% in 1975 to just over 18% in 2016. The rise has occurred similarly among both boys and girls: in 2016 18% of girls and 19% of boys were overweight.
• While just under 1% of children and adolescents aged 5-19 were obese in 1975, more 124 million children and adolescents (6% of girls and 8% of boys) were obese in 2016.
• Overweight and obesity are linked to more deaths worldwide than underweight. Globally there are more people who are obese than underweight – this occurs in every region except parts of sub-Saharan Africa and Asia.
Childhood obesity is associated with a higher chance of obesity, premature death and disability in adulthood. In addition to increased future risks, obese children experience breathing difficulties, increased risk of fractures, hypertension, early markers of cardiovascular disease, insulin resistance and psychological effects.
What are common health consequences of overweight and obesity?

Raised BMI is a major risk factor for

- non-communicable diseases which were the leading cause of death in 2012
- diabetes
- musculoskeletal disorders (especially osteoarthritis)
- some cancers (including endometrial, breast, ovarian, prostate, liver, gallbladder, kidney, and colon).

- The risk for these non-communicable diseases increases with increases in BMI.
Diverse sectors of society operate at different levels to influence population energy balance. Factors can range from the individual level to the international level, and the sectors of influence include education, agriculture, transportation, urban developments, and media, among others, in addition to the health sector. Research that cuts across these different levels and sectors can be undertaken.


Factors influencing obesity prevalence
### Macroeconomic burden of obesity for selected countries

<table>
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<tr>
<th>Country</th>
<th>Year of estimate</th>
<th>Total costs (percent of GDP)</th>
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<tr>
<td>United States</td>
<td>2000</td>
<td>1.2</td>
</tr>
<tr>
<td>Canada</td>
<td>2001</td>
<td>0.7</td>
</tr>
<tr>
<td>Switzerland</td>
<td>2002</td>
<td>0.6</td>
</tr>
<tr>
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<tr>
<td>India</td>
<td>1995</td>
<td>1.1</td>
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<tr>
<td>China</td>
<td>1995</td>
<td>2.1</td>
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It should be noted that these costs are not directly comparable across studies as a result of methodological differences. But they can be viewed as illustrative of the sizeable and robust impact of epidemic obesity on 'sickness' systems.

**Source:** Epidemiologic and economic consequences of the global epidemics of obesity and diabetes

How can overweight and obesity be reduced?

At the individual level, people can:

• limit energy intake from total fats and sugars;
• increase consumption of fruit and vegetables, as well as legumes, whole grains and nuts; and
• engage in regular physical activity (60 minutes a day for children and 150 minutes spread through the week for adults).

• Individual responsibility can only have its full effect where people have access to a healthy lifestyle. Therefore, at the societal level it is important to support individuals in following the recommendations above, through sustained implementation of evidence based and population based policies that make regular physical activity and healthier dietary choices available, affordable and easily accessible to everyone, particularly to the poorest individuals. An example of such a policy is a tax on sugar sweetened beverages.

The food industry can play a significant role in promoting healthy diets by:

• reducing the fat, sugar and salt content of processed foods;
• ensuring that healthy and nutritious choices are available and affordable to all consumers;
• restricting marketing of foods high in sugars, salt and fats, especially those foods aimed at children and teenagers; and
• ensuring the availability of healthy food choices and supporting regular physical activity practice in the workplace.
HOW CAN GOVERNMENTS SUPPORT HEALTHY FOOD PREFERENCES?

The food system is an interconnected network of producers, industry, and institutions. But at its heart is the individual. Policy can affect all parts of the network, influencing a cultural shift towards healthier food preferences.

**GOVERNMENTS**
- Tax unhealthy foods
- Restrict marketing to children
- Set food standards in schools
- Provide healthy eating education
- Incentivise healthy food retailers to enter low income areas
- Regulate to prevent positioning unhealthy food outlets where children gather
- Legislate for consumer-friendly nutrition labelling
- Invest in infrastructure for producing healthier foods
- Subsidise healthy foods to increase availability/affordability
- Reformulation of products to reduce unhealthy ingredients

**SCHOOLS**
- Provide healthy foods to children
- Influence each other as role models, caregivers and peers

**INDIVIDUALS**
- Redesign the choices available at point of sale and increase the availability of healthy options
- Change in demand for healthier choices
- Increased shelf-space for healthier foods
- Increased demand for healthier foods

**FOOD PRODUCERS**
- Change in demand for healthier choices

**RETAILERS**
- Regulate to prevent positioning unhealthy food outlets where children gather

For further information on the reality series or to read the full report visit: www.thelancet.com/reality/2013

Source: "Realities Series: Support Healthy Food Policies for Healthy People". Lancet, 2013. Published online on 18 January. www.thelancet.com/journals/lancet
Obese 100-Year-Old Crocodile Dies From Overeating After Worshippers Keep Throwing It Chickens And Goats For Good Luck
Childhood obesity

- oversized
- overeating
- large
- weight
- playing
- maintaining
- breastbone
- reduction
- maintenance
- shape
- medication
- surgery
- exercise
- aerobic
- running
- concern
- word
- blood
- slenderness
- goal
- helps
- nutrition
- lifestyle
- diet
- weight
- illness
- normal
- condition
- eating
- concept
- treatment
- physical
- psychological
- normal
- comparison
- body
- concept
- unhealth
- lifestyle
- cultural
- illness
- fat
- health
- diabetes
- obesity
- disorders
- food
- size
- unhealthy
- overweight
- disease