LEVELS AND TRENDS IN CHILD MALNUTRITION
UNICEF / WHO / World Bank Group
Joint Child Malnutrition Estimates
Key findings of the 2017 edition

41 million OVERWEIGHT
An estimated 6.0 per cent or 40.6 million children under age 5 around the world were overweight in 2016.

52 million WASTED
In 2016, wasting continued to threaten the lives of an estimated 7.7 per cent or nearly 52 million children under 5 globally.

155 million STUNTED
Stunting affected an estimated 22.9 per cent or 154.8 million children under 5 globally in 2016.

Good nutrition allows children to grow, develop, learn, play, participate and contribute – while malnutrition robs children of their futures and leaves young lives hanging in the balance.

Stunting is the devastating result of poor nutrition in early childhood. Children suffering from stunting may never grow to their full height and their brains may never develop to their full cognitive potential. Globally, approximately 155 million children under 5 suffer from stunting. These children begin their lives at a marked disadvantage: they face learning difficulties in school, earn less as adults, and face barriers to participation in their communities.

Wasting in children is the life-threatening result of hunger and/or disease. Children suffering from wasting have weakened immunity, are susceptible to long term developmental delays, and face an increased risk of death: they require urgent treatment and care to survive. In 2016, nearly 52 million children under 5 were wasted and 17 million were severely wasted.

There is also an emerging face of malnutrition: childhood overweight and obesity. There are now nearly 41 million overweight children globally, an increase of 11 million since 2000. The emergence of overweight and obesity has been shaped, at least in part, by industry marketing and greater access to processed foods, along with lower levels of physical activity.

While malnutrition can manifest in multiple ways, the path to prevention is virtually identical: adequate maternal nutrition before and during pregnancy and lactation; optimal breastfeeding in the first two years of life; nutritious and safe foods in early childhood; and a healthy environment including access to basic services and opportunities for physical activity. These key ingredients can deliver a world where children are free from all forms of malnutrition.

Despite this opportunity, the UNICEF, WHO, World Bank global and regional child malnutrition estimates from 1990 to 2017 reveal that we are still far from a world without malnutrition. The joint estimates, published in May 2017, cover indicators of stunting, wasting, severe wasting and overweight among children under 5, and reveal insufficient progress to reach the World Health Assembly targets set for 2025 and the Sustainable Development Goals set for 2030.

Improving children’s nutrition requires effective and sustained multi-sectoral nutrition programming over the long term, and many countries are moving in the right direction. Regular data collection is critical to monitor and analyse country, regional and global progress going forward.

**Forms of malnutrition**

- **Stunting** refers to a child who is too short for his or her age. Stunting is the failure to grow both physically and cognitively and is the result of chronic or recurrent malnutrition. The devastating effects of stunting can last a lifetime.

- **Overweight** refers to a child who is too heavy for his or her height. This form of malnutrition results from expending too few calories for the amount consumed from food and drinks and increases the risk of noncommunicable diseases later in life.

- **Wasting** refers to a child who is too thin for his or her height. Wasting, or acute malnutrition, is the result of recent rapid weight loss or the failure to gain weight. A child who is moderately or severely wasted has an increased risk of death, but treatment is possible.

* Some children suffer from more than one form of malnutrition – such as stunting and overweight or stunting and wasting. There are currently no joint estimates for these combined conditions.
Malnutrition rates remain alarming: stunting is declining too slowly while overweight continues to rise

Percentage of stunted, overweight and wasted children under 5, global, 2000–2016

Number (millions) of stunted, overweight and wasted children under 5, global, 2000–2016

See Notes on Data on page 14 on why only one time point is presented for Wasting on the graphs above.

Africa and Asia bear the greatest share of all forms of malnutrition

In 2016, more than half of all stunted children under 5 lived in Asia and more than one third lived in Africa.

In 2016, almost half of all overweight children under 5 lived in Asia and one quarter lived in Africa.

In 2016, more than two thirds of all wasted children under 5 lived in Asia and more than one quarter lived in Africa.
Five sub-regions have stunting rates that exceed 30 per cent
Percentage of stunted children under 5, by United Nations sub-region, 2016

Source: UNICEF, WHO, World Bank Group joint malnutrition estimates, 2017 edition. Note: *Eastern Asia excluding Japan; **Oceania excluding Australia and New Zealand, ***Northern America regional average based on United States data. These maps are stylized and not to scale and do not reflect a position by UNICEF, WHO or World Bank Group on the legal status of any country or territory or the delimitation of any frontiers. The legend contains a category for >40 per cent (pink) but there is no sub-region with a rate this high.

Two regions have experienced slow or no progress in reducing stunting

Source: UNICEF, WHO, World Bank Group joint malnutrition estimates, 2017 edition. Note: *Asia excluding Japan; **Oceania excluding Australia and New Zealand. The values for “percentage change since 2000” are based on calculations using unrounded estimates and therefore might not match values calculated using the rounded estimates presented in this brochure.
**Stunting**

### NUMBERS AFFECTED

**Two out of five stunted children in the world live in Southern Asia**

Number (millions) of stunted children under 5, by United Nations sub-region, 2016

<table>
<thead>
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<th>2016</th>
<th>Percentage change since 2000</th>
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<tr>
<td>Oceania**</td>
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<td>Latin America and Caribbean</td>
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<td>Middle Africa</td>
<td>8.9</td>
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</tbody>
</table>
| Africa is the only region where the number of stunted children has risen**

Number (millions) of stunted children under 5, by United Nations region, 2000 and 2016

- **Africa**: 50.4 million in 2000, 59.0 million in 2016, 17% increase
- **Asia***: 133.9 million in 2000, 86.5 million in 2016, -35% decrease
- **Latin America and Caribbean**: 10.5 million in 2000, 5.9 million in 2016, -44% decrease
- **Oceania****: 0.4 million in 2000, 0.5 million in 2016

Source: UNICEF, WHO, World Bank Group joint malnutrition estimates, 2017 edition. Note: *Asia excluding Japan; **Oceania excluding Australia and New Zealand; ***The Northern America sub-regional average based on United States data; there is no estimate available for Developed Regions, the parent region of Northern America.

**Western Africa accounts for half of the stunting increase in Africa; there were 4 million more stunted children in Western Africa in 2016 than in 2000**

Source: UNICEF, WHO, World Bank Group joint malnutrition estimates, 2017 edition. Note: *Asia excluding Japan; **Oceania excluding Australia and New Zealand. The values for “percentage change since 2000” are based on calculations using unrounded estimates and therefore might not match values calculated using the rounded estimates presented in this brochure. Of the five UN Regions, the Developed Region has Insufficient data to produce a regional estimate.
In three sub-regions, at least one in every ten children under five is overweight

Percentage of overweight children under 5, by United Nations sub-region, 2016

There has been no progress to stem the rate of overweight in more than 15 years


In Oceania, the rate of overweight nearly doubled between 2000 and 2016

Source: UNICEF, WHO, World Bank Group joint malnutrition estimates, 2017 edition. Note: *Eastern Asia excluding Japan; **Oceania excluding Australia and New Zealand, ***Northern America regional average based on United States data. These maps are stylized and not to scale and do not reflect a position by UNICEF, WHO or World Bank Group on the legal status of any country or territory or the delimitation of any frontiers. The legend contains a category for >15 per cent (pink) but there is no sub-region with a rate this high.
The only developed sub-region with overweight data is Northern America

Number (millions) of overweight children under 5, by United Nations sub-region, 2016

- Northern America***: 1.7
- Latin America and Caribbean: 3.7 million
- Asia: 19.9 million
  - Eastern Asia*: 7.9 million
  - Central Asia: 0.8
  - Southern Asia: 4.7
- Africa: 9.8 million
  - Eastern Africa: 3.1
  - Western Africa: 2.8
- Western Asia: 2.2
- Southern Asia: 4.2
- Oceania**: 0.1 million

Source: UNICEF, WHO, World Bank Group joint malnutrition estimates, 2017 edition. Note: *Eastern Asia excluding Japan; **Oceania excluding Australia and New Zealand, ***The Northern America sub-regional average based on United States data; there is no estimate available for Developed Regions, the parent region of Northern America.

The number of overweight children is on the rise in Africa and Asia

Number (millions) of overweight children under 5, by United Nations region, 2000 and 2016

- Africa: 6.6 (2000), 6.6 (2016)
  - Oceania**: 0.1 (2000), 0.1 (2016)

Source: UNICEF, WHO, World Bank Group joint malnutrition estimates, 2017 edition. Note: *Asia excluding Japan; **Oceania excluding Australia and New Zealand. The values for “percentage change since 2000” are based on calculations using unrounded estimates and therefore might not match values calculated using the rounded estimates presented in this brochure.

In Africa, the number of overweight children under 5 has increased by nearly 50 per cent since 2000
Wasting in Southern Asia constitutes a critical public health emergency
Percentage of wasted children under 5, by United Nations sub-region, 2016

In Asia and Oceania, wasting is putting nearly one in ten children under 5 at increased risk of death

Note: *Asia excluding Japan; **Oceania excluding Australia and New Zealand.
More than half of all wasted children in the world live in Southern Asia

Number (millions) of wasted children under 5, by United Nations sub-region, 2016

Asia
35.9 million

Latin America and Caribbean
0.7 million

Africa
14.0 million

Oceania**
0.1 million


Asia is home to the majority of children under 5 suffering from wasting and severe wasting

Number of wasted and severely wasted children under 5, by United Nations region, 2016

35.9 million children under 5 in Asia are wasted, of which
12.6 million are severely wasted

In Africa, 14.0 million children under 5 are wasted, of which
4.1 million are severely wasted

Upper-middle-income countries have more than halved their stunting rates since 2000

Percentage of stunted, overweight and wasted children under 5, by country income classification, 2000 – 2016

Upper-middle-income countries have the largest relative declines in stunting rates of all income groups

Number of stunted children under 5, by country income classification, 2000 and 2016

The number of overweight children has increased the most in lower-middle-income countries

Number of overweight children under 5, by country income classification, 2000 and 2016

While **less than half** of all children under-5 live in lower-middle income countries, **two-thirds** of all stunted children and **three-quarters** of all wasted children live there.

### Distribution of children under-5 in the world, by country income grouping, 2016

- **47%** of all children under-5 live in lower-middle income countries.
- **28%** of all children under-5 live in upper-middle income countries.
- **10%** of all children under-5 live in high-income countries.
- **16%** of all under-5 children live in low-income countries.

### Distribution of children under 5 affected by stunting, overweight and wasting in 2016

- **66%** of all stunted children live in lower-middle-income countries.
- **25%** of all stunted children live in low-income countries.
- **8%** of all stunted children live in upper-middle-income countries.
- **1%** of all stunted children live in high-income countries.

- **44%** of all overweight children live in lower-middle-income countries.
- **10%** of all overweight children live in low-income countries.
- **35%** of all overweight children live in upper-middle-income countries.
- **11%** of all overweight children live in high-income countries.

- **75%** of all wasted children live in lower-middle-income countries.
- **16%** of all wasted children live in low-income countries.
- **7%** of all wasted children live in upper-middle-income countries.
- **1%** of all wasted children live in high-income countries.
### PREVALENCE ESTIMATES TABLES*

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### UNICEF

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<th>East Asia and Pacific</th>
<th>East and Southern Africa</th>
<th>Latin America and Caribbean</th>
<th>Middle East and North Africa</th>
<th>South Asia</th>
<th>West and Central Africa</th>
<th>Other</th>
<th>WHO</th>
<th>World Bank Income Groups</th>
<th>World Bank Regions</th>
<th>Footnotes</th>
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<td>7. For stunting, wasting and severe wasting estimates, the Northern America regional average based only on United States data; hence confidence intervals are not available.</td>
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<td>Low income*</td>
<td>World Bank Regions</td>
<td>8. Consecutive low population coverage, interpret with caution.</td>
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**Footnotes**

1. Only Developing Regions are displayed, while the aggregates of the Developed Regions are not displayed due to insufficient population coverage.
2. Asia excluding Japan; Eastern Asia excluding Japan.
3. Oceania excluding Australia and New Zealand.
4. CEE/CIS is Central Eastern Europe/Commonwealth of Independent States; missing data for Russian Federation.
5. Other refers mainly to high-income countries not included within UNICEF programme regions.
6. High-income countries: low (<50 per cent) population coverage in all time periods.
7. For stunting, wasting and severe wasting estimates, the Northern America regional average based only on United States data; hence confidence intervals are not available.
8. Consecutive low population coverage, interpret with caution.
**NUMBER (MILLIONS) AFFECTED TABLES**

|                      | Stunting 2000 | Stunting 2016 | Stunting (moderate and severe) | Stunting (moderate and severe) | Stunting (moderate and severe) | Stunting (moderate and severe) | Stunting (moderate and severe) | Stunting (moderate and severe) | Stunting (moderate and severe) | Stunting (moderate and severe) | Stunting (moderate and severe) | Stunting (moderate and severe) |
|----------------------|---------------|---------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|
| **Global**           | 198.4 [188.3-208.4] | 154.8 [142.7-166.9] | 30.4 [27.1-33.7] | 40.6 [33.5-47.7] | 51.7 [44.5-58.9] | 16.9 [13.3-20.5] |

**United Nations**

- **Developing Regions**
  - Africa: 195.3 [185.5-205.0]
  - Eastern Africa: 50.4 [47.4-53.4]
  - Middle East: 7.2 [6.2-8.2]
  - Northern Africa: 4.8 [3.6-6.3]
  - Southern Africa: 2.1 [1.8-2.4]
  - Western Africa: 15.2 [14.0-16.5]
  - Asia: 133.9 [125.0-142.8]
  - Central Asia: 1.8 [1.2-2.1]
  - Eastern Asia: 16.5 [15.3-17.8]
  - Western Asia: 5.4 [3.7-7.5]
  - Latin America and Caribbean: 10.5 [7.9-13.1]
  - Caribbean: 0.4 [0.2-0.7]
  - Central America: 4.4 [2.9-6.2]
  - South America: 5.7 [4.0-8.1]
  - Oceania: 0.4 [0.2-0.7]
  - **UNICEF**
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    - East Asia and Pacific: 36.0 [24.0-51.4]
    - Latin America and Caribbean: 10.5 [7.9-13.1]
    - Caribbean: 0.4 [0.2-0.7]
    - Central America: 4.4 [2.9-6.2]
    - South America: 5.7 [4.0-8.1]
    - Oceania: 0.4 [0.2-0.7]
  - **WHO**
    - AFRO: 48.0 [43.7-52.3]
    - AMRO: 8.6 [4.4-16.0]
    - EMRO: 21.3 [15.5-28.2]
    - EURO: -
    - SEARO: 90.7 [83.6-97.8]
    - WPRO: 23.8 [18.4-28.8]
  - **World Bank Regions**
    - Low income: 35.2 [32.3-38.1]
    - Middle Income: 164.3 [148.1-180.0]
    - Lower-middle income: 131.0 [115.4-146.8]
    - Upper middle income: 33.4 [29.6-37.6]
    - High income: 2.2 [1.4-3.3]
  - **World Bank Regions**
    - East Asia and Pacific: 36.4 [28.7-44.1]
    - Europe and Central Asia: -
    - Latin America and Caribbean: 10.5 [7.9-13.1]
    - Middle East and North Africa: 8.5 [6.4-11.1]
    - North America: 0.6
    - South Asia: 89.2 [86.4-92.0]
    - Sub-Saharan Africa: 50.1 [46.3-54.0]

**Notes:**
- Complete data series for stunting and overweight (1990, 1995, 2000, 2010, 2011, 2012, 2013, 2014, 2015 and 2016) and the latest year for wasting (2016) estimates of prevalence and numbers affected can be found at the websites below for global as well as for the following country groupings: (i) United Nations regions and sub-regions; (ii) UNICEF; (iii) WHO; (iv) World Bank Income; (v) World Bank regions; (vi) SDG regions; and (vii) MDG regions. These websites also contain a file with the regional or income grouping compositions.

References:
- UNICEF <uni.cf/medashboard>
- WHO <www.who.int/nutgrowthdb/estimates>
- World Bank Group <data.worldbank.org/child-mainnutrition>

Strengths and weaknesses of malnutrition data
Prevalence estimates for stunting and overweight are relatively robust. It is therefore possible to track global and regional changes in these two conditions over time.

Wasting and severe wasting are acute conditions that can change frequently and rapidly. This makes it difficult to generate reliable trends over time, and as such, this report provides only most recent global and regional estimates.

The global and regional estimates presented here are based on data from national household surveys. These data are collected infrequently and measure malnutrition at one point in time (e.g. during several months of field work), making it difficult to capture the rapid fluctuations in wasting that can occur over the course of a given year. Incidence data (i.e. the number of new cases that occur during the calendar year) would allow for better tracking of changes over time; however, these data currently do not exist.

The analysis methods have remained unchanged from the 2012 report, except for some minor refinements detailed below:

1. Year assigned to each survey
When data collection begins in one calendar year and continues into the next, the survey year assigned is the one in which most of the fieldwork took place. For example, if a survey was conducted between 1 September 2009 and 28 February 2010, the year 2009 would be assigned, since the majority of data collection took place in that year (i.e., four months in 2009 versus two months in 2010). This method has been used since the 2013 edition (prior to that, the latter year was used by default – e.g., 2010 in the example above).

2. Final reports only
As of the 2014 edition, the dataset used to generate the global and regional estimates is based only on final survey results. Preliminary survey results are no longer included in the dataset due to situations where they were cancelled or significantly changed before release.

3. Updated data sources
i. The updated joint dataset includes:
- 806 nationally representative surveys;
- data from 150 countries and territories, representing more than 90 per cent of all children under 5 globally (population coverage varies by regions and periods). The majority of data available are from low- and middle-income countries – more efforts are needed to generate data from high-income countries.

ii. The under 5 population estimates were based on The United Nations World Population Prospects, 2015 Revision. These were used as weighting factors for each country survey to derive the regional and global prevalence estimates and calculate the numbers affected.

iii. Regional and country income classifications were based on FY17 World Bank income classification.

4. Footnotes on population coverage
As started in the 2014 edition, a separate exercise was conducted to assess population coverage. This was important in order to alert the reader, via footnotes, to instances where the data should be interpreted with caution due to low population coverage (defined as less than 50 per cent). A conservative method was applied looking at available data within mutually exclusive five-year periods around the projected years. Population coverage was calculated as:

\[
\text{Population coverage} = \frac{\text{the sum of country five-year average populations}}{\text{the total of country five-year average population for all countries in the region}}
\]

Population coverage for the most recent period, UN regions

<table>
<thead>
<tr>
<th>Region</th>
<th>Africa</th>
<th>Asia</th>
<th>Latin America and Caribbean</th>
<th>Oceania</th>
<th>Global</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of countries with recent* stunting data</td>
<td>36/54</td>
<td>28/48</td>
<td>10/36</td>
<td>1/16</td>
<td>77/197</td>
</tr>
<tr>
<td>Population coverage</td>
<td>72%</td>
<td>60%</td>
<td>37%</td>
<td>1%</td>
<td>55%</td>
</tr>
<tr>
<td>Number of countries with recent* overweight data</td>
<td>35/54</td>
<td>26/48</td>
<td>8/36</td>
<td>1/16</td>
<td>72/197</td>
</tr>
<tr>
<td>Population coverage</td>
<td>72%</td>
<td>25%</td>
<td>31%</td>
<td>1%</td>
<td>36%</td>
</tr>
</tbody>
</table>

Numbers for wasting are the same as for stunting and not presented.

NOTES ON THE DATA AND METHODOLOGY
This key findings report of the 2017 edition of the Joint Malnutrition Estimates summarizes the new numbers and main messages for official United Nations data on child malnutrition. The following materials can be downloaded at the links below for the three organizations:

- the latest country-level joint malnutrition dataset, a time series of all country estimates that were used to generate the global and regional estimates;
- the global and regional estimates database from 1990-2016 by various regional groupings (e.g. United Nations, UNICEF, WHO, etc., regional groupings);
- interactive dashboards, which allow users to visualize and export the global and regional estimates for a number of regional groupings including:
  - UNICEF <uni.cf/jmedashboard>
  - WHO <www.who.int/nutgrowthdb/estimates>
  - World Bank Group <data.worldbank.org/child-malnutrition>
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