Trends in the Distribution of Body Mass Index Among Women of Reproductive Age

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Presentation Overview

Describe distribution and trends in BMI among women of reproductive age in the United States

– Adult (20-49 y) and adolescents (12-19 y)
  • Definitions of weight status
  • National prevalence and trends
  • By age group
  • By race/ethnicity

– Summary
Data Source

• National Health and Nutrition Examination Survey (NHANES)
  – US civilian, non-institutionalized population
  – Height and weight measured
Classification* of adult underweight, overweight and obesity by BMI

<table>
<thead>
<tr>
<th>Obesity Class</th>
<th>BMI (kg/m²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Underweight</td>
<td>&lt;18.5</td>
</tr>
<tr>
<td>Normal</td>
<td>18.5 - 24.9</td>
</tr>
<tr>
<td>Overweight</td>
<td>25.0 - 29.9</td>
</tr>
<tr>
<td>Obesity</td>
<td>30.0 - 34.9</td>
</tr>
<tr>
<td>I</td>
<td></td>
</tr>
<tr>
<td>II</td>
<td>35.0 - 39.9</td>
</tr>
<tr>
<td>Extreme obesity</td>
<td>40+</td>
</tr>
</tbody>
</table>

*National Heart Lung and Blood Institute (NHLBI), 1998

Obesity defined as BMI $\geq 30$.


Obesity Prevalence (%)
Change in the distribution of BMI between 1988-94 and 2005-06 among U.S. women aged 20-49 years

<table>
<thead>
<tr>
<th>Percentile</th>
<th>BMI (kg/m²)</th>
<th>Percentile</th>
<th>BMI (kg/m²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10th</td>
<td>19.4</td>
<td>10th</td>
<td>20.3</td>
</tr>
<tr>
<td>25th</td>
<td>21.3</td>
<td>25th</td>
<td>22.7</td>
</tr>
<tr>
<td>50th</td>
<td>24.0</td>
<td>50th</td>
<td>26.1</td>
</tr>
<tr>
<td>75th</td>
<td>29.1</td>
<td>75th</td>
<td>32.8</td>
</tr>
<tr>
<td>90th</td>
<td>35.0</td>
<td>90th</td>
<td>38.7</td>
</tr>
</tbody>
</table>
Prevalence of underweight, overweight and obesity among U.S. women aged 20-49 y

Source: NHANES, unpublished analysis
Trends in obesity among U.S. women of reproductive age by age group, 1988-2006

Source: NHANES: unpublished analysis

Obesity defined as BMI ≥ 30.
Prevalence of overweight and obesity among U.S. women aged 20-49 years by age group, 2005-2006

Source: NHANES: unpublished analysis

Overweight defined as BMI= 25.0-29.9; Obesity defined as BMI≥30.

Obesity prevalence (%)

- NH black
- Mexican American
- NH white

Source: NHANES: unpublished analysis
Obesity defined as BMI≥30. NH=non-Hispanic.
Prevalence of overweight and obesity among U.S. women aged 20-49 years by race/ethnicity, 2005-2006

Source: NHANES: unpublished analysis
Overweight defined as BMI 25-29.9; Obesity defined as BMI ≥30. NH=non-Hispanic.
Prevalence of obesity among U.S. women aged 20-49 years by age and race/ethnicity, 2003-2006

Source: NHANES: unpublished analysis
Obesity defined as BMI ≥ 30. NH = non-Hispanic.
Prevalence of underweight among U.S. women aged 20-49 years by race/ethnicity, 2001-2006

Source: NHANES: unpublished analysis
Underweight defined as BMI<18.5. NH=non-Hispanic.
<table>
<thead>
<tr>
<th>Gender- and age-specific BMI percentile†</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Underweight</td>
<td>&lt;5&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td>Normal</td>
<td>5&lt;sup&gt;th&lt;/sup&gt; - &lt;85&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td>Overweight ‡</td>
<td>85&lt;sup&gt;th&lt;/sup&gt; - &lt;95&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td>Obesity ‡</td>
<td>≥95&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

*Adolescent defined as 12-19 years.
† Percentiles based on CDC growth charts.
‡ Overweight formerly known as at risk for overweight. Obesity formerly known as overweight.

Obesity Prevalence (%)

Note: Obesity is defined as BMI ≥ gender- and age-specific 95th percentile from the 2000 CDC Growth Charts.
Source: NHANES; Ogden et al JAMA 2002; Ogden et al JAMA 2006; Ogden et al JAMA 2008.
Prevalence of underweight, overweight and obesity among U.S. adolescent girls aged 12-19 y

Source: NHANES, unpublished analysis

Obesity defined as BMI ≥ 95th percentile. NH = non-Hispanic.
Prevalence of overweight and obesity among U.S. adolescent girls aged 12-19 years by race/ethnicity, 2003-2006

Source: NHANES: Ogden et al JAMA 2008
Overweight defined as BMI 85th-94th percentile; Obesity defined as BMI≥95th percentile. NH=non-Hispanic.

Source: NHANES: Ogden et al JAMA 2008
Obesity defined as BMI≥95th percentile. NH=non-Hispanic.
Prevalence of underweight among U.S. adolescent girls aged 12-19 years by race/ethnicity, 2001-2006

Source: NHANES: Unpublished data.
Underweight defined as BMI<5th percentile. NH=non-Hispanic.
Summary

- Underweight relatively stable
- Since 1980, obesity doubled among women, tripled among adolescent girls
- Obesity may be reaching a plateau
- Obesity higher among older populations
- Racial disparities among women and adolescent girls
Acknowledgements

- Cathleen Gillespie, Division of Nutrition, Physical Activity and Obesity