Review of latest obesity data

Obesity Review Group
Monday 28 January 2013
Obesity data sources

Child data
- **Health Survey for England**
  - Sample size ranges from 2,000 to 5,000 per year
- **National Child Measurement Programme**
  - Sample size >1 million 4-5 and 10-11 year olds per year
  (>90% participation rate)

Adult data
- **Health Survey for England**
  - Sample size approximately 8,000 per year (**approx 66% response rate**)
Child data
Prevalence of overweight and obesity among children aged 2-15 years

Health Survey for England 1995-2011

Child overweight including obese (excess weight): BMI ≥ 85th centile of the UK90 growth reference
Child obesity: BMI ≥ 95th centile of the UK90 growth reference
95% confidence intervals are displayed on the chart
Child prevalence by BMI status
National Child Measurement Programme 2011/12

Reception
(aged 4-5 years)
- Healthy Weight: 76.5%
- Overweight: 13.1%
- Obese: 9.5%
- Underweight: 0.9%

Year 6
(aged 10-11 years)
- Healthy Weight: 64.9%
- Overweight: 14.7%
- Obese: 19.2%
- Underweight: 1.3%

This analysis uses the 2nd, 85th and 95th centiles of the British 1990 growth reference (UK90) for BMI to classify children as underweight, healthy weight, overweight and obese. These thresholds are the most frequently used for population monitoring within England.
Prevalence of excess weight among children by school year and sex
National Child Measurement Programme 2006/07 – 2011/12

Year of measurement

<table>
<thead>
<tr>
<th>Year of measurement</th>
<th>Reception boys</th>
<th>Reception girls</th>
<th>Year 6 boys</th>
<th>Year 6 girls</th>
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</thead>
<tbody>
<tr>
<td>2006/07</td>
<td>24.3%</td>
<td>24.0%</td>
<td>33.2%</td>
<td>35.4%</td>
</tr>
<tr>
<td>2007/08</td>
<td>24.0%</td>
<td>23.9%</td>
<td>34.3%</td>
<td>35.1%</td>
</tr>
<tr>
<td>2008/09</td>
<td>23.5%</td>
<td>21.5%</td>
<td>34.5%</td>
<td>34.9%</td>
</tr>
<tr>
<td>2009/10</td>
<td></td>
<td>21.1%</td>
<td>34.9%</td>
<td></td>
</tr>
<tr>
<td>2010/11</td>
<td></td>
<td>21.8%</td>
<td>35.0%</td>
<td></td>
</tr>
<tr>
<td>2011/12</td>
<td></td>
<td>21.3%</td>
<td>35.4%</td>
<td></td>
</tr>
</tbody>
</table>

Child excess weight: BMI ≥ 85th centile of the UK90 growth reference
95% confidence intervals are displayed on the chart.
## Prevalence of obesity among children by school year and sex

**National Child Measurement Programme 2006/07 – 2011/12**

<table>
<thead>
<tr>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Reception boys</td>
<td>10.7%</td>
<td>10.4%</td>
<td>10.3%</td>
<td>10.1%</td>
<td>9.1%</td>
<td>9.0%</td>
</tr>
<tr>
<td>Reception girls</td>
<td>19.0%</td>
<td>18.8%</td>
<td>19.2%</td>
<td>20.0%</td>
<td>20.4%</td>
<td>20.7%</td>
</tr>
<tr>
<td>Year 6 boys</td>
<td>15.8%</td>
<td>16.6%</td>
<td>16.5%</td>
<td>17.0%</td>
<td>17.4%</td>
<td>17.7%</td>
</tr>
<tr>
<td>Year 6 girls</td>
<td>20.0%</td>
<td>20.0%</td>
<td>20.0%</td>
<td>20.0%</td>
<td>20.0%</td>
<td>20.0%</td>
</tr>
</tbody>
</table>

Child obesity: BMI ≥ 95th centile of the UK90 growth reference

95% confidence intervals are displayed on the chart.
Prevalence of severe obesity among children by school year and sex
National Child Measurement Programme 2006/07 – 2011/12

Year of measurement

<table>
<thead>
<tr>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Reception boys</td>
<td>2.7%</td>
<td>2.6%</td>
<td>2.6%</td>
<td>2.5%</td>
<td>2.5%</td>
<td>2.4%</td>
</tr>
<tr>
<td>Reception girls</td>
<td>2.0%</td>
<td>2.0%</td>
<td>1.9%</td>
<td>2.0%</td>
<td>1.9%</td>
<td>2.0%</td>
</tr>
<tr>
<td>Year 6 boys</td>
<td>3.6%</td>
<td>3.8%</td>
<td>3.8%</td>
<td>3.9%</td>
<td>4.0%</td>
<td>4.1%</td>
</tr>
<tr>
<td>Year 6 girls</td>
<td>2.5%</td>
<td>2.7%</td>
<td>2.7%</td>
<td>2.8%</td>
<td>2.9%</td>
<td>2.9%</td>
</tr>
</tbody>
</table>

Severe child obesity: BMI ≥ 99.6th centile of the UK90 growth reference
95% confidence intervals are displayed on the chart
Prevalence of obesity by deprivation decile, Reception children
National Child Measurement Programme 2006/07 to 2011/12

Child obesity: BMI ≥95th centile of the UK90 growth reference

Deprivation deciles assigned to the child area of residence using the Index of Multiple Deprivation 2010
95% confidence intervals are displayed on the chart
PREVALENCE OF OBESITY BY DEPRIVATION DECILE, YEAR 6 CHILDREN
NATIONAL CHILD MEASUREMENT PROGRAMME 2006/07 TO 2011/12

Child obesity: BMI ≥95th centile of the UK90 growth reference
Deprivation deciles assigned to the child area of residence using the Index of Multiple Deprivation 2010
95% confidence intervals are displayed on the chart
BMI distribution: Reception children
National Child Measurement Programme 2011/12

Girls
Boys
1990 baseline

BMI z score

2nd centile
85th centile
91st centile
95th centile
98th centile
BMI distribution: Year 6 children
National Child Measurement Programme 2011/12

- Girls
- Boys
- 1990 baseline

BMI z score

2nd centile
85th centile
91st centile
95th centile
98th centile
Prevalence of obesity among Reception children by ethnic group and sex
National Child Measurement Programme 2011/12

Child obesity: BMI ≥ 95th centile of the UK90 growth reference
95% confidence intervals are displayed on the chart
Prevalence of obesity among Year 6 children by ethnic group and sex
National Child Measurement Programme 2011/12

Child obesity: BMI ≥ 95th centile of the UK90 growth reference
95% confidence intervals are displayed on the chart
1. There is a consistent pattern between ethnic groups over time
   • Generally the ethnic groups with the highest prevalence remain high over time.

2. Very few ethnic groups are showing a consistent trend of change over time
   • White British boys in Reception are showing a decrease in obesity prevalence.
   • Girls in Year 6 from White British, Bangladeshi, Pakistani, and ‘Other Asian’ ethnic groups are showing an increase in obesity prevalence.
   • Boys in Year 6 from White British, and Black African are showing an increase in obesity prevalence.
   • There is no robust evidence for a change in obesity prevalence within any other ethnic group (using NCMP data).
Prevalence of obesity among Year 6 girls by ethnic group
National Child Measurement Programme 2006/07 to 2011/12

Child obesity: BMI ≥ 95th centile of the UK90 growth reference
95% confidence intervals are displayed on the chart
Prevalence of obesity among Reception children (old GOR)
National Child Measurement Programme 2006/07 to 2011/12

Child obesity: BMI ≥ 95th centile of the UK90 growth reference
95% confidence intervals are displayed on the chart
Prevalence of obesity among Year 6 children (old GOR)
National Child Measurement Programme 2006/07 to 2011/12

Obesity prevalence

25% 20% 15% 10% 5% 0%


ENGLAND
London
North East
West Midlands
North West
Yorkshire and The Humber
East Midlands
East of England
South West
South East

Child obesity: BMI ≥ 95th centile of the UK90 growth reference
95% confidence intervals are displayed on the chart
Prevalence of obesity by local authority
National Child Measurement Programme 2011/12

Prevalence of obesity among Year 6 children (aged 10-11 years)

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Child obesity: BMI ≥ 95th centile of the UK90 growth reference
Prevalence of obesity by Middle Super Output Area

National Child Measurement Programme

*Prevalence of obesity among Year 6 children (aged 10-11 years)*

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Child obesity: BMI ≥ 95th centile of the UK90 growth reference
Adult data
Prevalence of excess weight among adults aged 16+ years
Health Survey for England 1993-2011 (3-year average)

Adult (aged 16+) overweight including obese (excess weight): BMI ≥ 25kg/m²
Prevalence of obesity among adults aged 16+ years

Health Survey for England 1993-2011 (3-year average)

Prevalence of obesity: BMI ≥ 30kg/m²

Adult (aged 16+) obesity: BMI ≥ 30kg/m²
Prevalence of obesity class III among adults aged 16+ years

Health Survey for England 1993-2011 (3-year average)

- Women: 4.0%
- Men: 0.0%

Adult (aged 16+) obesity III: BMI ≥ 40kg/m²
Adult prevalence by BMI status
Health Survey for England (2009-2011 average)

Men
- Obese: 24.0%
- Healthy weight: 32.2%
- Overweight: 42.2%
- Underweight: 1.6%

Women
- Obese: 25.3%
- Healthy weight: 40.2%
- Overweight: 32.3%
- Underweight: 2.2%

Adult (aged 16+) BMI thresholds
Underweight: <18.5kg/m²
Healthy weight: 18.5 to <25kg/m²
Overweight: 25 to <30kg/m²
Obese: ≥30kg/m²
Change in the adult BMI distribution
Health Survey for England 1991-1993 and 2008-2010 (population weighted)

Underweight
<18.5kg/m²
Men
1991-93: 0.7%
2008-10: 0.7%
Women
1991-93: 1.3%
2008-10: 1.2%

Healthy weight
18.5 to <25kg/m²
Men
1991-93: 37.8%
2008-10: 27.0%
Women
1991-93: 47.6%
2008-10: 36.8%

Overweight
25 to <30kg/m²
Men
1991-93: 46.7%
2008-10: 44.7%
Women
1991-93: 33.3%
2008-10: 34.4%

Obese
30 to <40kg/m²
Men
1991-93: 14.6%
2008-10: 26.1%
Women
1991-93: 16.4%
2008-10: 24.0%

Morbidly obese
≥40kg/m²
Men
1991-93: 0.3%
2008-10: 1.5%
Women
1991-93: 1.4%
2008-10: 3.5%

BMI (kg/m²)
Levels of obesity in men differ by age group, as do the trends we are seeing for each group.

Adult obesity: BMI ≥ 30kg/m²
Trend in obesity prevalence for adult females by age group

Health Survey for England 1993-2011

Obesity prevalence (%)

- Women over 35 years old

Year of measurement

Obesity prevalence (%)

- 75+
- 65-74
- 55-64
- 45-54
- 35-44
- 25-34
- 16-24

This is true for women as well.

Adult obesity: BMI ≥ 30kg/m²
Adult obesity prevalence by highest level of education

Health Survey for England 2006-2010

The chart shows 95% confidence limits

Adult (aged 16+) obesity: BMI ≥ 30kg/m²
Adult obesity prevalence by ethnic group
Age standardised
Health Survey for England 2006-2010

The chart shows 95% confidence limits
Adult (aged 16+) obesity: BMI ≥ 30kg/m²
Raised waist circumference among adults by age

Health Survey for England 2009-2011

Prevalence of raised waist circumference

Adults aged 16+ years

Raised waist circumference defined as >102cm for men and >88cm for women
Trend in raised waist circumference among adults
Health Survey for England, 1993 - 2011

Adults aged 16+ years
Raised waist circumference defined as >102cm for men and >88cm for women
Summary of key messages

• On-going high levels of obesity and excess weight in children and adults (including high levels of obesity in older adults)

• Obesity prevalence doubles in children between the beginning and the end of primary school

• A strong and increasing gradient in obesity prevalence against deprivation for children (especially in Year 6)

• Rising levels of severe obesity in older children (approx 17,400 Year 6 children in 2011/12)

• Around one million adults are morbidly obese (two-thirds of them women)

• Large differences in obesity prevalence between ethnic groups for children and adults