

# 3. Overweight and obesity

Overweight and obesity increase the risk of CHD. As well as being an independent risk factor, obesity is also a major risk factor for high blood pressure, raised blood cholesterol, diabetes and impaired glucose tolerance<sup>1</sup>.

The adverse effects of excess weight are more pronounced when fat is concentrated in the abdomen. This is known as central or abdominal obesity and is assessed using the waist to hip ratio<sup>2</sup>.

The World Health Organization's World Health Report 2002 estimated that over 7% of all disease burden in developed countries was caused by raised body mass index (BMI), and that around a third of CHD and ischaemic stroke and almost 60% of hypertensive disease in developed countries was due to overweight<sup>3</sup>.

More recently the INTERHEART case-control study estimated that 63% of heart attacks in Western Europe and 28% of heart attacks in Central and Eastern Europe were due to abdominal obesity (a high waist to hip ratio), and those with abdominal obesity were at over twice the risk of a heart attack compared to those without<sup>4</sup>. This study also found that abdominal obesity was a much more significant risk factor for heart attack than BMI.

## *Public health targets*

In 2004 in England an obesity target for children was introduced to halt the year-on-year rise in obesity in children under 11 by 2010. A more general statement has been made that increasing rates of obesity in the population should be addressed (Table 3.1). There are currently no targets for overweight and obesity in Scotland, Wales or Northern Ireland.

## *Overall prevalence*

Data from recent Health Surveys showed that the rate of overweight (a BMI of 25–30 kg/m<sup>2</sup>) is similar for men (44%) and women (35%) in England, Scotland (43% and 34%) and Wales (42% and 31%).

Obesity rates (a BMI of more than 30 kg/m<sup>2</sup>) were similar for men and women in England (23% and 24%) and Scotland (22% and 26%) but lower in Wales (17% and 18%) (Table 3.2 and Figures 3.2a and 3.2b).

In England, around a third of men (33%) and women (30%) had an elevated waist to hip ratio indicating abdominal obesity. The proportion of Scottish men (29%) with abdominal obesity was similar to that in England although the rate was higher among Scottish women (37%) (Table 3.3).

## *Sex and age differences*

The prevalence of overweight and obesity increased with age. In England about 31% of men and 38% of women aged 16–24 were overweight or obese while 78% of men and 70% of women aged 55–64 were overweight or obese (Table 3.2 and Figures 3.2a and 3.2b). The pattern was similar for Scottish men (31%) and women (39%) aged 16–24 and for men (80%) and women (73%) aged 55–64. Compared to the rest of the UK, the prevalence of overweight and obesity in Wales was lower among men (29%) and women (26%) in the 16–24 age group, and men (68%) and women (61%) in the 55–64 age group.

The prevalence of abdominal obesity also increased with age, especially in men. About 4% of English men, 11% of English women, 3% of Scottish men and 20% of Scottish women aged 16–24 had abdominal obesity compared with 57% of English men, 45% of English women, 46% of Scottish men and 51% of Scottish women aged 65–74 (Table 3.3).

## *Children and young people*

The classification of overweight and obesity in children and adolescents is more problematic than in adults. Constant changes in body composition during growth mean that the relationship between BMI and adiposity during childhood is age-dependent, and further complicated by race and gender. There is no clear agreement on the best way to define overweight and obesity in children. The International Obesity Taskforce (IOTF) has developed a new international classification based on age and sex-specific BMI cut-off points. UK data is also reported using the National BMI percentile classification where children are classified as overweight or obese using the 85th and 95th percentiles as cut points. These two methods of classification result in different estimates of childhood overweight and obesity<sup>5</sup>.

Using the IOTF classification, a third of boys (33%) and more than a third of girls (35%) in England aged 2–15 years were either overweight or obese. In Scotland more than a third of boys (35%) and 30% of girls were overweight or obese (Table 3.4).

## *Temporal trends*

Overweight and obesity are increasing rapidly. In England, the percentage of adults aged 16–64 who were obese has increased by over 50% in the last decade (Table 3.5 and Figure 3.5). This increase in obesity was particularly marked in men among whom rates have tripled since the mid-1980s, with men now as likely to be obese as women. Between 1995 and 2003 in Scotland the rate of obesity increased by 50% in men and increased by more than 40% in women.

High levels of overweight and obesity among children are likely to exacerbate the trend towards overweight and obesity in the adult population, since compared to thin children, obese children have a high risk of becoming overweight adults<sup>7</sup>. Between 1995 and 2004 the prevalence of obesity almost doubled among English boys (from 11% to 19%) and increased by over a half in girls (from 12% to 19%) (Table 3.6a). Between 1998 and 2003 obesity in Scottish boys increased from 14% to 18% while obesity among girls remained steady at 14% (Table 3.6b).

## *Socio-economic differences*

Obesity is more common in adults employed in manual occupations, particularly in women. In England 33% of women working in semi routine and routine occupations had a BMI of more

than 30 kg/m<sup>2</sup> compared to less than 21% of those employed in a managerial and professional role (Table 3.7). In Scotland 36% of women working in semi routine and routine occupations had a BMI of more than 30 kg/m<sup>2</sup> compared to less than 23% of those employed in a managerial and professional role.

### *Ethnic differences*

Levels of general and abdominal obesity varied with ethnicity in both men and women in England. Compared with the general population, levels of obesity were much lower in Black African, Indian, Pakistani, and, most markedly, Bangladeshi and Chinese men, who were around four times less likely to be obese than men in the general population (Table 3.8 and Figure 3.8). Black Caribbean and Irish men had similar levels of obesity to the general population. Despite low levels of general obesity, Pakistani, Indian and Bangladeshi men had similar levels of raised waist to hip ratio compared to the general population. Black Caribbean, Black African and Chinese men were less likely to have a raised waist to hip ratio (Table 3.9).

Among women, obesity prevalence was high for Black Caribbean, Black African and Pakistani women and low for Chinese women (Table 3.8 and Figure 3.8). Again the pattern was different for levels of central obesity. Black Caribbean, Pakistani, and Irish women all had levels of central obesity above that of the general female population, while Bangladeshi women were much more likely to have a raised waist to hip ratio as women in the general population (Table 3.9).

### *International differences*

Data from the WHO SuRF Report 2 showed that the prevalence of overweight and obesity in the UK was among the highest in Europe. Worldwide prevalence of overweight and obesity in the UK was in the highest quintile for men and the second highest for women (Table 3.10 and Figures 3.10a and 3.10b).

In 2006, the International Obesity TaskForce collated data on overweight and obesity in children worldwide. Caution should be used in interpreting these data as the studies used different age groups and different definitions of overweight and obesity. For boys, the countries with overweight (including obesity) levels of 30% or more were Canada (33%), Mexico (32.3%), Kuwait (30%), Malta (32.7%), Spain (31%) and New Zealand (30%). For girls they were Mexico (31.1%), Bahrain (38.5%), Kuwait (31.8%), Malta (38.5%), Portugal (34.3%) and New Zealand (30%). Ethiopia, Mali, Senegal and Nepal had very low levels of under 0.1% for both boys and girls (Table 3.11).

### *Hospital visits*

In England, Hospital Episode Statistics (HES) showed that the number of hospital admissions where obesity was given as the primary diagnosis rose from just under 1,100 in 1999/00 to over 2,200 in 2004/05<sup>8</sup>. The percentage of admissions with obesity as the main cause doubled during this time and accounted for between 1 and 2 of every 10,000 admissions (Table 3.14).

### *Economic costs*

Between 1998 and 2004 there has been a 17-fold increase in the drugs used to treat obesity (Table 3.19). Annual expenditure on drugs used to treat obesity was more than £30 million in 2004 (Figure 3.19).

Diseases attributable in some part to overweight and obesity include ischaemic heart disease, stroke, diabetes mellitus and some cancers. It is estimated that over three billion pounds of direct costs to the National Health Service could be avoided each year if all members of the population were at a healthy weight (Table ref).

1. World Health Organization (2000) *Obesity – preventing and managing the global epidemic. Report of a WHO Consultation on Obesity*. World Health Organization: Geneva.
2. *Abdominal obesity is commonly defined as a waist to hip ratio above 0.95 in men and above 0.85 in women.*
3. World Health Organization (2002) *The World Health Report 2002. Reducing Risks, Promoting Healthy Life*. World Health Organization: Geneva. *The WHO uses a different definition of overweight for these calculations than is presented in the rest of this document. Please see the source for further details.*
4. Yusuf S, Hawken S, Ounpuu S, Dans T, Avezum A, Lanas F, McQueen M, Budaj A, Pais P, Varigo J, Lisheng A, on behalf of the INTERHEART Study Investigators (2004) *Effect of potentially modifiable risk factors associated with myocardial infarction in 52 countries (the INTERHEART Study): case-control study*. *The Lancet*; 364: 937–952.
5. *For details of the International classification system see chapter nine of Department of Health (2003) Health Survey for England 2002. The Stationery Office: London. Because of differences in definition and measurement, direct comparison of adult (Table 3.2) and childhood (Table 3.4) tables in this chapter is inappropriate.*
6. *This finding should be viewed with caution since it has been suggested that the International classification may exaggerate sex differences by under-estimating prevalence for boys. Overweight and obesity estimates derived using the alternative National BMI percentiles classification showed no marked sex differences.*
7. Serdula M, Ivery D, Coates R, Freedman D, Williamson D and Byers T (1993) *Do obese children become obese adults? A review of the literature*. *Prev Med* 22:167–177.
8. Department of Health (2006) *Hospital Episode Statistics*. NHS Health and Social Care Information Centre.

**Table 3.1** *Obesity targets for the United Kingdom*

<b>ENGLAND<sup>1</sup></b>	
Children	To halt the year-on-year rise in obesity among children under 11 by 2010 in the context of a broader strategy to tackle obesity in the population as a whole
<b>SCOTLAND</b>	No target set
<b>WALES</b>	No target set
<b>NORTHERN IRELAND</b>	No target set

1. Department of Health (2004) National Standards, Local Action: Health and Social Care Standards and Planning Framework 2005/06 and 2007/08. DH: London. PSA Target 3. [www.dh.gov.uk/PublicationsAndStatistics/Publications/PublicationsPolicyAndGuidance/PublicationsPAmpGBrowsableDocument/fs/en?CONTENT\\_ID=4096173&chk=V8WLUg](http://www.dh.gov.uk/PublicationsAndStatistics/Publications/PublicationsPolicyAndGuidance/PublicationsPAmpGBrowsableDocument/fs/en?CONTENT_ID=4096173&chk=V8WLUg)

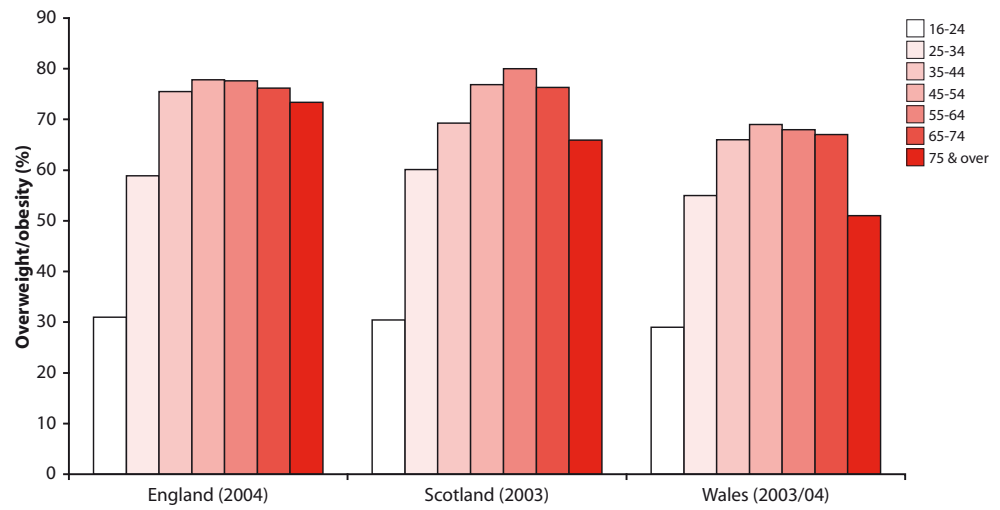
**Table 3.2** *Body mass index by sex and age, England, Scotland and Wales, latest available year*

ENGLAND 2004	All ages	16-24	25-34	35-44	45-54	55-64	65-74	75 & over
<b>MEN</b>	%	%	%	%	%	%	%	%
<b>BMI (kg/m<sup>2</sup>)</b>								
20 or under	5	20	4	2	1	1	2	3
Over 20-25	29	49	37	22	22	22	22	24
Over 25-30	44	23	41	50	48	48	48	54
Over 30-40	22	7	18	25	28	28	27	19
Over 40	1	1	0	0	2	2	1	0
<i>All over 30 (obese)</i>	23	8	18	25	30	30	28	19
<i>Weighted base</i>	39,244	5,920	6,806	8,110	6,584	5,651	3,912	2,260
<i>Unweighted base</i>	2,444	255	388	478	390	424	319	190
<b>WOMEN</b>								
<b>BMI (kg/m<sup>2</sup>)</b>								
20 or under	6	17	9	6	4	2	3	4
Over 20-25	36	46	43	41	34	29	28	30
Over 25-30	35	25	31	30	36	37	40	46
Over 30-40	21	11	16	21	23	30	24	20
Over 40	3	2	2	3	3	3	4	0
<i>All over 30 (obese)</i>	24	12	18	24	26	32	28	20
<i>Weighted base</i>	39,803	5,345	6,513	7,984	6,493	6,023	4,172	3,273
<i>Unweighted base</i>	3,135	294	453	649	527	538	393	281
<b>SCOTLAND 2003</b>	All ages	16-24	25-34	35-44	45-54	55-64	65-74	75+
<b>MEN</b>	%	%	%	%	%	%	%	%
<b>BMI (kg/m<sup>2</sup>)</b>								
18.5 or under	2	8	1	1	1	1	1	1
Over 18.5-25	33	62	39	30	22	19	22	33
Over 25-30	43	23	44	45	49	47	49	48
Over 30-40	21	7	16	22	24	31	26	17
Over 40	2	1	1	2	3	2	1	1
<i>All over 30 (obese)</i>	22	8	16	24	28	33	27	18
<i>Weighted base</i>	3,217	495	505	647	563	492	335	180
<i>Unweighted base</i>	3,016	286	380	629	523	550	421	227
<b>WOMEN</b>								
<b>BMI (kg/m<sup>2</sup>)</b>								
18.5 or under	2	5	2	1	2	0	0	3
Over 18.5-25	38	56	48	41	34	27	26	33
Over 25-30	34	26	29	32	38	41	34	37
Over 30-40	23	12	18	21	22	27	37	26
Over 40	3	1	2	5	5	5	4	0
<i>All over 30 (obese)</i>	26	13	21	26	26	32	41	27
<i>Weighted base</i>	3,458	473	533	687	574	510	385	297
<i>Unweighted base</i>	3,684	336	486	752	666	668	459	317
<b>WALES 2003/04</b>	All ages	16-24	25-34	35-44	45-54	55-64	65-74	75+
<b>MEN</b>	%	%	%	%	%	%	%	%
<b>BMI (kg/m<sup>2</sup>)</b>								
Less than 18.5	2	7	2	1	1	0	2	2
18.5 to under 25	39	64	43	33	31	31	32	47
25 to under 30	42	22	39	45	46	48	49	42
<i>All 30 plus (obese)</i>	17	7	16	21	23	20	18	9
<i>Unweighted base</i>	7,201	826	923	1,303	1,264	1,293	957	635
<b>WOMEN</b>								
<b>BMI (kg/m<sup>2</sup>)</b>								
Less than 18.5	3	10	3	2	1	1	2	5
18.5 to under 25	48	64	54	50	42	37	38	51
25 to under 30	31	19	26	29	34	38	37	31
<i>All 30 plus (obese)</i>	18	7	16	19	23	24	23	13
<i>Unweighted base</i>	8,243	903	1,120	1,499	1,401	1,369	1,041	910

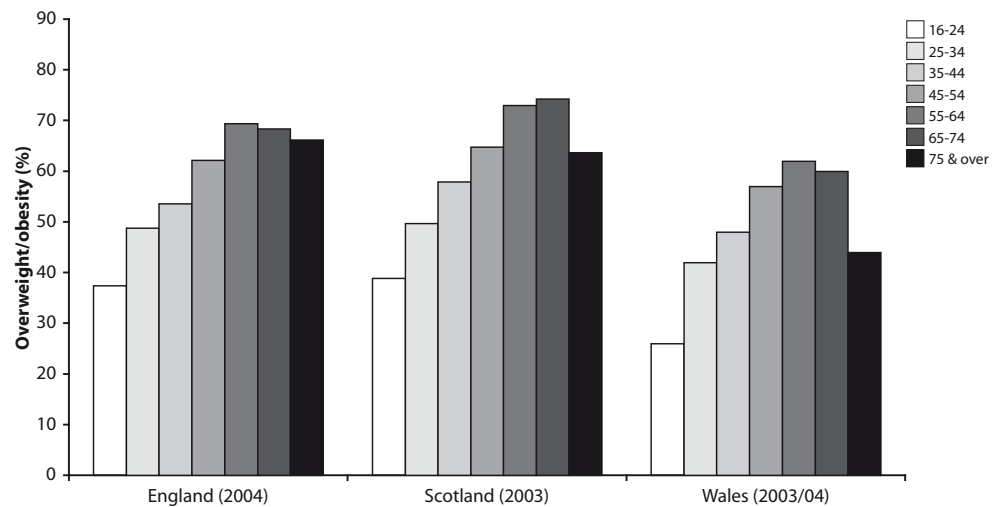
Notes: Adults aged 16 and above with a valid height and weight measurement.  
 English data are weighted for non-response.  
 Welsh data is self-reported height and weight.  
 The categories of BMI vary by country.

Sources: Department of Health (2005) Health Survey for England 2004. See <http://www.ic.nhs.uk/pubs/hlthsvyeng2004upd>  
 The Scottish Executive (2005) The Scottish Health Survey 2003. The Stationery Office, Edinburgh.  
 National Assembly for Wales (2005) Welsh Health Survey 2003/04.  
<http://www.wales.gov.uk/keypubstatisticsforwales/content/publication/health/2005/hs2003-04/hs2003-04.htm>

**Fig 3.2a** *Prevalence of overweight and obesity by age, men, latest available year, England, Scotland and Wales*



**Fig 3.2b** *Prevalence of overweight and obesity by age, women, latest available year, England, Scotland and Wales*



**Table 3.3** *Prevalence of a raised waist to hip ratio by sex and age, 2003, England and Scotland*

	All ages	16-24	25-34	35-44	45-54	55-64	65-74	75 & over
	%	%	%	%	%	%	%	%
<b>ENGLAND</b>								
<b>MEN</b>	33	4	14	32	41	54	57	51
<i>Base</i>	5,397	771	969	1,074	891	779	551	363
<b>WOMEN</b>	30	11	18	26	28	42	45	54
<i>Base</i>	5,554	752	891	1,044	895	809	606	556
<b>SCOTLAND</b>								
	All ages	16-24	25-34	35-44	45-54	55-64	65-74	75 & over
	%	%	%	%	%	%	%	%
<b>MEN</b>	29	3	16	26	35	45	46	43
<i>Weighted base</i>	2,532	370	405	506	442	377	269	165
<i>Unweighted base</i>	2,356	175	274	459	413	44	361	230
<b>WOMEN</b>	37	20	26	34	38	44	51	53
<i>Weighted base</i>	2,679	347	401	512	430	388	311	290
<i>Unweighted base</i>	2,850	204	343	567	521	544	381	290

*Notes:* Raised waist-hip ratio for men is defined as 0.95 and over and for women is 0.85 and over.

*Sources:* Department of Health (2004) Health Survey for England 2003.

See [www.dh.gov.uk/PublicationsAndStatistics/PublishedSurvey/HealthSurveyForEngland/fs/en](http://www.dh.gov.uk/PublicationsAndStatistics/PublishedSurvey/HealthSurveyForEngland/fs/en)

The Scottish Executive (2005) The Scottish Health Survey 2003. The Stationery Office: Edinburgh.

**Table 3.4** *Prevalence of overweight and obesity in children by sex and age, latest available year, England and Scotland*

	AGE					
	2-15 years %	2-4 %	5-7 %	8-10 %	11-12 %	13-15 %
<b>ENGLAND 2004</b>						
<b>BOYS</b>						
Overweight	14			15		13
Obese	19			16		24
<b>Total overweight and obese</b>	<b>33</b>			<b>31</b>		<b>37</b>
<i>Base</i>	8,833			5,368		3,466
<b>GIRLS</b>						
Overweight	17			15		19
Obese	19			13		27
<b>Total overweight and obese</b>	<b>35</b>			<b>28</b>		<b>46</b>
<i>Base</i>	8,228			4,901		3,328
<b>SCOTLAND 2003</b>						
<b>BOYS</b>						
Overweight	17	15	21	14	20	14
Obese	18	10	17	20	22	20
<b>Total overweight and obese</b>	<b>35</b>	<b>24</b>	<b>39</b>	<b>34</b>	<b>42</b>	<b>34</b>
<i>Weighted base</i>	1,249	220	260	274	212	284
<i>Unweighted base</i>	1,215	238	263	256	184	274
<b>GIRLS</b>						
Overweight	16	17	14	14	14	22
Obese	14	10	16	16	14	13
<b>Total overweight and obese</b>	<b>30</b>	<b>27</b>	<b>29</b>	<b>30</b>	<b>28</b>	<b>35</b>
<i>Weighted base</i>	1,191	209	280	245	204	254
<i>Unweighted base</i>	1,223	219	286	253	203	262

*Notes:* English and Scottish children were defined as overweight or obese using the International classification age and sex-specific BMI percentile cut-points. See sources for details.

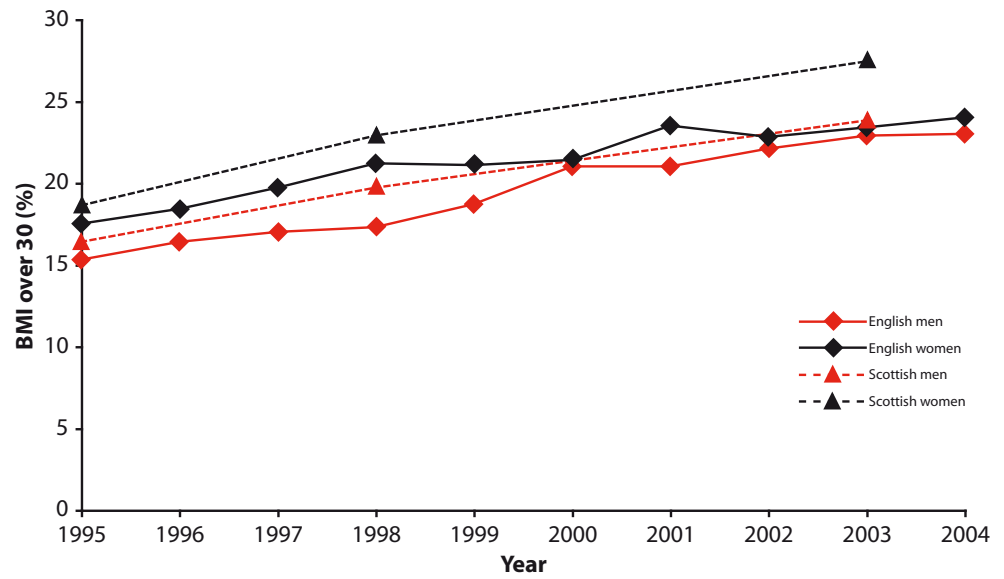
*Sources:* Department of Health (2005) *Health Survey for England 2004*. The Stationery Office: London.  
The Scottish Executive (2005) *The Scottish Health Survey 2003*. The Stationery Office: Edinburgh.

**Table 3.5 Prevalence of overweight and obesity by sex, adults aged 16-64 years, 1986/87-2004, England, and 1995-2003, Scotland**

Body mass index (kg/m <sup>2</sup> )	1986/87	1991/92	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
	%	%	%	%	%	%	%	%	%	%	%	%	%	%
<b>ENGLAND</b>														
<b>MEN</b>														
20 or less	6	6	5	5	4	4	4	4	5	5	4	5	4	5
Over 20-25	49	41	38	37	36	35	34	34	33	30	28	30	29	29
Over 25-30	38	40	44	44	44	45	45	46	44	45	47	43	44	44
More than 30	7	13	13	14	15	16	17	17	19	21	21	22	23	23
Base	<i>n/a</i>	<i>n/a</i>	7,247	6,795	6,707	6,997	3,635	6,600	3,204	3,260	6,267	2,969	5,966	2,444
<b>WOMEN</b>														
20 or less	11	9	7	7	7	7	7	7	7	6	6	6	6	6
Over 20-25	53	50	44	44	43	41	40	40	39	39	38	37	37	36
Over 25-30	24	26	32	31	33	34	33	32	33	34	33	34	33	35
More than 30	12	15	16	17	18	18	20	21	21	21	24	23	23	24
Base	<i>n/a</i>	<i>n/a</i>	8,037	7,884	7,729	8,064	4,254	7,730	3,699	3,703	7,414	3,509	7,090	3,135
<b>Body mass index (kg/m<sup>2</sup>)</b>														
<b>SCOTLAND</b>														
<b>MEN</b>														
Over 25-30					56			61					64	
More than 30					16			20					24	
Weighted base					3,672			3,673					2,702	
Unweighted base					33			3,110					2,368	
<b>WOMEN</b>														
Over 25-30					47			52					57	
More than 30					19			23					27	
Weighted base					3,632			3,572					2,776	
Unweighted base					4,005			3,783					2,908	

Sources: Department of Health (2005) Health Survey for England 2004, and previous surveys. See <http://www.ic.nhs.uk/pubs/hls/hlsyeng2004upd>  
 Earlier figures, Central Health Monitoring Unit, Department of Health, personal communication.  
 The Scottish Executive (2005) The Scottish Health Survey 2003. The Stationery Office, Edinburgh, and previous surveys.

Fig 3.5 *Prevalence of obesity by sex, adults aged 16-64 years, 1995-2004, England and Scotland*



*Table 3.6a Prevalence of overweight and obesity in children by sex and age, 1995 - 2004, England*

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
	%	%	%	%	%	%	%	%	%	%
<b>BOYS</b>										
Aged 2-10										
Overweight	13	14	13	15	14	14	16	13	15	15
Obese	10	11	11	11	16	12	14	15	15	16
Overweight including obese	22	25	24	26	30	26	29	29	30	30
Aged 11-15										
Overweight	13	15	13	15	15	10	14	14	14	13
Obese	14	14	16	16	17	19	19	20	20	24
Overweight including obese	27	29	28	31	32	29	33	34	35	37
<b>All (aged 2-15)</b>										
Overweight	13	14	13	15	14	12	15	14	15	14
Obese	11	12	13	13	16	14	15	17	17	19
Overweight including obese	24	26	26	28	31	27	31	31	32	33
<b>Weighted base</b>	1,918	2,132	3,063	1,981	977	877	1,653	3,745	1,452	8,833
<b>GIRLS</b>										
Aged 2-10										
Overweight	13	11	12	12	13	12	14	13	13	15
Obese	10	10	11	12	13	12	13	16	12	13
Overweight including obese	23	21	23	24	26	23	27	29	26	28
Aged 11-15										
Overweight	14	14	15	16	14	14	18	15	16	19
Obese	15	15	16	17	15	18	18	19	22	27
Overweight including obese	29	29	32	33	29	33	35	34	38	46
<b>All (aged 2-15)</b>										
Overweight	13	12	13	14	14	13	15	14	15	17
Obese	12	12	12	14	14	14	14	17	16	18
Overweight including obese	25	24	26	27	27	27	30	31	31	35
<b>Weighted base</b>	1,901	2,014	3,069	1,872	950	841	1,699	3,636	1,393	8,228

Notes: Children were defined as overweight or obese using the 85th and 95th percentiles of the UK reference curves (known as the National BMI percentile classification). See source for details. From 2003 data were also weighted for non response. Data weighted for child selection only are provided for consistency with previous years.

Source: Department of Health (2005) Health Survey for England 2004, and previous surveys. See <http://www.ic.nhs.uk/pubs/hsechildobesityupdate/excelsheets/file>

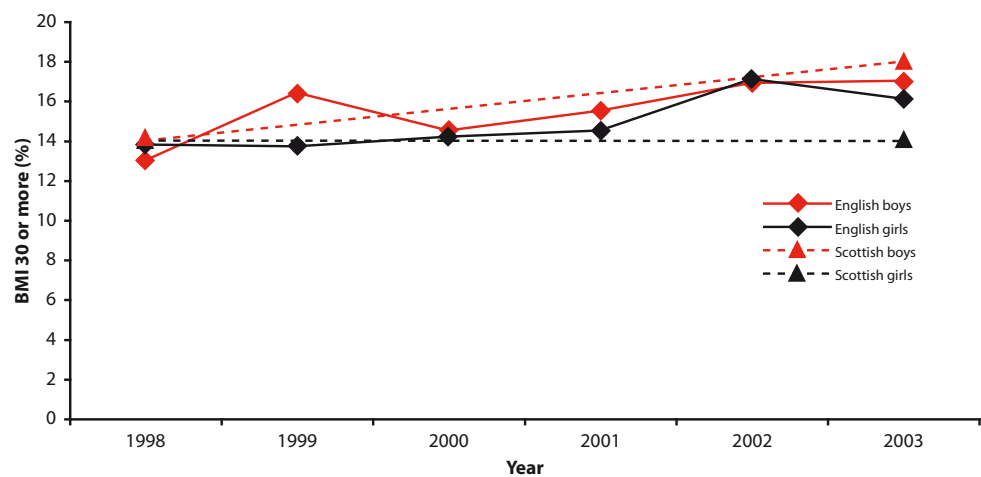
**Table 3.6b** Prevalence of overweight and obesity in children by sex and age, 1998 and 2003, Scotland

	1998	2003		1998	2003
BOYS	%	%	GIRLS	%	%
<b>Aged 2-6</b>			<b>Aged 2-6</b>		
Overweight	16	19	Overweight	14	16
Obese	12	13	Obese	14	12
Overweight including obese	28	32	Overweight including obese	27	28
<b>Aged 7-11</b>			<b>Aged 7-11</b>		
Overweight	14	15	Overweight	16	15
Obese	15	20	Obese	14	15
Overweight including obese	29	35	Overweight including obese	30	30
<b>Aged 12-15</b>			<b>Aged 12-15</b>		
Overweight	13	16	Overweight	16	18
Obese	16	21	Obese	15	15
Overweight including obese	29	37	Overweight including obese	31	33
<b>All (aged 2-15)</b>			<b>All (aged 2-15)</b>		
Overweight	14	17	Overweight	15	16
Obese	14	18	Obese	14	14
Overweight including obese	29	35	Overweight including obese	29	30
Weighted base	988	1,249	Weighted base	932	1,191
Unweighted base	1,788	1,215	Unweighted base	1,706	1,223

Notes: Children were defined as overweight or obese using the 85th and 95th percentiles of the UK reference curves (known as the National BMI percentile classification). For details and base for each age group, see source.

Source: The Scottish Executive (2005) The Scottish Health Survey 2003. The Stationery Office, Edinburgh.

**Fig 3.6** Prevalence of obese children aged 2-15 years, 1998 to 2003, England and Scotland



*Table 3.7 Prevalence of overweight and obesity by sex and socio-economic classification, 2003, England and Scotland, 2003/04, Wales*

Body mass index (kg/m <sup>2</sup> )	NS-SEC of household reference person				
	Managerial & professional	Intermediate	Small employers & own account workers	Lower supervisory & technical	Semi-routine & routine
%	%	%	%	%	%
<b>ENGLAND 2003</b>					
<b>MEN</b>					
25-30 (overweight)	43	43	38	39	39
Over 30 (obese)	21	20	27	24	23
<i>Base</i>	2,706	459	754	879	1,615
<b>WOMEN</b>					
25-30 (overweight)	28	29	35	29	28
Over 30 (obese)	21	21	22	32	33
<i>Base</i>	2,540	612	671	758	1,815
<b>SCOTLAND 2003</b>					
<b>MEN</b>					
25-30 (overweight)	45	41	45	39	38
Over 30 (obese)	21	27	27	28	24
<i>Weighted base</i>	1,227	215	300	445	973
<i>Unweighted base</i>	1,140	182	318	429	898
<b>WOMEN</b>					
25-30 (overweight)	35	29	23	29	28
Over 30 (obese)	23	33	27	32	36
<i>Weighted base</i>	1,248	315	285	391	1,125
<i>Unweighted base</i>	1,307	326	327	416	1,210
<b>WALES 2003/04</b>					
<b>ALL</b>					
Over 25 (overweight & obese)	53	52	55	56	56
<i>Unweighted base</i>	5,332	1,182	1,791	2,352	4,510

Notes: Adults aged 16 and over  
Age-standardised percentages: see source for method of age-standardisation

Sources: Department of Health (2005) Health Survey for England 2004. See <http://www.ic.nhs.uk/pubs/hlthsvyeng2004upd>  
The Scottish Executive (2005) The Scottish Health Survey 2003. The Stationery Office: Edinburgh.  
National Assembly for Wales (2005) Welsh Health Survey 2003/04.  
<http://www.wales.gov.uk/keypubstatisticsforwales/content/publication/health/2005/hs2003-04/hs2003-04.htm>

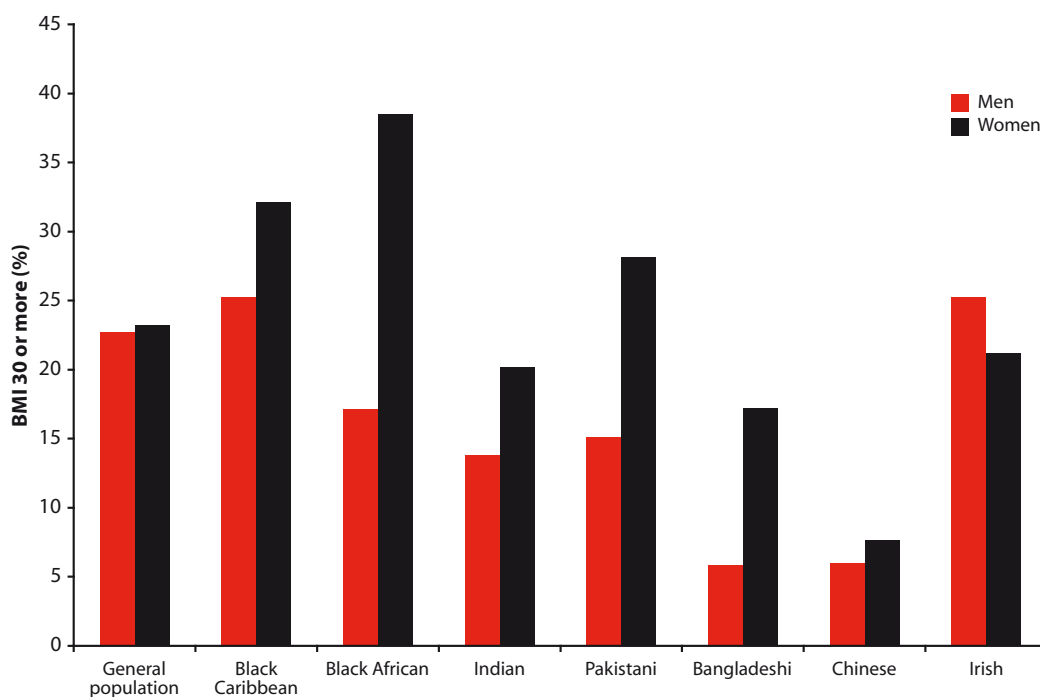
**Table 3.8** *Prevalence of obesity by sex and ethnic group, 2004, England*

	General population	Black Caribbean	Black African	Indian	Pakistani	Bangladeshi	Chinese	Irish
	%	%	%	%	%	%	%	%
<b>MEN</b>	23	25	17	14	15	6	6	25
<i>Unweighted base</i>	2,444	317	297	482	346	330	307	420
<b>WOMEN</b>	23	32	39	20	28	17	8	21
<i>Unweighted base</i>	3,135	459	332	546	391	353	308	555

*Notes:* Adults aged 16 and over.  
Obesity is defined as a BMI of over 30; age-standardised percentages; see source for method of age-standardisation.

*Source:* Department of Health (2005) Health Survey for England 2004. See <http://www.ic.nhs.uk/pubs/blthsveyeng2004upd>

**Fig 3.8** *Prevalence of obesity by sex and ethnic group, 2004, England*



*Table 3.9 Prevalence of a raised waist to hip ratio by sex and ethnic group, 2004, England*

	General population	Black Caribbean	Black African	Indian	Pakistani	Bangladeshi	Chinese	Irish
	%	%	%	%	%	%	%	%
<b>MEN</b>	33	25	16	36	37	32	17	36
<i>Unweighted base</i>	4,692	209	156	310	197	138	182	311
<b>WOMEN</b>	30	37	32	30	39	50	22	37
<i>Unweighted base</i>	5,995	314	200	345	224	171	185	405

*Notes:* Adults aged 16 and over.

A raised waist-hip ratio for men is 0.95 and over and for women is 0.85 and over; age-standardised percentages; see source for method of age-standardisation. General population figures taken from 2003 Health Survey for England.

*Source:* Department of Health (2005) Health Survey for England 2004. See <http://www.ic.nhs.uk/pubs/hlthsvyeng2004upd>

*Table 3.10 Prevalence estimates of overweight and obesity for 2002, and projections for 2005 and 2010, by sex, adults aged 15 and above, the World*

	Prevalence of overweight, Male %			Prevalence of overweight, Female %			Prevalence of obesity, Male %			Prevalence of obesity, Female %		
	2002	2005	2010	2002	2005	2010	2002	2005	2010	2002	2005	2010
<b>WHO Africa Region</b>												
Angola	19.9	21.3	23.8	31.4	33.6	37.2	1.6	1.9	2.4	5.9	6.9	8.7
Benin	15.8	17.9	21.9	32.8	39.1	43.8	0.7	1.0	1.5	6.2	9.3	12.1
Botswana	35.5	37.8	41.6	46.9	49.4	53.5	4.6	5.4	6.9	12.9	14.6	17.7
Burkina Faso	10.6	12.1	15.1	15.8	16.0	19.4	0.3	0.4	0.6	1.1	1.1	1.7
Burundi	7.0	7.8	9.1	16.3	18.1	21.1	0.1	0.1	0.2	1.2	1.5	2.2
Cameroon	35.7	38.7	43.9	38.3	41.1	45.8	6.3	7.5	10.1	9.2	10.8	13.8
Cape Verde	30.5	32.4	35.6	41.8	44.1	48.0	4.0	4.6	5.8	11.0	12.5	15.1
Central African Republic	6.7	7.2	8.0	17.7	18.5	20.0	0.1	0.1	0.1	1.1	1.3	1.5
Chad	10.4	12.0	15.0	17.1	19.2	22.9	0.3	0.4	0.6	1.3	1.7	2.6
Comoros	17.7	20.0	24.3	33.1	35.9	40.7	0.9	1.2	1.9	5.8	7.1	9.6
Congo, Democratic Republic of	4.3	4.8	5.7	11.9	13.3	15.8	0.0	0.0	0.1	0.6	0.8	1.1
Congo, Republic of	12.0	12.7	13.8	24.2	25.2	26.8	0.4	0.4	0.5	2.7	3.0	3.5
Côte d'Ivoire	10.9	11.6	12.7	32.5	34.2	36.0	0.2	0.2	0.3	4.8	5.4	6.2
Djibouti	17.6	18.9	21.2	28.8	31.0	34.5	1.2	1.4	1.8	5.0	5.8	7.4
Equatorial Guinea	35.4	37.5	41.0	46.1	48.5	52.3	5.6	6.4	7.9	13.8	15.4	18.4
Eritrea	2.9	3.1	3.5	5.9	5.7	6.3	0.0	0.0	0.0	0.1	0.1	0.1
Ethiopia	7.4	7.8	8.6	3.1	3.3	3.7	0.1	0.2	0.2	0.0	0.0	0.0
Gabon	22.7	25.4	30.2	45.0	47.7	52.2	1.8	2.3	3.4	13.5	15.5	19.2
Gambia	9.0	10.3	12.8	20.5	22.8	27.0	0.2	0.3	0.5	1.9	2.5	3.6
Ghana	27.3	30.3	35.6	26.2	28.1	32.5	2.6	3.3	4.8	3.5	4.2	5.9
Guinea	14.5	16.5	20.3	27.8	30.4	34.9	0.6	0.8	1.3	4.2	5.2	7.1
Guinea-Bissau	10.5	11.4	12.9	20.3	22.1	25.1	0.4	0.5	0.6	2.4	2.8	3.7
Kenya	6.5	6.9	7.7	21.3	21.7	23.3	0.1	0.1	0.1	1.8	1.9	2.2
Lesotho	26.3	27.5	29.5	68.7	69.5	70.8	1.7	1.9	2.3	33.2	34.3	36.1
Liberia	27.8	29.6	32.7	39.2	41.6	45.4	3.3	3.8	4.8	9.6	11.0	13.4
Madagascar	12.9	14.5	17.5	18.1	20.2	24.1	0.7	1.0	1.5	1.5	1.9	2.9
Malawi	14.3	15.1	16.4	21.6	23.5	25.2	0.6	0.7	0.8	1.6	2.0	2.4
Mali	12.8	14.6	18.1	26.1	33.6	38.4	0.4	0.6	1.0	3.4	6.2	8.4
Mauritania	27.5	30.4	35.4	52.2	54.6	58.6	2.9	3.7	5.3	20.6	22.9	26.9
Mozambique	8.7	9.3	10.3	24.3	25.3	26.9	0.1	0.2	0.2	2.7	3.0	3.4
Namibia	11.6	12.3	13.5	31.5	32.6	34.4	0.2	0.3	0.4	4.9	5.3	6.1
Niger	12.1	13.9	17.2	19.6	21.3	25.1	0.4	0.6	0.9	1.9	2.3	3.4
Nigeria	19.6	21.9	26.0	29.6	32.2	36.8	1.6	2.0	3.0	4.9	6.0	8.1
Rwanda	6.8	7.3	8.1	19.2	20.1	21.7	0.1	0.1	0.1	1.2	1.3	1.6
Sao Tome and Principe	14.4	15.5	17.5	25.2	27.2	30.5	0.8	0.9	1.2	3.7	4.4	5.7
Senegal	14.4	16.1	19.2	34.1	36.7	41.0	1.0	1.3	2.0	7.8	9.2	11.8
Seychelles	55.1	58.5	63.8	68.6	70.7	73.8	14.2	16.7	21.3	35.8	38.6	43.2
Sierra Leone	20.2	22.4	26.3	41.6	44.5	49.1	1.9	2.4	3.5	10.9	12.7	16.0
Somalia	9.8	10.6	12.1	19.3	21.1	24.0	0.3	0.4	0.6	2.1	2.6	3.4
South Africa	38.2	39.3	41.3	66.4	67.2	68.5	6.2	6.7	7.6	34.3	35.2	36.8
Sudan	16.0	17.2	19.3	27.0	29.1	32.5	1.0	1.2	1.5	4.3	5.1	6.5
Swaziland	33.6	35.8	39.5	45.2	47.8	51.9	4.0	4.7	6.1	11.8	13.5	16.5
Tanzania, United Republic of	14.7	15.4	16.8	26.0	27.0	28.7	0.6	0.7	0.8	2.8	3.1	3.6
Togo	15.0	17.1	20.9	28.3	30.9	35.5	0.6	0.9	1.4	4.3	5.3	7.3
Uganda	6.9	7.4	8.2	20.1	22.2	23.9	0.1	0.1	0.1	1.3	1.6	1.9
Zambia	7.0	7.5	8.3	20.2	18.6	20.0	0.1	0.1	0.1	1.6	1.3	1.5
Zimbabwe	14.5	15.3	16.7	47.2	48.9	50.6	0.5	0.6	0.8	14.1	15.3	16.7
<b>WHO Eastern Mediterranean and Middle East Region</b>												
Afghanistan	11.2	12.7	15.6	15.6	17.4	20.8	0.3	0.5	0.7	1.1	1.4	2.1
Algeria	32.1	34.1	37.4	43.2	45.6	49.4	4.5	5.2	6.4	11.9	13.4	16.2
Armenia	53.9	53.9	53.9	52.8	52.8	52.8	12.1	12.1	12.1	19.8	19.8	19.8
Bahrain	60.9	60.9	60.9	66.0	67.3	69.5	21.2	21.2	21.2	33.5	35.2	37.9
Brunei Darussalam	55.3	56.4	58.1	61.9	63.2	65.2	14.4	15.2	16.6	25.9	27.4	29.7
Egypt	64.5	64.5	64.5	69.7	74.2	76.0	22.0	22.0	22.0	39.3	45.5	48.0
Iran, Islamic Republic of	47.3	48.5	48.5	55.7	57.8	60.2	9.4	10.0	10.0	25.0	27.0	29.5
Iraq	38.7	40.1	42.4	49.0	50.8	53.6	6.6	7.2	8.3	15.5	16.8	19.1
Jordan	57.5	57.5	57.5	67.3	63.4	65.4	19.6	19.6	19.6	40.2	35.6	37.9
Kuwait	69.5	69.5	69.5	76.6	79.0	80.4	29.6	29.6	29.6	49.2	52.9	55.2
Lebanon	51.7	51.7	51.7	52.9	54.3	56.7	14.9	14.9	14.9	23.9	25.2	27.4
Libyan Arab Jamahiriya	47.6	48.8	50.8	56.0	57.5	59.8	10.7	11.4	12.7	21.1	22.5	24.9
Morocco	31.1	31.1	31.1	53.0	54.7	57.5	3.7	3.7	3.7	19.0	20.5	23.1
Oman	43.4	43.4	43.4	46.0	47.8	50.8	7.7	7.7	7.7	13.5	14.8	17.0
Pakistan	16.7	18.8	22.8	23.2	25.5	29.5	0.8	1.0	1.6	2.9	3.6	5.0
Qatar	56.9	57.9	59.5	62.9	64.1	65.9	16.6	17.4	18.7	27.9	29.3	31.6
Saudi Arabia	62.4	63.1	63.1	63.0	63.8	65.9	22.3	23.0	23.0	32.8	33.8	36.4
Syrian Arab Republic	47.2	48.4	50.4	55.7	57.2	59.6	10.5	11.2	12.4	20.8	22.2	24.6
Tunisia	42.8	42.8	42.8	57.9	59.2	61.4	7.7	7.7	7.7	28.8	30.2	32.6
United Arab Emirates	66.9	66.9	66.9	68.4	69.6	71.6	24.5	24.5	24.5	37.9	39.4	42.0
Yemen	24.6	24.6	24.6	27.8	29.4	32.2	2.0	2.0	2.0	4.4	5.1	6.2
<b>WHO European Region</b>												
Albania	57.2	57.2	57.2	52.5	52.5	52.5	18.6	18.6	18.6	23.8	23.8	23.8
Andorra	59.8	60.9	62.5	65.5	66.8	68.7	14.9	15.8	17.1	27.3	28.8	31.2
Austria	59.0	61.0	62.9	53.4	53.2	55.2	19.5	21.3	23.1	20.4	20.3	21.8
Azerbaijan	57.4	57.4	57.4	56.8	56.8	56.8	15.4	15.4	15.4	24.9	24.9	24.9
Belarus	63.7	63.7	63.7	69.9	69.9	69.9	16.2	16.2	16.2	32.2	32.2	32.2
Belgium	49.0	51.9	54.1	40.7	40.7	42.9	11.4	13.3	14.8	9.5	9.5	10.7
Bosnia and Herzegovina	56.6	56.6	56.6	51.0	51.0	51.0	13.8	13.8	13.8	21.5	21.5	21.5
Bulgaria	62.8	62.8	62.8	45.5	45.5	45.5	17.0	17.0	17.0	19.0	19.0	19.0
Croatia	60.0	61.3	63.5	45.3	46.4	48.3	17.1	18.2	20.1	15.4	16.2	17.6
Cyprus	50.4	51.7	53.9	59.0	60.6	63.0	9.4	10.1	11.4	20.7	22.2	24.7
Czech Republic	56.7	58.1	60.1	47.0	47.8	49.3	17.4	18.5	20.2	20.0	20.7	22.1
Denmark	50.7	52.5	55.0	37.5	39.1	41.4	9.6	10.6	12.0	6.4	7.1	8.3
Estonia	50.7	50.7	50.7	33.8	33.8	33.8	8.6	8.6	8.6	8.4	8.4	8.4
Finland	63.8	64.9	67.1	52.0	52.4	54.5	18.0	18.9	20.9	17.5	17.8	19.4
France	44.1	45.6	48.0	33.4	34.7	36.9	7.2	7.8	9.0	6.1	6.6	7.6
Georgia	37.4	38.9	41.5	48.9	50.8	53.8	4.7	5.2	6.1	13.4	14.7	17.1
Germany	63.7	65.1	67.2	53.6	55.1	57.1	19.7	20.9	22.9	19.2	20.4	22.1
Greece	74.6	75.7	77.5	60.1	61.3	63.2	26.2	27.7	30.3	23.4	24.5	26.4
Hungary	55.9	55.9	55.9	47.4	47.4	47.4	15.8	15.8	15.8	16.1	16.1	16.1
Iceland	57.7	59.0	61.2	60.5	61.7	63.7	15.7	16.7	18.5	22.0	23.2	25.3
Ireland	50.0	51.5	53.9	40.3	41.7	43.9	9.5	10.3	11.7	8.4	9.1	10.4
Israel	55.9	57.2	59.4	56.3	57.5	59.3	15.2	16.2	17.9	23.3	24.3	25.9
Italy	51.9	52.7	55.0	37.8	38.3	40.0	12.2	12.9	14.4	12.2	12.6	

	Prevalence of overweight, Male %			Prevalence of overweight, Female %			Prevalence of obesity, Male %			Prevalence of obesity, Female %		
	2002	2005	2010	2002	2005	2010	2002	2005	2010	2002	2005	2010
Macedonia, FYR	37.1	37.1	37.1	57.4	57.4	57.4	5.9	5.9	5.9	24.3	24.3	24.3
Malta	70.2	71.4	73.3	65.1	66.1	67.6	24.6	25.9	28.1	33.8	34.8	36.5
Moldova, Republic of	33.3	34.8	37.5	45.4	47.4	50.7	3.5	4.0	4.8	11.2	12.5	14.8
Monaco	58.0	59.1	60.9	64.3	65.6	67.6	13.7	14.5	15.9	26.0	27.5	29.9
Netherlands	46.7	48.0	50.2	42.6	44.0	46.1	9.6	10.4	11.7	10.7	11.5	12.9
Norway	53.3	54.8	57.2	42.0	43.4	45.8	10.4	11.3	12.8	8.6	9.3	10.7
Poland	50.7	50.7	50.7	44.3	44.3	44.3	12.9	12.9	12.9	18.0	18.0	18.0
Portugal	55.5	58.5	60.9	47.6	49.2	51.2	13.1	13.7	15.5	14.6	16.1	17.7
Romania	37.7	37.7	37.7	40.6	40.6	40.6	5.5	5.5	5.5	12.0	12.0	12.0
Russian Federation	46.5	46.5	46.5	51.7	51.7	51.7	9.6	9.6	9.6	23.6	23.6	23.6
San Marino	57.6	58.8	60.5	64.1	65.4	67.4	13.5	14.3	15.7	25.7	27.2	29.7
Serbia and Montenegro	61.2	61.2	61.2	48.5	48.5	48.5	17.7	17.7	17.7	20.6	20.6	20.6
Slovakia	50.7	52.0	54.0	59.1	60.6	62.9	10.1	10.8	12.0	21.3	22.8	25.3
Slovenia	54.8	56.0	57.9	62.1	63.5	65.7	11.8	12.5	13.9	23.7	25.2	27.6
Spain	55.7	55.8	57.9	45.7	47.7	49.8	15.6	15.6	17.3	14.5	15.8	17.3
Sweden	51.7	54.5	57.0	43.3	44.9	47.2	10.1	11.8	13.3	10.0	10.9	12.4
Switzerland	52.4	54.1	56.5	53.8	56.7	58.9	11.4	12.4	13.9	16.4	18.7	20.6
Tajikistan	29.2	30.8	33.5	41.8	43.9	47.4	2.5	2.9	3.6	9.2	10.4	12.6
Turkey	47.9	47.9	47.9	65.4	65.7	65.7	10.8	10.8	10.8	32.1	32.5	32.5
Turkmenistan	48.1	48.1	48.1	45.5	45.5	45.5	9.3	9.3	9.3	15.0	15.0	15.0
Ukraine	41.2	41.2	41.2	48.5	48.5	48.5	7.4	7.4	7.4	19.4	19.4	19.4
United Kingdom	62.5	65.7	67.8	58.8	61.9	63.8	18.7	21.6	23.7	21.3	24.2	26.3
Uzbekistan	42.0	42.0	42.0	44.3	49.9	49.9	7.1	7.1	7.1	13.5	17.6	17.6
<b>WHO North American Region</b>												
Antigua and Barbuda	50.0	51.2	53.2	58.3	59.8	62.1	10.4	11.2	12.4	21.5	22.9	25.3
Bahamas	55.9	57.0	58.7	62.5	63.8	65.9	13.9	14.7	16.0	25.6	27.1	29.5
Barbados	55.5	59.2	65.1	77.8	80.1	83.3	14.1	16.8	22.0	46.7	50.8	57.2
Belize	43.3	44.7	47.0	53.3	54.9	57.6	7.3	7.9	9.0	17.2	18.6	21.0
Canada	64.5	65.1	66.9	55.9	57.1	59.5	23.1	23.7	25.5	22.2	23.2	25.7
Dominica	61.5	65.1	70.8	74.4	77.1	80.8	16.9	20.0	25.8	41.8	46.0	52.6
Grenada	47.4	48.7	50.8	56.4	58.0	60.4	9.1	9.8	11.0	19.8	21.2	23.6
Guyana	40.6	42.1	44.4	51.2	52.9	55.8	6.3	6.8	7.9	15.6	17.0	19.4
Haiti	13.0	15.1	19.0	39.8	50.6	57.7	0.5	0.7	1.3	8.2	15.0	21.1
Jamaica	36.0	40.0	46.8	71.8	74.7	79.0	3.8	5.1	7.7	36.4	41.0	48.3
Mexico	64.6	68.4	73.6	65.6	67.9	73.0	20.3	24.0	30.1	31.6	34.3	41.0
Saint Kitts and Nevis	50.7	52.0	53.9	58.9	60.3	62.6	10.8	11.6	12.8	22.0	23.4	25.8
Saint Lucia	41.3	45.5	52.5	65.7	69.1	74.1	5.0	6.6	9.8	30.5	34.7	41.7
Saint Vincent and the Grenadines	44.3	45.6	47.9	54.0	55.7	58.3	7.7	8.4	9.5	17.8	19.2	21.6
Trinidad and Tobago	54.8	58.9	65.2	74.4	77.0	80.8	11.3	14.0	19.1	41.9	46.1	52.7
United States of America	72.2	75.6	80.5	69.8	72.6	76.7	32.0	36.5	44.2	37.8	41.8	48.3
<b>WHO South and Central American Region</b>												
Argentina	70.1	73.1	77.7	62.1	65.7	71.2	28.0	31.4	37.4	27.1	31.0	37.8
Bolivia	52.5	56.3	62.4	64.4	68.0	73.2	12.2	14.7	19.4	28.8	33.1	40.2
Brazil	43.4	47.4	54.0	49.2	53.5	60.3	6.9	8.7	12.4	15.0	18.3	24.5
Chile	58.9	62.6	68.4	64.4	68.0	73.3	16.1	19.0	24.3	27.2	31.6	39.1
Colombia	52.7	56.5	62.6	55.1	54.6	61.1	12.4	14.9	19.6	20.3	19.9	26.1
Costa Rica	49.8	53.9	60.1	56.2	57.8	63.8	10.6	13.0	17.5	22.7	24.2	30.5
Cuba	55.2	59.2	65.4	57.0	61.1	67.2	12.3	14.9	20.1	20.7	24.6	31.5
Dominican Republic	42.5	46.6	53.4	62.8	66.4	71.7	6.0	7.7	11.2	27.8	31.8	38.7
Ecuador	40.2	41.7	44.0	50.9	52.6	55.5	6.1	6.7	7.7	15.4	16.7	19.1
El Salvador	42.1	43.5	45.8	52.3	54.0	56.8	6.8	7.4	8.5	16.5	17.8	20.2
Guatemala	53.2	56.9	62.9	61.1	65.4	70.9	13.1	15.7	20.5	25.0	29.7	36.8
Honduras	36.2	37.6	40.1	47.5	49.4	52.5	4.7	5.2	6.2	13.1	14.4	16.7
Nicaragua	48.9	52.9	59.4	62.9	68.1	73.1	9.3	11.5	15.9	28.3	34.3	41.1
Panama	45.2	46.5	48.7	54.7	56.3	58.9	8.1	8.8	9.9	18.3	19.8	22.2
Paraguay	40.9	42.3	44.7	51.4	53.2	56.0	6.4	7.0	8.0	15.8	17.2	19.6
Peru	50.8	54.6	60.9	62.7	64.7	70.1	10.8	13.2	17.7	28.9	31.1	37.7
Suriname	41.0	42.4	44.8	51.5	53.2	56.1	6.4	7.0	8.1	15.8	17.2	19.6
Uruguay	60.0	63.6	69.3	54.1	58.1	64.4	17.1	20.1	25.7	19.6	23.3	29.8
Venezuela	65.6	69.1	74.4	57.5	61.4	67.3	19.7	23.2	29.5	22.4	26.2	33.0
<b>WHO South-East Asian Region</b>												
Bangladesh	5.9	6.7	8.4	4.3	5.4	6.7	0.1	0.1	0.2	0.1	0.2	0.2
Bhutan	34.0	35.3	37.7	44.7	46.5	49.6	5.3	5.8	6.7	13.1	14.3	16.5
India	15.0	16.8	20.1	13.7	15.2	18.1	0.9	1.1	1.7	1.1	1.4	2.0
Maldives	29.7	32.3	36.6	45.7	47.6	50.8	4.7	5.7	7.7	20.2	22.0	25.0
Mauritius	35.6	39.0	44.8	49.5	52.3	56.8	4.5	5.6	8.0	16.1	18.3	22.3
Nepal	7.7	8.8	11.0	8.0	8.0	9.9	0.1	0.2	0.3	0.2	0.2	0.3
Sri Lanka	8.8	8.9	9.1	5.0	5.9	7.9	0.2	0.2	0.2	0.1	0.1	0.2
<b>WHO Western Pacific Region</b>												
Australia	69.7	72.1	75.7	60.2	62.7	66.5	21.2	23.8	28.4	22.5	24.9	29.1
Cambodia	9.6	13.3	21.4	7.1	9.3	13.8	0.1	0.2	0.5	0.1	0.1	0.4
China	27.5	33.1	45.0	22.7	24.7	32.0	1.0	1.6	4.1	1.5	1.9	3.6
Cook Islands	92.0	92.6	93.4	88.5	89.2	90.3	67.9	69.5	72.1	69.0	70.8	73.4
Fiji	42.7	43.9	47.5	63.4	65.6	69.5	7.8	8.7	10.7	29.8	32.5	37.1
Indonesia	9.6	9.7	9.9	20.3	22.7	27.1	0.2	0.2	0.2	2.0	2.6	3.9
Japan	25.3	27.0	29.8	18.6	18.1	16.2	1.5	1.8	2.3	1.5	1.5	1.1
Kiribati	71.4	73.2	76.1	71.9	73.9	77.1	27.6	29.8	33.6	37.9	41.0	46.1
Korea, Democratic People's Republic of	31.0	32.7	35.5	44.0	46.2	49.7	2.4	2.7	3.4	9.5	10.7	12.9
Korea, Republic of	32.8	40.2	51.5	38.2	43.8	51.0	2.3	4.1	8.3	7.2	10.1	14.6
Lao People's Democratic Republic	30.4	32.1	34.9	43.5	45.6	49.2	2.3	2.6	3.3	9.2	10.4	12.6
Malaysia	22.5	22.7	23.0	34.2	37.2	42.2	1.6	1.6	1.7	6.8	8.2	11.0
Marshall Islands	39.1	40.6	43.0	50.0	51.8	54.7	5.7	6.3	7.3	14.8	16.1	18.5
Micronesia, Federated States of	91.5	92.1	93.1	89.5	90.1	91.1	64.3	66.2	69.1	71.3	72.9	75.3
Mongolia	46.0	53.0	64.1	65.8	69.3	74.4	5.2	7.9	14.5	24.6	29.0	36.6
Myanmar	27.8	29.4	32.3	41.1	43.3	47.0	1.8	2.1	2.7	8.0	9.1	11.3
Nauru	96.3	96.5	96.9	92.0	92.4	93.0	82.3	83.2	84.6	77.7	78.8	80.5
New Zealand	65.2	68.7	73.9	64.0	68.2	74.2	19.7	23.0	28.9	26.7	31.5	39.9
Niue	76.9	78.5	80.9	83.8	85.0	86.7	34.4	36.8	40.7	58.6	61.0	64.7
Palau	72.7	74.5	77.2	81.0	82.4	84.5	29.0	31.2	35.0	52.2	55.0	59.4
Papua New Guinea	29.2	31.5	35.3	26.1	29.0	34.0	2.0	2.5	3.4	3.2	4.2	6.1
Philippines	21.7	21.9	22.2	25.4	28.5	33.6	1.1	1.1	1.1	2.8	3.7	5.5
Samoa	77.2	78.7	81.1	80.7	82.1	84.1	36.2	38.4	42.2	55.0	57.3	60.9
Singapore	23.6	23.8	24.1	20.7	22.0	26.7	1.3	1.3	1.4	1.6	1.8	2.9
Solomon Islands	36.8	38.2	40.7	48.0	49.9	52.9	4.9	5.4	6.4	13.4	14.7	17.1
Thailand	27.7	27.9	28.3	32.5	35.2	39.9	2.5	2.5	2.6	7.0	8.4	11.1
Timor-Leste, Democratic Republic of	35.9	37.2	39.5	46.4	48.2	51.1	6.0	6.5	7.5	14.2	15.4	17.7
Tonga	89.5	90.3	91.4	90.9	91.4	92.1	58.7	60.7	64.0	74.8	76.1	78.1
Tuvalu	51.2	52.5	54.4	59.2	60.7	62.9	11.1	11.9	13.1	22.3	23.8	26.2
Vanuatu	54.0	56.3	60.2	60.1	62.9	67.2	11.9	13.4	16.2	23.4	26.3	31.4
Vietnam	2.7	4.1	7.5	7.0	8.7	12.2	0.0	0.0	0.0	0.2	0.3	0.7

Notes: Values are age-standardised to the WHO Standard Population. Overweight is defined as BMI  $\geq 25\text{kg/m}^2$ . Obese defined as BMI  $\geq 30\text{kg/m}^2$ . Estimates for 2005 and 2010 are projections only.

Source: WHO (2005) The SuRF Report 2. Surveillance of chronic disease risk factors, WHO: Geneva.

Fig 3.10a Prevalence of obesity by sex, 2002, WHO European Region

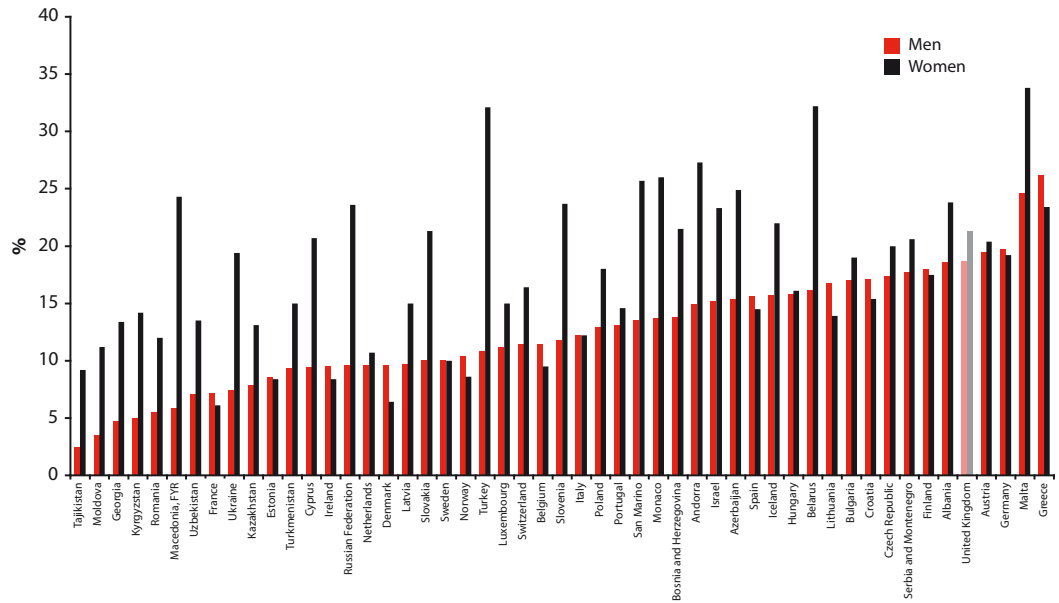
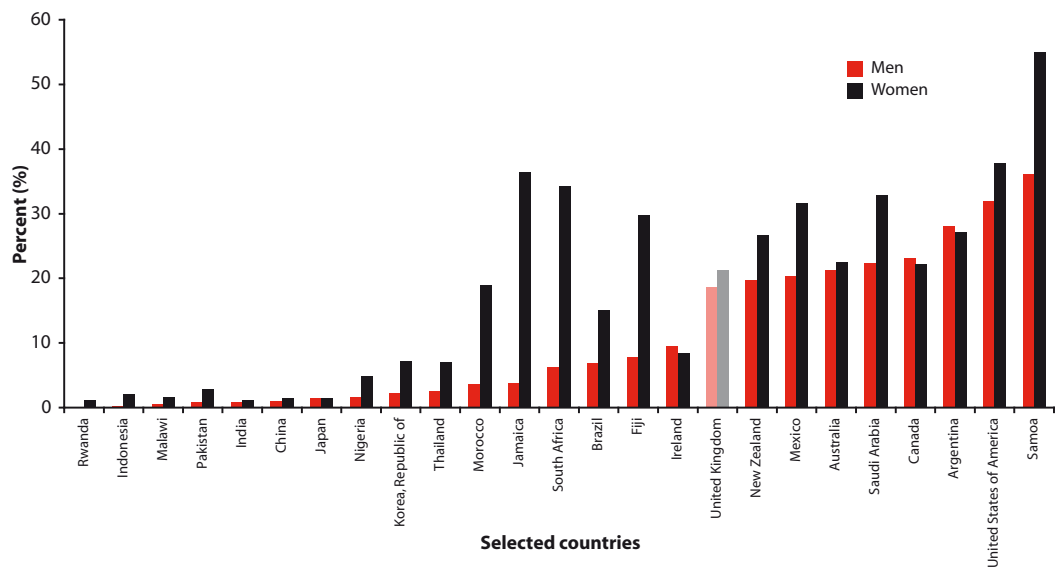


Fig 3.10b Prevalence of obesity by sex, 2002, selected countries, the World



**Table 3.11** *Prevalence of overweight children (including obesity) by WHO Region and country, by sex, latest available year, the World*

	Year of Survey	Age Range Years (inclusive)	Overweight (including obesity)		Cut Off
			Boys	Girls	
<b>WHO Africa Region</b>					
Algeria	2003	7-17	6.0	5.6	IOTF
Ethiopia	1987-1995	5-17	0.1	0.4	IOTF
Mali	1993	5-17	0.2	0.5	IOTF
Senegal	1992	5-17	0.1	0.5	IOTF
Seychelles	1999	5,9,12 & 16	9.2	15.8	IOTF
Zimbabwe	1990-4	5-17	1.7	2.4	IOTF
<b>WHO Americas Region</b>					
Bolivia (urban)	2003	14-17	15.6	27.5	IOTF
Brazil	2002	7-10	23.0	21.1	IOTF
Canada	1996	7-13	33.0	27.0	IOTF
Chile	2000	6	26.0	27.1	IOTF
Mexico	1995	5-17	32.3	31.1	IOTF
Trinidad & Tobago	1999	5,6,9 & 10	8.1	8.8	IOTF
USA	1988-94	5-17	26.8	28.1	IOTF
Venezuela	1976-82	10 & 15	21.1	17.2	IOTF
<b>WHO Eastern Mediterranean Region</b>					
Bahrain	2000	12-17	29.9	38.5	IOTF
Iran	1995	6	24.7	26.8	IOTF
Kuwait	1999-2000	10-14	30.0	31.8	85th/95th centile
Lebanon	1996	5-17	23.4	19.7	IOTF
Saudi Arabia	2002	5-17	16.7	19.4	IOTF
<b>WHO European Region</b>					
Austria	2003	8-12	22.5	16.7	90/97th centile
Belgium	1998-9	5-15	27.7	26.8	85/95th centile
Bulgaria	1998	7-17	18.9	16.1	IOTF
Cyprus	1999-2000	6-17	25.4	22.6	IOTF
Czech Republic	2001	5-17	14.7	13.4	IOTF
Denmark	1996/7	6-16	14.1	15.3	IOTF
Finland (self report)	1999	12-17	19.4	11.2	IOTF
France	2000 (12yrs 2001)	7,8,9&12	19.1	19.3	IOTF
Germany	1995	5-17	14.1	14.0	IOTF
Greece	2003	13-17	29.6	16.1	IOTF
Hungary	1993-4	10 & 15	17.8	15.9	IOTF
Iceland	1998	9	22.0	25.5	IOTF
Italy	1993-2001	5-17	26.6	24.8	IOTF
Macedonia, FYR	1995-2002	6-17	18.6	16.7	85th & 95th centile
Malta	1992	10	32.7	38.5	IOTF
Netherlands	1997	5-17	8.8	11.8	IOTF
Poland	1996	5-17	16.7	13.6	IOTF
Portugal	2002/3	7-9	29.5	34.3	IOTF
Russian Federation	1992	5-17	24.2	19.7	IOTF
Slovakia	1995-99	11-17	9.8	8.2	IOTF
Spain	1998-2000	5-16	31.0	19.5	IOTF
Sweden	2001	6-11	17.6	27.4	IOTF
Switzerland	2002	6-12	21.0	23.2	IOTF
Turkey	2001	12-17	11.4	10.3	IOTF
United Kingdom (England)	2001	5-17	21.8	27.1	IOTF
<b>WHO South East Asia Region</b>					
India	2002 approx	5-17 (5-15 girls)	12.9	8.2	IOTF
Nepal	1997	5-17	0.0	0.0	IOTF
Thailand	1997	5-15	21.1	12.6	IOTF
<b>WHO Western Pacific Region</b>					
Australia	1995	7-17	21.1	21.3	IOTF
Japan	1996-2000	6-14	16.2	14.3	IOTF
Singapore	1993	10 & 15	20.4	14.6	IOTF
China	1999-2000	11 & 15	14.9	8.0	IOTF
New Zealand	2000	11 & 12	30.0	30.0	IOTF

Source: International Obesity TaskForce (2006). <http://www.ietf.org/database/ChildhoodTablebyRegionFeb06.htm>

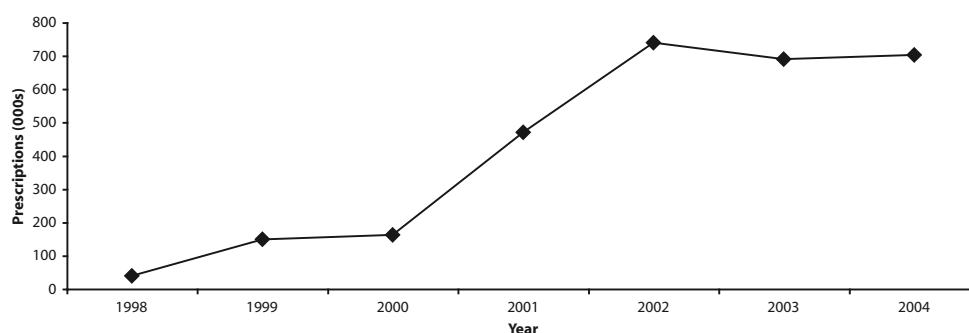
**Table 3.12** Numbers and cost of prescriptions for drugs used to treat obesity, 1998-2004, England

Year	Numbers of prescriptions (000s)	£ (000s)
1998	39	812
1999	148	5,490
2000	162	6,671
2001	470	19,737
2002	739	31,301
2003	690	29,641
2004	702	30,850

Source: Department of Health (2005) and previous years: Prescription Cost Analysis

[http://www.dh.gov.uk/AdvancedSearch/SearchResults/fs/en?NP=1&PO1=C&PI1=W&PF1=A&PG=1&RP=20&PT1=prescription+rates+BNF+codes+4.5.1+4.5.2&SC=\\_dh\\_site&Z=1](http://www.dh.gov.uk/AdvancedSearch/SearchResults/fs/en?NP=1&PO1=C&PI1=W&PF1=A&PG=1&RP=20&PT1=prescription+rates+BNF+codes+4.5.1+4.5.2&SC=_dh_site&Z=1)

**Fig 3.12** Numbers of prescriptions for drugs used to treat obesity, 1998-2004, England



**Table 3.13** Cost of obesity-related ill-health to the NHS, 2002

Disease categories	Cost to the NHS (£billions)	Cost attributed to overweight and obesity (£billions)
<i>Diseases related to overweight and obesity</i>	8.70	3.20
Ischaemic heart disease	2.30	0.78
Stroke	2.90	0.98
Breast cancer	0.24	0.03
Colon/rectum cancer	0.38	0.06
Hypertensive diseases	0.99	0.58
Corpus uteri cancer	0.09	0.05
Osteoarthritis	1.09	0.23
Diabetes Mellitus	0.68	0.53
<i>All diseases</i>		
Infectious diseases	7.30	
Cancer (malignant and other neoplasms)	2.88	
Cardiovascular diseases	8.50	
Musculoskeletal diseases	5.50	
Mental and nervous system disorders	17.55	
Respiratory diseases	4.35	
Injuries	2.67	
Other	21.48	
<b>Total</b>	<b>70.20</b>	

Notes Figures may not add due to rounding. NHS costs for diseases for 2002 are extrapolated from 1992/93 costs.

Source: Allender S, Rayner M, (2006). The burden of obesity-related ill health. Forthcoming.

*Table 3.14 Hospital admissions by obesity as primary diagnosis by sex and age, 1999/00 to 2004/05, England*

	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05
<b>MEN</b>						
0 - 4	21	16	23	42	30	21
5-14	73	75	71	149	141	199
15 - 44	108	124	106	132	180	219
45 - 64	82	116	109	126	173	171
65 - 74	14	22	9	22	28	23
75 - 84	3	3	8	9	10	5
85+	3				2	1
<i>Total FCE for obesity</i>	304	356	326	480	564	639
<i>Total FCE</i>	5,262,807	5,321,016	5,396,157	5,571,968	5,759,916	5,983,455
<i>% FCE for obesity</i>	0.006%	0.007%	0.006%	0.009%	0.010%	0.011%
<b>WOMEN</b>						
0 - 4	25	37	33	29	31	40
5-14	78	83	97	138	318	235
15 - 44	396	409	372	468	580	780
45 - 64	215	239	235	252	332	451
65 - 74	44	55	59	50	43	29
75 - 84	16	18	17	20	21	26
85+	8		2	5	7	10
<i>Total FCE for obesity</i>	782	841	815	962	1332	1571
<i>Total FCE</i>	6,904,767	6,943,661	6,961,203	7,183,931	7,414,564	7,723,310
<i>% FCE for obesity</i>	0.011%	0.012%	0.012%	0.013%	0.018%	0.020%

*Notes* Hospital admission defined as a finished consultant episode (FCE): a period of admitted patient care under one consultant within one healthcare provider. Please note that the figures do not represent the number of patients, as a person may have more than one episode of care within the year.

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*Source:* Department of Health (2006) Hospital Episode Statistics. NHS Health and Social Care Information Centre.