

# 14 Patient risk factors

General practice is a useful intervention point for health promotion because about 88% of Australians visit a GP at least once each year.<sup>4</sup> GPs, through ongoing professional education, have substantial knowledge of population health, screening programs and other interventions. They are also in an ideal position to advise patients about the benefits of health screening, and to counsel patients about their lifestyle choices on an individual basis.

Since April 1998, a section on the bottom of each encounter form has been used to investigate aspects of patient health or health care delivery not covered by general practice consultation-based information. These additional substudies are referred to as SAND (Supplementary Analysis of Nominated Data). The SAND methods are described in Appendix 1.

The patient risk factors measured include self-reported height and weight (for calculation of body mass index, BMI), alcohol consumption and smoking status. Patient risk factors are investigated for a subsample of 40 of the 100 patient encounters recorded by each GP. An example of the encounter form with the patient risk factor SAND questions is included in Appendix 3. The methods used for investigating patient risk factors are described in Appendix 2.

Summaries of results from all SAND substudies from April 1999 to July 2006 inclusive have been published in *Patient-based substudies from BEACH: abstracts and research tools 1999–2006*.<sup>22</sup> Abstracts of results and the research tools used in SAND substudies conducted from August 2006 to March 2007 were published in *General practice activity in Australia 2006–07*<sup>23</sup> and those conducted from April 2007 to January 2008 are included in *General practice activity in Australia 2007–08*.<sup>7</sup>

This chapter includes data about the risk behaviours of general practice patients from each of the 10 years of the BEACH study from 1998–99 to 2007–08. The direction and type of change from 1998–99 to 2007–08 is indicated for each result in the far right column of the tables:

↑/↓ indicates a statistically significant linear change, ↑/↓ indicates a marginally significant linear change, § indicates a non-linear significant or marginal change, and – indicates there was no change.

The results of the patient risk factors body mass index (BMI), alcohol consumption and smoking status are presented in tables 14.1 to 14.3 for each year from 1998–99 to 2007–08. These are also graphically summarised in figures 14.1 to 14.5.

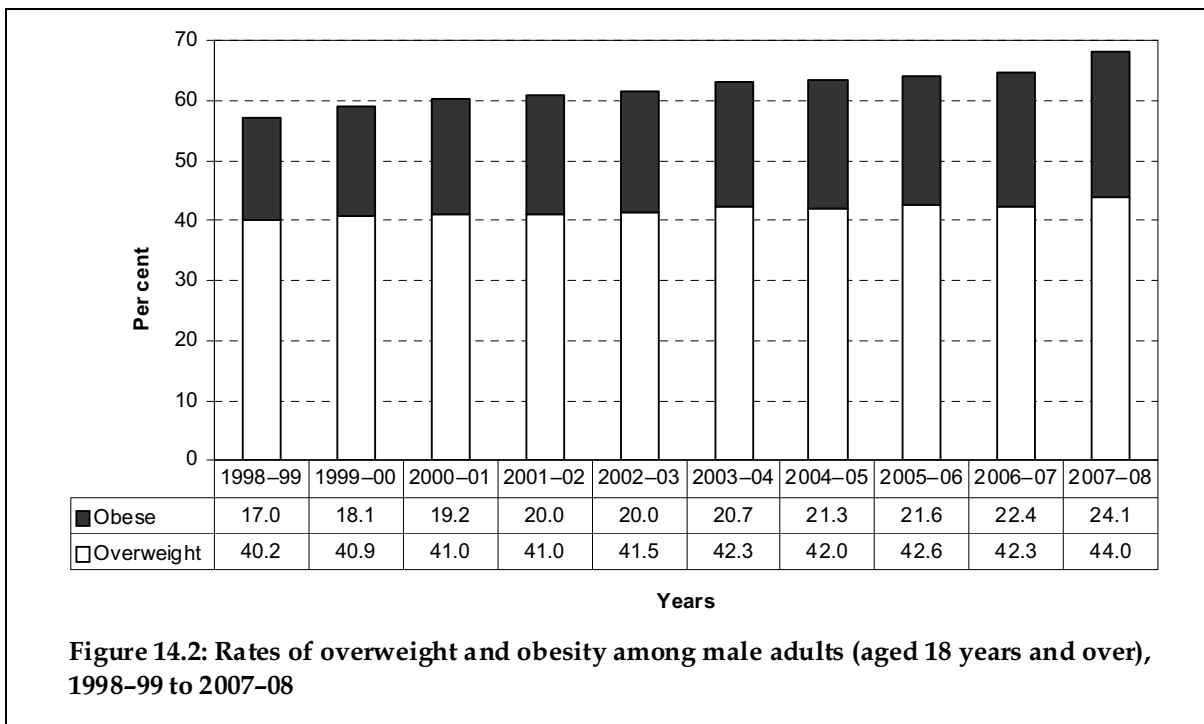
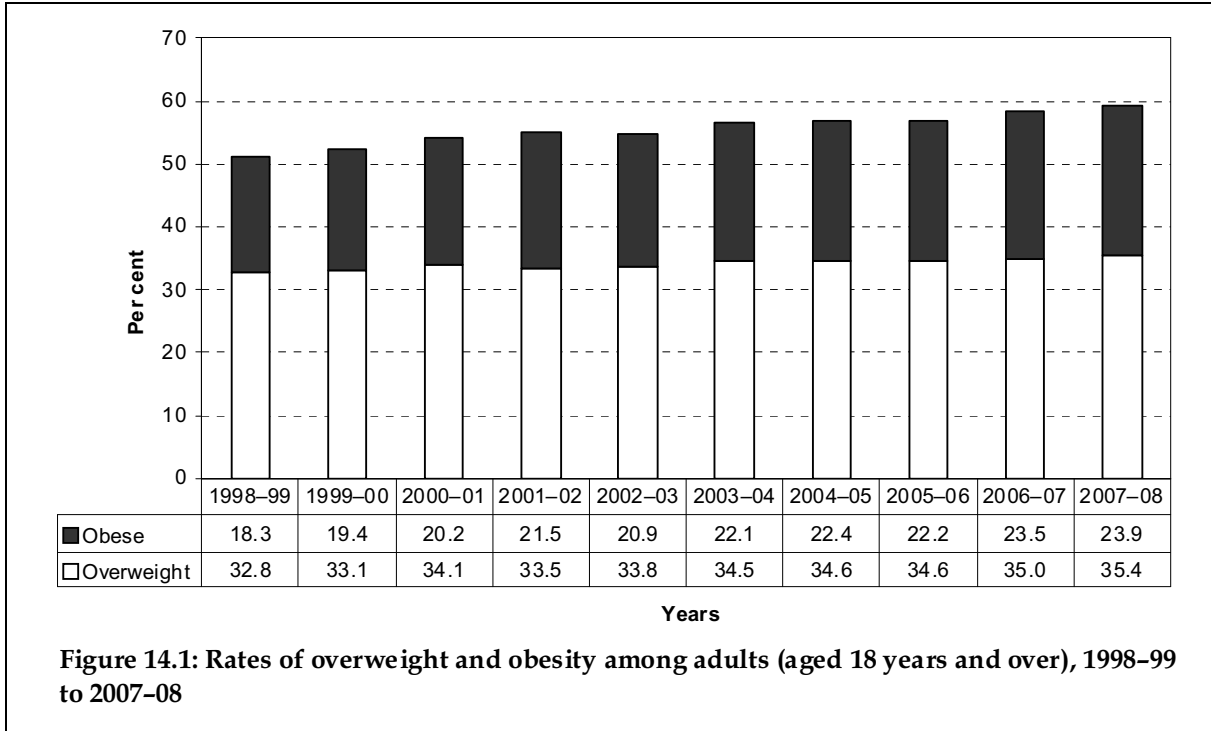
## 14.1 Body mass index

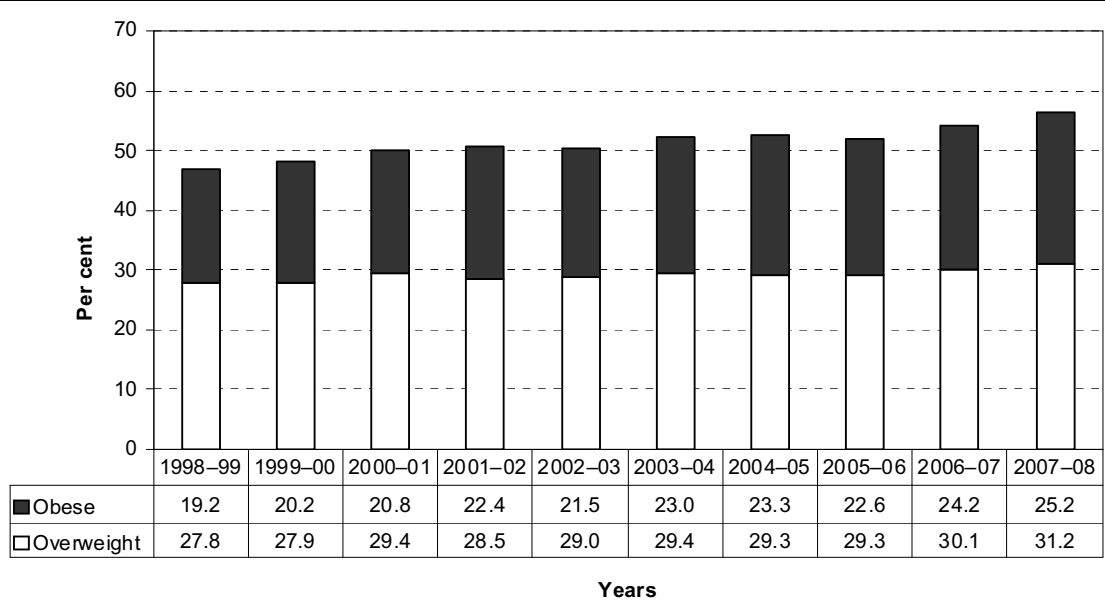
### Adults

There has been a significant increase in the prevalence of overweight and obesity in adults attending general practice, from 32.8% and 18.3%, respectively, in 1998–98 to 35.4% and 23.9% in 2007–08 (Table 14.1; Figure 14.1). The significant increase of overweight and obesity are apparent in both male and female patients. The increase is largely due to an increase in prevalence of obesity; rates of overweight increased but by a much smaller amount (tables 14.2 and 14.3; figures 14.2 and 14.3).

## Children

In contrast, the rates of overweight and obesity in children aged 2–17 years have remained static over from 1998–99 to 2007–08, with about 11% of children being obese and about 17% overweight (Table 14.1).

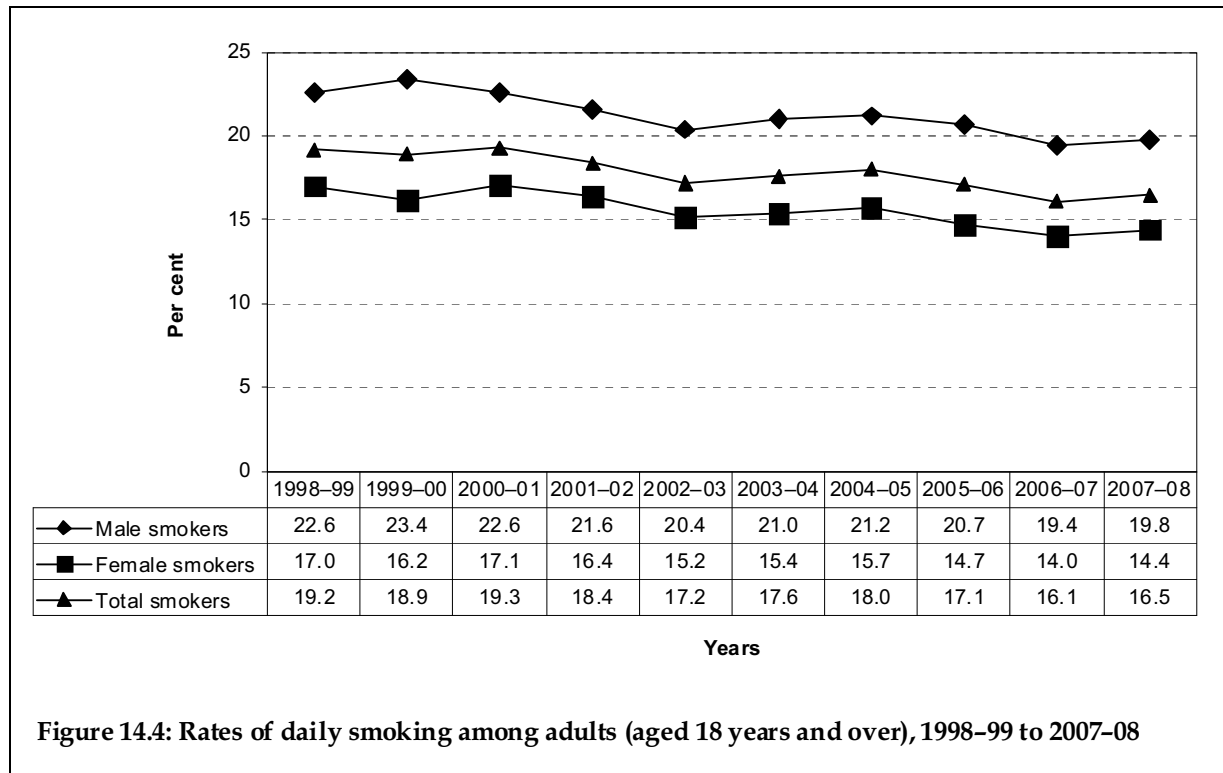




**Figure 14.3: Rates of overweight and obesity among female adults (aged 18 years and over), 1998-99 to 2007-08**

## 14.2 Smoking

There has been a significant decrease in the rates of current daily and occasional smoking in all adults aged 18 years and over, from 19.2% and 5.6%, respectively, in 1998–99 to 16.5% and 2.9% in 2007–08 (Table 14.1). This decrease was apparent in both male and female patients (tables 14.2 and 14.3; Figure 14.4).



## 14.3 Alcohol consumption

The rates of at-risk levels of alcohol consumption among adults attending general practice have remained static at 26–27% of adult patients from 2001–02 to 2007–08 (Table 14.1; Figure 14.5).

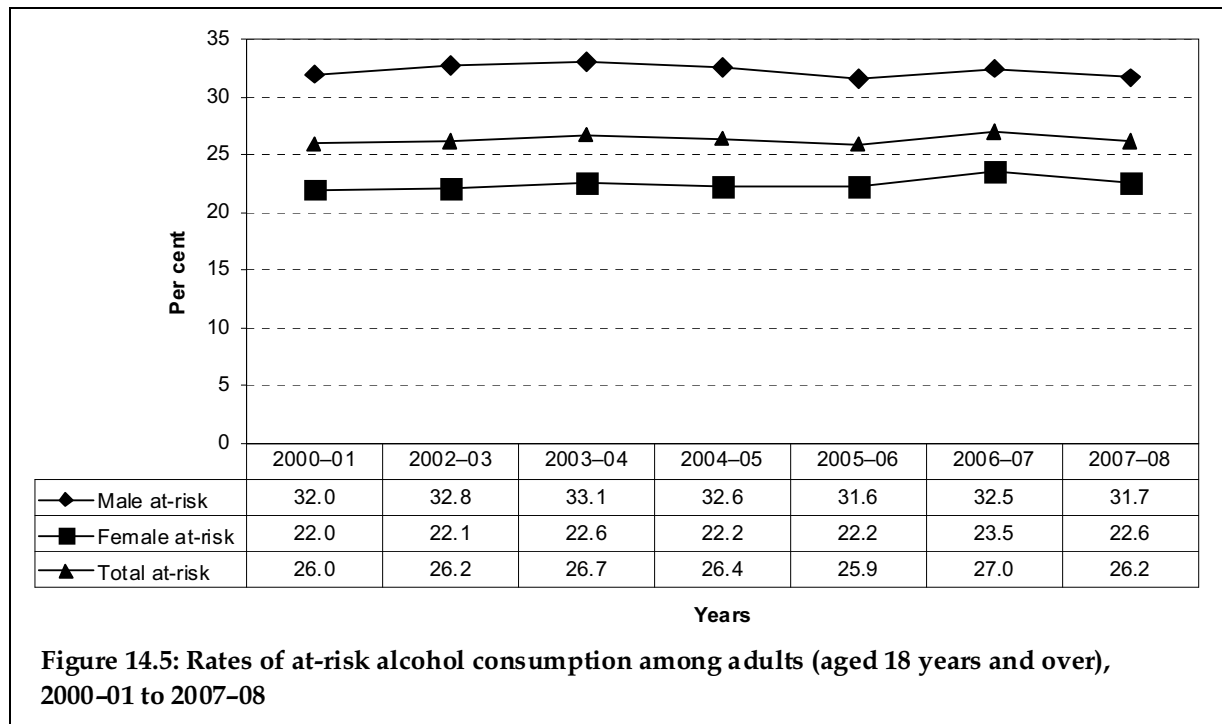


Table 14.1: Comparative results for all patient risk factors, summary of annual results, BEACH, 1998-99 to 2007-08

Risk factor	Per cent (95% CI)											↑ <sup>(e)</sup> ↓
	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08		
<b>Adults (aged 18 years and over)</b>												
<b>BMI class<sup>(b)</sup> (n)</b>	<b>(30,485)</b>	<b>(33,069)</b>	<b>(31,957)</b>	<b>(31,789)</b>	<b>(32,367)</b>	<b>(31,890)</b>	<b>(30,476)</b>	<b>(33,101)</b>	<b>(32,334)</b>	<b>(31,062)</b>		
Obese	18.3 (17.7-18.9)	19.4 (18.8-20.0)	20.2 (19.5-20.8)	21.5 (20.8-22.2)	20.9 (20.2-21.5)	22.1 (21.4-22.7)	22.4 (21.7-23.2)	22.2 (21.5-22.9)	23.5 (22.7-24.2)	23.9 (23.1-24.6)	↑	
Overweight	32.8 (32.1-33.4)	33.1 (32.5-33.8)	34.1 (33.4-34.7)	33.5 (32.9-34.1)	33.8 (33.2-34.5)	34.5 (33.8-35.1)	34.6 (33.9-35.2)	34.6 (33.9-35.2)	35.0 (34.3-35.6)	35.4 (34.7-36.0)	↑	
Normal	45.5 (44.7-46.4)	44.3 (43.5-45.1)	42.8 (42.0-43.7)	42.1 (41.3-42.9)	42.4 (41.6-43.3)	40.7 (39.9-41.6)	40.3 (39.5-41.2)	40.5 (39.7-41.4)	39.0 (38.1-39.8)	38.3 (37.4-39.2)	↓	
Underweight	3.4 (3.1-3.6)	3.2 (3.0-3.5)	2.9 (2.7-3.1)	3.0 (2.8-3.2)	2.9 (2.7-3.1)	2.8 (2.6-3.0)	2.7 (2.5-2.9)	2.8 (2.5-3.0)	2.6 (2.4-2.8)	2.5 (2.3-2.7)	↓	
<b>Smoking status (n)</b>	<b>(30,265)</b>	<b>(32,483)</b>	<b>(32,124)</b>	<b>(31,966)</b>	<b>(32,651)</b>	<b>(32,718)</b>	<b>(31,295)</b>	<b>(33,558)</b>	<b>(31,176)</b>	<b>(31,652)</b>		
Daily	19.2 (18.4-20.0)	18.9 (18.1-19.6)	19.3 (18.5-20.1)	18.4 (17.7-19.2)	17.2 (16.5-17.9)	17.6 (16.8-18.3)	18.0 (17.2-18.7)	17.1 (16.3-17.8)	16.1 (15.4-16.9)	16.5 (15.8-17.3)	↓	
Occasional	5.6 (5.2-6.0)	5.2 (4.9-5.6)	4.4 (4.0-4.7)	4.1 (3.8-4.4)	4.1 (3.8-4.4)	4.3 (4.0-4.7)	3.7 (3.4-4.0)	3.6 (3.4-3.9)	3.2 (2.9-3.4)	2.9 (2.7-3.2)	↓	
Previous	27.0 (26.2-27.8)	27.1 (26.3-27.8)	27.3 (26.5-28.1)	27.8 (27.0-28.6)	27.2 (26.5-28.0)	28.0 (27.3-28.8)	28.0 (27.2-28.8)	27.1 (26.3-27.8)	28.8 (28.0-29.6)	27.9 (27.1-28.6)	—	
Never	48.2 (47.2-49.2)	48.8 (47.9-49.7)	49.1 (48.1-50.1)	49.7 (48.7-50.7)	51.4 (50.4-52.4)	50.1 (49.1-51.0)	50.3 (49.4-51.3)	52.3 (51.3-53.2)	51.9 (50.9-52.9)	52.7 (51.7-53.6)	↑	
<b>Alcohol consumption<sup>(c)</sup> (n)</b>	..	..	..	<b>(31,559)</b>	<b>(32,140)</b>	<b>(31,721)</b>	<b>(30,414)</b>	<b>(32,753)</b>	<b>(30,347)</b>	<b>(30,796)</b>		
At-risk alcohol level	NAV	NAV	NAV	26.0 (25.1-26.8)	26.2 (25.3-27.1)	26.7 (25.8-27.6)	26.4 (25.5-27.3)	25.9 (25.0-26.8)	27.0 (26.1-28.0)	26.2 (25.3-27.1)	—	
Responsible drinker	NAV	NAV	NAV	44.1 (43.3-45.0)	44.2 (43.4-45.1)	44.9 (44.1-45.8)	44.9 (44.0-45.7)	44.8 (44.0-45.7)	44.6 (43.7-45.5)	44.6 (43.7-45.5)	—	
Non-drinker	NAV	NAV	NAV	29.9 (28.9-30.9)	29.5 (28.5-30.6)	28.4 (27.3-29.4)	28.7 (27.7-29.8)	29.3 (28.2-30.4)	28.3 (27.3-29.4)	29.3 (28.2-30.3)	—	

(continued)

**Table 14.1 (continued): Comparative results for all patient risk factors, summary of annual results, BEACH, 1998–99 to 2007–08**

Risk factor	Per cent (95% CI)											↑ <sup>(a)</sup> ↓
	1998–99	1999–00	2000–01	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08		
<b>Children (aged 2–17 years)<sup>(d)</sup> (n)</b>	<b>(4,019)</b>	<b>(4,053)</b>	<b>(3,610)</b>	<b>(3,518)</b>	<b>(3,380)</b>	<b>(3,189)</b>	<b>(3,018)</b>	<b>(3,338)</b>	<b>(3,087)</b>	<b>(3,046)</b>	—	
Obese	11.0 (9.8–12.1)	10.4 (9.3–11.5)	11.4 (10.1–12.6)	10.9 (9.7–12.1)	11.9 (10.5–13.2)	11.8 (10.5–13.2)	10.8 (9.5–12.2)	10.9 (9.7–12.1)	10.6 (9.3–11.9)	11.2 (10.0–12.5)	—	
Overweight	17.1 (15.9–18.4)	17.4 (16.3–18.6)	17.8 (16.5–19.2)	17.9 (16.5–19.3)	18.3 (16.9–19.6)	19.2 (17.7–20.7)	17.7 (16.3–19.1)	17.9 (16.5–19.2)	18.6 (17.2–20.0)	17.1 (15.7–18.5)	—	

(a) The direction and type of change is indicated for each result: ↑ indicates a statistically significant change, and — indicates there was no change.

(b) Adult patients aged 18+ with a recorded height outside the ABS height range based on age and sex were excluded. WHO BMI criteria for normal (BMI 18.5 to < 25) and underweight (BMI < 18.5) have been applied.

(c) From 2001–02 onwards, the wording of the responses to the first and third alcohol questions was amended to exactly reflect the AUDIT instrument from which they are derived. Therefore 1998–99 to 2000–01 are not directly comparable with data from 2001–02 onwards, and as such are not listed.

(d) Children with height outside the ABS height range based on age and sex were excluded. Child BMI has been re-calculated for 1998–99 to 2005–06 and will differ from data previously published to incorporate this exclusion and to apply a more precise method for calculating child BMI.

Note: CI—confidence interval; BMI—body mass index; NAV—not available.

Table 14.2: Comparative results for male patient risk factors, summary of annual results, BEACH, 1998–99 to 2007–08

Risk factor	Per cent (95% CI)										<sup>(a)</sup>
	1998–99	1999–00	2000–01	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08	
<b>BMI class<sup>(b)</sup> (n)</b>	<b>(12,030)</b>	<b>(13,062)</b>	<b>(12,800)</b>	<b>(12,512)</b>	<b>(12,450)</b>	<b>(12,434)</b>	<b>(12,288)</b>	<b>(12,882)</b>	<b>(12,715)</b>	<b>(12,126)</b>	
Obese	17.0 (16.2–17.8)	18.1 (17.3–19.0)	19.2 (18.4–20.1)	20.0 (19.1–20.9)	19.9 (19.1–20.8)	20.7 (19.8–21.5)	21.3 (20.4–22.3)	21.6 (20.7–22.5)	22.4 (21.6–23.3)	23.1 (22.1–24.1)	↑
Overweight	40.2 (39.2–41.2)	40.9 (39.9–41.8)	41.0 (39.9–41.8)	41.0 (40.0–42.0)	41.5 (40.5–42.4)	42.3 (41.3–43.2)	42.0 (41.0–43.0)	42.6 (41.6–43.6)	42.3 (41.4–43.3)	43.0 (42.0–44.0)	↑
Normal	41.0 (39.9–42.2)	39.4 (38.3–40.4)	38.2 (37.0–39.3)	37.4 (36.3–38.6)	37.2 (36.2–38.3)	35.6 (34.5–36.7)	35.3 (34.2–36.5)	34.3 (33.3–35.4)	34.0 (32.9–35.1)	32.7 (31.6–33.8)	↓
Underweight	1.8 (1.5–2.0)	1.6 (1.4–1.9)	1.6 (1.4–1.9)	1.5 (1.3–1.8)	1.4 (1.1–1.6)	1.5 (1.3–1.7)	1.4 (1.1–1.6)	1.5 (1.3–1.7)	1.2 (1.0–1.4)	1.2 (1.0–1.4)	↓
<b>Smoking status (n)</b>	<b>(11,797)</b>	<b>(12,230)</b>	<b>(12,869)</b>	<b>(12,547)</b>	<b>(12,521)</b>	<b>(12,692)</b>	<b>(12,613)</b>	<b>(13,016)</b>	<b>(12,257)</b>	<b>(12,335)</b>	
Daily	22.6 (21.5–23.7)	23.4 (22.3–24.5)	22.6 (21.5–23.7)	21.6 (20.5–22.6)	20.4 (19.4–21.4)	21.0 (20.0–22.0)	21.2 (20.2–22.3)	20.7 (19.7–21.8)	19.4 (18.3–20.5)	19.8 (18.8–20.8)	↓
Occasional	6.2 (5.6–6.8)	5.4 (4.9–5.9)	4.4 (4.0–4.9)	4.6 (4.1–5.1)	4.5 (4.0–5.0)	4.5 (4.0–4.9)	4.3 (3.9–4.7)	4.1 (3.7–4.6)	3.8 (3.4–4.2)	3.3 (2.9–3.7)	↓
Previous	36.8 (35.5–38.0)	36.3 (35.1–37.4)	36.5 (35.2–37.8)	36.6 (35.4–37.9)	36.4 (35.2–37.6)	37.3 (36.2–38.5)	36.5 (35.3–37.6)	35.7 (34.5–36.9)	37.1 (35.8–38.4)	36.5 (35.3–37.7)	—
Never	34.5 (33.3–35.7)	35.0 (33.9–36.1)	36.5 (35.3–37.7)	37.2 (36.0–38.4)	38.7 (37.5–40.0)	37.2 (36.0–38.4)	38.0 (36.8–39.2)	39.5 (38.2–40.7)	39.7 (38.5–41.0)	40.4 (39.2–41.6)	↑
<b>Alcohol consumption<sup>(c)</sup> (n)</b>	..	..	..	<b>(12,464)</b>	<b>(12,391)</b>	<b>(12,334)</b>	<b>(12,294)</b>	<b>(12,792)</b>	<b>(12,005)</b>	<b>(12,071)</b>	
At-risk alcohol level	NAV	NAV	NAV	32.0 (30.8–33.2)	32.8 (31.6–34.1)	33.1 (31.9–34.3)	32.6 (31.3–33.8)	31.6 (30.3–32.8)	32.5 (31.2–33.8)	31.7 (30.5–32.9)	—
Responsible drinker	NAV	NAV	NAV	46.8 (45.7–48.0)	46.6 (45.5–47.8)	47.3 (46.1–48.5)	47.7 (46.4–48.9)	47.9 (46.7–49.1)	48.0 (46.7–49.2)	47.6 (46.4–48.8)	—
Non-drinker	NAV	NAV	NAV	21.2 (20.1–22.2)	20.5 (19.5–21.5)	19.6 (18.5–20.7)	19.8 (18.7–20.9)	20.5 (19.4–21.6)	19.5 (18.5–20.6)	20.7 (19.6–21.8)	—

(a) The direction and type of change is indicated for each result: ↑↓ indicates a statistically significant change, and — indicates there was no change.

(b) Adult patients aged 18+ with a recorded height outside the ABS height range based on age and sex were excluded. WHO BMI criteria for normal (BMI 18.5 to < 25) and underweight (BMI < 18.5) have been applied.

(c) From 2001–02 onwards, the wording of the responses to the first and third alcohol questions was amended to exactly reflect the AUDIT instrument from which they are derived. Therefore 1998–99 to 2000–01 are not directly comparable with data from 2001–02 onwards and as such are not listed. Note: CI—confidence interval; BMI—body mass index; NAV—not available.



Table 14.3: Comparative results for female patient risk factors, summary of annual results, BEACH, 1998–99 to 2007–08

Risk factor	Per cent (95% CI)											2007–08	↑ <sup>(a)</sup> ↓
	1998–99	1999–00	2000–01	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08	2007–08		
<b>BMI class<sup>(b)</sup> (n)</b>	<b>(18,092)</b>	<b>(19,655)</b>	<b>(18,820)</b>	<b>(19,039)</b>	<b>(19,670)</b>	<b>(19,214)</b>	<b>(17,976)</b>	<b>(19,976)</b>	<b>(19,410)</b>	<b>(18,703)</b>			
Obese	19.2 (18.4–19.9)	20.2 (19.5–21.0)	20.8 (20.0–21.6)	22.4 (21.6–23.2)	21.5 (20.7–22.3)	23.0 (22.1–23.8)	23.2 (22.4–24.1)	22.6 (21.7–23.4)	24.2 (23.3–25.1)	24.3 (23.5–25.2)	24.3 (23.5–25.2)	↑	
Overweight	27.8 (27.1–28.6)	27.9 (27.2–28.7)	29.4 (28.6–30.1)	28.5 (27.8–29.3)	29.0 (28.2–29.8)	29.4 (28.6–30.1)	29.3 (28.6–30.1)	29.3 (28.6–30.0)	30.1 (29.4–30.9)	30.4 (29.7–31.2)	30.4 (29.7–31.2)	↑	
Normal	48.6 (47.6–49.5)	47.6 (46.6–48.5)	46.0 (45.0–47.0)	45.2 (44.2–46.1)	45.7 (44.7–46.8)	44.1 (43.1–45.1)	43.8 (42.7–44.8)	44.6 (43.6–45.6)	42.2 (41.2–43.2)	41.9 (40.9–43.0)	41.9 (40.9–43.0)	↓	
Underweight	4.5 (4.1–4.8)	4.3 (4.0–4.6)	3.8 (3.5–4.1)	3.9 (3.6–4.2)	3.8 (3.5–4.2)	3.6 (3.3–3.9)	3.6 (3.3–4.0)	3.5 (3.2–3.8)	3.5 (3.2–3.8)	3.3 (3.0–3.6)	3.3 (3.0–3.6)	↓	
<b>Smoking status (n)</b>	<b>(18,073)</b>	<b>(19,930)</b>	<b>(18,920)</b>	<b>(19,182)</b>	<b>(19,875)</b>	<b>(19,780)</b>	<b>(18,468)</b>	<b>(20,288)</b>	<b>(18,718)</b>	<b>(19,081)</b>			
Daily	17.0 (16.2–17.7)	16.2 (15.4–16.9)	17.1 (16.3–17.9)	16.4 (15.6–17.2)	15.2 (14.4–15.9)	15.4 (14.6–16.1)	15.7 (15.0–16.5)	14.7 (14.0–15.4)	14.0 (13.3–14.8)	14.4 (13.7–15.2)	14.4 (13.7–15.2)	↓	
Occasional	5.2 (4.8–5.7)	5.1 (4.7–5.4)	4.3 (4.0–4.7)	3.8 (3.4–4.1)	3.9 (3.5–4.3)	4.2 (3.9–4.6)	3.3 (3.0–3.7)	3.3 (3.0–3.6)	2.7 (2.5–3.0)	2.6 (2.4–2.9)	2.6 (2.4–2.9)	↓	
Previous	20.6 (19.8–21.4)	21.4 (20.7–22.2)	20.9 (20.0–21.7)	22.0 (21.2–22.9)	21.5 (20.7–22.3)	22.0 (21.2–22.8)	22.2 (21.3–23.0)	21.5 (20.7–22.3)	23.3 (22.5–24.2)	22.3 (21.4–23.1)	22.3 (21.4–23.1)	↑	
Never	57.2 (56.1–58.4)	57.4 (56.3–58.4)	57.7 (56.6–58.8)	57.8 (56.7–58.9)	59.4 (58.3–60.5)	58.4 (57.3–59.5)	58.8 (57.7–59.9)	60.5 (59.5–61.6)	59.9 (58.8–61.0)	60.7 (59.6–61.7)	60.7 (59.6–61.7)	↑	
<b>Alcohol consumption<sup>(c)</sup> (n)</b>	..	..	..	<b>(19,095)</b>	<b>(19,749)</b>	<b>(19,387)</b>	<b>(18,120)</b>	<b>(19,961)</b>	<b>(18,342)</b>	<b>(18,715)</b>			
At-risk alcohol level	NAV	NAV	NAV	22.0 (21.1–22.9)	22.1 (21.2–23.0)	22.6 (21.7–23.6)	22.2 (21.3–23.2)	22.2 (21.3–23.2)	23.5 (22.5–24.5)	22.6 (21.6–23.6)	22.6 (21.6–23.6)	—	
Responsible drinker	NAV	NAV	NAV	42.4 (41.3–43.4)	42.7 (41.7–43.8)	43.5 (42.4–44.5)	43.0 (41.9–44.0)	42.8 (41.8–43.9)	42.4 (41.3–43.5)	42.6 (41.6–43.7)	42.6 (41.6–43.7)	—	
Non-drinker	NAV	NAV	NAV	35.6 (34.4–36.9)	35.2 (33.9–36.5)	33.9 (32.7–35.2)	34.8 (33.4–36.2)	35.0 (33.6–36.3)	34.1 (32.8–35.4)	34.8 (33.5–36.1)	34.8 (33.5–36.1)	—	

(a) The direction and type of change is indicated for each result. ↑/↓ indicates a statistically significant change, ↑/↓ indicates a marginally significant change, and — indicates there was no change.

(b) Adult patients aged 18+ with a recorded height outside the ABS height range based on age and sex were excluded. WHO BMI criteria for normal (BMI 18.5 to < 25) and underweight (BMI < 18.5) have been applied.

(c) From 2001–02 onwards, the wording of the responses to the first and third alcohol questions was amended to exactly reflect the AUDIT instrument from which they are derived. Therefore 1998–99 to 2000–01 are not directly comparable with data from 2001–02 onwards and as such are not listed. Note: CI—confidence interval; BMI—body mass index; NAV—not available.