

13 Patient risk factors

13.1 Background

General practice is commonly identified as a significant intervention point for health care and health promotion because general practitioners have considerable exposure to the health of the population. As about 80% of the population visit a GP in any one year,³² general practice appears to provide a suitable basis from which to monitor many aspects of the health of the population.

Since BEACH began in April 1998 a section on the bottom of each encounter form has been allocated to investigate aspects of patient health or healthcare delivery not covered by general practice consultation-based information. These additional substudies are referred to as the SAND (Supplementary Analysis of Nominated Data). Each organisation supporting the BEACH program has access to a subsample of 6,000 encounter forms per year in which to insert a series of questions (or two sets of questions in two smaller samples) on a subject of their choice as the SAND questions.

13.2 Methods

The fourth annual BEACH data collection period was divided into ten blocks of 5 weeks. Each block included data from 100 GPs, with 20 GPs recording per week. The recording pads of 100 forms were divided into three sections (40 A forms, 30 B forms and 30 C forms). Form A topics remained constant over the ten blocks, while Form B and Form C topics changed from block to block. The order of SAND sections in the GP recording pack is randomised, so that the 40 A forms may appear first, second or third in the pad. Randomised ordering of the components ensures that there is no order effect on the quality of the information collected.

The Form A topics contain questions about patient risk factors including self-reported height and weight (for calculation of body mass index, BMI), alcohol use and smoking status.

The population risk factor questions for alcohol consumption, BMI and smoking status will remain constant in future years and results are reported in each annual report. Summaries of results for other topics covered in SAND are available to the general public on the FMRC web site (www.fmrc.org.au/beach.htm).

13.3 Body mass index

Overweight and obesity has been estimated to account for over 4% of the total burden of disease in Australia³³. The 1999–2000 Australian diabetes, obesity and lifestyle study (AusDiab) estimated that 60% of Australians aged over 25 years were overweight or obese (BMI>25). Men (67%) were more likely to be overweight or obese than women (52%).³⁴

The body mass index (BMI) for an individual is calculated by dividing weight (kilograms) by height (metres) squared. A person with a BMI that is less than 20 is considered underweight, 20–24 is normal, 25–29 overweight and more than 30 is considered to be obese.

The GPs were instructed to ask the patients (or their carer in the case of children):

- What is your height in centimetres?
- What is your weight in kilograms?

Metric conversion tables (feet and inches; stones and pounds) were provided to the GP.

There is considerable debate in the literature as to whether the standard BMI calculation described above is appropriate in the case of children. Cole et al. have developed a method which calculates age- and sex-specific BMI cut-off levels for overweight and obesity which are specific to children.³⁵ The BEACH data on BMI are therefore presented separately for adults (aged 18 or over) and children. The standard BMI cut-offs have been applied for the adult population whereas the method described by Cole et al. has been used to calculate BMI cut-off levels for defining overweight and obesity in children aged between 2 and 18 years. This method is based on international data from developed Western cultures and is therefore applicable within the Australian setting.

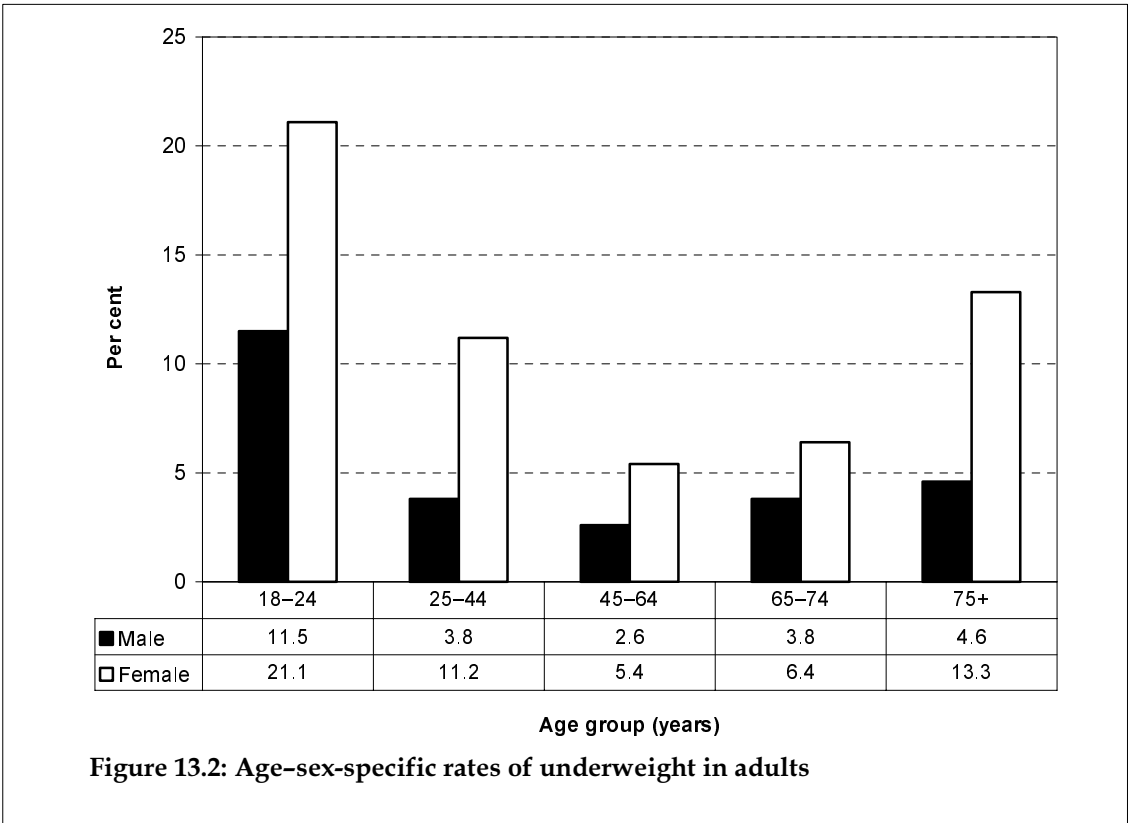
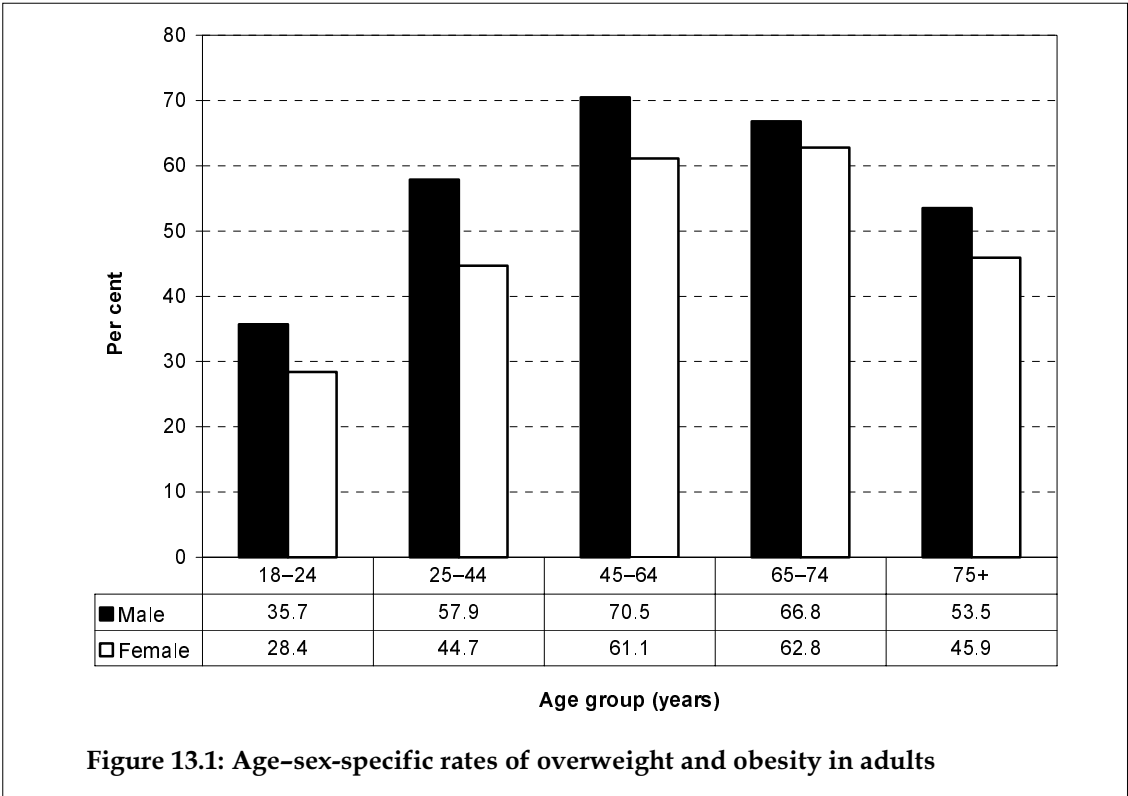
Body mass index of adult patients

BMI was calculated for 31,789 patients aged 18 years and over at encounters with 980 GPs. Overall, 21.4% (95% CI: 20.7–22.1) of these encounters were with patients considered obese, and 33.5% (95% CI: 32.9–34.1) were with those defined as overweight. A further 7.7% were with underweight patients and 37.4% were with patients whose BMI was in the normal range.

A greater proportion of males were overweight or obese (61.0%) than females (50.9%). The proportion of patients considered overweight or obese was greatest for males aged 45–64 years (Figure 13.1). These results are consistent with those of the 1999–2000 AusDiab study which estimated 67% of adult males (25 years and over) and 52% of adult females were overweight or obese.^{34,36} They are also consistent with the results reported for BEACH 2000–01.⁷

The patient was classified as underweight at 7.7% (95% CI: 7.3–8.0) of all adult encounters. In the 18–24 years age group, 21.1% of women and 11.5% of men were considered underweight, as were 13.3% of women and 4.6% of men in the 75 years and over age group (Figure 13.2).

These estimates are almost four times those made in the AusDiab study (underweight measured as BMI <18.5) when less than 1% of men and 2% of women were considered underweight. This difference is likely to be due to the use of different cut-off points between the two studies. In accepted clinical practice, GPs use a cut-off of BMI<20 rather than <18.5 to define 'underweight'.

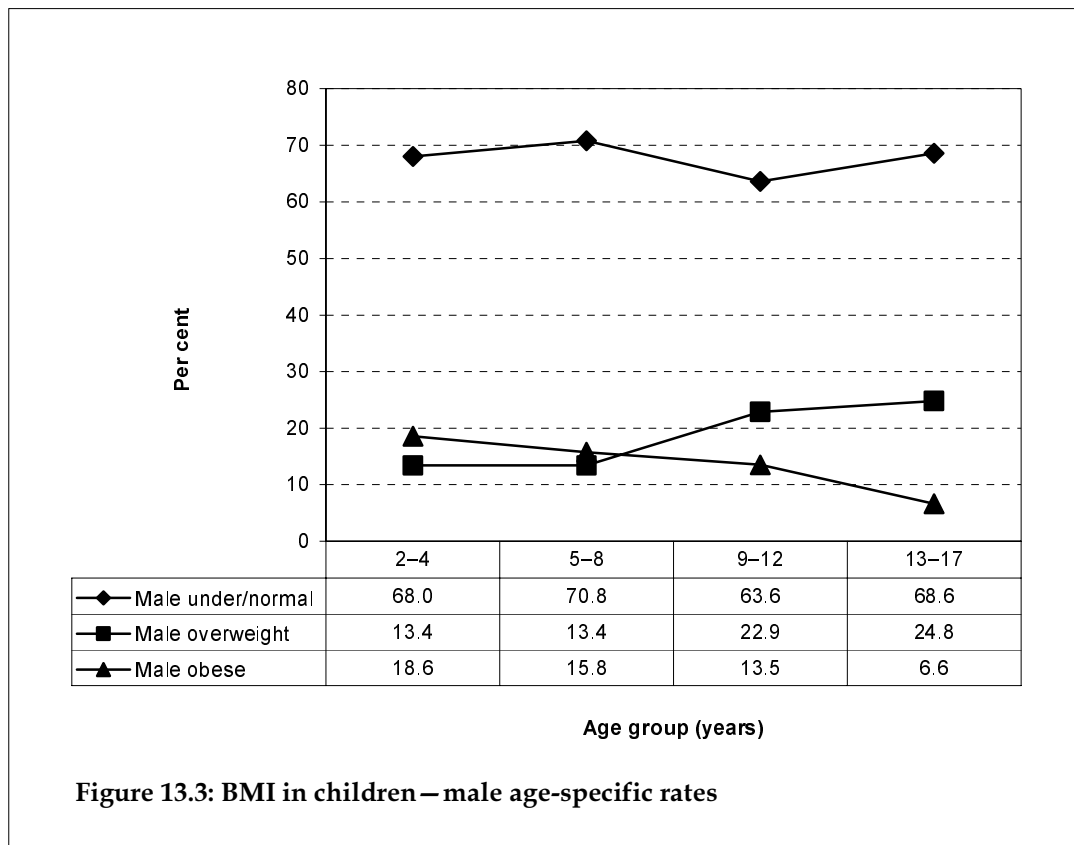


Body mass index of children attending general practice

BMI was calculated for 3,692 patients aged between 2 and 17 years at encounters with 869 GPs. A further 626 patients were in this age range, but BMI was not calculated due to missing height and/or weight data. Overall 13.0% (95% CI: 10.7–15.3) of encounters with children were with those considered obese, and a further 17.6% (95% CI: 15.9–19.3) were with children defined as overweight.

Almost one-third of all children aged 2 to 17 (30.6%; 95% CI: 28.6–32.5) were considered to be overweight or obese; comprising 32.2% (95% CI: 29.0–35.4) of male children and 29.5% (95% CI: 26.7–32.3) of female children.

Children aged 9–12 years were the most likely to be overweight or obese and this applied to both males (36.4%) and females (33.8%). In the adolescent age group (13–17 years) the rates of overweight and obesity were lower in both male (31.4%) and female (26.9%) patient groups (Figures 13.3 and 13.4).



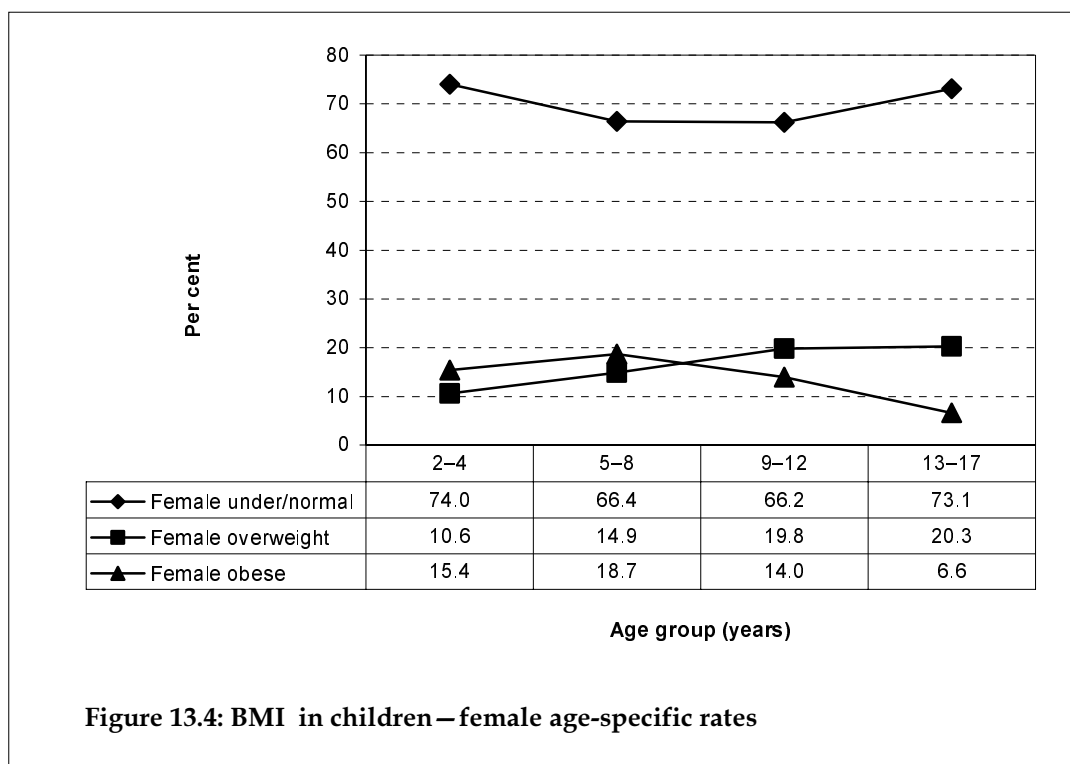


Figure 13.4: BMI in children – female age-specific rates

Errata:

The figures for childhood BMI were reported incorrectly in the previous annual report (*General Practice Activity in Australia 2000-01*, cat. no. GEP 8). Encounters where the BMI was missing were inadvertently included in the under/normal BMI grouping, in effect inflating the percentage classified as under/normal and deflating percentages classified as overweight and obese.

Below are the updated figures for the previous year (2000-01).

Table 13.1: Age-sex-specific rates of obesity and overweight in children (2000-01)

	2-4 years	5-8 years	9-12 years	13-17 years
Male				
Obese	22.6	18.9	9.7	8.4
Overweight	15.2	13.2	25.9	23.0
Under/normal	62.2	68.0	64.4	68.6
Female				
Obese	20.3	14.8	11.0	7.0
Overweight	12.2	19.1	22.5	15.6
Under/normal	67.5	66.0	66.6	77.5

13.4 Smoking

Tobacco smoking is the leading cause of drug related death and hospital separations in Australia.³⁷ It has been identified as the risk factor responsible for the greatest burden (9.7% of the total burden of disease) on the health of Australians.³³ According to the 2001 National Drug Strategic Household Survey 19.5% of Australians smoked daily, 21.1% of males and 18.0% of females.³⁴

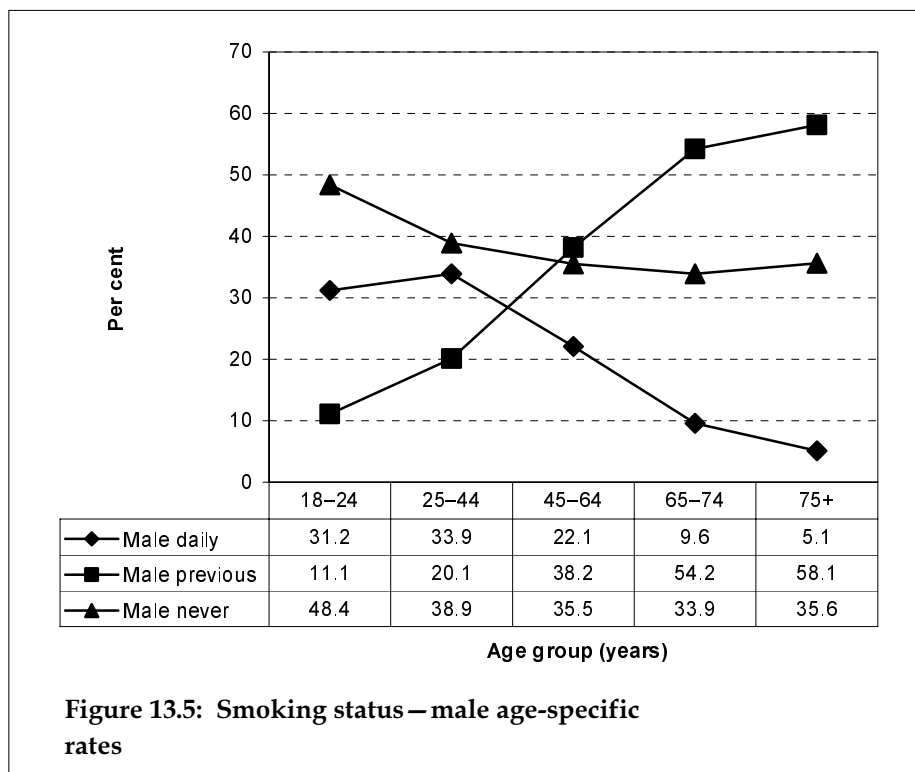
As part of the current study, the GPs were instructed to ask the patients (18+ years):

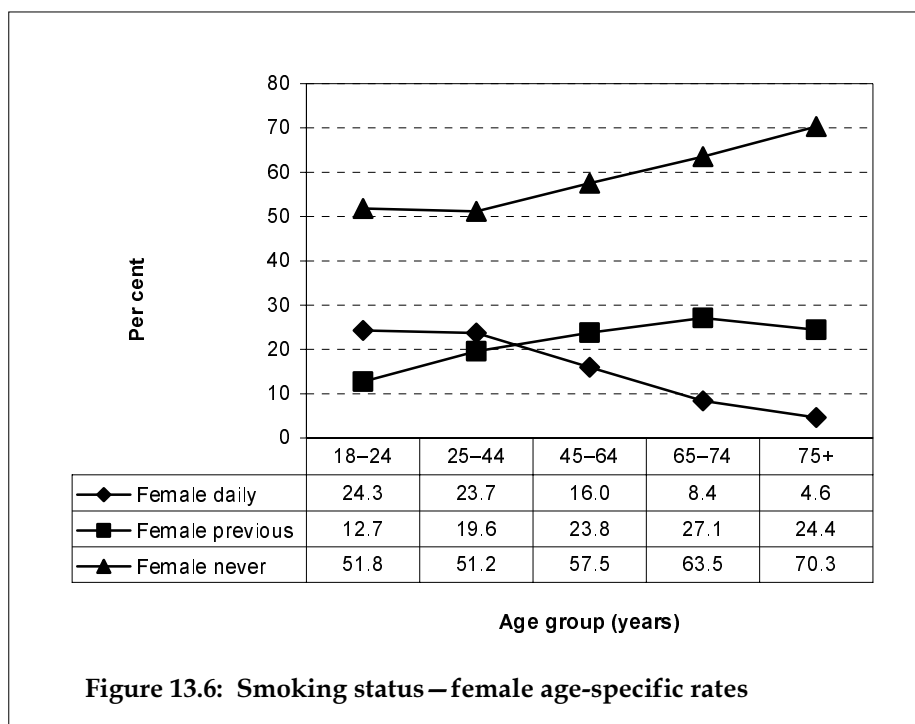
- What best describes your smoking status?
 - Smoke daily
 - Occasional smoker
 - Previous smoker
 - Never smoked

Respondents were limited to adults aged 18 years and over as the reliability of information on smoking and alcohol consumption from patients aged 14–17 may be compromised if a parent is present at the consultation. There may also be ethical concerns about approaching this younger patient group to ask this information for survey purposes.

The smoking status of 31,966 adult patients aged 18 years and over was ascertained from encounters with 981 GPs. Overall, 18.4% (95% CI: 17.7–19.1) of patient encounters were with adults who were daily smokers, 4.1% (95% CI: 3.7–4.5) were with occasional smokers and 27.8% (95% CI: 27.0–28.6) were with previous smokers. A significantly greater proportion of males (21.6%, 95% CI: 20.5–22.6) than females (16.4%, 95% CI: 15.6–17.2) were daily smokers. As shown in previous BEACH reports, the proportion of smokers decreased with age. Only 5.1% of male and 4.6% of female patients aged 75 years and over were daily smokers (Figures 13.5 and 13.6); however, 58.1% of males and 24.4% of females aged 75 years or more were previous smokers.

It is notable that the prevalence of daily smoking remains high among younger adults (aged 18–24), 31.2% of young males and one in four young females reporting daily smoking.





13.5 Alcohol use

Alcohol consumption is the second leading cause of drug-related death and hospitalisation in Australia.³⁸ In people aged 65 years and over, low to moderate consumption of alcohol was found to have a preventative effect against selected causes of morbidity and mortality (e.g. cardiovascular disease).³⁷ The beneficial impact of low alcohol consumption has been found to prevent more mortality than harmful alcohol consumption causes.³⁷ Alcohol consumption accounted for 4.9% of the total burden of disease in Australia; however, after taking into account the benefit of low to moderate alcohol consumption this fell to 2.2% of the total burden of disease.³³

The 2001 National Drug Strategic Household Survey (NDSHS) found that 10.2% of males and 9.4% of females (aged 14 years and over) drank at levels considered to be risky or high risk for their health in the long term,³⁴ based on the National Health and Medical Research Council 2001 Guidelines.³⁹ It also found that 39.3% of males and 29.6% of females (aged 14 years and above) drank alcohol at levels which put their health at-risk in the short term during the preceding 12 months.³⁴

To measure alcohol consumption, BEACH uses three items from the WHO Alcohol Use Disorders Identification Test (AUDIT),⁴⁰ with slightly modified wording and scoring for an Australian setting.⁴¹ Together these three questions assess 'at-risk' alcohol use. The scores for each question range from 0 to 4. A score of 5+ for males or 4+ for females suggests that the person's drinking level is placing them at-risk.

GPs were instructed to ask the patient (18+ years):

- How often do you have a drink containing alcohol?
 - Never
 - Monthly or less
 - Once a week/fortnight
 - 2-3 times a week
 - 4+ times a week
- How many standard drinks do you have on a typical day when you are drinking? _____
- How often do you have 6 or more standard drinks on one occasion?
 - Never
 - Less than monthly
 - Monthly
 - Weekly
 - Daily or almost daily

A standard drinks chart was provided to each GP to help the patient identify the number of standard drinks consumed.

Responses to these questions were recorded at 31,559 patient encounters (18+ years) from 981 GPs. There were a further 1,539 encounters with adults for which an 'alcohol score' could not be calculated, due to missing data.

In this fourth year of BEACH the wording of the responses to the first and third questions was amended to exactly reflect the AUDIT instrument from which they are derived. This change, along with a data entry change allowing more specific entry of the response slightly increased the rates of 'at-risk' drinking this year compared with each of the first 3 years of the program. The rates of 'at-risk' drinking this year are more reflective of the true rates of alcohol consumption in patients encountered in general practice.

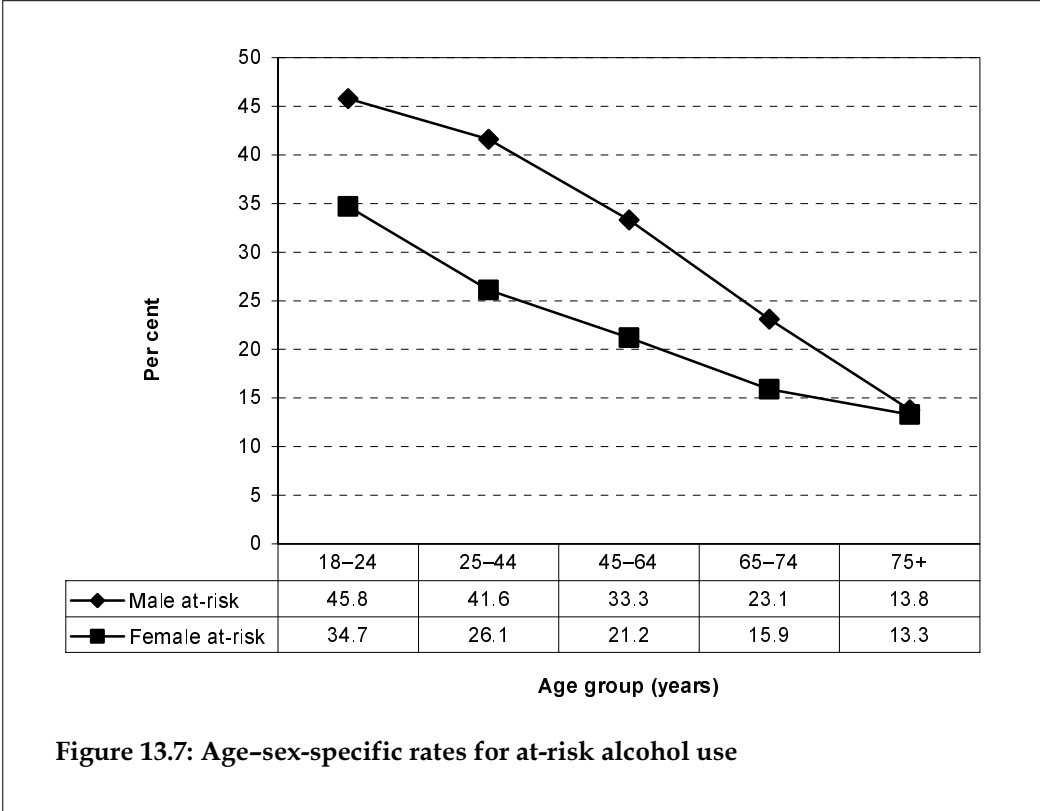


Figure 13.7: Age-sex-specific rates for at-risk alcohol use

The highest prevalence of at-risk drinkers was in the 18–24 years age group where almost half (45.8%) of the males and one-third (34.7%) of the females reported at-risk alcohol consumption. Overall, 26.1% (95% CI: 25.1–26.8) of patient encounters were with adults who reported drinking ‘at-risk’ levels of alcohol. The proportion of at-risk drinkers was higher for male patients (32.0%, 95% CI: 30.9–33.1) than for female patients (22.0%, 95% CI: 21.1–22.9). The proportion of patients who were at-risk drinkers decreased with age for both males and females (Figure 13.7). These estimates are a little lower than those made from the NDSHS.³⁴ This is likely to be due to the difference in the age bands studied (14 + in the NDSHS and 18+ in BEACH) and to differences in the age–sex distributions of the study populations.

13.6 Risk behaviour profile of adult patients

Due to a change in the placement of SAND questions in 2001–02, all patient risk factor questions (BMI, smoking and alcohol use) were asked to the same subsample of patients, making it possible to build up a risk profile of this subsample of adult patients.

For the purposes of this analysis, being overweight or obese, a daily smoker or an at-risk drinker are considered to be risk behaviours.

Table 13.2: Risk behaviour profile of adult patients

Number of risk behaviours	Number	Per cent of patients (n=30,642)	95% LCL	95% UCL
None	8,530	27.8	27.0	28.7
One	14,891	48.6	47.9	49.3
Overweight only	6,517	21.3	20.7	21.8
Obese only	4,354	14.2	13.7	14.7
Current daily smoker only	1,576	5.1	4.7	5.5
At-risk alcohol level only	2,444	8.0	7.5	8.5
Two	6,083	19.9	19.3	20.5
Overweight and current daily smoker	934	3.1	2.7	3.4
Obese and current daily smoker	715	2.3	1.9	2.7
Overweight and at-risk alcohol level	2,075	6.8	6.4	7.1
Obese and at-risk alcohol level	1,089	3.6	3.2	3.9
Daily smoker and at-risk alcohol level	1,270	4.1	3.8	4.5
Three	1,138	3.7	3.4	4.1
Overweight and current daily smoker and at-risk alcohol level	746	2.4	2.1	2.8
Obese and current daily smoker and at-risk alcohol level	392	1.3	0.9	1.7

Note: LCL—lower confidence limit, UCL—upper confidence limit.

A risk factor profile was prepared for 30,642 adult patients. Of the three measured risk behaviours (BMI, smoking and alcohol use), almost half of adult patients (48.6%; 95% CI: 47.9–49.3) had one risk factor. Being overweight or obese accounted for 73% of these single risk factor patients. One in five patients (19.9%) had two risk behaviours, the most common combinations being overweight and drinking ‘at-risk’ levels, followed by being a daily smoker and drinking ‘at-risk’ levels. A small minority (3.7%; 95% CI: 3.4–4.1) of patients reported having all three risk behaviours (Table 13.2).

Overall, female patients reported significantly lower levels of risk behaviours than males. Almost a third of females (31.6%) reported not having any of the measured risk behaviours, compared with 22.2% of males. Half of females (49.9%) had only one risk factor compared with 46.7% of males.

Table 13.3: Number of risk behaviours, by sex of patient

Sex of patient and number of risk behaviours	Number	Rate per 100 encounters (n=30,642)	95% LCL	95% UCL
Male patients	12,173	100
Zero	2,697	22.2	21.2	23.1
One	5,680	46.7	45.7	47.6
Two	3,107	25.5	24.6	26.4
Three	689	5.7	4.9	6.4
Female patients	18,469	100
Zero	5,833	31.6	30.6	32.5
One	9,211	49.9	49.1	50.7
Two	2,976	16.1	15.5	16.8
Three	449	2.4	1.8	3.1

Note: LCL—lower confidence limit, UCL—upper confidence limit.

13.7 Changes in patient health risk behaviours since 1998–99

The proportion of adults attending general practice who reported being daily smokers showed no significant change with time over the first 4 years of the BEACH program. The proportion of adult patients consuming at-risk levels of alcohol appears to have increased in the fourth year, but this is probably due to a slight change in the scoring method employed. The proportion of adults who were classified as obese according to their self-reported height and weight, showed a significant increase over the 4 years. The proportion classed as obese rose from 18.4% in 1998–99 to 21.4% in 2000–01 ($p < 0.0001$).

Table 13.4: Comparative results for patient risk behaviours, 1998–99 to 2001–02

Risk factor	BEACH 1998–99		BEACH 1999–00		BEACH 2000–01		BEACH 2001–02	
	Per cent	95% CI	Per cent	95% CI	Per cent	95% CI	Per cent	95% CI
Obese	18.4	17.7–18.9	19.4	18.8–20.0	20.2	19.5–20.8	21.4	20.7–22.1
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
Current daily smoker	19.2	18.4–20.0	18.9	18.2–19.6	19.3	18.5–20.1	18.4	17.7–19.1
At-risk alcohol level	24.5	23.6–25.3	24.2	23.4–24.9	24.1	23.3–24.9	26.0	25.1–26.8

Note: CI—confidence interval.