

## CHAPTER 8

## HEALTH RISK FACTORS

### INTRODUCTION

Health risk factors impact on the onset, maintenance and prognosis of a variety of chronic diseases. A wide body of research has demonstrated complex yet robust connections between a number of biomedical and behavioural factors and major chronic diseases and conditions (AIHW 2002d), including the fact that the major chronic diseases share common risk factors (WHO 2000). Though their role is less certain, environmental factors from cultural, socioeconomic, and physical domains have also been shown to have a strong association with both disease and behavioural and biomedical risk factors.

Understanding risk factors facilitates early intervention and management strategies to prevent or ameliorate disease and so achieve health gains for individuals and populations (NPHP 2001). 'Much is known about the prevention of noncommunicable diseases. Experience clearly shows that they are to a great extent preventable through interventions against the major risk factors and their environmental, economic, social and behavioural determinants in the population' (WHO 2000).

The health risk factors presented in this Chapter focus predominantly on behavioural risk factors, including smoking, the use of alcohol and other drugs, breastfeeding, immunisation, and nutrition. Data on the prevalence of biomedical risk factors, such as levels of blood pressure and blood cholesterol, are currently limited for the Indigenous population, with the exception of body weight, which is presented in this Chapter. Exposure to violence is presented as an environmental risk factor. The health and welfare of Indigenous Australians is also likely to be affected by exposure to other risk factors such as poor housing and inadequate environmental infrastructure (Chapter 3). The majority of the health risk factors presented in this Chapter are consistently recognised within the public health debate as impacting on health, and are responsible for a large proportion of the total burden of disease in Australia (Mathers et al. 1999; AIHW 2002c). They are also an important component of the greater burden of ill health experienced by Aboriginal and Torres Strait Islander peoples when compared with non-Indigenous Australians.

The Indigenous component of the 2001 National Health Survey (NHS) provides the most recent data for the majority of risk factors presented in this Chapter. Many of the following estimates presented from the 2001 NHS are subject to large sampling error. The *National Health Survey: User's Guide* (cat. no. 4363.0.55.001), available free of charge from the ABS web site <<http://www.abs.gov.au>>, provides further details about the reliability of the results. Given the increasing interest in regional differences in health status, where possible, comparisons have been made between remote and non-remote areas of Australia. In addition, data from various other sources, including the Australian Institute of Health and Welfare's (AIHW) 2001 National Drug Strategy Household Survey (NDSHS) and the National Hospital Morbidity Database (NHMD) are discussed (see Explanatory Notes for further details of these sources).

## BREASTFEEDING

Breastfeeding is associated with improvements in health outcomes, through reduction in child and infant mortality and morbidity (SIGNAL 2001). Specific benefits identified include reduction in otitis media, gastrointestinal infections, and sudden infant death syndrome (NHMRC 2001). In a traditional Indigenous setting, children were breastfed until at least two years of age. More recently, Indigenous children in more urban areas are increasingly weaned onto diets relatively high in sugar, fats and protein at a younger age, which may impact on health outcomes throughout adulthood (Gracey 2000).

In 2001, 78% of Indigenous children aged under four years were breastfed. While the proportion of the non-Indigenous children reported to have been breastfed was higher (87%), it can not be stated with confidence that there is any difference between the two populations in their likelihood to have been breastfed. Indigenous children living in non-remote areas are less likely than non-Indigenous children to have been breastfed for more than six months (table 8.1).

In non-remote areas in 2001, (77%) of Indigenous children aged under four had been or were currently being breastfed for at least some time, similar to the proportion in 1995 (75%) (table 8.1).

### 8.1 CHILDREN AGED UNDER 4 YEARS, BREASTFEEDING STATUS — NON-REMOTE AREAS(a)

	1995		2001	
	Indigenous	Non-Indigenous	Indigenous	Non-Indigenous
PROPORTION (%)				
Child has been breastfed for				
Less than 1 month	**11	13	15	11
1 to less than 6 months	*18	25	25	24
6 to less than 12 months	*15	21	*12	19
12 months or more	14	13	*12	16
Total(b)	59	72	64	71
Child currently being breastfed	16	14	13	16
Child has never been breastfed	25	14	23	12
Total children aged under 4 years(c)	100	100	100	100
NUMBER ('000)				
Total children aged under 4 years	32	972	36	962

(a) Indigenous data for 1995 are only available for non-remote areas. As a result, non-Indigenous and time series comparisons are made on this basis.

(b) Includes 'length of time child has been breastfed' not known.

(c) Includes 'child breastfeeding status' not known.

Source: ABS 2002e.

Given that Aboriginal and Torres Strait Islander peoples suffer a much higher burden of disease from infectious diseases than do non-Indigenous Australians, there are extra vaccinations recommended for Indigenous Australians in addition to the Australian Standard Vaccination Schedule. The detailed recommendations for all vaccines can be found in the Australian Immunisation Handbook (NHMRC 2003).

As noted in Chapter 7, the Indigenous hospital separation rates for influenza and pneumonia (combined) in 2000–01 were about five times the non-Indigenous rates. Due to these higher rates of influenza and pneumonia and pneumococcal disease, vaccination for influenza and pneumococcal disease is recommended by the National Health Medical Research Council (NHMRC) to commence at a younger age for Aboriginal and Torres Strait Islander peoples (50 years of age) than non-Indigenous Australians (65 years). The NHMRC also recommends that Indigenous adults aged 15–49 years with underlying medical conditions (e.g. diabetes, chronic heart disease or severe asthma) should be vaccinated. The National Indigenous Pneumococcal and Influenza Immunisation Program funds free vaccines and promotes vaccination in these risk groups.

National data on vaccination coverage in Indigenous Australians became available for the first time in the 2001 NHS (ABS 2002d). The discussion compares Indigenous adults aged 50 years of age or more with non-Indigenous peoples over 65 years. For Indigenous adults, self-reported vaccination coverage for influenza in the past year was 51%, similar to the coverage in the non-Indigenous population; and for pneumococcal disease in the past five years, was 25% higher than the coverage in the non-Indigenous population (14%). For Indigenous adults, coverage was considerably higher in remote areas compared to non-remote for both influenza (almost twice as high) and pneumococcal disease (more than double) (table 8.2).

For Indigenous children aged under seven years, vaccination data were available for non-remote areas only. For diphtheria, tetanus, whooping cough, hepatitis B, polio, measles, mumps and rubella, the proportion of Indigenous children who were fully vaccinated ranged from 60% (whooping cough), to 78% (measles, mumps, rubella) (table 8.2). Negotiations are currently occurring between jurisdictional health departments and community controlled health organisations for the release of data on vaccination coverage in Indigenous children from the Australian Childhood Immunisation Register. It is anticipated that national level data will be published in 2004.

## 8.2 IMMUNISATION STATUS, NON-REMOTE AREAS — 2001

	<i>Indigenous</i>	<i>Non-Indigenous</i>
	%	%
CHILDREN AGED UNDER 7 YEARS		
Diphtheria, tetanus		
Fully immunised	66	78
Partially immunised	20	14
Not immunised	*2	2
<i>Total(a)</i>	100	100
Whooping cough		
Fully immunised	60	73
Partially immunised	26	19
Not immunised	*2	2
<i>Total(a)</i>	100	100
Hepatitis B(b)		
Fully immunised	76	77
Partially immunised	*16	14
Not immunised	n.p.	*5
<i>Total(a)(c)</i>	100	100
Polio		
Fully immunised	71	84
Partially immunised	14	8
Not immunised	*2	2
<i>Total(a)</i>	100	100
Measles, mumps, rubella		
Fully immunised	78	87
Partially immunised	7	7
Not immunised	7	4
<i>Total(a)</i>	100	100
ADULTS(d)		
Influenza		
Had vaccination in last 12 months	45	75
Had vaccination but not in last 12 months	11	7
Never had vaccination	43	18
<i>Total persons(e)</i>	100	100
Pneumonia		
Had vaccination in last five years	19	28
Had vaccination but not in last five years	**4	*1
Never had vaccination	75	69
<i>Total persons(f)</i>	100	100

(a) Includes 'immunisation status' not known.

(b) Introduced in the recommended immunisation schedule in May 2000. Therefore data only apply to children under 18 months of age.

(c) Includes 'immunisation status' not applicable.

(d) Includes only adults in age groups recommended to be vaccinated, that is Indigenous adults over 50 years, and non-Indigenous adults over 65 years.

(e) Includes 'whether had influenza vaccination in the 12 months prior to interview' and 'whether had influenza vaccination' not known.

(f) Includes 'whether had pneumonia vaccination in the five years prior to interview' and 'whether had pneumonia vaccination' not known.

Source: ABS 2002e.

Nutrition-related diseases such as heart disease, Type 2 diabetes, obesity, and renal disease are principal causes of ill health among Aboriginal and Torres Strait Islander peoples (NHMRC 2000a; SIGNAL 2001). While the relationship between health and nutrition is widely accepted, less well understood are the complex interrelationships between nutrition and health risk factors. For example, diet-related diseases may be associated with environmental, behavioural, biological and genetic factors, making it difficult to determine the extent to which diet contributes to disease (AIHW 2000). The diets of many Aboriginal and Torres Strait Islander peoples have undergone rapid change, from a fibre-rich, high protein, low saturated fat 'traditional' diet, to one in which refined carbohydrates and saturated fats predominate (NHMRC 2000a). In addition, external factors, such as the physical environment, dispossession of land, socioeconomic status, historical and cultural issues, and access to fresh food in remote areas, all impact on the choices Indigenous Australians have in terms of nutrition and diet.

The NHMRC recommends that a balanced diet should include, among other items, plenty of fruit and vegetables, reduced fat dairy foods and/or alternatives, and limited intake of saturated/total fat and salt in foods (NHMRC 2001). After adjusting for age differences, 42% of Aboriginal and Torres Strait Islander adults living in non-remote areas were estimated to have a medium to high fruit intake (2 or more serves per day), compared to 52% of the non-Indigenous population. However, 83% of Indigenous adults were estimated to have a medium to high vegetable intake (2 or more serves per day), compared to 77% of the non-Indigenous population (table 8.3). Indigenous adults in non-remote areas were also more likely than non-Indigenous adults in non-remote areas to consume whole (full cream) milk, rather than reduced fat alternatives, and add salt to their meals after cooking (table 8.3). These trends were apparent across all age groups (ABS 2002e).

A healthy diet also is dependent on the supply of appropriate foods, at both an individual and community level. Many Aboriginal and Torres Strait Islander peoples in remote communities do not have access to the same range and cost options for healthy food as non-Indigenous Australians (Public Health Services; Queensland Health 2001; Stewart 1997). Even where healthy food is available, education, availability of traditional foods, and limited access to income (including financial control and management) can influence decision making. The ability to store and prepare fresh food is also limited by the lack of adequate facilities and infrastructure such as kitchens, storage facilities, and a reliable source of electricity (Chapter 3).

### 8.3 SELECTED DIETARY BEHAVIOURS, NON-REMOTE AREAS(a) — 2001

	<i>Indigenous</i>	<i>Non-Indigenous</i>
	%	%
Usual daily serves of vegetables		
Do not eat vegetables	1	1
1 serve or less	17	22
2–3 serves	47	48
4–5 serves	32	25
6 serves or more	4	5
<i>Total</i>	<i>100</i>	<i>100</i>
Usual daily serve of fruit		
Do not eat fruit	11	6
1 serve or less	47	41
2–3 serves	32	42
4–5 serves	9	8
6 serves or more	*2	2
<i>Total</i>	<i>100</i>	<i>100</i>
Usual type of milk		
Whole	67	48
Low/reduced fat	18	30
Skim	6	12
Soy	*2	4
None of the above(b)	6	5
<i>Total(c)</i>	<i>100</i>	<i>100</i>
Salt added after cooking		
Never/rarely	39	55
Sometimes	19	20
Usually	42	25
<i>Total</i>	<i>100</i>	<i>100</i>

(a) Persons aged 12 years and over. Directly age-standardised using the total Australian population as at 30 June 2001.

(b) Includes 'evaporated or sweetened condensed milk'.

(c) Includes 'usual type of milk consumed' not known.

Source: ABS data available on request, 2001 NHS.

## BODY WEIGHT

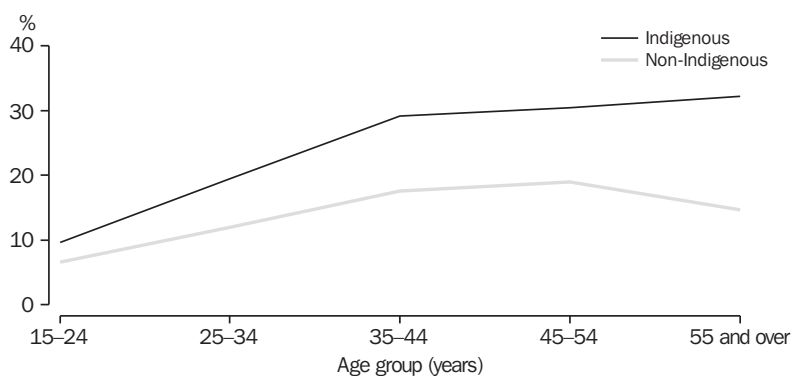
Relative body weight is important both as an indicator of past and current health, and as a predictor of future health. Being underweight may reflect poor nutrition or illness, and under-nutrition is still a significant health problem, particularly for children in some Indigenous communities (NHMRC 2000b). Obesity is a risk factor for diabetes and heart disease, among other conditions.

Self-reported measurements of height and weight were collected in the 2001 NHS and used as the basis for allocating Body Mass Index (BMI — see Glossary) for persons aged 15 years and over. Although a comparison of data from the 1995 NHS and 1995 National Nutrition Survey indicated that self-reported measurements were shown to underestimate BMI (ABS 1998c), the lack of alternative means of gathering data necessitated the use of self-reporting in the 2001 NHS. Classification of the 2001 NHS data into relative weight categories (i.e. underweight, acceptable weight, overweight and obese) was consistent with recommendations of the NHMRC (1985) and those of the World Health Organisation (WHO) (1995). Height and weight information could not be obtained for approximately 20% of Aboriginal and Torres Strait Islander peoples and 8% of non-Indigenous Australians.

In the 2001 NHS, persons with a BMI of between 25 to less than 30 were classified as overweight, while persons with a BMI of 30 or more were classified as obese (see Glossary). Results from the 2001 NHS indicate that after adjusting for age differences and non-response, Indigenous adults aged 15 years and over were more likely (61%) to be classified as overweight or obese when compared with non-Indigenous adults (48%). The proportion of both Indigenous and non-Indigenous persons, aged 18 years and over and classified as obese, has increased since 1995.

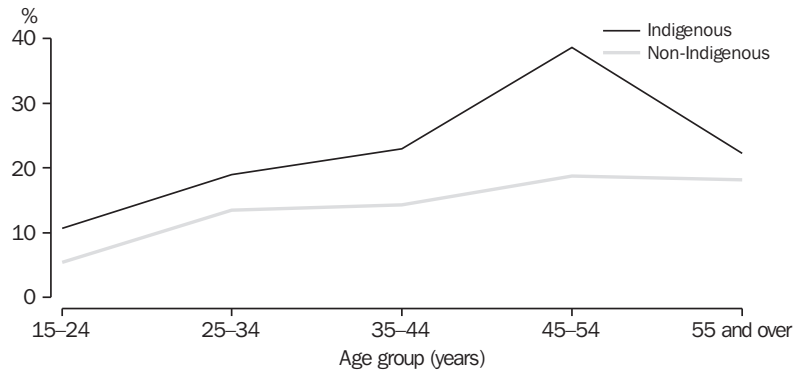
As shown in the following graphs, Indigenous males and females in each age group were more likely to be classified as obese than non-Indigenous Australians in the same groupings.

8.4 OBESSE MALES — 2001



Source: ABS 2002e.

8.5 OBESE FEMALES — 2001



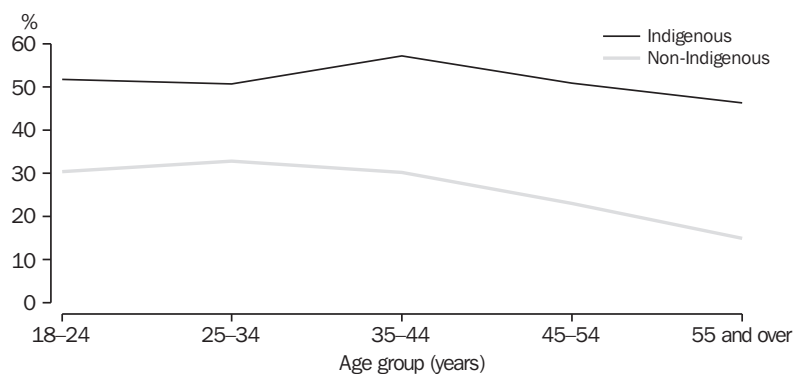
Source: ABS 2002e.

## SMOKING

Smoking tobacco increases the risk of coronary heart disease, stroke, peripheral vascular disease, numerous cancers and a variety of other diseases and conditions. As a single risk factor, it causes the greatest burden of disease for the total Australian population (Mathers et al. 1999; AIHW 2002c). As Chapters 7 and 9 show, Aboriginal and Torres Strait Islander peoples are at greater risk than non-Indigenous Australians of hospitalisation and/or death from these conditions. Smoking during pregnancy is also a risk factor for low birthweight which, as Chapter 6 indicates, is about twice as common among babies born to Indigenous mothers as it is among non-Indigenous babies.

After adjusting for age differences, 51% of Indigenous persons aged 18 years were current smokers, compared to 24% of non-Indigenous persons. As shown in the following graphs, smoking was more commonly reported in 2001 among Indigenous males and females in every age group when compared with the non-Indigenous population (graphs 8.6 and 8.7).

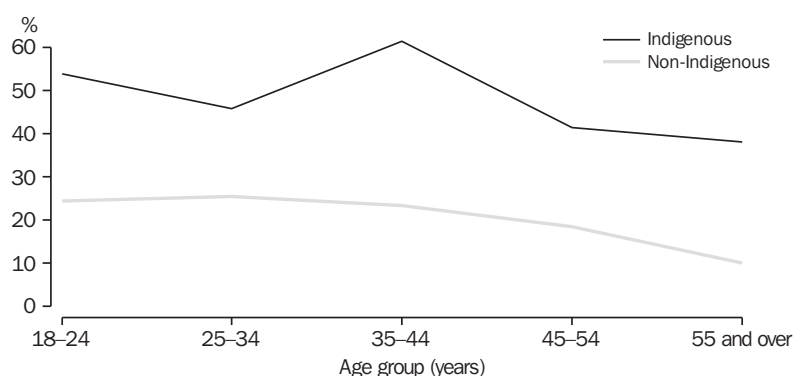
8.6 MALE SMOKERS — 2001



Source: ABS 2002e.



8.7 FEMALE SMOKERS — 2001



Source: ABS 2002e.

Results from the 2001 NDSHS indicate very similar trends to the 2001 NHS in regard to the smoker status of Indigenous and non-Indigenous Australians (see Explanatory Notes for further details of the NDSHS). According to the 2001 NDSHS, 45% of all Aboriginal and Torres Strait Islander peoples aged 14 years and over reported being daily smokers, compared to 19% of non-Indigenous peoples (AIHW 2003j).

## ALCOHOL CONSUMPTION

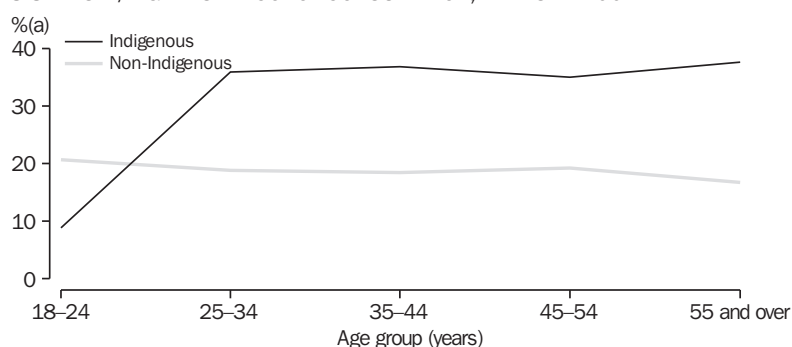
The excessive consumption of alcohol is a major risk factor for conditions such as liver disease, pancreatitis, diabetes, some cancers and epilepsy. Alcohol is frequently a contributor in injuries from motor vehicle accidents, falls, burns, and suicide (AIHW 2002c), and has the potential to contribute to domestic violence, family breakdown and anti-social behaviour. Excessive alcohol consumption was associated with 3.4% of deaths in Australia in 1996 and 4.8% of the total burden of disease (Mathers et al. 1999).

There is a growing body of research providing information on alcohol consumption patterns of Indigenous and non-Indigenous Australians. Broad level results from these surveys are similar, although detailed results vary slightly due to differences in definitions, field operations, time frames and geography. It is important to note that although the majority of this research focuses on the consumption of alcohol by individuals, the political economy governing the supply of alcohol is a key factor in patterns of alcohol use (eds Gray & Sagers 2002).

While several surveys have shown that Aboriginal and Torres Strait Islander peoples are less likely than non-Indigenous Australians to drink alcohol, those who do so are more likely to consume it at hazardous levels (ABS & AIHW 1999; ABS 2002e; AIHW 2003j). Results from the 2001 NHS indicate that Indigenous adults were less likely (42%) than non-Indigenous adults (62%) to have consumed alcohol in the week prior to interview (ABS 2002e).

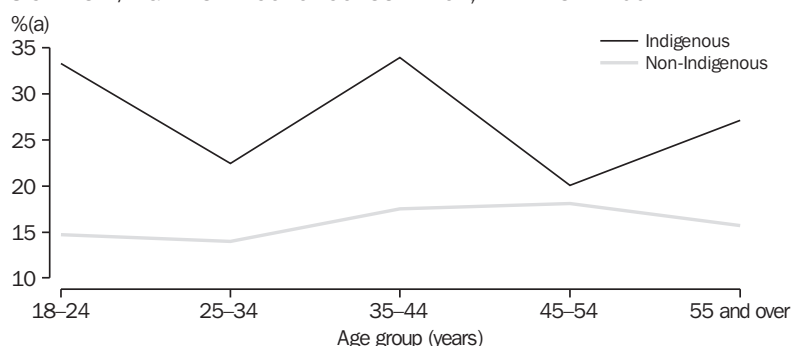
Of those that did consume alcohol, Indigenous Australians were more likely to consume at risky/high risk levels (29%) compared with non-Indigenous Australians (17%). Indigenous and non-Indigenous males were both more likely than Indigenous females and non-Indigenous females respectively to consume alcohol at risky/high risk levels (graphs 8.8 and 8.9). The highest proportion of risky/high risk alcohol consumption was recorded for Indigenous males aged 55 years and over at 38%. However, younger Indigenous males (18–24 years) were less likely than non-Indigenous males in the same age group to consume alcohol at risky or high risk levels (9% and 21% respectively).

8.8 RISKY/HIGH RISK ALCOHOL CONSUMPTION, MALES — 2001



(a) Proportion of respondents who reported consuming alcohol in the week prior to interview.  
Source: ABS data available on request, 2001 NHS.

8.9 RISKY/HIGH RISK ALCOHOL CONSUMPTION, FEMALES — 2001



(a) Proportion of respondents who reported consuming alcohol in the week prior to interview.  
Source: ABS data available on request, 2001 NHS.

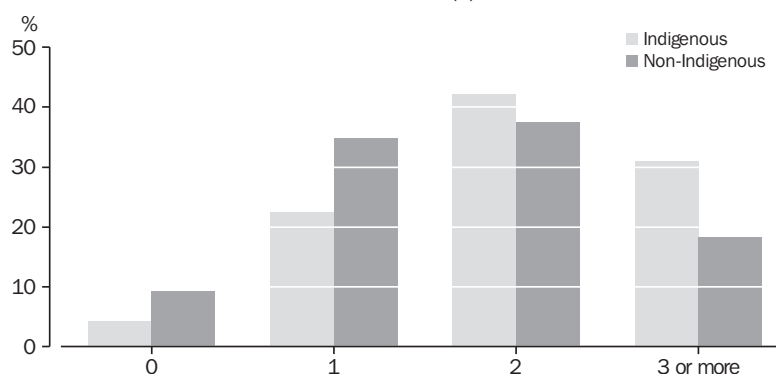
According to the 2001 NDSHS, Indigenous Australians aged 14 years and over who consumed alcohol were twice as likely (20%) as non-Indigenous Australians to consume alcohol at risky or high risk levels over the course of a year (AIHW 2003j). It is important to note that specific definitions and methodology used in the 2001 NDSHS differ from those in the 2001 NHS.

**MULTIPLE RISK FACTORS:  
OBESITY, SMOKING,  
ALCOHOL CONSUMPTION  
AND LOW EXERCISE LEVEL**

In the sections above, risk factors such as obesity, smoking and alcohol consumption have been assessed largely in isolation from one another. However, the level of risk of a particular factor may depend on whether other factors are also present, as risk factors tend to coexist and be interactive in their effects (AIHW 2002d). For example, for smokers who are obese, the risks associated with smoking may combine with those of obesity so that the health consequences are greater than what would be expected from one of these factors alone.

As discussed above, Indigenous adults were more likely than non-Indigenous adults to smoke, to be classified as obese, and to be categorised as a high risk drinker. In addition, results from the 2001 NHS indicate that the majority (around 70%) of both Indigenous and non-Indigenous adults living in non-remote areas reported their levels of exercise for recreation, sport or fitness as either sedentary or low (ABS 2002e). As graph 8.10 shows, Indigenous adults living in non-remote areas were more likely than non-Indigenous adults to be exposed to more than one of these four risk factors.

8.10 NUMBER OF RISK FACTORS REPORTED(a) — 2001



(a) Adults aged 18 years and over living in non-remote areas. Risk factors include overweight/obesity (according to NHMRC BMI guidelines), sedentary/low exercise level, risky/high alcohol risk, and cigarette smoking.

Source: ABS data available on request, 2001 NHS.

**ILLICIT DRUG USE**

The term 'illicit drugs' refers to a variety of substances that are either illegal to possess (e.g. marijuana, heroin), or legally available, but used inappropriately (e.g. misuse of prescription medication, inhalation of petrol) (AIHW 2002c). Illicit drug use may have severe social and economic impacts on individuals and communities. For individuals, the use of illicit drugs is linked to various medical conditions. Injecting drug users, for example, have an increased risk of blood-borne viruses such as Hepatitis C. For communities, there are additional issues associated with social disruption, such as domestic violence, crime and assaults, consequences which can be more apparent in smaller remote and rural Indigenous communities (McAllister & Makkai 2001; Gray et al. 2002).

Illicit drug use is an important health risk factor for Indigenous Australians. The 2001 NDSHS indicates that illicit drug use among Aboriginal and Torres Strait Islander peoples was higher than for non-Indigenous Australians (AIHW 2003j). Over half (57%) of Indigenous respondents indicated that they had tried an illicit drug, compared to 37% of non-Indigenous respondents. This pattern was similar for marijuana/cannabis and 'any other illicit drug' (table 8.11).

## 8.11 SUMMARY OF ILLICIT DRUG USE(a)(b) — 2001

	<i>Indigenous</i>	<i>Non-Indigenous</i>
	%	%
Ever used		
Marijuana/cannabis	50	33
Any illicit drug	57	37
Any illicit drug other than marijuana/cannabis	25	18
Used in the last 12 months		
Marijuana/cannabis	27	13
Any illicit drug	32	17
Any illicit drug other than marijuana/cannabis	13	8

(a) There were 415 Indigenous respondents in the NDSHS 2001. Results should therefore be interpreted with caution.

(b) Persons aged 14 years and over. Data are not age-standardised.

Source: AIHW National Drug Strategy Household Survey 2001.

## EXPOSURE TO VIOLENCE

The recent WHO report 'World Report on Violence and Health' divides violence into three broad categories — self-inflicted, interpersonal and collective (eds Krug et al. 2002). To some extent, the former two can be investigated in an Indigenous experience using selected survey and hospitalisation data (ABS & AIHW 2001). It has been argued, however, that there is a lack of any discussion of the magnitude of collective violence against Aboriginal and Torres Strait Islander peoples (Anderson 2002).

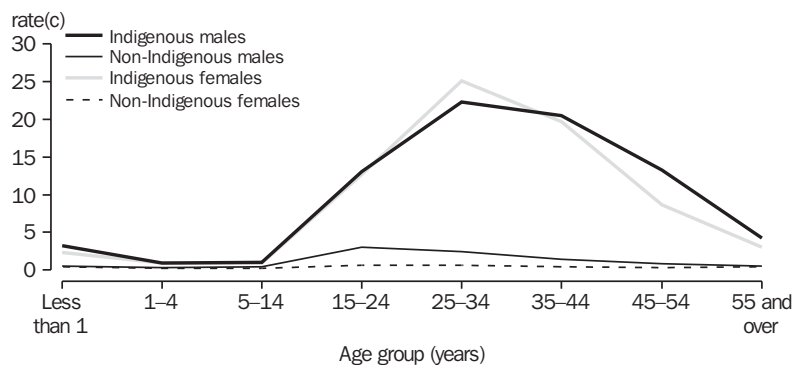
Violence is a health risk factor that is at times overlooked. It can result in injury, psychological trauma and even death. In the 1994 National Aboriginal and Torres Strait Islander Survey (NATSIS), the first national data on the personal safety of Indigenous Australians became available. In the year preceding the NATSIS, 14% of Indigenous males and 12% of Indigenous females aged 13 years and over said that they had been verbally threatened or physically attacked (ABS 1995).

These figures suggest that the problem of violence-related injury is not a minor one, supported by data on the rates of hospitalisation experienced by Aboriginal and Torres Strait Islander peoples as a result of interpersonal violence. As noted in Chapter 7, rates of hospitalisation in 2000–01 for injury or poisoning (ICD-10-AM chapter 'Injury, poisoning and certain other consequences of external causes'), were 1.9 times higher for Indigenous males and 2.4 times higher for Indigenous females compared with non-Indigenous males and females respectively. In cases where the principal diagnosis was injury or poisoning, Indigenous males

were 8.4 times more likely to have 'Assault' coded as the first reported external cause than non-Indigenous males. Similarly, Indigenous females were 28.3 times more likely than non-Indigenous females to have 'Assault' coded as the first reported external cause of injury (AIHW NHMD). This trend was apparent across every age group for both males and females (graph 8.12).

Available data on deaths caused by 'Assault' also show significantly higher age specific death rates for Indigenous males and females between 15 and 54, compared to the relevant age specific rates for the total Australian population (Chapter 9).

8.12 HOSPITAL SEPARATIONS FOR ASSAULT(a)(b) — 2000–01



(a) Data are for public and most private hospitals, for separations with an external cause of injury or poisoning coded as 'assault'. Based on the International Statistical Classification of Diseases and Related Health Problems, 10th Revision, Australian Modification (ICD-10-AM) (National Centre for Classification in Health 2000).

(b) These figures should be interpreted with caution, as injuries purposely inflicted by others may be under-reported by women.

(c) Age-specific rate per 1,000 population.

Source: AIHW, National Hospital Morbidity Database.

## SUMMARY

The relative socioeconomic disadvantage experienced by Aboriginal and Torres Strait Islander peoples compared with non-Indigenous Australians places them at greater risk of ill health (Chapter 2). Results from the 2001 NHS indicate that Indigenous children were less likely to have been breastfed for as long as non-Indigenous children. After adjusting for age differences and non-response, Indigenous Australians aged 18 years and over were twice as likely as non-Indigenous Australians to be current smokers (table 8.13). Indigenous adults aged 18 years and over were less likely (42%) than non-Indigenous adults (62%) to have consumed alcohol in the week prior to interview (ABS 2002e). Of those that did consume alcohol, Indigenous Australians were more likely to consume at risky/high risk levels (29%) compared with non-Indigenous Australians (17%) (table 8.13). Illicit drug use among Aboriginal and Torres Strait Islander peoples appears to be higher than for non-Indigenous peoples (AIHW 2003j). Indigenous Australians were more likely to be classified as overweight or obese when compared with non-Indigenous Australians (61% to 48% respectively). Indigenous persons aged 12 years and over were more likely to have a low daily fruit intake than non-Indigenous persons, but less likely to have a low daily vegetable intake.

