

## Chapter 4 Determinants of Health

Determinants of health are factors that have either a positive or negative influence on health at the individual or population level. This tier of the framework seeks to answer the questions: Are the factors that determine good health changing for the better? Is it the same for everyone? and Where and for whom are these determinants changing? The dimensions covered by the second tier are shown in Table 4.1.

**Table 4.1 Dimensions of the Second Tier of the National Health Performance Framework**

<b>Determinants of Health</b>				
<b>Are the factors determining good health changing for the better? Is it the same for everyone? Where and for whom are these factors changing?</b>				
<b>Environmental Factors</b>	<b>Socioeconomic Factors</b>	<b>Community Capacity</b>	<b>Health Behaviours</b>	<b>Person-related Factors</b>
Physical, chemical and biological factors such as air, water, food and soil quality resulting from chemical pollution and waste disposal.	Socioeconomic factors such as education, employment, per capita expenditure on health, and average weekly earnings.	Characteristics of communities and families such as population density, age distribution, health literacy, housing, community support services and transport.	Attitudes, beliefs knowledge and behaviours e.g. patterns of eating, physical activity, excess alcohol consumption and smoking.	Genetic-related susceptibility to disease and other factors such as blood pressure, cholesterol levels and body weight.

Indicators for some of these dimensions, particularly health behaviours, are well accepted. Indicators for other dimensions, including community capacity, and socioeconomic and environmental determinants of health, are less well established.

### Example indicators

This chapter presents some sample indicators that could be used to report on the determinants of health. Table 4.2 shows how the sample indicators relate to the dimensions within this tier of the framework.

**Table 4.2 Example indicators**

<b>Example indicator</b>	<b>Dimension within Tier 2</b>
Unemployment and participation in the labour force, rate trends by sex	Socioeconomic factors
Environmental tobacco smoke: workplace smoking restrictions	Environmental factors
Pattern of tobacco use	Health behaviours
Percentage of people achieving 'sufficient' physical activity	Health behaviours
Percentage of people overweight or obese	Health behaviours

As for the Health Status and Outcomes domain (Chapter Three), these examples were chosen to represent the major issues encompassed within this domain for which there were established measures and available national data. The indicators presented illustrate those that could be included under this domain in future reports.

### Issues

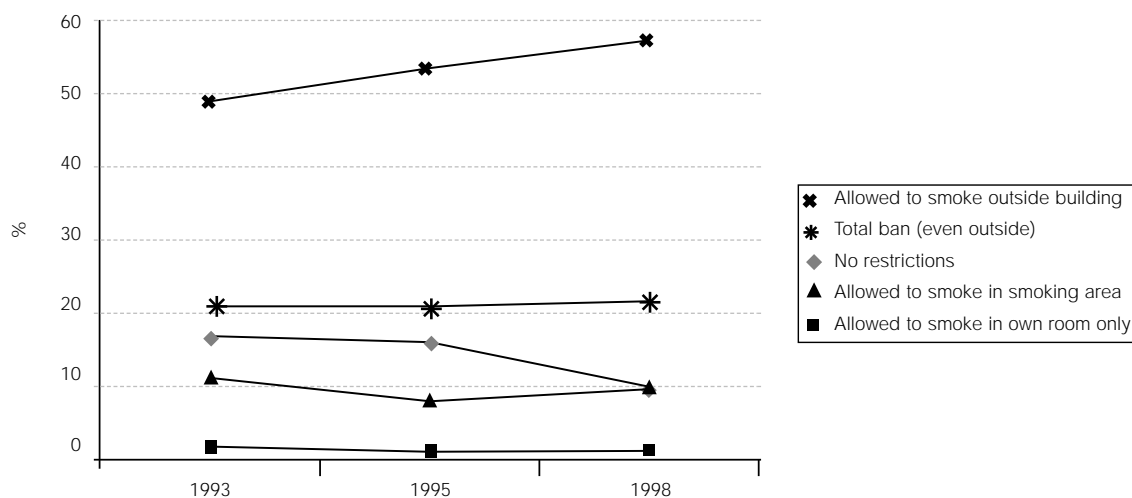
While there is general acceptance that all of the dimensions of health determinants shown in the framework influence health status and outcomes, the magnitude of those influences and the causal pathways are not always clear. For example, indicators for 'community capacity' require further conceptual work prior to the development of measures and collection of data. The understanding of these influences is developing as evidence from research continues to emerge.

Information to address the question 'Is it the same for everyone?' is available on some issues. However, further development of appropriate indicators to enable analysis of trends in health inequalities is required.

New data collections will be required to report on indicators for this domain. These will need to be resourced and developed via the established national health information development processes.



### Example indicator 4.2 Environmental tobacco smoke: workplace smoking restrictions



### Non-smoking policies or restrictions in place in workplace, school or college, Australia, 1993–1998

Restriction	% of persons working or studying		
	1993	1995	1998
No restrictions	17.1	16.2	9.9
Allowed to smoke in own room only	1.5	0.7	1.0
Allowed to smoke in smoking area	11.5	8.4	10.4
Allowed to smoke outside building	48.6	53.3	57.0
Total ban (even outside)	21.3	21.4	21.7

Sources: Australian Institute of Health and Welfare (various years), National Drug Strategy Household Survey 1993, 1995 and 1998.

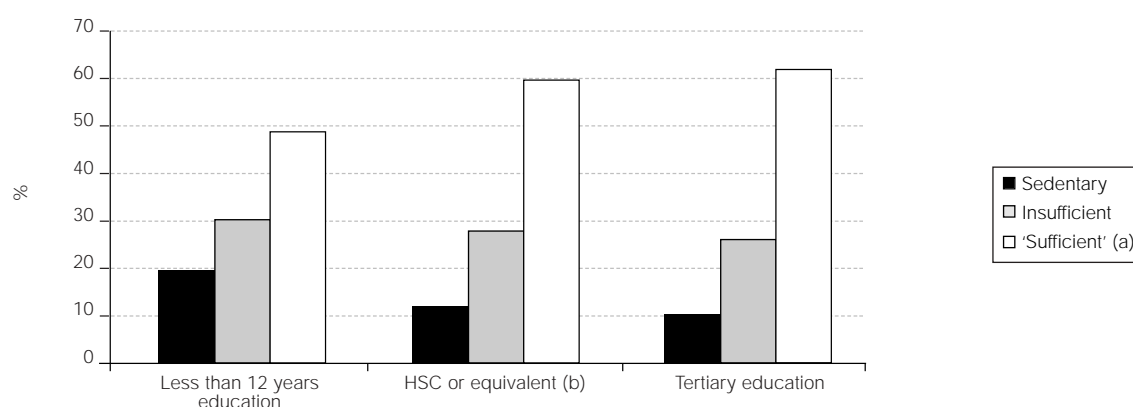
- Smoking in the workplace is associated with an increased risk of fires and exposure to environmental tobacco smoke (ETS). ETS increases the risk of lung cancer and heart attack (NHMRC, 1997).
- Restrictions on smoking at work are associated with reduced exposure to ETS, reduced daily smoking rate and increased cessation. Smoking restrictions also contribute to smoking being regarded as more socially unacceptable and inconvenient (Chapman et al, 1999).
- Between 1993 and 1998, the proportion of respondents in the National Drug Strategy Household Survey who reported that their workplace had no restrictions on smoking declined (from 17.1% to 9.9%) and the proportion of respondents reporting that smoking was allowed only outside the work area increased (from 48.6% to 57.0%).

### For further information see:

Chapman S. Borland R. Scollo M. Brownson R.C. Dominello A. and Woodward S. (1999), 'The impact of smoke-free workplaces on declining cigarette consumption in Australia and the United States', *American Journal of Public Health*, 89: 1018–1023.  
National Health and Medical Research Council (NHMRC) (1997), *The Health Effects of Passive Smoking*. Australian Government Publishing Service, Canberra.



### Example indicator 4.4 Percentage of people achieving 'sufficient' physical activity



### Percentage of people achieving 'sufficient' physical activity time during the previous week by age and education level, 1999 (a)

	Sedentary	Insufficient	'Sufficient' (a)
	- % -		
Age group (years)			
18-29	6.3	25.0	68.7
30-44	16.9	29.6	53.5
45-59	18.2	31.9	50.0
60-75	17.9	28.1	54.1
Level of education			
Less than 12 years	19.5	30.9	49.6
HSC or equivalent (b)	12.5	27.9	59.7
Tertiary	10.9	26.7	62.3

(a) 'Sufficient' time is defined as 150 minutes per week, using the sum of walking, moderate activity and vigorous activity (weighted by two). Age standardised to the 1991 Australian population.

(b) HSC = Higher School Certificate.

Source: Australian Institute of Health and Welfare (2000), *National Physical Activity Survey 1999*, p.29.

- Participation in physical activity has benefits for physical and mental health. It is associated with reduced risk of chronic disease, improved psychological wellbeing and reduced death rates (Armstrong et al, 2000).
- Physical inactivity is responsible for about 7% of the total burden of disease in Australia and cost to the health system (AIHW, 1999 (Mathers et al) and AIHW, 2000 (Stephenson et al)).
- Physical activity varies by age, sex and level of education. In 1999, people with tertiary qualifications were most likely to report sufficient levels of physical activity (62%). Those with an education level less than year 12 were least likely to report this (50%). Sufficient activity level for a health benefit was most frequently reported by 18-29 year olds (69%), and least frequently reported by 45-59 year olds (50%).
- These data suggest that approaches targeting adults 30-59 years, especially those with lower education levels, are required to increase levels of physical activity. *Developing an Active Australia: A Framework for Action for Physical Activity and Health* (DHAC, 1998) recommends a range of strategies to promote increased levels of moderate-intensity physical activity.

#### For further information see:

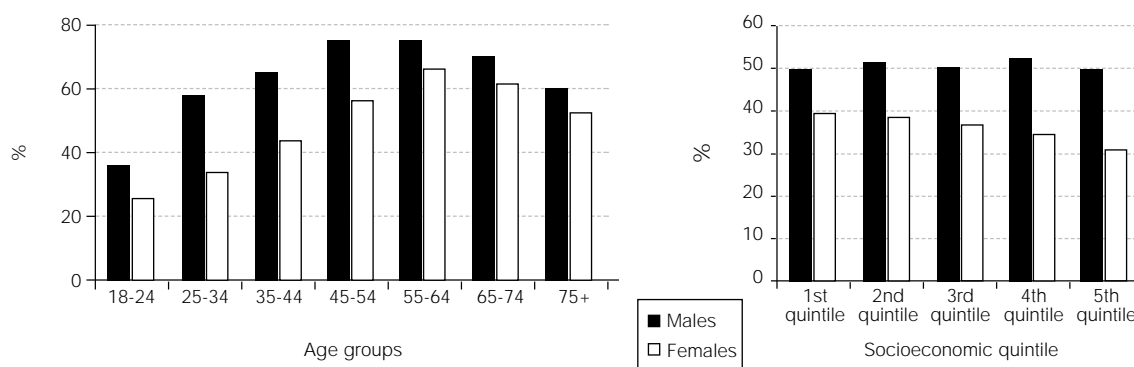
Australian Institute of Health and Welfare (2000), *Physical Activity Patterns of Australian Adults: Results of the 1999 National Physical Activity Survey*, by Armstrong T. Bauman A. and Davies J., AIHW Cat. no. CVD 10, Canberra.

Stephenson J. Bauman A. Armstrong T. Smith B. and Bellow B. (2000), *The Costs of Illness Attributable to Physical Inactivity in Australia: A Preliminary Study*, Commonwealth Department of Health and Aged Care and the Australian Sports Commission, Canberra.

Commonwealth Department of Health and Aged Care (1998), *Developing an Active Australia: A Framework for Action for Physical Activity and Health*, Canberra.

Australian Institute of Health and Welfare (1999), *The Burden of Disease and Injury in Australia*, by Mathers C. Vos T. and Stevenson C., AIHW Cat. no. PHE 17, Canberra.

### Example indicator 4.5 Percentage of people overweight or obese



#### Percentage of people overweight or obese, Australia, 1995 (a)

	Age group (years) (b)							SEIFA (c)				
	18-24	25-34	35-44	45-54	55-64	65-74	75+	1st (bottom) quintile	2nd quintile	3rd quintile	4th quintile	5th (top) quintile
	- % -							- % -				
Males	35.6	58.1	66.0	75.6	75.6	70.5	60.1	49.8	52.1	50.5	52.6	50.3
Females	25.9	33.9	44.4	56.4	66.5	62.1	53.1	40.2	38.5	36.8	35.2	31.4

(a) 'Overweight' is defined as BMI >=25; 'Obese' is defined as BMI >=30. See Glossary for definition of BMI.

(b) Age standardised to the 1991 Australian population.

(c) SEIFA (Socio-Economic Indexes for Areas) is a collection of indexes developed by the ABS. The SEIFA index used in this table is the Index of Relative Socio-Economic Disadvantage, where the first quintile represents the most disadvantaged and the fifth quintile represents the least disadvantaged.

Source: Australian Institute of Health and Welfare (unpublished work), Analysis of the results of the National Nutrition Survey, 1995 (ABS 1997, Cat. no. 4802.0).

- There is a strong association between overweight or obesity and health problems such as coronary heart disease, stroke and type 2 diabetes. In 1996, overweight and obesity accounted for over 4% of the total burden of disease in Australia (AIHW, 1999 (Mathers et al)).
- Prevalence of overweight and obesity among Australians increased significantly between 1980 and 1995 (from 27% to 43% among women and from 48% to 63% among men aged 25-64 in capital cities) (AIHW, 1999 CVD Series no.10:37).
- The 1995 National Nutrition Survey (ABS) estimated that about 7.4 million adult Australians (56% of those aged 18 years and over) were overweight or obese. Almost two-thirds (63%) of men were overweight or obese, with those aged 45-64 most likely to be overweight. Almost half (48%) of women were overweight or obese with the highest prevalence in the 55-64 years age group.
- The prevalence of overweight and obesity varies with employment status. Employed men were more likely to be overweight than unemployed men or those not in the labour force. Conversely, employed women were less likely to be overweight than those not in paid employment.
- Among women, those from lower socioeconomic groups were more likely to be overweight, but this association was not apparent among men.
- Increasing physical activity and having a healthy diet are key factors in reducing overweight and obesity. Addressing increasing prevalence of overweight and obesity will require a range of strategies encompassing behavioural, cultural, social, psychological and environmental factors.

#### For further information see:

Australian Bureau of Statistics and Commonwealth Department of Health and Aged Care Services (1998), *National Nutrition Survey: Nutrient Intakes and Physical Measurements, Australia, 1995*, ABS Cat. no. 4805.0, Canberra.

Australian Institute of Health and Welfare (1999), *The Burden of Disease and Injury in Australia*, by Mathers C. Vos T. and Stevenson C., AIHW Cat. no. PHE 17, Canberra.

Australian Institute of Health and Welfare (1999), *Heart, Stroke and Vascular Diseases, Australian Facts*, AIHW Cat. no. CVD 7, AIHW and the Heart Foundation of Australia (Cardiovascular Disease Series No. 10), Canberra.