

# Research Summary

## Disease trends

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Australians are living much longer so it is now time to pay attention to the quality of our extra years. This analysis of statistical health trends of the past 20 years reveals a remarkable increase in longevity but a disturbing rise in a range of chronic diseases that can greatly impair our enjoyment of our final years.

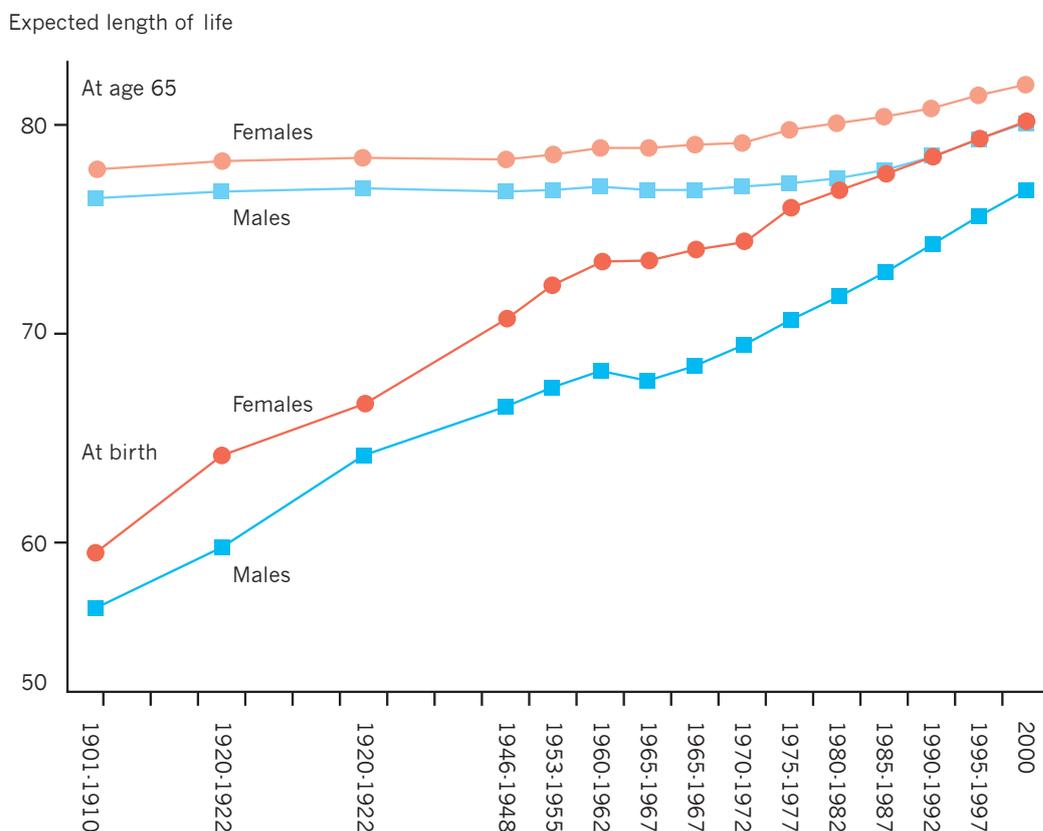
This decline in mortality and overall rise in morbidity presents important challenges to governments, health policy makers and providers, and the community. These challenges can be summarised simply: how do we ensure that we thrive, rather than just survive, into old age?

Analysis of the common risk factors for chronic disease uncovers a mixed picture, with great improvements in some areas and relatively little progress in others. **In reflecting on the changing nature of risk, we suggest that novel approaches are needed if we are to make the most of our extra years, to ensure that we experience acceptable levels of physical, mental and social wellbeing.**

This summary confirms that a significant proportion of these chronic illnesses that are on the increase are preventable. We need to make the healthy choices the easy choices in society.

In Australia, life expectancy has increased by about six years in the past 20, with a boy born in 2005 expected to live to 78.5 years, while a girl would be expected to live until 83.3 years, on average. This is a remarkable increase, continuing a steady rise since 1901 when life expectancy was only 55.8 for males and 58.8 for females (Figure 1).

**Figure 1: Expected length of life at birth and at 65 years, by sex, Australia, 1901-1910 to 2000.**

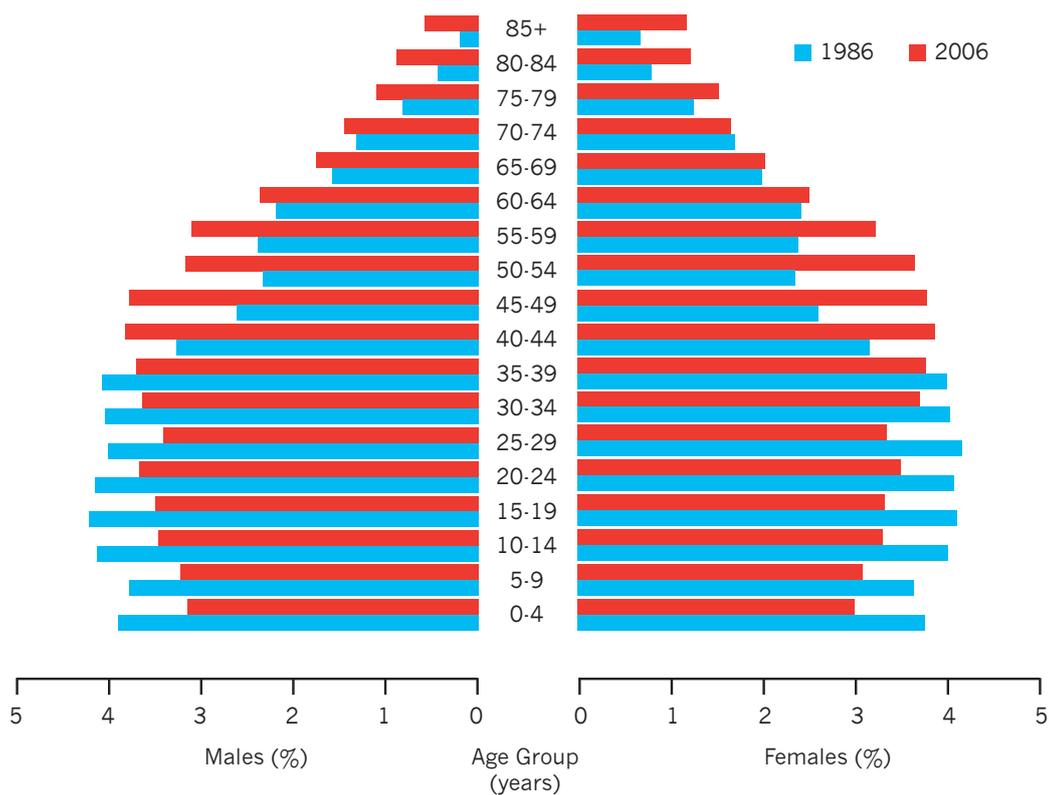


## Disease drivers shift gear

Since the early 1900s, the drivers of morbidity and mortality in Australia have shifted from infectious disease to chronic disease, with the increases in life expectancy over the past 20 years reflecting improvements in the prevention and management of cardiovascular disease in particular.

During the past 20 years, we have increasingly recognised that the incidence of chronic disease is rising. This is the seemingly inevitable consequence of the improved treatment of fatal conditions, leading to our increasingly ageing population (Figure 2) and a growing number of survivors with chronic disease.

**Figure 2: Population change, age and sex - Australia - 1986 and 2006**



[Source: ABS]

The rise in chronic disease is also due to substantial changes in our environment, affecting behaviours such as smoking, physical activity and eating habits. Reflecting on our advances in treatment, and our improved knowledge of what is considered a healthy lifestyle, we can examine the trends in mortality and morbidity associated with chronic disease in recent decades.

## Chronic disease trends

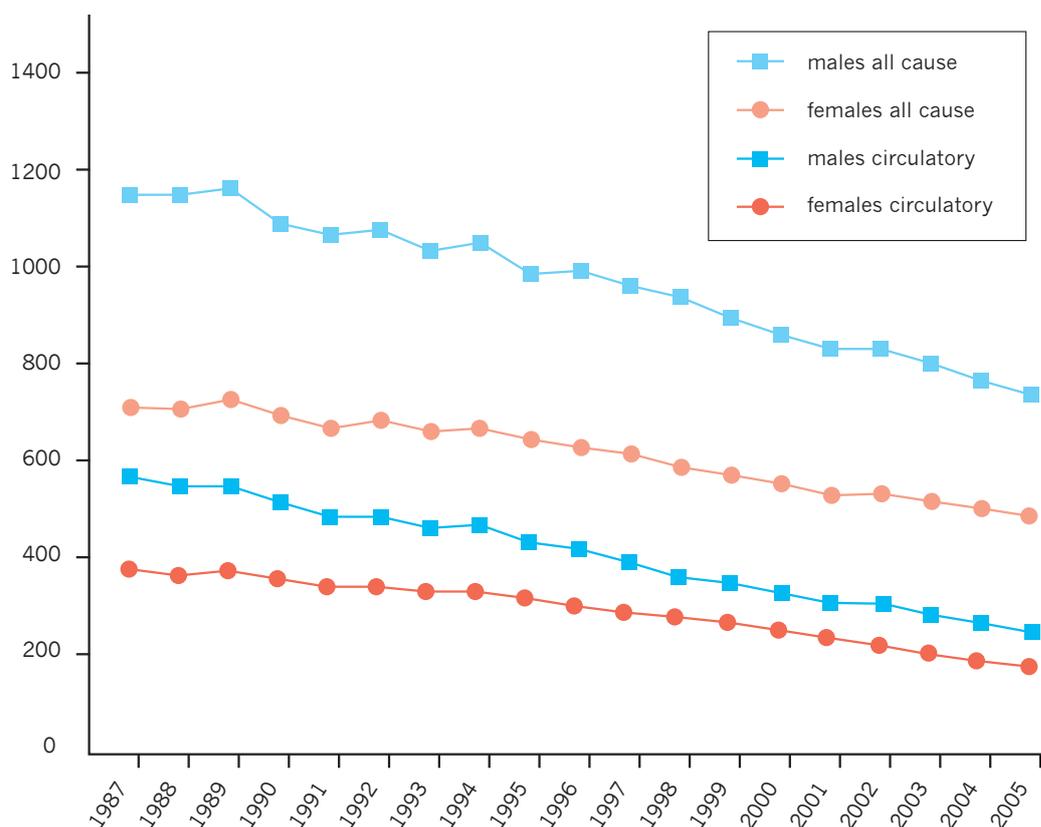
The overall trends in chronic disease since 1987 chart a fall in death rates but a rise in hospital admissions. Overall, a substantial proportion of older people are living with chronic disease.

**Chronic diseases currently make up more than 70% of Australia's overall disease burden due to death, disability and diminished quality of life.** They include diseases which are disabling over the long term such as depression, dementia, musculoskeletal disease, asthma and diabetes, and diseases with both high disability and mortality burden such as coronary heart disease, stroke, chronic obstructive pulmonary disease, cancer and chronic kidney disease.

The mortality rate for almost all the major chronic diseases has been decreasing (with notable exceptions being diabetes and osteoporosis). For example, since 1987 age-adjusted rates of circulatory disease mortality have continuously decreased in Australia from 554 to 245 per 100,000 for males and from 371 to 175 per 100,000 for females (Figure 3).

In contrast, the number of hospitalisations for all chronic diseases has increased in Australia, ranging from a 20% increase for diseases of the circulatory system, through a 40% increase for diseases of the musculoskeletal system, to a doubling for endocrine, nutritional, and metabolic diseases over the past 10 years. We cannot say whether these increases represent a higher real prevalence of chronic disease or changes in diagnosis, treatment and/or access.

**Figure 3: Trends in all-cause and circulatory disease mortality, Australia 1987-2005.**



There are very few surveys that allow us to compare trends in the prevalence of chronic disease in Australia, let alone Victoria, over the past 20 years. However, those surveys that do exist confirm the hospitalisation data, indicating increases in the prevalence of most chronic conditions. In Victoria, this has led to a substantial proportion of the elderly living with at least one chronic disease (Table 1). Arthritis is the most common self-reported chronic disease afflicting Victorians aged over 65; it affected 60% of women and 43.3% of men surveyed in 2005.

**Table 1: Proportion of Victorians over age 65 living with a self-reported chronic disease in 2005**

Disease	Females	Males
Arthritis	60%	43.3%
Osteoporosis	22.2%	5.3%
Depression or anxiety	18.2%	9.2%
Heart disease	17.6%	27.5%
Cancer	17.1%	19%
Diabetes	12.1%	12.5%
Asthma	11.3%	7.5%
Stroke	6.6%	7.7%

(Source Victorian Population Health Survey 2005)

## Understanding trend differences & risk factors

The differences in the trends associated with chronic disease mortality and morbidity are important. Understanding these distinctions could help us deal with such key questions as: Does increased longevity inevitably lead to increased prevalence of chronic disease? And to what extent could we aim for prevention and treatment strategies that would decrease both mortality and morbidity associated with chronic disease?

An overarching principle will be that with an increasingly ageing population, disability levels will be affected by the degree to which we target treatment and prevention strategies at disabling diseases. The relationship between treatment and the burden of chronic disease in the population will relate to the stage of the disease at which the treatment is aimed, and the degree to which it can delay both disease progression and mortality.

Improvement in risk factors is our best hope for delaying the onset of chronic disease by at least as much as, if not more than, we delay mortality.

Interestingly, most of the chronic diseases in Australia today are associated with a similar web of behavioural risk factors. These are:

- unhealthy eating
- physical inactivity
- alcohol
- smoking.

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These behavioural risk factors then lead to the biomedical risk factors of:

- high blood pressure
- high cholesterol
- diabetes.

It is always difficult to measure self-reported, behavioural risk factors in a comparable way over time. However, to the extent that this has been done, it appears that these primary risk factors have each followed quite different patterns over the past 20 years.

### **Smoking halved, obesity doubled**

One of Australia's dramatic success stories has been smoking. Since its peak, when over 40% of males and 30% of females smoked, today around 20% of Victorians aged over 18 are current smokers. In contrast, the proportion of the population with obesity has more than doubled over the past 20 years. And with a different pattern again, alcohol consumption trends have been relatively stable.

Consistent measurement of changes in diet and physical activity over time has been less frequent, and the definitions of "acceptable" have been prone to change.

However, our best information suggests that levels of physical activity in Australia have been relatively constant over the past 20 years: about 50% of adults don't achieve adequate levels of activity.

Vegetable and fruit consumption levels have also been fairly constant over the past 20 years. In 2005 it was shown that over 80% of Australian adults were not consuming the recommended levels of vegetables and almost 50% were not consuming the recommended levels of fruit.

Levels of food insecurity (that is, lack of ready access to enough nutritional, acceptable food) also appear to have remained relatively constant. However, there have been many changes to other parts of our diet. For example, we are consuming much less salt, red meat, and full-fat dairy products. In contrast, our overall energy intake has increased strikingly and continuously over the past 20 years, for both children and adults.

In combination, these changes in behaviour within Australia have led to mixed trends for the key biomedical risk factors of high blood pressure, high cholesterol and diabetes. While the incidence of high blood pressure has halved, rates of high cholesterol have remained relatively stable, and diabetes has more than doubled over the past 20 years.

### **Impact of trends inequitable**

To further complicate the picture, it is important to recognise that there are strong social inequalities in the distribution of almost all of these risk factors and diseases. For example, Australians in the most disadvantaged 20% of the population have nearly double the rate of obesity (23%) compared to those in the most advantaged group (12%). Similarly, 10% of non-indigenous Australians report having high blood pressure, compared to 15% of their Indigenous counterparts. To the extent that it can be measured, even in the areas where there has been measurable improvement, such as with high blood pressure, the social inequalities themselves have not substantially decreased.

## What drives Australians?

The story of Australia's health over this past 20 years is about major wins countered by significant setbacks. We have seen large cultural shifts in the areas of smoking and the consumption of specific foodstuffs, but we have seen no overall improvement in diet or physical activity levels, and no improvement in the social distribution of such risk.

The broader drivers of our behaviour are obviously complex and are not the subject of this piece. However, in simple terms, the corporate drive to make profits has been a key driver of our behaviour as consumers. The impact of this commercial imperative is linked to the widespread availability and marketing of labour saving technology, energy dense food and, in the past, cigarettes.

So in seeking answers to the chequered nature of Australia's health trends, it is useful to look briefly at why some large cultural shifts were achieved more successfully than others. For example, the shifts in consumption of tobacco and full fat dairy products had some similarities: the public received an uncomplicated message associated with a clearly directed action for the consumer. As well, these changes drew broad structural support from the government and NGOs on one hand, and from the companies on the other hand, which seized the opening of a new marketing opportunity.

By contrast, the concepts of "a healthy diet", and "sufficient physical activity" are much more complex, especially when combined with strong societal barriers against achieving them. This makes success in promoting change in these areas much more difficult. In no country in the world, except those affected by disaster, has the weight of the population decreased over the past twenty years.

## Future challenges

In summary, we have seen significant treatment and lifestyle changes over the past 20 years that have led to continual improvements in survival. This is an unmitigated success story. However, we now face the luxurious hardship of trying to ensure that our extra lived years are healthy years, and that these healthy years are distributed more equitably in the population.

We need to prevent the scenario in which our prevented deaths are replaced with many years of unacceptably compromised health and wellbeing. Advances in treatment will play a part, however it is only by improving our underlying risk – before chronic disease has already developed – that we can ensure improvements in our overall health and wellbeing. It is up to society to be strategic where we can – we need to think about changing our environment to capitalise on our extra years of life.

In today's society, the causes of chronic disease are multi-factorial, embedded in our social and physical environments, and driven in part by commercial incentives. Chronic disease has many faces, and develops over a lifetime. We need to think creatively if we are to tackle the issues across all of these fronts.

The multi-faceted nature of these issues means that developing effective interventions, and evaluating them, has become increasingly difficult. Only a comprehensive approach, targeting the many different levels of behavioural determinants, at the same time and in a complementary fashion, can work.

We need to think creatively about upstream strategies such as regulation and social marketing that can impact on the environmental determinants of risk, and their distribution in the population.

We will also need to think differently about how we might gather the evidence to support any given approach, and evaluate it. Evaluation may need to be expert and model driven, due to the impossibility of evaluating these strategies over lifetimes and across a range of disease and disability states.

Finally, unless social inequalities are explicit components of any suite of interventions we will run the risk of increasing these inequalities.

To achieve these goals we require a huge inter-sectoral effort. We need clear, agreed-upon goals and we need to engage all sectors to ensure that the components of our strategy are comprehensive and complementary. We need to make the healthy choices the easy choices in society if we are to fully capitalise on our extra years, living them in an acceptable state of health and well-being.

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