

# Dementia prevalence and incidence among Australians who do not speak English at home

Report by Access Economics Pty Limited for

**Alzheimer's Australia**



## TABLE OF CONTENTS

<b>FOREWORD</b> .....	<b>i</b>
<b>EXECUTIVE SUMMARY</b> .....	<b>ii</b>
<b>1. Introduction and methodology</b> .....	<b>1</b>
1.1 What is dementia? .....	2
1.2 Dementia prevalence rates .....	2
1.3 Australian population estimates .....	3
1.3.1 Estimating people from CALD background groups.....	3
1.3.2 Projecting populations with CALD backgrounds .....	5
<b>2. Prevalence and incidence estimates</b> .....	<b>8</b>
2.1 Findings for Australia .....	8
2.2 Findings for the States and Territories.....	10
2.2.1 Australian Capital Territory.....	10
2.2.2 New South Wales.....	12
2.2.3 Northern Territory.....	14
2.2.4 Queensland .....	16
2.2.5 South Australia .....	18
2.2.6 Tasmania.....	20
2.2.7 Victoria .....	22
2.2.8 Western Australia.....	24
2.3 Concluding comments .....	26
<b>REFERENCES</b> .....	<b>27</b>

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## TABLE OF FIGURES

Figure 1-1: Australian population, by languages (other than English) spoken at home, 2005 (% total)	5
Figure 1-2: NSW people with CALD backgrounds estimated from regression of census data	6
Figure 1-3: Australian population, by languages spoken at home, 2005-2050	7
Figure 1-4: Australian population, by languages (other than English) spoken at home, 2005 and 2050	7

## TABLE OF TABLES

Table 1-1: Prevalence and incidence rates by age and gender (%)	3
Table 1-2: Australian population, by languages spoken at home, 1986-2005 (% total)	4
Table 2-1: Prevalence by language spoken at home and gender, 2005-2050, Australia	8
Table 2-2: Incidence by language spoken at home and gender, 2005-2050, Australia	9
Table 2-3: Prevalence by language spoken at home and gender, 2005-2050, ACT	10
Table 2-4: Incidence by language spoken at home and gender, 2005-2050, ACT	11
Table 2-5: Prevalence by language spoken at home and gender, 2005-2050, NSW	12
Table 2-6: Incidence by language spoken at home and gender, 2005-2050, NSW	13
Table 2-7: Prevalence by language spoken at home and gender, 2005-2050, NT	14
Table 2-8: Incidence by language spoken at home and gender, 2005-2050, NT	15
Table 2-9: Prevalence by language spoken at home and gender, 2005-2050, QLD	16
Table 2-10: Incidence by language spoken at home and gender, 2005-2050, QLD	17
Table 2-11: Prevalence by language spoken at home and gender, 2005-2050, SA	18
Table 2-12: Incidence by language spoken at home and gender, 2005-2050, SA	19
Table 2-13: Prevalence by language spoken at home and gender, 2005-2050, TAS	20
Table 2-14: Incidence by language spoken at home and gender, 2005-2050, TAS	21
Table 2-15: Prevalence by language spoken at home and gender, 2005-2050, VIC	22
Table 2-16: Incidence by language spoken at home and gender, 2005-2050, VIC	23
Table 2-17: Prevalence by language spoken at home and gender, 2005-2050, WA	24
Table 2-18: Incidence by language spoken at home and gender, 2005-2050, WA	25

## FOREWORD

On behalf of the National Cross Cultural Dementia Network, Alzheimer's Australia commissioned Access Economics to undertake a study on the prevalence and incidence of dementia amongst Australians from a Culturally and Linguistically Diverse (CALD) background. This work was designed to assist in understanding the need for services capable of meeting the special requirements of people with dementia in this group.

The work was made more difficult given the paucity of available data and the definitional problems surrounding these data. Language spoken at home was used as a marker for identifying the CALD community although the question of cultural identity, and the consequent demand for services sensitive to those cultures, goes well beyond simple questions of language. A more detailed analysis may be possible once the results of the 2006 Census become available.

This study assumes that prevalence and incidence rates for the CALD community are comparable to those for the Australian population as a whole. This may not be the case but, in the absence of any information to the contrary, no better course of action was possible. It is possible that different cultural groups have different rates of dementia but Australian research to confirm or refute this thesis does not currently exist.

The report has included analysis of Indigenous people where the available statistics have identified that they speak a language other than English at home. While Indigenous people are not normally included when discussing CALD issues, given the nature of this report and the importance of the issue in certain jurisdictions, particularly the Northern Territory, the decision was made to include the information within this report. The qualifications on the lack of specific epidemiological evidence relating to CALD populations also apply to Indigenous communities.

Alzheimer's Australia wishes to thank Lundbeck Australia Pty Ltd for the unrestricted grant that made this report possible.



Glenn Rees  
National Executive Director  
Alzheimer's Australia  
24 November 2006

## EXECUTIVE SUMMARY

A substantial proportion of Australia's population aged over 60 years of age are migrants from non-English speaking backgrounds, with a variety of cultural customs, traditions and values. In 2005, 16% of people aged over 60 years (approximately one-sixth) spoke a language other than English at home, while 33% of people aged over 60 years (one-third) were born in a country other than Australia. Although these culturally and linguistically diverse (CALD) Australians may have been fluent in English, studies show that the language most recently acquired is lost first for people with dementia. There is also some evidence that people from some non-English speaking backgrounds may present later to services such as memory clinics, even if there is a bilingual specialist available. These Australians have an equal right to access affordable, quality dementia assessment and care services, which can only be available for them if specialist resources are better developed and more widely known.

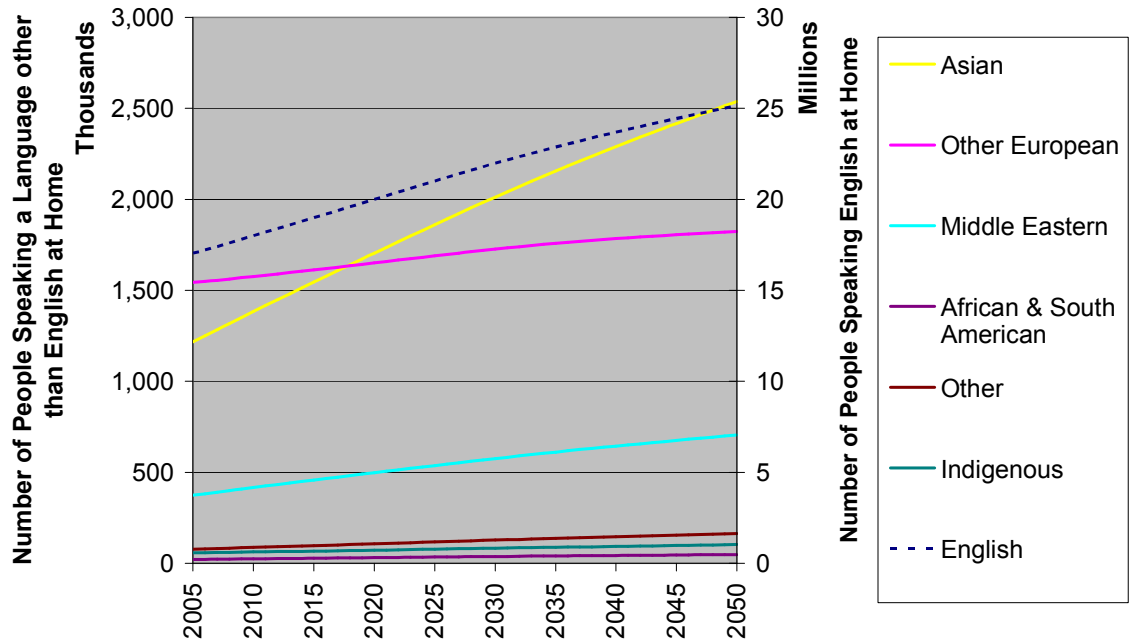
Access Economics was commissioned by Alzheimer's Australia in May 2006 to estimate the prevalence and incidence of dementia for people from CALD backgrounds in Australia. The findings are the subject of this report. The report provides a 'snapshot' of the prevalence and incidence of dementia among people from CALD backgrounds in Australia, based on current Australian Bureau of Statistics (ABS) demographic data. A more detailed future study is planned when 2006 Census data become available, which will provide a greater level of disaggregation by cultural group and by local government area.

### Methods

This analysis has used established prevalence and incidence rates, together with previous estimates of dementia prevalence and incidence in Australia. There is not a strong case for using prevalence and incidence rates from other countries (of origin) as risk and preventive factors may differ in Australia. This assumption is more of a risk for Indigenous people, in respect of whom more research is needed on prevalence rates.

ABS population data from four Australian censuses (1986, 1991, 1996 and 2001) – by single year of age, gender, State/Territory and language spoken at home, grouped as English, other European, Asian, Middle Eastern, African and South American, Other and Aboriginal and Torres Strait Islander (Indigenous) languages – were used to estimate the number of people from CALD backgrounds in Australia and Aboriginal and Torres Strait Islander peoples from 2001 to 2050.

### AUSTRALIAN POPULATION, BY LANGUAGE SPOKEN AT HOME, 2005-2050



Left axis: Other languages spoken at home. Right axis: English spoken at home.

### Findings

Currently, some **12.4% of Australians with dementia – around one in eight – do not speak English at home.** People with dementia who do not speak English at home comprise:

- ❑ 12.9% – around 1 in 8 – NSW residents with dementia;
- ❑ 16.9% – around 1 in 6 – Victorians with dementia;
- ❑ 6.8% – around 1 in 15 – Queenslanders with dementia;
- ❑ 12.0% – more than 1 in 9 – South Australians with dementia;
- ❑ 3.5% – around 1 in 29 – Tasmanians with dementia;
- ❑ 11.5% – around 1 in 9 – West Australians with dementia;
- ❑ 21.0% – more than 1 in 5 – Northern Territorians with dementia; and
- ❑ 14.7% – around 1 in 7 – people with dementia in the ACT.

Higher proportions of people who do not speak English at home are directly related to significant cultural populations in particular jurisdictions (for example, Indigenous people in the Northern Territory and Greek people in Victoria).

Overall in the period 2001 to 2050 there is projected to be a fall in the proportion of Australians speaking English (83.8% to 82.4%) and other European languages (7.6% to 6.0%), with a greater proportion speaking Asian (6.0% to 8.3%) and Middle Eastern (1.8% to 2.3%) languages.

**DEMENTIA PREVALENCE BY LANGUAGE SPOKEN AT HOME, 2005-2050, AUSTRALIA**

	2005	2010	2020	2030	2040	2050
<b>English</b>	179,384	214,106	295,603	415,518	553,808	646,973
% total pwd	87.6%	88.3%	88.8%	89.3%	89.5%	88.5%
<b>Other European</b>	19,838	21,638	26,996	33,725	40,416	46,850
% total pwd	9.7%	8.9%	8.1%	7.2%	6.5%	6.4%
<b>Asian</b>	4,199	5,027	7,662	12,060	18,617	28,105
% total pwd	2.0%	2.1%	2.3%	2.6%	3.0%	3.8%
<b>Middle Eastern</b>	1,076	1,312	2,048	3,175	4,716	6,762
% total pwd	0.5%	0.5%	0.6%	0.7%	0.8%	0.9%
<b>African &amp; South American</b>	48	57	91	154	258	424
% total pwd	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%
<b>Other</b>	160	201	329	549	892	1,393
% total pwd	0.1%	0.1%	0.1%	0.1%	0.1%	0.2%
<b>Indigenous</b>	145	158	202	276	381	521
% total pwd	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
<b>Total</b>	204,851	242,500	332,931	465,458	619,089	731,028
% total pwd	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Note: people with dementia (pwd)

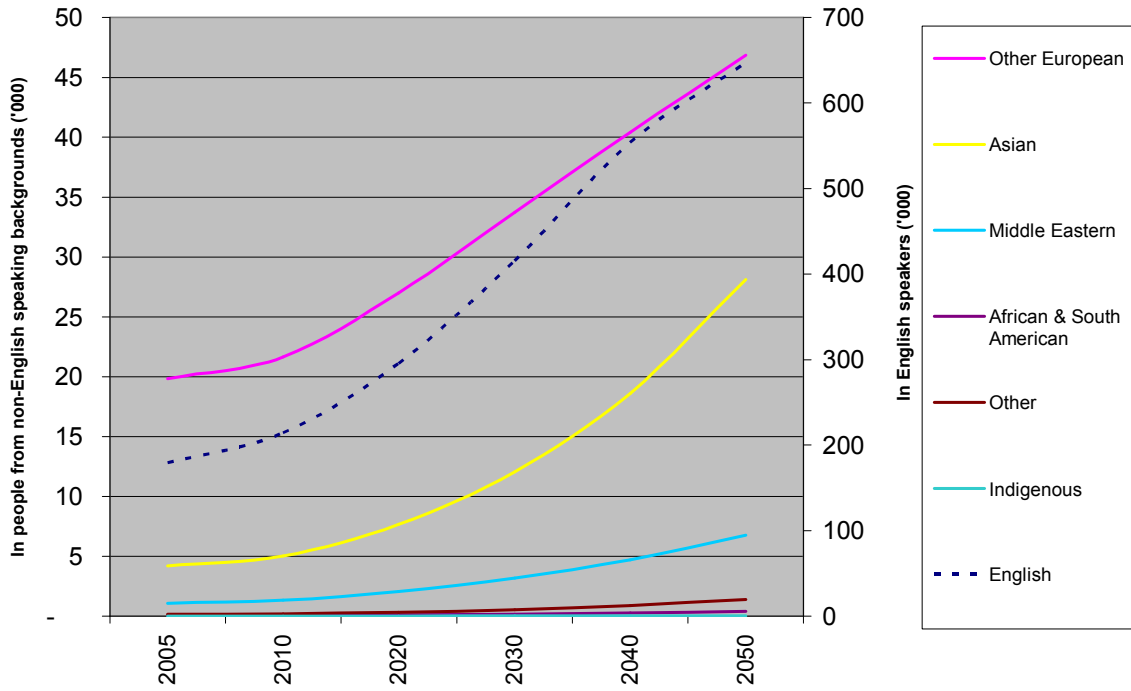
The proportion of people with dementia (pwd) who speak English at home is projected to increase as a share of total prevalence and incidence to nearly 90%, before it starts to fall around 2040, reflecting that the oldest Australians are predominantly English speakers. In 2005, of those aged over 80 years, around 90% spoke English and around 8% spoke other European languages at home.

The proportion of populations who do not speak English at home varies between States and Territories. For example, in NSW in 2005, there were more non-English speakers than the population average and more Asian speakers than people speaking other European languages. In contrast, in the Northern Territory, 17% spoke Indigenous languages and in Victoria, 12% spoke other European languages, while 97% of Tasmanians speak English at home. The prevalence of dementia, however, is determined very much by the ethnicity of the oldest Australians, and this is less variable.

The report is a reminder that services at the regional and local level need to be responsive to the particular profiles of their non-English speaking populations. While language and communication are important factors in service delivery, so too are the variety of cultural customs, traditions and values practised by people from non-English speaking backgrounds.



### DEMENTIA PREVALENCE IN PEOPLE WITH NON-ENGLISH SPEAKING BACKGROUNDS IN AUSTRALIA AND ENGLISH SPEAKERS, 2005-2050



Left axis: Other languages spoken at home. Right axis: English spoken at home.



## 1. INTRODUCTION AND METHODOLOGY

Access Economics was commissioned by Alzheimer's Australia in May 2006 to estimate the prevalence and incidence of people with dementia who do not speak English at home – it includes figures in respect of people with a Culturally and Linguistically Diverse (CALD) background and of Indigenous people. The report provides a 'snapshot' of the prevalence and incidence of dementia among people who do not speak English at home in Australia, based on current Australian Bureau of Statistics (ABS) demographic data and with only basic splits between ethnic groups and by State/Territory. A more detailed future study is planned when 2006 Census data become available, which will provide a greater level of disaggregation by cultural group and by local government area.

Access Economics (2005a) previously estimated dementia prevalence and incidence in Australia by age, gender and State/Territory. Access Economics has also estimated dementia prevalence and incidence for regions within some States and Territories (Access Economics, 2005b,c,d). Previous estimates showed that:

- ❑ in 2005, the number of Australians with dementia passed the 200,000 mark (and reached 1.0% of the population);
- ❑ by 2050, the total number of Australians with dementia is projected to exceed 730,000 (2.8% of the projected population) – a fourfold increase since 2000;
- ❑ in 2005, there were nearly 52,000 new dementia cases in Australia, and
- ❑ by 2050, there are projected to be over 175,000 new cases of dementia every year, more than the total number of people with dementia in Australia in 2000.

These increases arise, in the absence of effective prevention or treatment, as a simple consequence of an increase in the size of the population most at risk, ie of those aged 60 years and over and, in particular, those aged 80 years and over.

A substantial proportion of Australia's population aged over 60 years are migrants, and many come from non-English speaking backgrounds, with a variety of cultural customs, traditions and values. In 2005, 16% of people aged over 60 years (approximately one-sixth) spoke a language other than English at home, while 33% of people aged over 60 years (one-third) were born in a country other than Australia. The composition of this group will continue to vary, from Eastern European to those from Southern Europe, Asia, the Middle East and elsewhere. Although people from non-English speaking backgrounds may have been fluent in English, studies show that the language most recently acquired is lost first for people with dementia. Sometimes a mix of native and second languages is used for a time. Using interpreters for people with dementia, particularly as the illness progresses, can be difficult, but it may bring joy to a person to hear their native language. While language and communication are important factors in service delivery, so too are the variety of cultural customs, traditions and values practised by people from non-English speaking backgrounds. These Australians have an equal right to access affordable, quality dementia assessment and care services, which can only be available for them if specialist resources are better developed and more widely known.

## 1.1 WHAT IS DEMENTIA?

Dementia is a progressive, degenerative condition that affects memory, thinking, behaviour, emotion and day-to-day functioning.

There are numerous diseases that cause dementia. The most common cause is **Alzheimer's disease**, accounting for 50-60% of all cases and caused by abnormal brain tissue changes – known as 'plaques and tangles'. **Vascular dementia** accounts for a further 20-30% of cases of dementia, and results from a narrowing of the arteries supplying blood to the brain. **Dementia with Lewy bodies** (or Lewy body dementia) comprises about 10% (or more) of all cases of dementia, characterised by abnormal inclusions in brain cells. **Fronto-temporal (lobe) dementia** was described by Arnold Pick ('Pick's disease') and is characterised by tangles and by rounded proteins in brain cells called 'Pick bodies'. **Younger onset dementia** refers to onset of dementia in people aged under 65 years. Of the known risk factors for dementia, age is the most well-established.

The effects of dementia can include, depending on type: gradual memory loss; decline in ability to perform routine tasks; disorientation to time and place; impaired judgement, abstract thinking and physical coordination; difficulty in learning and concentration; loss of language and communication skills; changes in personality, behaviour and mood (many with Alzheimer's have depressive symptoms and about 20% exhibit aggression, more commonly in men); hallucinations (experienced by 16% of people with Alzheimer's) and delusions (false beliefs), often paranoid (30% of people with Alzheimer's); loss of initiative; altered sleep patterns, eating disturbances and screaming. The dementia specific mortality rate for people with dementia is twice the rate of people without dementia, controlling for co-morbidities and socio-demographic factors.

There is a diversity in perception and understanding of dementia across cultures. The term dementia is meaningless in some communities while in others it is perceived as a normal part of ageing. There are also beliefs that dementia is related to mental illness, with an extreme of this being the perception that dementia is a form of 'craziness'. In light of these diverse perceptions it is important to improve community education and raise awareness of dementia.

## 1.2 DEMENTIA PREVALENCE RATES

In this report, 'prevalence' of dementia refers to the number of people with dementia (pwd) in a population at a given point, or over a certain period of time, usually one year, while the 'prevalence rate' refers to those people expressed as a proportion of their respective source population. Similarly, 'incidence' refers to the number of new cases of dementia in a population at a given point, or over a certain period of time, usually one year, while the 'incidence rate' refers to those newly diagnosed people expressed as a proportion of their respective source population.

Prevalence rates of dementia reportedly vary to some degree across ethnic groups.

- For example, dementia may be less common in developing rather than developed countries (10/66 DRG, 2000; Chandra et al, 1994) although data from developing countries are sparse. Well-conducted studies in Kerala, India (Shaji et al, 1996) and China (Zhang et al, 1990) suggest similar prevalence rates for dementia to those seen in developed countries. Dementia, however, seems to be very rare in Kashmir (Chandra et al, 1998), and among Cree native American Indians (Hendrie et al, 1993). The best evidence for a contrast between developing and developed countries comes from a study that compared directly, using the same methods, the age-adjusted prevalence of

dementia in African Americans in Indianapolis (6.4%) with Africans in Ibadan, Nigeria (1.2%) (Hendrie et al, 1995).

- Ferri et al, 2005 suggest that factors that may underlie regional variations include: genes, environment, infectious agents, chemical neurotoxins, diet, vascular disease and its risk factors, lifestyles and interactions between genes and environment. However, it is also possible that mild dementia could have been under-detected in the least developed regions because of difficulties in establishing social impairment.
- Moreover, when people have migrated and lived in another country for some years, dementia prevalence rates may tend towards those in the country of residence. An example of this is that, although the overall prevalence of dementia in Japan is similar to elsewhere, Alzheimer's disease is the most common form of dementia in Caucasian populations, vascular dementia might be more common and Alzheimer's disease less common in Japan and in the former USSR. However, two American studies of older Japanese immigrants in Hawaii (White et al, 1996) and King County (Graves et al, 1996) observed a ratio of vascular dementia to Alzheimer's disease cases that was more typical of findings among European and American Caucasians.

In summary, there is not a strong case for using prevalence and incidence rates from countries (of origin). Moreover, there are no epidemiological data available currently to establish whether age-gender prevalence or incidence rates are any different among people from CALD backgrounds or among Indigenous people relative to other Australians. As such, it would seem desirable in this analysis to use established prevalence and incidence rates that would provide consistency with previous (Access Economics, 2005a,b,c,d) estimates of total prevalence and incidence of dementia in Australia and for Asia Pacific regional countries (Access Economics, 2006). These rates are based on a meta-analysis by Wancata et al (2003) and are presented in Table 1-1.

**TABLE 1-1: PREVALENCE AND INCIDENCE RATES BY AGE AND GENDER (%)**

Age group	Prevalence		Incidence	
	Female	Male	Female	Male
<60	0.01	0.01	0.01	0.01
60-64	0.6	1.2	0.1	0.1
65-69	1.3	1.7	0.4	0.4
70-74	3.3	3.5	0.9	0.9
75-79	6.3	5.8	2.1	2.0
80-84	12.6	11.8	3.9	3.8
85-89	21.5	18.6	6.6	6.2
90-94	33.3	31.1	10.6	9.6
95+	40.3	38.1	8.7	8.7

Sources: ABS (2004), Jorm et al (1987), Hofman et al (1991), Ritchie and Kildea (1995), Lobo et al (2000).

## 1.3 AUSTRALIAN POPULATION ESTIMATES

### 1.3.1 ESTIMATING PEOPLE FROM CALD BACKGROUND GROUPS

ABS demographic data identifies people from CALD backgrounds by country of birth, by language spoken at home, and by "ancestry" ie, birthplace of parents. However, there are no ABS public projections of population by any of these definitions of ethnicity. People from CALD backgrounds may face major barriers to accessing and using healthcare services which originate from culturally and/or linguistically diverse cultures. As discussed in the introduction, studies have shown that the most recent language is lost first in people with dementia. Hence,

a first step was to estimate such population projections, which Access Economics undertook in relation to language spoken at home, deemed most appropriate in this case.

- These languages were categorised into groups as "English", "Other European", "Asian", "Middle Eastern", "African and South American", "Other" and "Aboriginal and Torres Strait Islander (Indigenous)".

Modelling ABS data based on country of birth would provide some insight into potential future cultural barriers in accessing and using dementia healthcare services in Australia. This recognises that a unique set of problems arise from links between cultural understanding of dementia and its impact for people born outside of Australia. Although "language spoken at home" is modelled in this report as a measure of a language based barrier, other barriers exist that deter access and utilisation to dementia healthcare services.

ABS Census data were used from 1986, 1991, 1996 and 2001 to compare the proportion of people who spoke English and other languages at home.

- The census includes people in residential care and in the case of a person in the late stages of dementia the census form would be filled out by their primary carer. As such it is reasonable to conclude that the language spoken at home would be recorded for these people.

The share of people speaking English at home fell from 86.8% of the population in 1986 to 84.2% by the 2001 Census. People speaking other European languages at home fell from 9.6% to 7.7%. People speaking Asian languages at home increased from 2.1% to 5.6%, while people speaking Middle Eastern languages increased from 1.0% to 1.8% of the population. People speaking African, South American and Other languages increased from 0.2% to 0.5%, while Indigenous languages remained fairly constant at 0.3% of the population (Table 1-2).

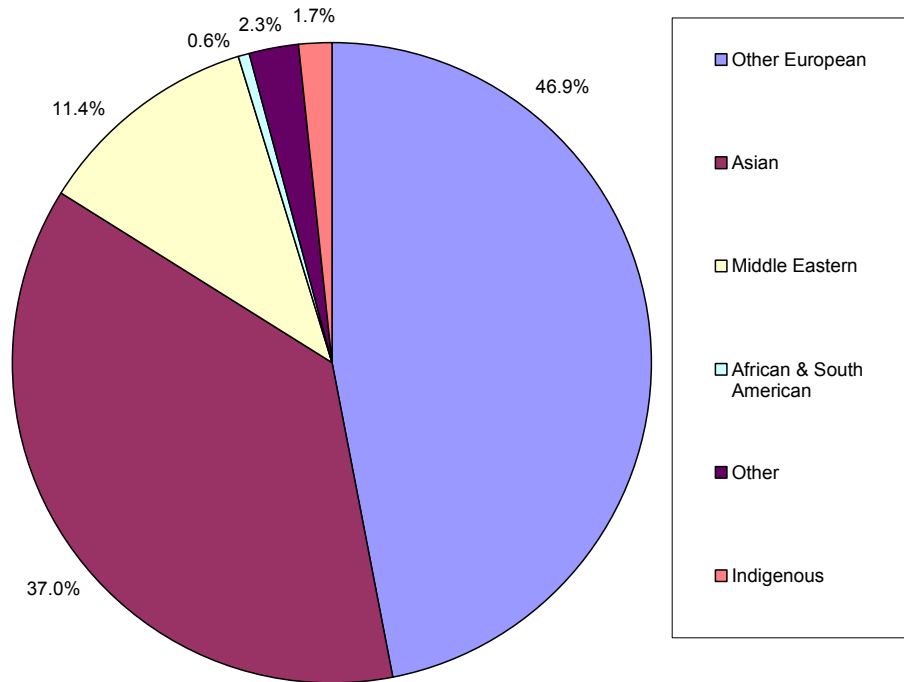
**TABLE 1-2: AUSTRALIAN POPULATION, BY LANGUAGES SPOKEN AT HOME, 1986-2005 (% TOTAL)**

	1986	1991	1996	2001	2005
English	86.8%	85.1%	84.8%	84.2%	83.8%
Other European	9.6%	9.2%	8.2%	7.7%	7.6%
Asian	2.1%	3.9%	4.8%	5.6%	6.0%
Middle Eastern	1.0%	1.3%	1.6%	1.8%	1.8%
African & South American	0.0%	0.1%	0.1%	0.1%	0.1%
Other	0.2%	0.2%	0.3%	0.4%	0.4%
Indigenous	0.3%	0.3%	0.3%	0.3%	0.3%
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

Source: ABS census data and Access Economics estimates for 2005.

By 2005, 83.8% of the Australian population was estimated to speak English at home. Of those who spoke other languages, nearly half (46.9%) spoke other European languages, 37% spoke Asian languages, 11.4% spoke Middle Eastern languages, 1.7% Indigenous languages and 2.9% African, South American and Other languages (Figure 1-1).

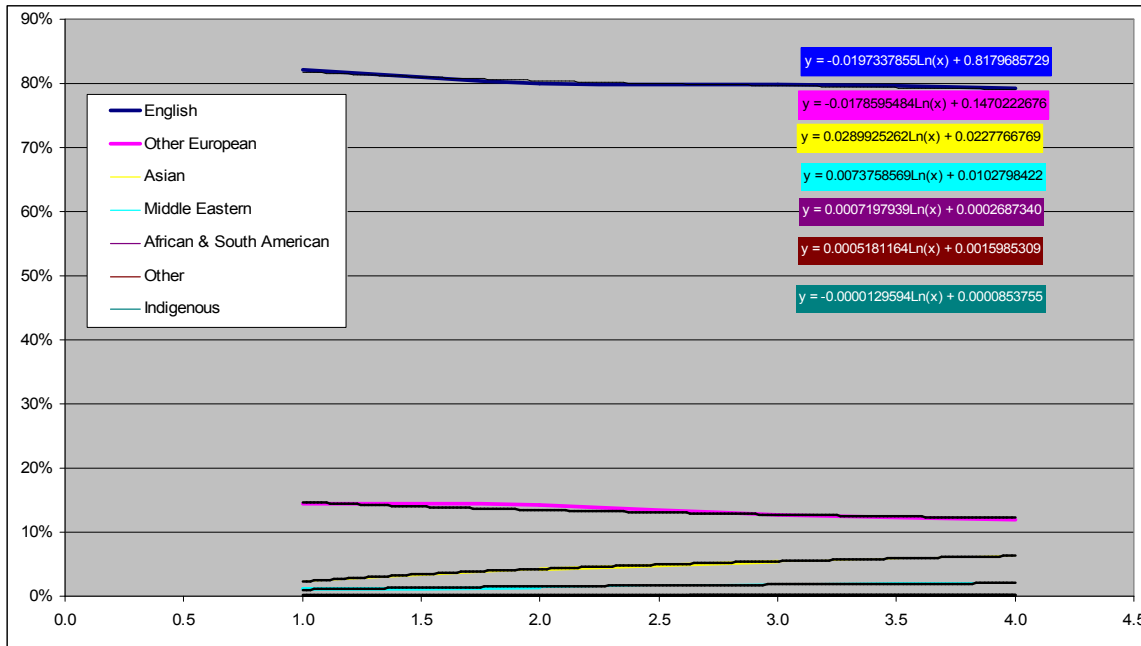
**FIGURE 1-1: AUSTRALIAN POPULATION, BY LANGUAGES (OTHER THAN ENGLISH) SPOKEN AT HOME, 2005 (% TOTAL)**



### 1.3.2 PROJECTING POPULATIONS WITH CALD BACKGROUNDS

Population projections were calculated from logarithmic lines of best fit through the Census data series for each 'language spoken at home' grouping by State/Territory. An example is shown below for New South Wales (Figure 1-2), with the regression equations then being used to estimate the sub-populations from 2001 to 2050. Adjustments were made to match ABS published projections for State/Territory populations by year (since language spoken at home was not reported by all Australians in the Census data).

**FIGURE 1-2: NSW PEOPLE WITH CALD BACKGROUNDS ESTIMATED FROM REGRESSION OF CENSUS DATA**



Note: 1.0=1986; 2.0=1991; 3.0=1996 and 4.0=2001.

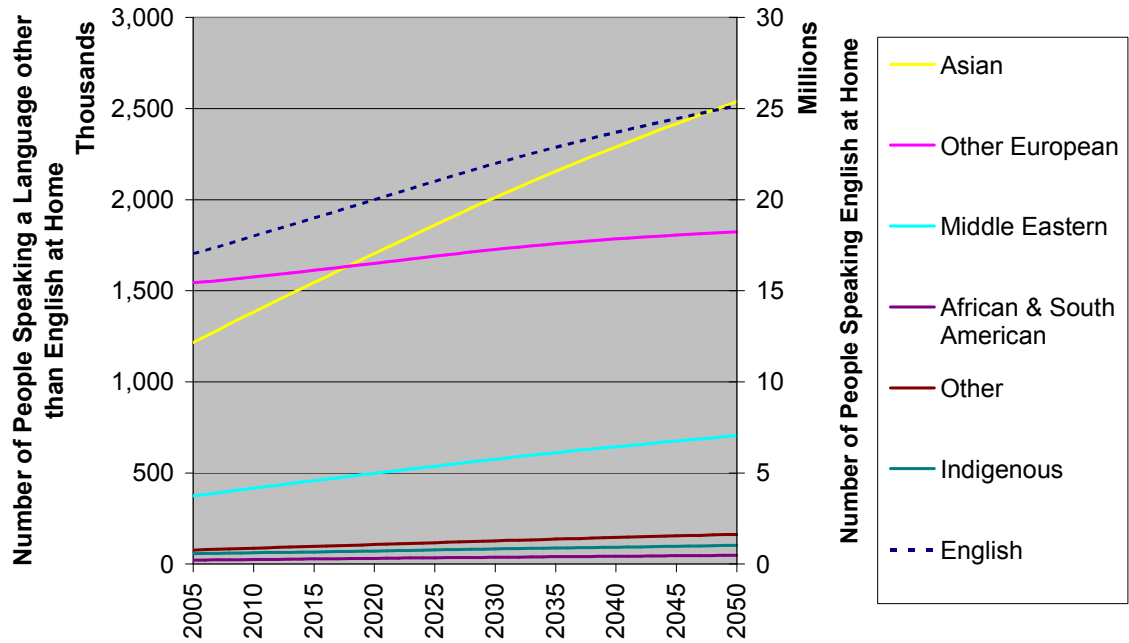
The projected age distribution by ethnicity was based on ageing the population each year, applying average mortality rates and assuming that new immigrants in each ethnic group arrived in the same proportions as in 2001. A two-year smoothed average was used to reduce volatility in the projections, particularly important for the very small cohorts.

Figure 1-3 and Figure 1-4 illustrate the population projections. From 2005 to 2050, across Australia:

- ❑ people speaking English at home increase from 17,000,000 to 25,200,000 (falling to 82.4% of the total);
- ❑ people speaking other European languages at home increase from 1,500,000 to 1,800,000 (falling to 6.0% of the total);
- ❑ people speaking Asian languages at home increase from 1,200,000 to 2,500,000 (rising to 8.3% of the total);
- ❑ people speaking Middle Eastern languages at home increase from 374,000 to 705,000 (rising to 2.3% of the total);
- ❑ people speaking African and South American languages at home increase from around 21,000 to 48,000 (rising to 0.2% of the total);
- ❑ people speaking Other languages at home increase from 77,000 to 163,000 (rising to 0.5% of the total);
- ❑ people speaking Indigenous languages at home increase from 57,000 to 103,000 (remaining at 0.3% of the total).

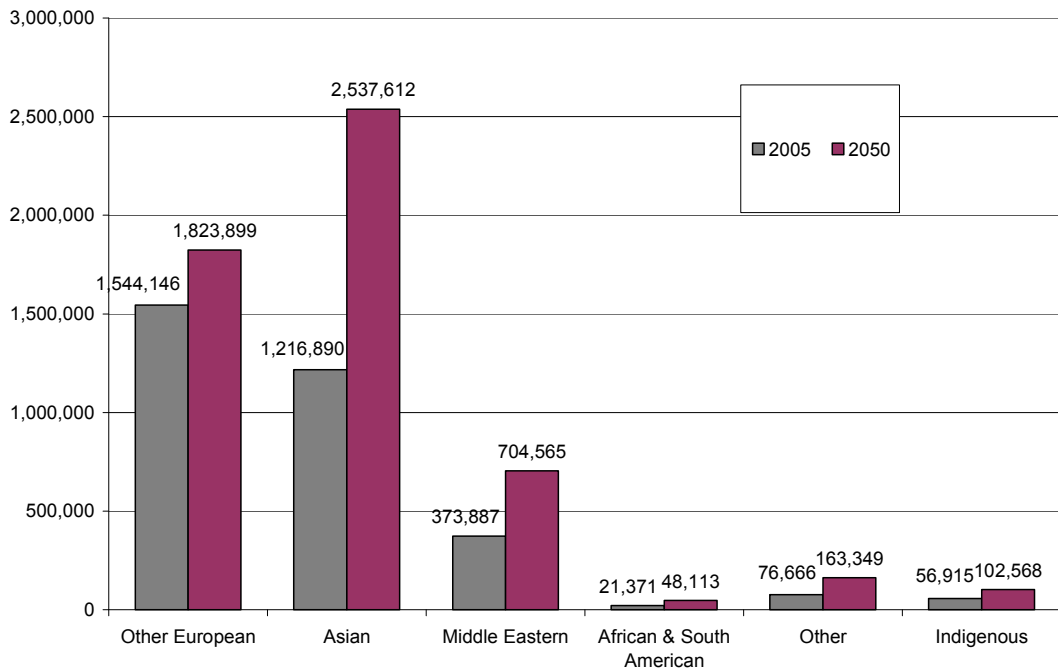


**FIGURE 1-3: AUSTRALIAN POPULATION, BY LANGUAGES SPOKEN AT HOME, 2005-2050**



Left axis: Other languages spoken at home. Right axis: English spoken at home.

**FIGURE 1-4: AUSTRALIAN POPULATION, BY LANGUAGES (OTHER THAN ENGLISH) SPOKEN AT HOME, 2005 AND 2050**



## 2. PREVALENCE AND INCIDENCE ESTIMATES

Prevalence and incidence of dementia among CALD populations were then estimated as the product of the prevalence and incidence rates and the estimated population numbers.

### 2.1 FINDINGS FOR AUSTRALIA

The number of people with dementia speaking English increases as a share of the total to nearly 90%, before it starts to fall around 2040, reflecting that the oldest Australians are predominantly English speakers.

**TABLE 2-1: PREVALENCE BY LANGUAGE SPOKEN AT HOME AND GENDER, 2005-2050, AUSTRALIA**

	2005	2006	2010	2020	2030	2040	2050
<b>English</b>							
Males	68,752	71,908	84,831	124,113	178,831	235,968	276,464
Females	110,632	114,675	129,275	171,490	236,687	317,841	370,509
Persons	179,384	186,583	214,106	295,603	415,518	553,808	646,973
% total pwd	87.6%	87.8%	88.3%	88.8%	89.3%	89.5%	88.5%
<b>Other European</b>							
Males	8,579	8,675	9,191	11,122	13,548	15,837	18,018
Females	11,259	11,444	12,447	15,874	20,177	24,579	28,832
Persons	19,838	20,119	21,638	26,996	33,725	40,416	46,850
% total pwd	9.7%	9.5%	8.9%	8.1%	7.2%	6.5%	6.4%
<b>Asian</b>							
Males	1,720	1,774	2,045	3,143	5,023	7,766	11,560
Females	2,480	2,565	2,982	4,520	7,037	10,852	16,544
Persons	4,199	4,339	5,027	7,662	12,060	18,617	28,105
% total pwd	2.0%	2.0%	2.1%	2.3%	2.6%	3.0%	3.8%
<b>Middle Eastern</b>							
Males	526	544	641	1,002	1,551	2,285	3,223
Females	551	569	671	1,046	1,624	2,432	3,538
Persons	1,076	1,113	1,312	2,048	3,175	4,716	6,762
% total pwd	0.5%	0.5%	0.5%	0.6%	0.7%	0.8%	0.9%
<b>African &amp; South American</b>							
Males	19	20	24	41	73	126	206
Females	28	29	34	50	81	132	218
Persons	48	49	57	91	154	258	424
% total pwd	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%
<b>Other</b>							
Males	70	73	87	144	244	396	607
Females	90	94	114	185	305	496	786
Persons	160	167	201	329	549	892	1,393
% total pwd	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.2%
<b>Indigenous</b>							
Males	62	62	65	82	114	158	216
Females	83	84	93	120	163	224	305
Persons	145	147	158	202	276	381	521
% total pwd	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
<b>Total</b>							
Males	79,728	83,056	96,883	139,646	199,384	262,534	310,295
Females	125,123	129,461	145,616	193,285	266,074	356,555	420,732
Persons	204,851	212,517	242,500	332,931	465,458	619,089	731,028
% total pwd	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Note: people with dementia (pwd)

In 2005, of people with dementia, 87.6% were English speakers, 9.7% spoke other European languages, 2.01% spoke Asian languages, 0.5% spoke Middle Eastern, 0.0% spoke African, South American languages, 0.1% spoke Indigenous languages and 0.1% spoke Other languages at home.

The patterns of incidence by language spoken at home very closely resemble those of prevalence, also reflecting the greater predominance of English among the oldest Australians.

**TABLE 2-2: INCIDENCE BY LANGUAGE SPOKEN AT HOME AND GENDER, 2005-2050, AUSTRALIA**

	2005	2006	2010	2020	2030	2040	2050
<b>English</b>							
Males	17,814	18,601	21,673	31,609	46,200	60,269	69,276
Females	27,773	28,685	31,879	41,736	58,162	76,495	86,491
Persons	45,587	47,286	53,552	73,345	104,362	136,764	155,767
% total pwd	87.7%	87.9%	88.3%	88.9%	89.5%	89.8%	88.7%
<b>Other European</b>							
Males	2,163	2,186	2,323	2,851	3,515	4,063	4,599
Females	2,826	2,866	3,100	3,950	5,066	6,031	6,969
Persons	4,989	5,053	5,423	6,801	8,581	10,094	11,568
% total pwd	9.6%	9.4%	8.9%	8.2%	7.4%	6.6%	6.6%
<b>Asian</b>							
Males	446	459	523	771	1,191	1,812	2,767
Females	642	663	766	1,143	1,763	2,644	3,994
Persons	1,088	1,122	1,289	1,914	2,954	4,456	6,761
% total pwd	2.1%	2.1%	2.1%	2.3%	2.5%	2.9%	3.9%
<b>Middle Eastern</b>							
Males	131	135	157	243	380	559	794
Females	144	148	173	266	412	600	862
Persons	274	283	330	509	792	1,159	1,656
% total pwd	0.5%	0.5%	0.5%	0.6%	0.7%	0.8%	0.9%
<b>African &amp; South American</b>							
Males	5	5	6	10	17	29	48
Females	8	8	9	13	20	32	53
Persons	13	13	15	23	37	61	101
% total pwd	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%
<b>Other</b>							
Males	18	19	22	34	57	93	145
Females	24	25	30	47	77	122	191
Persons	42	44	52	82	135	215	337
% total pwd	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.2%
<b>Indigenous</b>							
Males	16	16	16	20	28	38	52
Females	21	21	24	31	42	56	75
Persons	37	37	40	52	70	94	127
% total pwd	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
<b>Total</b>							
Males	20,592	21,421	24,720	35,538	51,388	66,862	77,682
Females	31,438	32,417	35,981	47,187	65,543	85,981	98,635
Persons	52,030	53,838	60,701	82,724	116,931	152,844	176,317
% total pwd	17,814	18,601	21,673	31,609	46,200	60,269	69,276

Note: The incidence estimates for all of Australia are fractionally higher than in Access Economics (2005a) due to standard error (uncertainty around the incidence rates and population estimates).

**Of all Australians with dementia, 12.4% – around one in eight – do not speak English at home.**

## 2.2 FINDINGS FOR THE STATES AND TERRITORIES

The proportion of CALD background populations varies between jurisdictions. For example, in NSW in 2005, there were more non-English speakers than the population average, more Asian speakers than people speaking other European languages and few Indigenous speakers. In contrast, in the Northern Territory, 16.9% spoke Indigenous languages. The prevalence of dementia, however, is determined very much by the ethnicity of the oldest old, and this is less variable. Numbers in the tables below may not sum precisely to totals, due to rounding.

### 2.2.1 AUSTRALIAN CAPITAL TERRITORY

**TABLE 2-3: PREVALENCE BY LANGUAGE SPOKEN AT HOME AND GENDER, 2005-2050, ACT**

	2005	2006	2010	2020	2030	2040	2050
<b>English</b>							
Males	769	822	1,029	1,622	2,413	3,159	3,629
Females	1,202	1,265	1,504	2,218	3,273	4,387	4,976
Persons	1,970	2,087	2,533	3,840	5,687	7,547	8,605
% total pwd	85.3%	85.9%	87.4%	89.5%	90.8%	91.2%	90.1%
<b>Other European</b>							
Males	112	113	116	134	158	179	203
Females	152	153	160	191	228	266	315
Persons	264	265	277	325	386	445	517
% total pwd	11.4%	10.9%	9.6%	7.6%	6.2%	5.4%	5.4%
<b>Asian</b>							
Males	28	29	31	44	67	100	148
Females	39	40	44	62	92	138	212
Persons	67	68	76	106	159	237	360
% total pwd	2.9%	2.8%	2.6%	2.5%	2.5%	2.9%	3.8%
<b>Middle Eastern</b>							
Males	3	3	4	7	11	16	23
Females	3	3	3	5	9	15	24
Persons	6	6	7	12	20	31	47
% total pwd	0.3%	0.3%	0.3%	0.3%	0.3%	0.4%	0.5%
<b>African &amp; South American</b>							
Males	0	0	0	1	1	2	3
Females	0	0	0	1	1	1	2
Persons	0	0	1	1	2	3	5
% total pwd	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%
<b>Other</b>							
Males	1	1	2	2	3	4	6
Females	1	2	2	3	4	6	9
Persons	3	3	3	5	7	10	15
% total pwd	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.2%
<b>Indigenous</b>							
Males	0	0	0	0	0	0	0
Females	0	0	0	0	0	1	1
Persons	0	0	0	0	0	1	1
% total pwd	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Total</b>							
Males	914	968	1,183	1,810	2,653	3,460	4,013
Females	1,397	1,462	1,714	2,480	3,608	4,813	5,538
Persons	2,311	2,430	2,897	4,289	6,260	8,273	9,551
% total pwd	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

In ACT in 2005, 85.8% of the population spoke English, 7.2% other European languages, 5.8% Asian languages, 0.8% Middle Eastern languages, 0.4% African, South American and Other languages and 0.0% Indigenous languages.

Table 2-3 and Table 2-4 show estimates of the prevalence and incidence of dementia by CALD background group in the ACT. Due to the small sample size, caution needs to be exercised with respect to the estimates for all but those speaking English, other European and Asian languages.

**TABLE 2-4: INCIDENCE BY LANGUAGE SPOKEN AT HOME AND GENDER, 2005-2050, ACT**

	2005	2006	2010	2020	2030	2040	2050
<b>English</b>							
Males	197	210	259	410	618	791	888
Females	303	318	373	546	811	1,055	1,158
Persons	500	527	631	956	1,429	1,845	2,046
% total pwd	85.3%	85.9%	87.4%	89.4%	90.9%	91.2%	89.9%
<b>Other European</b>							
Males	28	28	29	34	40	45	51
Females	38	38	40	48	57	65	77
Persons	66	66	69	82	97	110	128
% total pwd	11.3%	10.8%	9.6%	7.7%	6.2%	5.4%	5.6%
<b>Asian</b>							
Males	7	7	8	11	16	23	35
Females	10	10	11	16	23	33	52
Persons	17	18	19	26	39	57	87
% total pwd	3.0%	2.9%	2.7%	2.5%	2.5%	2.8%	3.8%
<b>Middle Eastern</b>							
Males	1	1	1	2	3	4	6
Females	1	1	1	1	2	4	6
Persons	1	2	2	3	5	7	12
% total pwd	0.3%	0.3%	0.3%	0.3%	0.3%	0.4%	0.5%
<b>African &amp; South American</b>							
Males	0	0	0	0	0	0	1
Females	0	0	0	0	0	0	0
Persons	0	0	0	0	0	1	1
% total pwd	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%
<b>Other</b>							
Males	0	0	0	0	1	1	1
Females	0	0	0	1	1	1	2
Persons	1	1	1	1	2	2	4
% total pwd	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.2%
<b>Indigenous</b>							
Males	0	0	0	0	0	0	0
Females	0	0	0	0	0	0	0
Persons	0	0	0	0	0	0	0
% total pwd	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Total</b>							
Males	233	246	297	456	677	864	982
Females	353	368	426	612	895	1,159	1,295
Persons	586	614	723	1,068	1,572	2,023	2,277
% total pwd	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

**Of all Canberrans with dementia, 14.7% – around one in seven – do not speak English at home.**

## 2.2.2 NEW SOUTH WALES

In NSW in 2005, only 79.6% of the population spoke English, 7.8% other European languages, 8.7% Asian languages, 3.4% Middle Eastern languages, 0.6% African, South American and Other languages and 0.0% Indigenous languages.

**TABLE 2-5: PREVALENCE BY LANGUAGE SPOKEN AT HOME AND GENDER, 2005-2050, NSW**

	2005	2006	2010	2020	2030	2040	2050
<b>English</b>							
Males	23,630	24,626	28,625	40,278	56,228	72,554	83,421
Females	38,551	39,852	44,360	56,497	74,844	97,647	111,353
Persons	62,181	64,478	72,985	96,775	131,072	170,201	194,775
% total pwd	87.1%	87.4%	87.7%	87.7%	87.7%	87.4%	85.7%
<b>Other European</b>							
Males	2,700	2,724	2,873	3,460	4,211	4,930	5,631
Females	3,600	3,641	3,905	4,882	6,172	7,544	8,911
Persons	6,300	6,365	6,778	8,341	10,383	12,474	14,542
% total pwd	8.8%	8.6%	8.1%	7.6%	6.9%	6.4%	6.4%
<b>Asian</b>							
Males	859	884	1,013	1,533	2,418	3,713	5,525
Females	1,246	1,286	1,485	2,211	3,381	5,122	7,708
Persons	2,105	2,170	2,498	3,744	5,799	8,836	13,234
% total pwd	2.9%	2.9%	3.0%	3.4%	3.9%	4.5%	5.8%
<b>Middle Eastern</b>							
Males	337	348	407	624	945	1,362	1,883
Females	347	358	421	649	993	1,464	2,097
Persons	684	706	828	1,273	1,938	2,826	3,980
% total pwd	1.0%	1.0%	1.0%	1.2%	1.3%	1.5%	1.8%
<b>African &amp; South American</b>							
Males	6	6	7	12	22	39	64
Females	10	11	11	16	25	40	66
Persons	16	16	18	28	47	79	130
% total pwd	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%
<b>Other</b>							
Males	29	31	37	61	102	163	247
Females	40	41	50	80	129	206	320
Persons	69	72	87	141	232	369	566
% total pwd	0.1%	0.1%	0.1%	0.1%	0.2%	0.2%	0.2%
<b>Indigenous</b>							
Males	1	1	2	2	3	5	7
Females	2	2	3	4	6	8	10
Persons	4	4	4	6	9	13	17
% total pwd	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Total</b>							
Males	27,562	28,619	32,964	45,970	63,931	82,767	96,778
Females	43,797	45,192	50,235	64,338	85,549	112,031	130,465
Persons	71,358	73,812	83,199	110,308	149,480	194,798	227,243
% total pwd	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 2-5 and Table 2-6 show estimates of the prevalence and incidence of dementia by CALD background group in NSW. Due to the small sample size, caution needs to be exercised with respect to the estimates for all but those speaking English, other European, Asian and Middle Eastern languages.

**TABLE 2-6: INCIDENCE BY LANGUAGE SPOKEN AT HOME AND GENDER, 2005-2050, NSW**

	2005	2006	2010	2020	2030	2040	2050
<b>English</b>							
Males	6,129	6,376	7,313	10,222	14,476	18,475	20,809
Females	9,683	9,972	10,936	13,710	18,347	23,495	26,003
Persons	15,812	16,348	18,249	23,932	32,823	41,969	46,811
% total pwd	87.2%	87.4%	87.7%	87.6%	87.7%	87.5%	85.6%
<b>Other European</b>							
Males	676	681	718	873	1,078	1,251	1,420
Females	904	912	971	1,213	1,549	1,856	2,163
Persons	1,580	1,593	1,689	2,086	2,627	3,107	3,583
% total pwd	8.7%	8.5%	8.1%	7.6%	7.0%	6.5%	6.6%
<b>Asian</b>							
Males	222	228	259	375	569	854	1,300
Females	323	332	381	559	847	1,248	1,861
Persons	545	561	640	934	1,416	2,102	3,160
% total pwd	3.0%	3.0%	3.1%	3.4%	3.8%	4.4%	5.8%
<b>Middle Eastern</b>							
Males	83	86	99	151	231	332	462
Females	90	93	109	165	252	362	511
Persons	174	179	208	316	483	694	973
% total pwd	1.0%	1.0%	1.0%	1.2%	1.3%	1.4%	1.8%
<b>African &amp; South American</b>							
Males	1	2	2	3	5	9	15
Females	3	3	3	4	6	10	16
Persons	4	4	5	7	11	18	30
% total pwd	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%
<b>Other</b>							
Males	8	8	9	14	24	38	59
Females	11	11	13	20	33	51	78
Persons	18	19	22	35	57	89	136
% total pwd	0.1%	0.1%	0.1%	0.1%	0.2%	0.2%	0.2%
<b>Indigenous</b>							
Males	0	0	0	1	1	1	2
Females	1	1	1	1	1	2	2
Persons	1	1	1	2	2	3	4
% total pwd	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Total</b>							
Males	7,121	7,382	8,401	11,639	16,384	20,960	24,065
Females	11,014	11,324	12,414	15,672	21,036	27,023	30,634
Persons	18,134	18,706	20,815	27,312	37,419	47,983	54,699
% total pwd	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

**Of all NSW residents with dementia, 12.9% – around one in eight – do not speak English at home.**

## 2.2.3 NORTHERN TERRITORY

In NT in 2005, only 75.2% of the population spoke English, 3.7% other European languages, 3.8% Asian languages, 0.1% Middle Eastern languages, 0.5% African, South American and Other languages and 16.9% Indigenous languages.

**TABLE 2-7: PREVALENCE BY LANGUAGE SPOKEN AT HOME AND GENDER, 2005-2050, NT**

	2005	2006	2010	2020	2030	2040	2050
<b>English</b>							
Males	220	230	283	462	702	935	1,137
Females	206	218	257	425	695	996	1,226
Persons	426	449	540	887	1,397	1,930	2,363
% total pwd	79.0%	79.4%	81.5%	86.2%	88.7%	89.0%	87.7%
<b>Other European</b>							
Males	18	19	20	22	24	27	30
Females	15	16	17	19	22	26	32
Persons	33	34	36	41	46	53	61
% total pwd	6.2%	6.1%	5.5%	3.9%	2.9%	2.4%	2.3%
<b>Asian</b>							
Males	8	9	9	11	16	24	34
Females	12	13	14	17	22	33	51
Persons	21	22	23	28	38	56	85
% total pwd	3.9%	3.8%	3.5%	2.7%	2.4%	2.6%	3.2%
<b>Middle Eastern</b>							
Males	0	0	0	0	1	1	2
Females	0	0	0	0	0	0	1
Persons	1	1	1	1	1	2	3
% total pwd	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
<b>African &amp; South American</b>							
Males	0	0	0	0	0	0	0
Females	0	0	0	0	0	0	0
Persons	0	0	0	0	0	0	1
% total pwd	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Other</b>							
Males	1	1	1	1	2	3	4
Females	1	1	1	1	1	2	4
Persons	2	2	2	2	3	5	8
% total pwd	0.3%	0.3%	0.3%	0.2%	0.2%	0.2%	0.3%
<b>Indigenous</b>							
Males	23	23	23	27	37	53	76
Females	34	35	38	43	53	70	98
Persons	57	58	61	70	90	123	174
% total pwd	10.6%	10.3%	9.1%	6.8%	5.7%	5.7%	6.5%
<b>Total</b>							
Males	271	282	336	524	782	1,042	1,283
Females	269	283	326	505	794	1,128	1,411
Persons	539	565	662	1,029	1,575	2,170	2,695
% total pwd	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 2-7 and Table 2-8 show estimates of the prevalence and incidence of dementia by CALD background group in NT. Due to the small sample size, caution needs to be exercised with respect to the estimates for all but those speaking English or Indigenous languages.



**TABLE 2-8: INCIDENCE BY LANGUAGE SPOKEN AT HOME AND GENDER, 2005-2050, NT**

	2005	2006	2010	2020	2030	2040	2050
<b>English</b>							
Males	51	54	66	113	178	237	286
Females	51	54	63	107	178	251	303
Persons	102	108	129	220	356	488	589
% total pwd	78.6%	79.1%	81.1%	86.1%	89.0%	89.4%	88.0%
<b>Other European</b>							
Males	4	4	4	5	6	6	7
Females	4	4	4	5	6	7	8
Persons	8	8	8	10	11	13	15
% total pwd	5.8%	5.7%	5.3%	3.8%	2.8%	2.4%	2.3%
<b>Asian</b>							
Males	2	2	2	3	4	5	8
Females	3	3	3	4	5	8	13
Persons	5	5	6	7	9	13	20
% total pwd	4.0%	3.9%	3.5%	2.6%	2.2%	2.4%	3.0%
<b>Middle Eastern</b>							
Males	0	0	0	0	0	0	0
Females	0	0	0	0	0	0	0
Persons	0	0	0	0	0	0	1
% total pwd	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
<b>African &amp; South American</b>							
Males	0	0	0	0	0	0	0
Females	0	0	0	0	0	0	0
Persons	0	0	0	0	0	0	0
% total pwd	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Other</b>							
Males	0	0	0	0	0	1	1
Females	0	0	0	0	0	1	1
Persons	0	0	0	1	1	1	2
% total pwd	0.3%	0.3%	0.3%	0.2%	0.2%	0.2%	0.3%
<b>Indigenous</b>							
Males	6	6	6	7	9	12	17
Females	9	9	10	11	14	18	25
Persons	15	15	16	18	23	30	42
% total pwd	11.2%	10.8%	9.7%	7.1%	5.7%	5.5%	6.3%
<b>Total</b>							
Males	63	66	78	128	196	262	320
Females	67	70	81	128	204	284	349
Persons	130	136	159	256	400	547	669
% total pwd	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

**Of all NT residents with dementia, 21.0% – nearly one quarter – do not speak English at home.**

## 2.2.4 QUEENSLAND

In QLD in 2005, 92.5% of the population spoke English, 3.4% other European languages, 3.0% Asian languages, 0.3% Middle Eastern languages, 0.7% African, South American and Other languages and 0.2% Indigenous languages.

**TABLE 2-9: PREVALENCE BY LANGUAGE SPOKEN AT HOME AND GENDER, 2005-2050, QLD**

	2005	2006	2010	2020	2030	2040	2050
<b>English</b>							
Males	13,541	14,220	17,128	26,723	40,845	56,119	68,544
Females	20,174	21,004	24,267	34,849	52,404	74,607	91,712
Persons	33,715	35,224	41,395	61,571	93,248	130,726	160,256
% total pwd	93.2%	93.3%	93.5%	93.9%	94.2%	94.3%	93.7%
<b>Other European</b>							
Males	852	867	946	1,233	1,603	1,984	2,373
Females	1,122	1,149	1,290	1,744	2,318	2,969	3,679
Persons	1,974	2,016	2,235	2,976	3,920	4,954	6,052
% total pwd	5.5%	5.3%	5.1%	4.5%	4.0%	3.6%	3.5%
<b>Asian</b>							
Males	156	163	196	336	578	941	1,444
Females	222	231	279	470	809	1,373	2,261
Persons	378	394	476	806	1,388	2,314	3,705
% total pwd	1.0%	1.0%	1.1%	1.2%	1.4%	1.7%	2.2%
<b>Middle Eastern</b>							
Males	16	16	21	37	65	108	167
Females	16	17	21	36	61	98	154
Persons	31	33	41	73	126	205	321
% total pwd	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.2%
<b>African &amp; South American</b>							
Males	2	3	4	8	15	27	44
Females	3	3	4	8	16	28	48
Persons	5	6	8	16	30	54	92
% total pwd	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%
<b>Other</b>							
Males	21	22	27	49	87	147	233
Females	29	30	37	63	110	187	308
Persons	50	52	64	112	197	334	542
% total pwd	0.1%	0.1%	0.1%	0.2%	0.2%	0.2%	0.3%
<b>Indigenous</b>							
Males	14	14	15	21	30	43	60
Females	15	16	19	29	43	62	87
Persons	28	29	34	50	73	105	147
% total pwd	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
<b>Total</b>							
Males	14,603	15,305	18,337	28,405	43,223	59,369	72,866
Females	21,580	22,450	25,917	37,200	55,760	79,324	98,249
Persons	36,182	37,754	44,254	65,605	98,983	138,693	171,115
% total pwd	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 2-9 and Table 2-10 show estimates of the prevalence and incidence of dementia by CALD group in QLD. Due to small sample size, caution needs to be exercised with respect to the estimates for all but those speaking English, Other European or Asian languages.

**TABLE 2-10: INCIDENCE BY LANGUAGE SPOKEN AT HOME AND GENDER, 2005-2050, QLD**

	2005	2006	2010	2020	2030	2040	2050
<b>English</b>							
Males	3,471	3,639	4,331	6,784	10,509	14,220	17,027
Females	5,074	5,265	6,004	8,572	13,007	18,081	21,595
Persons	8,545	8,904	10,335	15,356	23,517	32,301	38,621
% total pwd	93.2%	93.3%	93.5%	93.8%	94.2%	94.3%	93.6%
<b>Other European</b>							
Males	215	219	239	316	413	504	596
Females	282	289	322	437	584	730	890
Persons	497	507	562	753	997	1,233	1,486
% total pwd	5.4%	5.3%	5.1%	4.6%	4.0%	3.6%	3.6%
<b>Asian</b>							
Males	40	41	50	82	138	222	346
Females	58	60	72	119	203	336	547
Persons	97	101	121	201	341	557	894
% total pwd	1.1%	1.1%	1.1%	1.2%	1.4%	1.6%	2.2%
<b>Middle Eastern</b>							
Males	4	4	5	9	16	26	40
Females	4	4	5	9	15	24	37
Persons	8	8	10	18	31	50	77
% total pwd	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.2%
<b>African &amp; South American</b>							
Males	1	1	1	2	3	6	10
Females	1	1	1	2	4	7	12
Persons	1	1	2	4	7	13	22
% total pwd	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%
<b>Other</b>							
Males	6	6	7	12	21	35	56
Females	8	8	10	16	28	46	75
Persons	13	14	17	28	49	81	131
% total pwd	0.1%	0.1%	0.2%	0.2%	0.2%	0.2%	0.3%
<b>Indigenous</b>							
Males	4	4	4	5	7	10	15
Females	4	4	5	8	11	15	21
Persons	7	8	9	13	18	26	36
% total pwd	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
<b>Total</b>							
Males	3,740	3,913	4,637	7,210	11,107	15,022	18,090
Females	5,430	5,631	6,419	9,163	13,853	19,239	23,178
Persons	9,170	9,544	11,056	16,373	24,960	34,261	41,268
% total pwd	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

**Of all Queenslanders with dementia, 6.8% – around 1 in 15 – do not speak English at home.**

## 2.2.5 SOUTH AUSTRALIA

In SA in 2005, 87.8% of the population spoke English, 8.3% other European languages, 3.0% Asian languages, 0.6% Middle Eastern languages, 0.2% African, South American and Other languages and 0.2% Indigenous languages.

**TABLE 2-11: PREVALENCE BY LANGUAGE SPOKEN AT HOME AND GENDER, 2005-2050, SA**

	2005	2006	2010	2020	2030	2040	2050
<b>English</b>							
Males	6,148	6,391	7,403	10,213	14,028	17,733	19,591
Females	10,412	10,764	11,950	14,965	19,467	24,859	27,164
Persons	16,560	17,155	19,354	25,178	33,495	42,592	46,755
% total pwd	88.0%	88.3%	88.9%	89.9%	91.1%	92.1%	92.1%
<b>Other European</b>							
Males	892	895	914	996	1,082	1,118	1,134
Females	1,164	1,181	1,264	1,507	1,740	1,887	1,966
Persons	2,056	2,076	2,178	2,503	2,822	3,005	3,100
% total pwd	10.9%	10.7%	10.0%	8.9%	7.7%	6.5%	6.1%
<b>Asian</b>							
Males	65	66	72	98	142	200	272
Females	89	92	104	146	209	296	416
Persons	154	158	175	244	351	497	688
% total pwd	0.8%	0.8%	0.8%	0.9%	1.0%	1.1%	1.4%
<b>Middle Eastern</b>							
Males	16	16	18	26	37	51	68
Females	19	19	21	29	40	55	75
Persons	34	35	39	54	77	106	142
% total pwd	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.3%
<b>African &amp; South American</b>							
Males	1	1	1	1	2	3	5
Females	1	1	1	2	2	4	6
Persons	2	2	2	3	4	7	11
% total pwd	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Other</b>							
Males	1	1	1	2	3	4	6
Females	2	2	2	3	4	5	8
Persons	2	3	3	4	7	10	14
% total pwd	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Indigenous</b>							
Males	4	4	4	5	7	9	12
Females	6	6	7	9	11	14	18
Persons	10	10	11	14	18	24	30
% total pwd	0.1%	0.1%	0.0%	0.0%	0.0%	0.1%	0.1%
<b>Total</b>							
Males	7,126	7,374	8,413	11,341	15,300	19,118	21,088
Females	11,693	12,065	13,349	16,658	21,473	27,121	29,653
Persons	18,819	19,438	21,761	28,000	36,774	46,239	50,740
% total pwd	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 2-11 and Table 2-12 show estimates of the prevalence and incidence of dementia by CALD background group in SA. Due to the small sample size, caution needs to be exercised with respect to the estimates for all but those speaking English, Other European or Asian languages.

**TABLE 2-12: INCIDENCE BY LANGUAGE SPOKEN AT HOME AND GENDER, 2005-2050, SA**

	2005	2006	2010	2020	2030	2040	2050
<b>English</b>							
Males	1,600	1,658	1,889	2,577	3,600	4,493	4,836
Females	2,609	2,686	2,931	3,601	4,742	5,920	6,250
Persons	4,209	4,344	4,820	6,178	8,342	10,413	11,086
% total pwd	88.0%	88.3%	88.8%	89.7%	91.0%	92.1%	92.0%
<b>Other European</b>							
Males	228	229	234	258	282	282	281
Females	292	296	314	374	436	458	469
Persons	520	525	549	632	717	741	750
% total pwd	10.9%	10.7%	10.1%	9.2%	7.8%	6.6%	6.2%
<b>Asian</b>							
Males	17	17	18	24	34	47	65
Females	23	24	27	37	52	72	100
Persons	40	41	45	60	86	118	165
% total pwd	0.8%	0.8%	0.8%	0.9%	0.9%	1.0%	1.4%
<b>Middle Eastern</b>							
Males	4	4	4	6	9	12	16
Females	5	5	5	7	10	13	18
Persons	9	9	10	13	19	26	34
% total pwd	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.3%
<b>African &amp; South American</b>							
Males	0	0	0	0	0	1	1
Females	0	0	0	0	1	1	1
Persons	0	1	1	1	1	2	2
% total pwd	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Other</b>							
Males	0	0	0	0	1	1	1
Females	0	0	1	1	1	1	2
Persons	1	1	1	1	2	2	3
% total pwd	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Indigenous</b>							
Males	1	1	1	1	2	2	3
Females	1	2	2	2	3	3	4
Persons	2	3	3	4	5	6	7
% total pwd	0.1%	0.1%	0.1%	0.1%	0.0%	0.1%	0.1%
<b>Total</b>							
Males	1,850	1,910	2,148	2,867	3,927	4,838	5,204
Females	2,931	3,013	3,280	4,022	5,244	6,469	6,844
Persons	4,781	4,922	5,427	6,889	9,170	11,307	12,047
% total pwd	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

**Of all South Australians with dementia, 12.0% – more than one in nine – do not speak English at home.**

## 2.2.6 TASMANIA

In Tasmania in 2005, 96.8% of the population spoke English, 2.0% other European languages, 0.9% Asian languages, 0.2% Middle Eastern languages, 0.1% African, South American and Other languages and 0.0% Indigenous languages.

**TABLE 2-13: PREVALENCE BY LANGUAGE SPOKEN AT HOME AND GENDER, 2005-2050, TAS**

	2005	2006	2010	2020	2030	2040	2050
<b>English</b>							
Males	1,981	2,058	2,378	3,361	4,589	5,573	5,869
Females	3,186	3,284	3,643	4,677	6,225	7,787	8,245
Persons	5,167	5,341	6,022	8,038	10,813	13,359	14,114
% total pwd	96.5%	96.6%	97.0%	97.6%	98.1%	98.4%	98.4%
<b>Other European</b>							
Males	73	72	71	71	71	69	66
Females	99	99	101	107	109	106	102
Persons	172	171	172	178	180	175	168
% total pwd	3.2%	3.1%	2.8%	2.2%	1.6%	1.3%	1.2%
<b>Asian</b>							
Males	4	4	5	7	10	14	17
Females	7	8	8	11	14	20	27
Persons	12	12	13	18	25	34	44
% total pwd	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.3%
<b>Middle Eastern</b>							
Males	1	1	1	1	2	3	4
Females	1	1	1	1	1	2	2
Persons	2	2	2	2	3	4	6
% total pwd	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>African &amp; South American</b>							
Males	0	0	0	0	0	0	1
Females	0	0	0	0	0	1	1
Persons	1	1	1	1	1	1	1
% total pwd	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Other</b>							
Males	1	1	1	1	1	2	3
Females	0	1	1	1	1	2	3
Persons	1	1	2	2	3	4	5
% total pwd	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Indigenous</b>							
Males	0	0	0	0	0	0	0
Females	0	0	0	0	0	0	0
Persons	0	0	0	0	0	0	0
% total pwd	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Total</b>							
Males	2,059	2,136	2,456	3,442	4,674	5,661	5,959
Females	3,294	3,392	3,755	4,797	6,351	7,917	8,380
Persons	5,354	5,528	6,211	8,239	11,025	13,578	14,339
% total pwd	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 2-13 and Table 2-14 show estimates of the prevalence and incidence of dementia by CALD background group in Tasmania. Due to the small sample size, caution needs to be exercised with respect to the estimates for all but those speaking English and Other European languages.

**TABLE 2-14: INCIDENCE BY LANGUAGE SPOKEN AT HOME AND GENDER, 2005-2050, TAS**

	2005	2006	2010	2020	2030	2040	2050
<b>English</b>							
Males	511	531	608	860	1,189	1,421	1,456
Females	802	824	903	1,150	1,542	1,880	1,922
Persons	1,314	1,355	1,511	2,010	2,731	3,301	3,378
% total pwd	96.5%	96.6%	96.9%	97.5%	98.1%	98.4%	98.4%
<b>Other European</b>							
Males	19	19	18	18	18	18	16
Females	25	25	25	27	27	26	25
Persons	44	44	44	45	46	43	41
% total pwd	3.2%	3.1%	2.8%	2.2%	1.6%	1.3%	1.2%
<b>Asian</b>							
Males	1	1	1	2	2	3	4
Females	2	2	2	3	4	5	7
Persons	3	3	3	4	6	8	11
% total pwd	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.3%
<b>Middle Eastern</b>							
Males	0	0	0	0	0	1	1
Females	0	0	0	0	0	0	1
Persons	0	0	0	1	1	1	1
% total pwd	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>African &amp; South American</b>							
Males	0	0	0	0	0	0	0
Females	0	0	0	0	0	0	0
Persons	0	0	0	0	0	0	0
% total pwd	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Other</b>							
Males	0	0	0	0	0	0	1
Females	0	0	0	0	0	0	1
Persons	0	0	0	1	1	1	1
% total pwd	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Indigenous</b>							
Males	0	0	0	0	0	0	0
Females	0	0	0	0	0	0	0
Persons	0	0	0	0	0	0	0
% total pwd	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Total</b>							
Males	532	551	628	881	1,211	1,443	1,478
Females	830	852	931	1,181	1,574	1,912	1,955
Persons	1,361	1,403	1,559	2,061	2,785	3,355	3,433
% total pwd	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

**Of all Tasmanians with dementia, 3.5% – around 1 in 29 – do not speak English at home.**

## 2.2.7 VICTORIA

In Victoria in 2005, only 78.7% of the population spoke English, 11.9% other European languages, 6.8% Asian languages, 2.2% Middle Eastern languages, 0.3% African, South American and Other languages and 0.0% Indigenous languages.

**TABLE 2-15: PREVALENCE BY LANGUAGE SPOKEN AT HOME AND GENDER, 2005-2050, VIC**

	2005	2006	2010	2020	2030	2040	2050
<b>English</b>							
Males	16,332	17,099	20,125	29,039	41,043	53,884	63,057
Females	27,321	28,322	31,821	41,430	55,547	73,520	85,041
Persons	43,653	45,420	51,946	70,468	96,590	127,404	148,098
% total pwd	83.1%	83.4%	83.9%	84.3%	84.7%	85.0%	84.1%
<b>Other European</b>							
Males	3,241	3,288	3,514	4,311	5,285	6,186	6,997
Females	4,168	4,249	4,668	6,103	7,925	9,756	11,413
Persons	7,409	7,537	8,182	10,414	13,210	15,942	18,410
% total pwd	14.1%	13.8%	13.2%	12.5%	11.6%	10.6%	10.5%
<b>Asian</b>							
Males	468	483	555	844	1,336	2,053	3,040
Females	677	702	820	1,237	1,900	2,866	4,267
Persons	1,145	1,185	1,375	2,081	3,236	4,919	7,306
% total pwd	2.2%	2.2%	2.2%	2.5%	2.8%	3.3%	4.1%
<b>Middle Eastern</b>							
Males	135	140	167	269	427	641	917
Females	147	152	181	288	459	702	1,035
Persons	282	292	348	558	886	1,344	1,952
% total pwd	0.5%	0.5%	0.6%	0.7%	0.8%	0.9%	1.1%
<b>African &amp; South American</b>							
Males	7	8	8	13	21	33	52
Females	9	10	11	15	24	38	59
Persons	17	17	19	28	44	71	111
% total pwd	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%
<b>Other</b>							
Males	13	13	15	23	36	56	83
Females	16	16	19	29	46	71	107
Persons	29	30	34	52	82	127	190
% total pwd	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
<b>Indigenous</b>							
Males	0	0	0	0	0	1	1
Females	0	0	0	0	1	1	1
Persons	0	0	0	0	1	1	2
% total pwd	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Total</b>							
Males	20,197	21,031	24,385	34,498	48,148	62,855	74,147
Females	32,338	33,451	37,520	49,104	65,901	86,953	101,923
Persons	52,535	54,482	61,905	83,602	114,049	149,808	176,069
% total pwd	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 2-15 and Table 2-16 show estimates of the prevalence and incidence of dementia by CALD background group in Victoria. Due to the small sample size, caution needs to be exercised with respect to the estimates for all but those speaking English, Other European, Asian and Middle Eastern languages.



**TABLE 2-16: INCIDENCE BY LANGUAGE SPOKEN AT HOME AND GENDER, 2005-2050, VIC**

	2005	2006	2010	2020	2030	2040	2050
<b>English</b>							
Males	4,287	4,483	5,220	7,496	10,746	14,041	16,258
Females	6,856	7,081	7,840	10,025	13,553	17,607	19,760
Persons	11,143	11,564	13,059	17,521	24,298	31,648	36,017
% total pwd	83.2%	83.5%	83.9%	84.1%	84.6%	85.0%	83.9%
<b>Other European</b>							
Males	818	830	892	1,117	1,394	1,620	1,830
Females	1,045	1,064	1,162	1,516	1,990	2,395	2,758
Persons	1,863	1,893	2,054	2,634	3,384	4,015	4,588
% total pwd	13.9%	13.7%	13.2%	12.6%	11.8%	10.8%	10.7%
<b>Asian</b>							
Males	123	127	145	211	322	487	746
Females	176	182	211	313	476	698	1,028
Persons	299	309	356	524	798	1,185	1,774
% total pwd	2.2%	2.2%	2.3%	2.5%	2.8%	3.2%	4.1%
<b>Middle Eastern</b>							
Males	34	35	41	66	106	159	231
Females	39	40	47	73	116	173	252
Persons	72	75	88	139	222	333	483
% total pwd	0.5%	0.5%	0.6%	0.7%	0.8%	0.9%	1.1%
<b>African &amp; South American</b>							
Males	2	2	2	3	5	8	13
Females	2	3	3	4	6	9	14
Persons	4	5	5	7	11	17	27
% total pwd	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%
<b>Other</b>							
Males	3	4	4	6	9	13	20
Females	4	4	5	7	12	17	26
Persons	8	8	9	13	20	31	46
% total pwd	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
<b>Indigenous</b>							
Males	0	0	0	0	0	0	0
Females	0	0	0	0	0	0	0
Persons	0	0	0	0	0	0	1
% total pwd	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Total</b>							
Males	5,267	5,480	6,304	8,899	12,581	16,329	19,098
Females	8,122	8,373	9,267	11,939	16,152	20,900	23,838
Persons	13,389	13,853	15,571	20,838	28,733	37,230	42,936
% total pwd	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

**Of all Victorians with dementia, 16.9% – around one in six – do not speak English at home.**

## 2.2.8 WESTERN AUSTRALIA

In WA in 2005, only 88.2% of the population spoke English, 5.8% other European languages, 4.6% Asian languages, 0.6% Middle Eastern languages, 0.3% African, South American and Other languages and 0.5% Indigenous languages.

**TABLE 2-17: PREVALENCE BY LANGUAGE SPOKEN AT HOME AND GENDER, 2005-2050, WA**

	2005	2006	2010	2020	2030	2040	2050
<b>English</b>							
Males	6,129	6,458	7,855	12,401	18,960	25,979	31,181
Females	9,578	9,964	11,470	16,421	24,212	34,002	40,747
Persons	15,706	16,422	19,324	28,823	43,172	59,981	71,928
% total pwd	88.5%	88.8%	89.5%	90.5%	91.3%	91.6%	90.8%
<b>Other European</b>							
Males	690	697	737	894	1,113	1,342	1,583
Females	939	955	1,042	1,321	1,661	2,022	2,411
Persons	1,630	1,653	1,779	2,216	2,775	3,364	3,994
% total pwd	9.2%	8.9%	8.2%	7.0%	5.9%	5.1%	5.0%
<b>Asian</b>							
Males	131	137	163	269	454	720	1,078
Females	186	193	228	366	609	1,002	1,600
Persons	317	330	391	635	1,063	1,722	2,678
% total pwd	1.8%	1.8%	1.8%	2.0%	2.2%	2.6%	3.4%
<b>Middle Eastern</b>							
Males	18	19	22	37	63	102	160
Females	19	19	23	37	60	96	151
Persons	37	38	45	74	123	198	310
% total pwd	0.2%	0.2%	0.2%	0.2%	0.3%	0.3%	0.4%
<b>African &amp; South American</b>							
Males	2	3	3	6	12	22	36
Females	4	4	5	8	13	21	37
Persons	7	7	9	14	25	43	73
% total pwd	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%
<b>Other</b>							
Males	2	3	3	6	10	16	25
Females	2	2	2	5	10	17	28
Persons	4	4	5	11	20	34	53
% total pwd	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%
<b>Indigenous</b>							
Males	20	20	21	27	36	47	60
Females	26	26	27	35	49	67	89
Persons	46	46	48	61	85	114	149
% total pwd	0.3%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%
<b>Total</b>							
Males	6,994	7,336	8,805	13,641	20,648	28,228	34,124
Females	10,753	11,164	12,797	18,194	26,614	37,228	45,062
Persons	17,747	18,500	21,602	31,834	47,262	65,456	79,186
% total pwd	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 2-17 and Table 2-18 show estimates of the prevalence and incidence of dementia by CALD background group in WA. Due to the small sample size, caution needs to be exercised with respect to the estimates for all but those speaking English, Other European and Asian languages.

**TABLE 2-18: INCIDENCE BY LANGUAGE SPOKEN AT HOME AND GENDER, 2005-2050, WA**

	2005	2006	2010	2020	2030	2040	2050
<b>English</b>							
Males	1,567	1,650	1,986	3,143	4,878	6,584	7,709
Females	2,394	2,484	2,828	4,023	5,978	8,199	9,491
Persons	3,961	4,134	4,814	7,166	10,855	14,782	17,200
% total pwd	88.5%	88.7%	89.4%	90.5%	91.4%	91.7%	90.7%
<b>Other European</b>							
Males	175	177	187	228	284	336	396
Females	236	239	260	330	417	493	579
Persons	411	416	448	558	701	830	975
% total pwd	9.2%	8.9%	8.3%	7.0%	5.9%	5.1%	5.1%
<b>Asian</b>							
Males	33	34	40	64	107	171	264
Females	48	49	58	92	152	244	387
Persons	81	84	99	156	259	415	651
% total pwd	1.8%	1.8%	1.8%	2.0%	2.2%	2.6%	3.4%
<b>Middle Eastern</b>							
Males	5	5	6	9	15	24	38
Females	5	5	6	9	15	23	36
Persons	9	10	11	19	31	48	74
% total pwd	0.2%	0.2%	0.2%	0.2%	0.3%	0.3%	0.4%
<b>African &amp; South American</b>							
Males	1	1	1	2	3	5	8
Females	1	1	1	2	3	5	9
Persons	2	2	2	4	6	10	17
% total pwd	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%
<b>Other</b>							
Males	1	1	1	1	2	4	6
Females	0	0	1	1	3	4	7
Persons	1	1	1	3	5	8	13
% total pwd	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%
<b>Indigenous</b>							
Males	5	5	5	7	9	12	15
Females	6	6	7	9	12	17	22
Persons	12	11	12	16	21	28	36
% total pwd	0.3%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%
<b>Total</b>							
Males	1,786	1,873	2,226	3,454	5,298	7,136	8,436
Females	2,690	2,786	3,162	4,467	6,580	8,986	10,530
Persons	4,477	4,658	5,388	7,921	11,878	16,121	18,967
% total pwd	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

**Of all West Australians with dementia, 11.5% – around one in nine – do not speak English at home.**

## 2.3 CONCLUDING COMMENTS

In the tables above, it should be noted that the sum of the jurisdictions falls a little short of the Australian totals due to the absence of separate estimates for the smallest Australian Territories – the Jervis Bay Territory, Christmas Island and the Cocos (Keeling) Islands – which are included in the Australian totals.

The estimates and projections are subject to a number of qualifications. In particular, the analysis has shown that there would be benefit in the following refinements.

- The 2006 Census data should be used to enhance the regression estimate on which the population projections by people from CALD background group are based.
  - At present, with only four observations, some of the trend logarithmic curves imply projections that may fall below zero for some States/Territories and some CALD background groups. In the adjustment process, non-zero numbers were not permitted, so there are some irregularities in the estimates. A longer and more recent time series would enhance the estimation and adjustment process.
- The data for African, South American and Other language speakers should be combined to reduce statistical error and a false impression of accuracy in future.
- The Indigenous estimates are only robust for the Northern Territory and Western Australia, and even in these cases may be influenced by inaccuracies in Census reporting of Indigenous languages spoken at home.

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