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AIHW Dental Statistics  
 and Research Unit  
 Research Report No. 38

## Patterns of tooth loss in the Australian population 2004–06



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 AUSTRALIA



**T**his report provides information on patterns of tooth loss in the Australian population in 2004–06. Differences by age group, sex, eligibility for public dental care (cardholder status), place of residence, education, dental visiting pattern and dental insurance are presented. Variations by state and territory are provided.

### Main findings

- All measures of tooth loss were more prevalent among older age groups and people eligible for public dental care.
- Complete tooth loss was strongly associated with:
  - ◆ older age
  - ◆ eligibility for public dental care.
- Inadequate natural dentition (having less than 21 teeth) was more prevalent among:
  - ◆ those eligible for public dental care
  - ◆ people not covered by private dental insurance.
- The use of full or partial dentures by dentate adults was associated with:
  - ◆ lower education
  - ◆ living outside capital cities.
- There was a higher number of teeth missing due to dental disease among people who:
  - ◆ usually visit for a dental problem
  - ◆ are eligible for public dental care.
- Avoiding some foods because of dental problems was twice as prevalent among people who wear full or partial dentures than people who have their own natural teeth.

### Dentate status

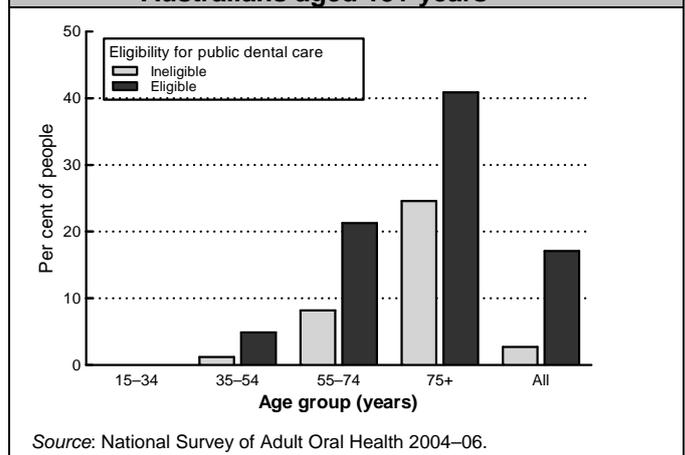
The cumulative effects of past dental disease and treatment are reflected in tooth loss and the wearing of dentures. Adults from different age groups and social backgrounds may exhibit variations in frequency of tooth loss, possibly indicating differing historical treatment patterns.

People with no natural teeth have limited oral function. Although they wear dentures, they report more oral health problems on average than people with natural teeth.

### Eligibility for public dental care

Prevalence of complete tooth loss increased sharply across age groups (Figure 1). People who were eligible for public dental care had a higher prevalence of complete tooth loss than those who were not eligible, with the difference evident in all age groups.

**Figure 1: Complete tooth loss among eligible Australians aged 15+ years**



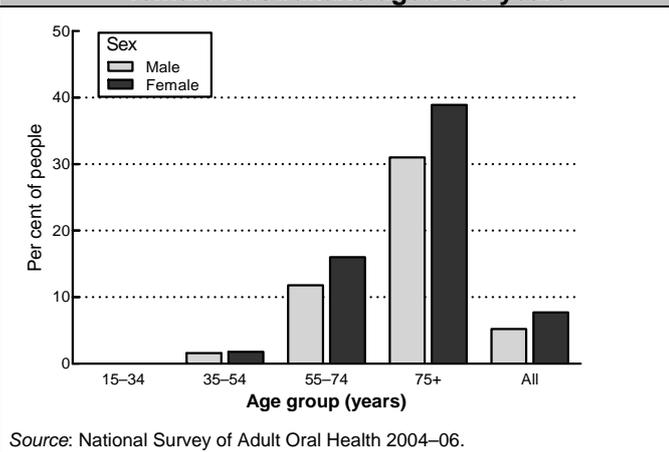
There was a six-fold difference in the prevalence of complete tooth loss among all ages when comparing people eligible for public dental care (17.1%) with ineligible people (2.7%).

Within age groups there was a four-fold difference in prevalence between eligible versus ineligible people among 35–54-year-olds, and a three-fold difference for the 55–74-year-olds (21.3% versus 8.2%). Among those aged 75+ years, 24.6% of ineligible people had no teeth compared with 40.9% of people eligible for public dental care.

### Complete tooth loss by gender

Females had higher prevalence of complete tooth loss than males (Figure 2). The 55–74-year-old group was the only age group with a significantly higher rate of tooth loss among females, being 16.0% versus 11.8% in males.

**Figure 2: Complete tooth loss among male and female Australians aged 15+ years**



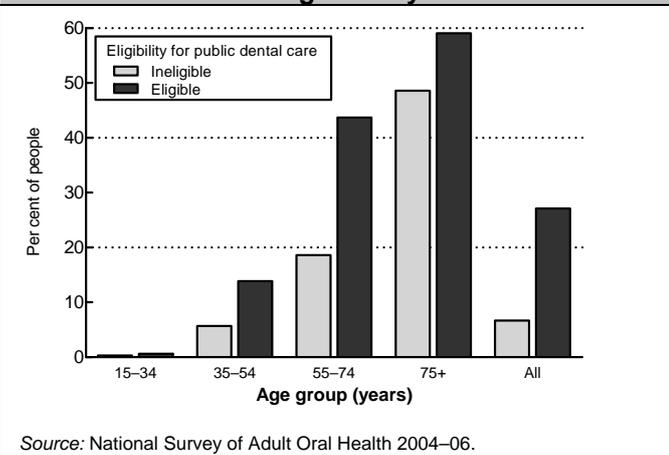
### Inadequate natural dentition

Traditionally, dentists have attempted to retain an optimal number of teeth so that the patient maintains oral function as well as an acceptable appearance. In recent decades an adequate dentition has variously been defined as 21+ or 20+ natural teeth. Below these thresholds people were more likely to suffer an impaired oral-health-related quality of life compared to adults with more teeth. In the Australian population of dentate people aged 15 years or more, 11.4% of people had fewer than 21 remaining teeth, a threshold used here to define an inadequate dentition.

The prevalence of an inadequate dentition was strongly associated with age, being virtually non-existent in 15-34-year-olds but affecting more than half of those aged 75+ years (Figure 3).

### Eligibility for public dental care

**Figure 3: Inadequate dentition among dentate Australians aged 15+ years**



Differences in the percentage of dentate persons with inadequate dentition were most noticeable when comparing those eligible for public dental

care (government concession cardholders) and ineligible people (Figure 3).

Among all ages combined, 27.1% of cardholders had fewer than 21 teeth compared to 6.7% of non-cardholders, a four-fold relative difference.

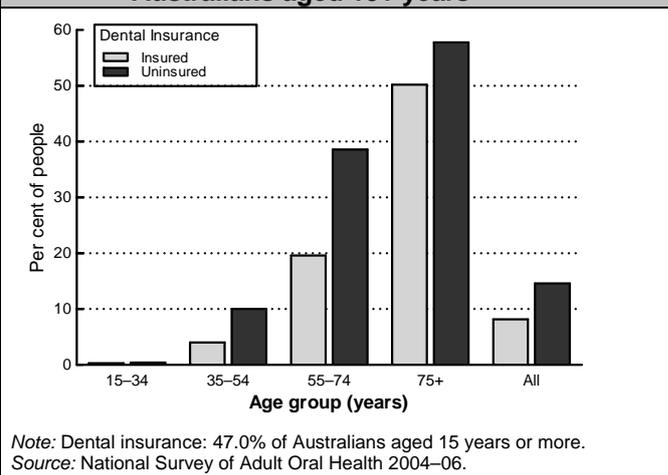
### Dental insurance

Large differences existed in the frequency of inadequate dentition when comparing insured and uninsured people.

People without private dental insurance were more likely to have fewer than 21 remaining teeth than those with dental insurance (Figure 4).

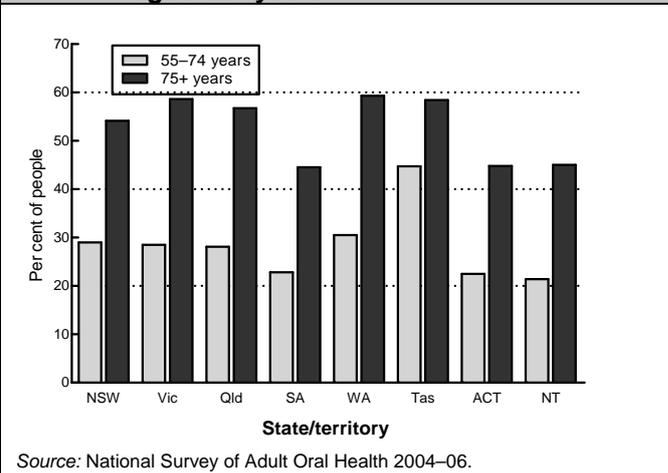
Uninsured people in the age groups 35-54 and 55-74 years were twice as likely to have less than 21 teeth (10.0% versus 4.0% and 38.6% versus 19.6%, respectively). The difference diminished in the oldest age group.

**Figure 4: Inadequate dentition among dentate Australians aged 15+ years**



### State/territory of residence

**Figure 5: State/territory variation in inadequate dentition among dentate Australians aged 55+ years**



State and territory differences in the prevalence of inadequate dentition among participants aged 55 years or more are presented in Figure 5. The proportion of people who reported having less than 21 teeth was higher in Tasmania, with almost 45% of those aged 55–74 years and more than 58% of the 75+ age group having less than 21 remaining teeth. South Australia, the Australian Capital Territory and the Northern Territory had the lowest prevalence, with around 22% of 55–74-year-olds and 45% of those aged 75+ years having inadequate dentition.

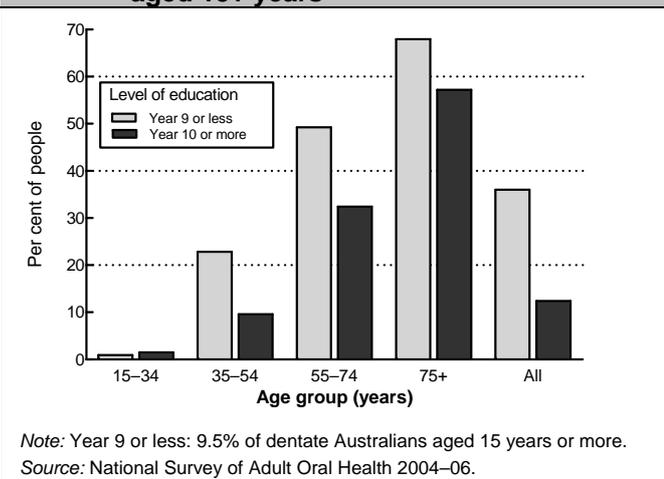
### Denture wearing by dentate people

The use of full or partial dentures by dentate adults (i.e. those with one or more natural teeth) is presented in Figure 6. Frequency of denture use increased across age groups; it was estimated that more than 60% of dentate adults aged 75+ years wore a denture.

### Education

In all age groups people with Year 9 or less in schooling were more likely to wear a denture than those who had completed Year 10 or higher. The difference was particularly noticeable in the 35–54-year-old age group, where there was a more than two-fold difference in prevalence. Significant differences occurred between levels of education in those aged 35–54 and 55–74 years, as well as in the overall population. Denture wearing was three times more likely overall among people who had lower education (36.0% versus 12.4%).

**Figure 6: Denture wearing among dentate people aged 15+ years**

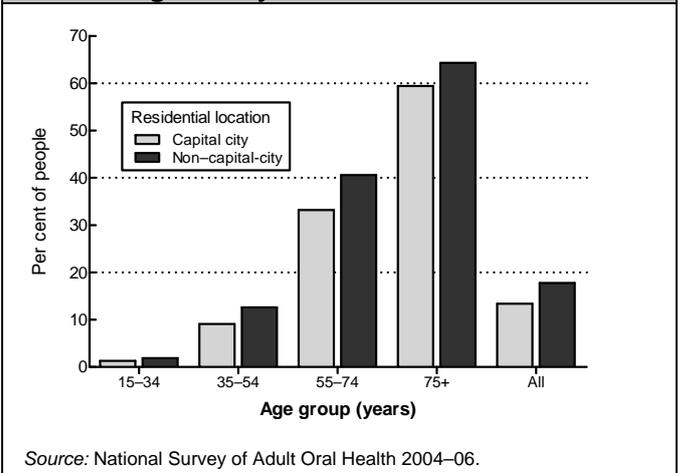


### Location of residence

People who lived in a capital city were less likely to wear a denture than those who lived in the rest of the state. The difference was greatest in the 55–74-year-old age group (33.2% versus 40.6%). Significant differences occurred between capital-city

and non-capital-city dwellers among those aged 35–54 and 55–74 years, as well as in the overall population.

**Figure 7: Denture wearing among dentate people aged 15+ years**



### Teeth missing due to dental disease

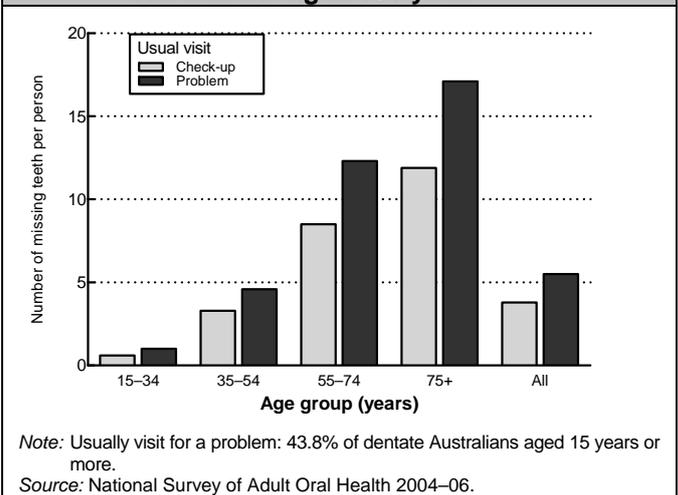
Examiners recorded the number of teeth missing due to dental decay or periodontal disease in people less than 45 years of age. In older people examiners assumed that missing teeth had been extracted due to dental disease.

The average number of missing teeth per person increased across the age groups, with 15–34-year-olds having 0.8 missing teeth on average per person and the 75+ years age group having an average of 14.1 teeth missing per person.

### Usual reason for dental visit

Usual reason for making a dental visit was associated with missing teeth among all ages, with people who usually visit for a problem (43.8% of Australians aged 15 years or more) having 1.4 times as many missing teeth than people who usually visit for a check-up (Figure 8).

**Figure 8: Number of missing teeth per person, Australians aged 15+ years**

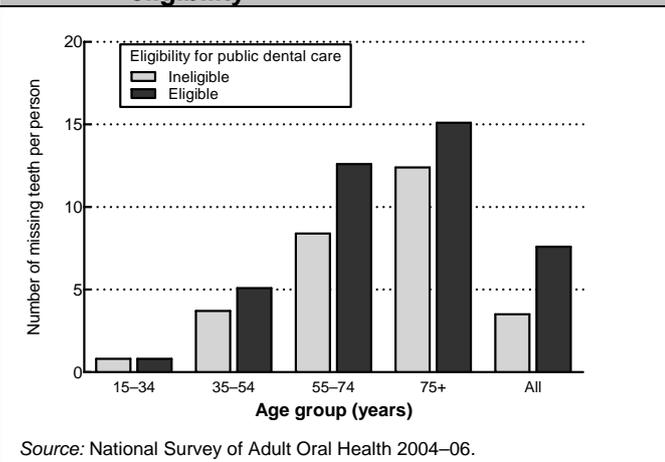


This association was seen across, and showed significant differences in, all age groups. Differences ranged from 1.0 versus 0.6 (1.7 times as great) in the youngest age group to 17.0 versus 11.9 (1.4 times) in the oldest age group.

### Eligibility for public dental care

People eligible for public dental care had twice as many missing teeth on average as those ineligible for such care (7.6 versus 3.5). The difference was most noticeable among people aged 55–74 years (12.6 versus 8.4 missing teeth).

**Figure 9: Number of missing teeth per person by eligibility**



### Food avoidance in last 12 months

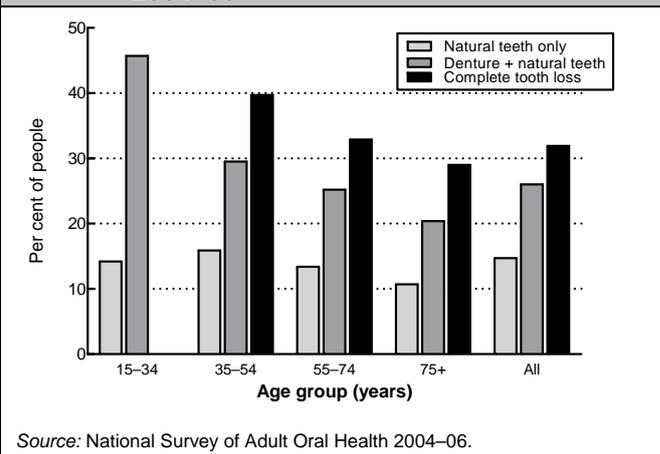
Avoiding food because of dental problems is an impact of poor oral health and may be caused by an inability to chew properly. People who reported that they had avoided some foods in the previous 12 months may have been less capable of maintaining a healthy nutritional status. One in six people (17.4% of the Australian population aged 15 years or more) avoided some foods fairly often or very often.

People who had no natural teeth were more than twice as likely to experience food avoidance compared to people who had natural teeth only. People who wore a denture or partial denture but still retained some of their natural teeth, although significantly less affected than those with complete tooth loss, were almost twice as likely to avoid food as those who had their own teeth. The difference in food avoidance was greatest among 35–54-year-olds who had none, some or all of their natural teeth—more than one in three (39.7%), one in four (29.5%) and one in six (15.9%) respectively.

The most noticeable impact was among the 15–34 years age group, where the prevalence of food avoidance was almost half (46%) of those wearing dentures.

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**Figure 10: Avoidance of food and denture wearing, 2004–06**



### Data collection

Data presented in this publication are from the telephone interview survey component of the National Survey of Adult Oral Health 2004–06. A sample of 14,123 persons aged 15 years or more participated in the survey. Sample sizes varied between states and territories according to the estimated resident population differences, with the largest sample (3,621) from New South Wales and the smallest (984) from the Australian Capital Territory.

Data were weighted to represent the age and sex distribution of the Australian population at the time of the survey. Participants were classified into 4 dental generation age groups: 15–34 years, 35–54 years, 55–74 years and 75+ years. Where attention is drawn to differences, the results are statistically significant at the 5 per cent level.

### Acknowledgments

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*The AIHW Dental Statistics and Research Unit (DSRU) is a collaborating unit of the Australian Institute of Health and Welfare established in 1988 at The University of Adelaide, located in the Australian Research Centre for Population Oral Health (ARCPOH), School of Dentistry, The University of Adelaide. DSRU aims to improve the oral health of Australians through the collection, analysis and reporting of information on oral health and access to dental care, the practice of dentistry and the dental labour force in Australia.*

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