

# EDENTULISM AND DENTURE USE

by Wayne J. Millar and David Locker

In 2003, 9% of Canadians aged 15 or older reported that they had no natural teeth; that is, they were edentate. This estimate is based on data from the Canadian Community Health Survey (CCHS).

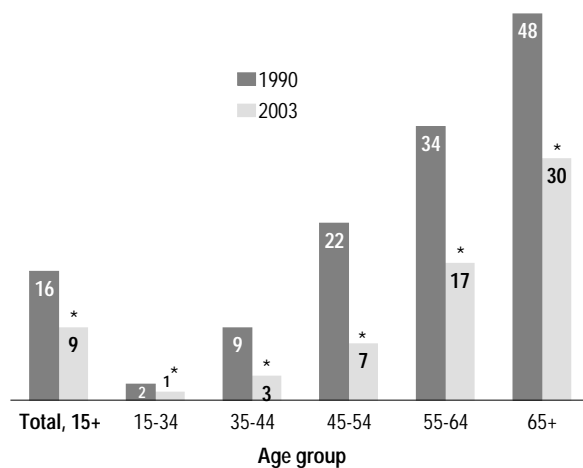
A comparison of estimates from the CCHS and the 1990 Health Promotion Survey reveals a decline in the prevalence of complete tooth loss. In 1990, 16% of the population was edentate. The largest decline in edentulism occurred in the older population. Close to half of individuals aged 65 or older (48%) were edentate in 1990; in 2003, the proportion was 30%.

This reduction is not surprising given the fairly widespread fluoridation of water and improved access to dental care.<sup>1</sup> Other contributing factors include growth of disposable income, improvements in dentist-to-population ratios and expansion of dental insurance coverage.<sup>2-4</sup>

## Differences by sex and age

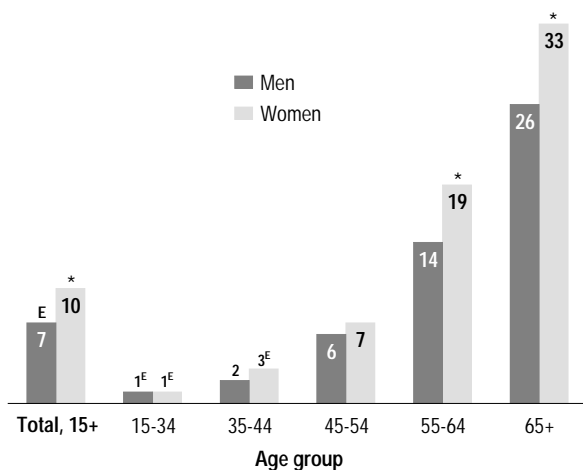
Overall, a higher proportion of women (10%) than men

Percentage of household population who were edentate, by age group, 1990 and 2003



Data sources: 1990 Health Promotion Survey; 2003 Canadian Community Health Survey  
\* Significantly lower than estimate for 1990 ( $p < 0.05$ )

Percentage of household population who were edentate, by age group and sex, 2003



Data source: 2003 Canadian Community Health Survey  
\* Significantly higher than estimate for men ( $p < 0.05$ )  
<sup>E</sup> Coefficient of variation 16.6% to 33.3% (interpret with caution)

(7%) were edentate, and edentulism was most common at older ages. The male–female difference reflects the higher proportion of edentate women aged 55 or older.

## By province

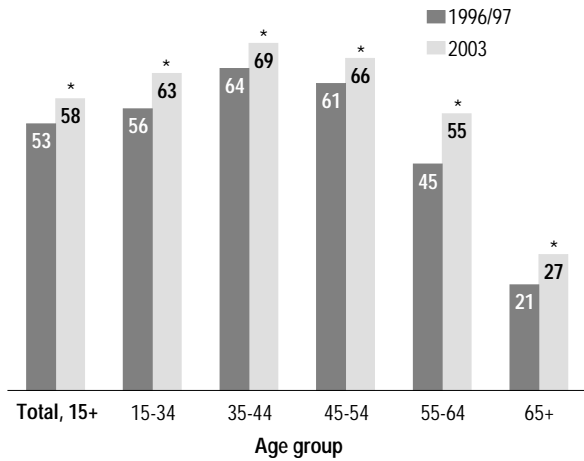
Québec had the highest rate of complete tooth loss (14%), and the Northwest Territories, the lowest (5%). Less widespread access to fluoridated water may have contributed to Québec’s high rate of edentulism.<sup>5</sup> Smoking, which is known to be associated with periodontal disease,<sup>6</sup> may also be a factor. Smoking rates in Québec remain higher than the national average. Other studies have also found higher rates of tooth loss in Québec.<sup>7</sup>

## Income, insurance

Employee benefit plans that help cover the costs of dental care have contributed to the decline in edentulism. And since 1996/97, the proportion of the population with dental insurance has increased in all age groups.

The percentage of Canadians in low income households who were

Percentage of household population with dental insurance, by age group, 1996/97 and 2003



Data sources: 1996/97 National Population Health Survey; 2003 Canadian Community Health Survey  
 \*Significantly higher than estimate for 1996/97 ( $p < 0.05$ )

## Denture use

According to the Canadian Community Health Survey, 24% of people aged 15 or older reported wearing dentures in 2003. Overall, denture use was more prevalent among women (26%) than men (23%)—especially for seniors.

Percentage of household population who wore dentures, by age group and sex, 2003

	Men	Women
	%	
Total, 15+	23	26*
15-34	3 <sup>E</sup>	3
35-44	12	12
45-54	31	27
55-64	45	50*
65+	58	66*

Data source: 2003 Canadian Community Health Survey  
 \*Significantly higher than estimate for men  
 E Coefficient of variation 16.6% to 33.3% (interpret with caution)

Among people in low income households, 36% wore dentures. For those in high income households, the figure was 16%.

Denture use among people with no dental insurance coverage was about twice that for those who did have benefits: 35% versus 18%.

Not all people who are edentate wear dentures. In 2003, about 9% of the edentate population reported that they did not wear dentures.

Percentage of household population aged 15 or older who were edentate, by selected characteristics, 2003

	'000	%
<b>Total</b>	<b>25,307</b>	<b>9</b>
<b>Sex</b>		
Men	12,426	7
Women	12,881	10*
<b>Age group</b>		
15 to 34	8,353	1*
35 to 44	5,310	3*
45 to 54	4,623	6*
55 to 64	3,237	17*
65 or older	3,785	30*
<b>Household income</b>		
Low	1,945	18*
Lower-middle	4,199	14*
Upper-middle	7,450	8*
High	7,680	3*
Missing	4,033	11*
<b>Dental insurance</b>		
Yes	14,795	5*
No	9,585	15*
Missing	927	5*
<b>Province/Territory</b>		
Newfoundland and Labrador	441	13*
Prince Edward Island	113	7*
Nova Scotia	757	10
New Brunswick	610	12*
Québec	6,070	14*
Ontario	9,792	6*
Manitoba	873	7
Saskatchewan	755	12*
Alberta	2,468	7*
British Columbia	3,361	7*
Yukon	24	7
Northwest Territories	31	5*
Nunavut	13	7

Data source: 2003 Canadian Community Health Survey  
 \*Significantly different from estimate for total ( $p < 0.05$ )

edentate was 18%, compared with 3% in the highest income households, indicating that complete tooth loss is closely associated with the ability to pay for dental services. Regardless of household income, however, people without benefit plans were more likely to be edentate in 2003.

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## Data sources

Estimates are based on data from the 2003 (cycle 2.1) Canadian Community Health Survey (CCHS). The CCHS covers the household population aged 12 or older in all provinces and territories, except members of the regular armed forces and people living on Indian reserves, and in some remote areas. Data for cycle 2.1 were collected between January and December 2003. The overall response rate was 80.6%, and the sample size was 135,573. More detail about the sample design of the CCHS is available in a previously published report.<sup>8</sup>

Cycle 2.1 has two separate modules on oral health. All respondents answered the Oral Health 1 questions. The Oral Health 2 module was answered by a sub-sample of respondents. This study focuses on people aged 15 or older who answered the Oral Health 2 module. The sample size was 35,927, representing 25.3 million people. To account for the multi-stage sample design of the survey, the bootstrap technique was used for calculating confidence intervals and coefficients of variation and for testing the statistical significance of differences between prevalence estimates. A significance level of  $p < 0.05$  was applied in all cases.<sup>9-12</sup>

The 1990 Health Promotion Survey (HPS) targeted all persons aged 15 or older residing in Canada, except full-time residents of institutions and residents of the Yukon and Northwest Territories. The survey used a random digit-dialled household design with a sample size of 13,792, representing 20.6 million people. The overall response rate was 78%. More information about the survey design is available in a published report.<sup>13</sup> Bootstrap weights were not available for the HPS. The design effect of the HPS was estimated to be 2.0 for all 10 provinces and closer to 1 for each province. To take this into account, adjusted standard errors were calculated by multiplying by the square root of the design effect.<sup>14</sup> These revised standard errors were used in the calculation of differences between rates in the HPS and CCHS.

Information about dental insurance was obtained from the 1996/97 National Population Health Survey (NPHS). The NPHS, which surveyed people aged 12 or older in Canada's household population, had an overall sample of 81,803 and a response rate of 79.0%. The sample size for people aged 15 or older, used in this analysis, was 70,884. More information about the survey can be found in a previous article.<sup>15</sup>

## Questions

Canadian Community Health Survey (CCHS) respondents who said that they had no natural teeth were defined as *edentate*.

Respondents were asked if they wore "dentures or false teeth." *Denture use* does not discriminate between a partial denture, a complete upper plate or both upper and lower plates.

CCHS respondents were asked if they had insurance that covered all or part of their dental expenses and those who said "yes" were classified as having *dental insurance*.

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