



# The Child Dental Health Survey, Australian Capital Territory 1997

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**AIHW Dental Statistics and Research Unit  
The University of Adelaide**

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**in collaboration with  
The Australian Capital Territory School Dental Service**

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## **Abbreviations**

d – deciduous decayed teeth

m – deciduous missing teeth

f – deciduous filled teeth

dmft – deciduous decayed, missing and filled teeth

D – permanent decayed teeth

M – permanent missing teeth

F – permanent filled teeth

DMFT – permanent decayed, missing and filled teeth

SD – standard deviation

## **Purpose of this report**

This report is part of the annual series providing descriptive statistics concerning child dental health in the Australian Capital Territory. The report contains tables and figures. Information listed in the tables includes: the age and sex of children in the sample, their deciduous and permanent caries experience, frequency of fissure sealants and children's history of School Dental Service examinations. The figures combine and summarise information from four of the tables.

The following sections briefly describe each table and figure (see pages 2–9) and provide a simple, summary statement highlighting differences between the 1996 and 1997 findings. However, no formal hypothesis tests have been undertaken and descriptions of difference between years are intended as a guide to the reader rather than an evaluation of trends.

## **Sampling and data analysis**

Data were collected during the 1997 calendar year from patients of the ACT School Dental Service by dental therapists and dentists. A random sampling procedure was used to select approximately one in two (1:2.5) patients. This was achieved by selecting those children whose birthday was between the 1st and 12th (inclusive) of any month. Provision was made for inclusion and numerical weighting of data from children whose date of birth was unknown. A total of 45 patients with birth dates outside of the desired sampling frame were also sampled. These children were included in the analyses with appropriate adjustments being made to statistical weights. Records from children with a known date of birth were weighted up, while records from children for whom age only was known or who were not sampled according to the desired sampling frame were weighted down. The sum of the weighted records is equivalent to the number of children sampled for the survey. The number of cases have been rounded to the nearest integer.

The data were extensively cleaned prior to analysis to correct for errors and duplicate cases. In addition, cases with ages more than 3 standard deviations from the mean age for a given number of either deciduous or permanent teeth were removed from the analysis or corrected where the cause for an error could be determined. These cases most likely represented data recording errors. As a result, 35 cases were removed from the data set prior to analysis.

All indices are calculated from data collected over a 12-month period. Where children received more than one examination during this period the information derived from examinations other than the first has been excluded. Age-specific indices denoted with an asterisk (\*) are those in which the relative standard error exceeds 40% and population estimates of these indices may be considered to be statistically unreliable and should be interpreted with due care.

## Demographic composition of the sample

The great majority of children in the sample (95.6%) were aged between 5 and 12 years inclusive, with approximately equivalent numbers in individual ages within the range of 6 to 11 years (see Table 1). Twelve-year-olds were one third as likely as those aged between 6 and 11 years to be in the sample, while children aged 4 years or less and those aged 13 years or older were represented in small numbers. Males and females were sampled in approximately equal proportions with only minor variations in proportions across age groups.

This distribution of the sample is closely related to the main target groups of children served by the School Dental Service in the ACT and emphasises that the sample is representative of primary school aged children served by the School Dental Service, rather than all children in the ACT. The small numbers of children aged less than 5 years or 13 years and older are likely to be less representative of ACT children in general, and their small numbers contribute to imprecision in some age-specific statistics contained in the remaining tables.

### Changes since 1996

There was a decrease of 486 in the sampled number of cases from 1996. The reduction was evident across most age groups, with 61.1% of the decline resulting from the decreased sampling of male children.

**Table 1: Demographic composition of the sample**

Age (years)	Number of children in sample		
	Males	Females	Persons
	<i>n</i>	<i>n</i>	<i>n</i>
2	1	3	4
3	3	5	8
4	15	10	25
5	217	227	444
6	323	310	633
7	303	276	579
8	302	289	591
9	242	290	533
10	245	245	489
11	206	233	439
12	89	63	152
13	27	20	46
14	27	29	56
15	20	12	32
16	6	2	8
<b>Total</b>	<b>2,025</b>	<b>2,014</b>	<b>4,039</b>

## Deciduous teeth: age-specific caries experience

The mean number of clinically decayed (d) teeth among children aged 5 to 12 years decreased from 0.79 to 0.22 (see Table 2). This can be explained by the exfoliation of deciduous teeth (as seen by the decrease in the mean number of deciduous teeth in Table 2) and does not necessarily reflect a reduction in the percentage of teeth with decay in older age groups. The mean dmft decreased for children up to 6 years of age, increased to ages 8 and 9 years, and subsequently declined.

The percentage of caries experience due to decay (d/dmft) showed an age-associated decline, more than halving from 75.3% among 5-year-olds to 35.4% among 10-year-olds. By comparison, the percentage of caries-free children (% dmft=0) showed a more modest reduction from 70.6% among 5-year-olds to 54.4% among 10-year-olds.

### Changes since 1996

The mean number of clinically detectable decayed teeth and mean dmft scores were higher in 1997 for almost all age groups than in 1996. For some ages, d/dmft was higher in 1997 than in 1996, however the percentage of children with dmft=0 was similar across age groups between 1996 and 1997. This indicates not an increased number of children with caries experience but rather increased detectable caries in those children with caries experience.

**Table 2: Deciduous teeth: age-specific caries experience**

Age (years)	Students (weighted) <i>n</i>	Teeth Present mean	Decayed (d)		dmft		d/dmft	Children with dmft=0
			mean	SD	mean	SD	%	%
Up to 4	37	19.92	0.92	1.72	1.38	2.29	72.1	63.9
5	444	19.39	0.79	1.86	1.06	2.23	75.3	70.6
6	634	17.42	0.63	1.57	1.05	2.20	62.2	68.2
7	580	14.56	0.60	1.35	1.11	1.97	56.2	61.3
8	592	12.44	0.54	1.11	1.32	7.97	43.5	55.6
9	533	10.71	0.53	1.06	1.32	1.95	43.2	54.2
10	456	8.82	0.42	0.97	1.25	1.95	35.4	54.4
11	316	6.34	0.35	0.86	1.02	1.56	32.6	56.1
12	62	4.87	0.22	0.54	0.52	0.90	47.2	67.4

## Permanent teeth: age-specific caries experience

It can be seen from Table 3 that clinically detectable decay increased across the age range of 6–15 years from a mean of 0.03 to a mean of 0.49. The mean DMFT also increased across age groups, from 0.04 for 6-year-olds to 1.17 for children aged 15 years and over. The age-related increase in D and DMFT scores reflects the increase in permanent teeth with age, from 3.43 for 5-year-olds to 27.56 for children aged 15 years old. However, there is also a significant jump in both clinically detectable decay and DMFT scores at 12 years of age and this is maintained in the oldest age groups sampled. The mean DMFT for 12 year-olds was 0.86.

The percentage of DMFT due to decay (D/DMFT) and the percentage of caries free children (DMFT=0) generally declined across age groups.

### Changes since 1996

Increases in the mean number of clinically decayed permanent teeth are most evident for children aged 12 years of age and older. There has also been an increase across these age groups for D/DMFT in 1997, compared to 1996. Considerable variability can be seen in DMFT scores between 1996 and 1997, with several age groups showing increases, yet several also demonstrating decreases. The percentage of children with DMFT=0 has decreased between 1996 and 1997 for 10, 12, 13 and 15 year-old children.

**Table 3: Permanent teeth: age-specific caries experience**

Age (years)	Students (weighted)	Teeth Present	Decayed		DMFT		D/DMFT	Children with DMFT=0
			mean	SD	mean	SD	%	%
5	150	3.43	0.04*	0.19*	0.06	0.26	66.8	95.0
6	490	5.76	0.03	0.19	0.04	0.21	81.2	96.8
7	562	8.78	0.07	0.32	0.12	0.46	65.1	91.6
8	592	11.00	0.08	0.34	0.18	0.54	43.9	87.7
9	533	12.92	0.11	0.47	0.25	0.67	40.2	84.3
10	490	15.70	0.12	0.43	0.36	0.81	35.8	77.1
11	440	20.27	0.12	0.64	0.37	0.85	32.7	76.5
12	152	24.02	0.43	1.00	0.86	1.47	49.5	60.8
13	46	26.28	0.36	0.90	1.02	1.50	33.7	55.3
14	56	27.24	0.37	0.71	0.22	1.86	37.0	53.1
15	40	27.56	0.49	0.93	1.17	1.56	40.6	49.3



## All teeth: age-specific caries experience

Untreated caries in the combined deciduous and permanent dentitions ( $d+D=1, 2, 3$  or  $4+$ ) existed for between 33.1% and 21.7% of children in the age range 5 to 15 years (see Table 4). The greatest likelihood of detectable untreated decay was seen for 9-year-olds. However, the most extensive levels of untreated decay ( $d+D=4$  or more) occurred in the younger age groups with the percentage  $d+D \geq 4$  generally declining with increasing age.

More than 99% of the total sample had no deciduous or permanent teeth missing due to caries, with little variation across age categories. However, smaller percentages avoided fillings. The percentage of children without fillings declined to age 10, increased to age 12, and then declined again. There was a similar pattern in the percentage of children with no caries experience in either deciduous or permanent dentition ( $dmft+DMFT=0$ ), from 70.4% at age 5 to 47.0% at age 9, increasing to 54.0% at age 11, and then declining. More than 45% of children at every specific age group had no detectable caries experience.

### Changes since 1996

There was a decrease between 1996 and 1997 in the percentage of children with  $d+D=0$  in children aged 12 years of age and older. However, few changes are apparent in the percentages  $m+M=0$  and  $f+F=0$ . Between 1996 and 1997 there was an increase in percentage  $d+D=1$  for 13–15-year-olds and an increase in percentage  $d+D=2$  for 12 and 13-year-olds. The other age group to show differences across years was 9-year-olds with  $d+D=0$  decreasing from 73.3% to 66.9%. Overall, the percentage of children with  $dmft+DMFT=0$  reduced for several age groups including 9, 12, 13 and 15-year-olds.

**Table 4: All teeth: age-specific caries experience**

Age (years)	Students (weighted) <i>n</i>	$d+D=$					$m+M=0$	$f+F=0$	$dmft+DMFT=0$
		0	1	2	3	4+			
		%	%	%	%	%	%	%	
Up to 4	37	69.3	8.0*	5.3*	6.8*	10.7	97.3	82.6	63.9
5	444	74.3	8.9	5.7	2.3	8.9	99.3	88.9	70.4
6	633	73.8	12.2	5.4	3.9	4.7	99.4	83.0	67.1
7	579	69.2	12.9	9.5	4.6	3.7	99.7	75.6	57.6
8	591	69.0	15.1	8.0	4.3	3.5	99.8	63.6	51.1
9	533	66.9	17.7	8.1	3.1	4.1	99.1	60.3	47.0
10	489	71.0	17.9	6.2	2.2	2.6	98.6	58.8	47.7
11	439	78.3	12.1	6.3	1.6	1.8	99.1	63.9	54.0
12	152	72.4	14.6	6.2	4.9	1.9*	99.4	69.3	52.4
13	46	70.2	19.1	6.4*	0.0	4.3*	100.0	61.7	46.8
14	56	72.5	17.7	8.0	1.8*	0.0	98.2	66.4	51.3
15	40	70.4	14.8	7.4*	7.4*	0.0	100.0	64.1	49.3

## Fissure sealants: age-specific experience

The mean number of fissure sealants generally increased in prevalence with increasing age (see Table 5). There is clear evidence of preferential use of fissure sealants among those with caries experience: the prevalence of fissure sealants among children aged between 7 and 12 years with some caries experience (DMFT=1+) was between 31.1% and 210.6% greater than among those with no caries experience (DMFT=0). However, little difference existed in older children, with fissure sealant prevalence similar for children with no history of caries experience and those with a DMFT score of 1 or more.

### Changes since 1996

There have been no systematic changes in the mean number of fissure sealants across years, with increases for 7, 8, 11 and 14-year-old children but decreases for 13 and 15-year-olds. The percentage of caries-free children with a fissure sealant, however, has shown an increase across a number of age categories while the percentages of children with DMFT $\geq$ 1 who have a fissure sealant have decreased for the same age groups.

**Table 5: Fissure sealants: age-specific experience**

Age (years)	Students (weighted) <i>n</i>	No. of sealants		Children with DMFT=0		Children with DMFT $\geq$ 1	
		mean	SD	<i>n</i>	%	<i>n</i>	%
6	633	0.08	0.51	618	2.9	16	6.3
7	579	0.33	1.00	532	9.4	47	29.2
8	591	0.75	1.38	518	23.3	73	41.9
9	533	0.93	1.53	449	29.6	84	38.8
10	489	1.07	1.55	377	33.4	112	51.8
11	439	1.27	1.72	336	39.1	103	57.2
12	152	1.14	1.66	92	40.4	60	44.5
13	46	1.64	2.20	26	50.0	21	52.4
14	56	2.27	2.28	30	63.3	26	66.1
15	40	1.26	2.05	20	35.0	20	43.8

## Immediate treatment needs

Information on immediate treatment needs for existing or imminent pain or infection are no longer collected.

## School Dental Service examinations

Table 6 describes the percentage of children who are new patients (having had no previous dental examination) in the ACT School Dental Service. As expected, the figure is highest for the youngest ages (6 years or less) with few children aged 8 years or more having had no previous examination. This pattern is expected and indicates that most patients are enrolled during their early school years.

Table 7 refers only to children with previous examinations and indicates their distribution according to time since last dental examination. Less than 50% of children in all key ages received examinations within 7 to 12 months of their previous examination with greater than 30% occurring between 13 to 24 months. A minority of children were re-examined either within six months or after two years. Time since last examination increased fairly consistently across most age groups: whereas 64.1% of 5-year-olds had an examination within the previous year this figure was only 30.8% for 13-year-olds. This can also be seen from the mean time since last visit which increased from 11.31 months for 5-year-olds to 16.80 months for 14-year-olds.

Time since last examination for both 6 and 12 year-olds is presented in Figure 1.

### Changes since 1996

For children who had had a previous exam there was an appreciable increase in the percentage of children in all age groups who had their last examination between 0 and 6 months previously and between 7 and 12 months previously. There was a corresponding reduction in the percentage of children with their last visit between 13 and 24 months previous to the current examination, although increases occurred in several age groups in the percentage of children with last examinations greater than

**Table 6: School Dental Service examinations: age-specific distribution**

Age (years)	Students <i>n</i>	Previous examination in School Dental Service		
		No %	Yes %	Unknown %
Up to 4	38	64.9	24.7	10.4
5	464	46.1	31.1	22.8
6	675	25.2	56.2	18.6
7	635	12.2	65.8	22.0
8	642	9.8	77.3	12.9
9	567	7.8	80.0	12.1
10	526	5.6	81.7	12.7
11	459	3.0	86.1	10.9
12	171	4.3	80.7	15.0
13	48	6.1*	81.6	12.2
14	56	3.5*	77.8	18.6
15	45	4.3*	77.1	18.5

2 years previously. Since 1996 there was a decrease for the majority of children in the percentage who had previously had an examination with the School Dental Service, and this can be explained by an increase in the percentage of children with an unknown previous examination status.

**Table 7: School Dental Service examinations: time since last visit**

Age	Students <i>n</i>	Months since last visit				mean	SD
		0-6	7-12	13-24	25+		
Up to 4	9	21.0*	37.1	31.5	10.5*	12.82*	11.27*
5	141	20.2	43.9	33.2	2.8	11.31	5.75
6	375	12.9	48.7	36.9	1.6	11.39	4.82
7	414	12.4	44.3	40.3	3.0	12.63	5.79
8	488	10.3	40.9	44.1	4.6	13.32	6.01
9	447	9.9	36.7	47.1	6.3	13.93	6.68
10	421	11.3	32.4	47.4	8.9	14.09	6.79
11	388	9.3	32.7	49.7	8.3	14.38	6.38
12	135	9.5	26.3	49.7	14.6	15.96	8.26
13	38	10.3	20.5	61.5	7.7*	14.85	5.82*
14	43	0.0	40.9	34.1	25.0	16.80	7.69*
15	35	21.2	19.7	39.4	19.7	15.66	10.26

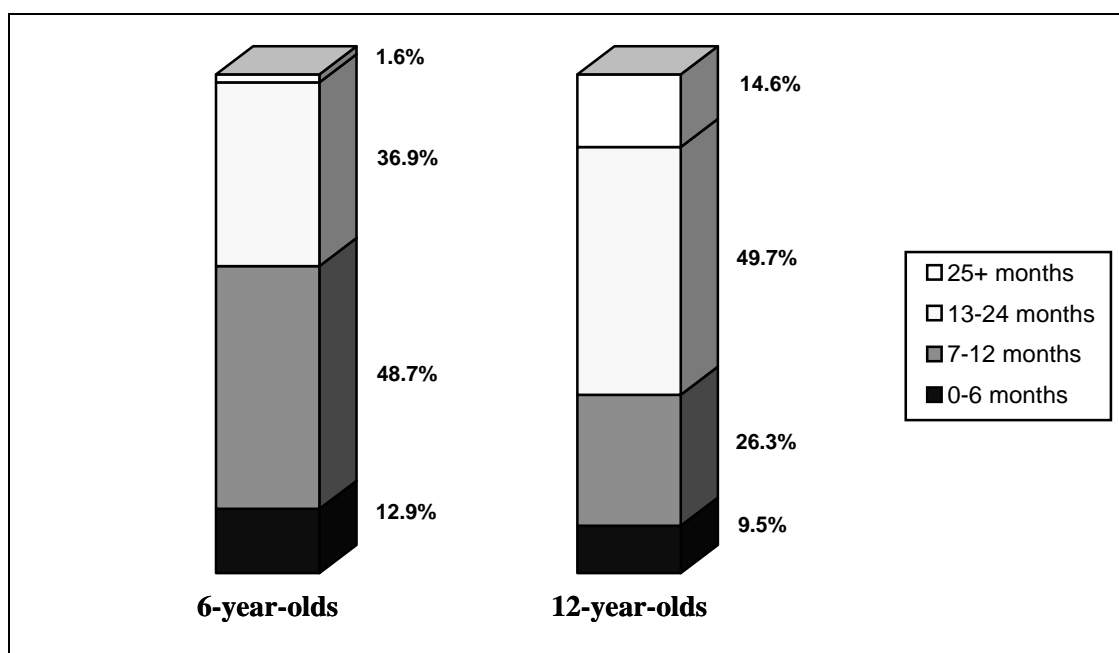


Figure 1. Time since last dental examination.

## Percentage of children with dmft=0, DMFT=0 and d+D≥4

Figure 2 uses data from previous tables to describe the percentages of children with no detectable caries experience in the deciduous dentition (dmft=0), no detectable caries experience in the permanent dentition (DMFT=0) and with clinically detectable decay in 4 or more teeth in either the deciduous or permanent dentition (d+D≥4). Trends across age groups should be interpreted in light of the exfoliation and eruption with age of deciduous and permanent teeth respectively.

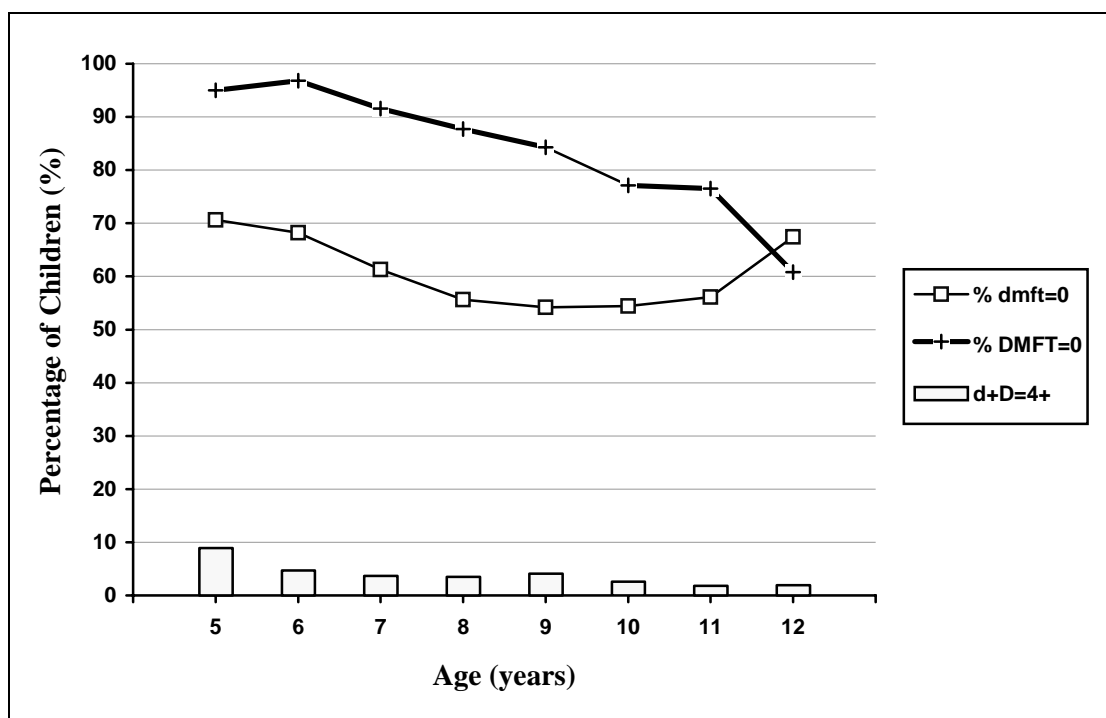


Figure 2. Percentage of children with dmft=0, DMFT=0 and d+D≥4.