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# The Child Dental Health Survey South Australia, 1995

*by*

Michael Davies,  
AIHW Dental Statistics  
and Research Unit

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The University of Adelaide  
AUSTRALIA 5005

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Phone: (08) 8303 5027  
Fax: (08) 8303 3444

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The AIHW Dental Statistics and Research Unit (DSRU) is an external unit of the Australian Institute of Health and Welfare, and was established in 1988 at The University of Adelaide. The DSRU was funded to improve the range and quality of dental statistics and research on the dental workforce, dental health status, dental practices and use of dental services.

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## THE CHILD DENTAL HEALTH SURVEY - SOUTH AUSTRALIA 1995

### Purpose of this report

This report establishes the series of annual reports providing descriptive statistics concerning child dental health in South Australia, and follows the 1994 report. 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. These data were collected during the 1995 calendar year from SA School Dental Service patients by dental therapists and dentists. A random sampling procedure was used to select patients aged 5 to 15 years during June 1994 to May 1995. This was achieved in metropolitan Adelaide by selecting those children whose birthdays were on the 13th, 30th or 31st day of any month. Non-metropolitan areas included birthdays falling on the 13th, and 26th through to 31st.

A sample of this cohort, based on participation in the Child Fluoride Study,<sup>1</sup> of cases was re-examined during the 1995 calendar year. To allow for the ageing of this cohort, 5 and 6 year-old children new to the SDS were also sampled at the above-mentioned ratios.

This sampling scheme represents a minor modification from the procedures used in 1994.

The following sections describe briefly each table and contain a simple summary statement highlighting differences between the 1995 and 1994 data. 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.*

### Table 1: Demographic composition of the sample

The first table lists at the left the number of children sampled according to their date of birth. The majority of children were aged 5 years or more, and there were large numbers of children in the range 5 to 15 years. There was a tendency for younger children within this age range to be represented in slightly greater numbers. Males and females were represented in approximately equivalent numbers. There was not more than 15 per cent variation in the gender balance within any age group.

The age distribution of the sample is related to the main target groups of children served by the School Dental Service in SA. This illustrates that the sample is representative of children in primary school and early secondary school, rather than all children in South Australia.

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<sup>1</sup> An NHMRC funded project conducted in collaboration with SADS designed to examine the effect of water fluoridation on 3 year caries incidence.

Consequently, those children who are outside the main school dental service target groups (less than 5 or more than 15 years) may differ on key characteristics and are likely to be less representative of their respective age groups in the SA population.

#### *Changes since 1994*

The 1995 sample is smaller than the 1994 sample by approximately 1051 children, reflecting the different sampling arrangements described previously. In other respects, the proportional distribution of ages and sexes is similar to the 1994 sample.

#### **Table 2: Country of birth**

These data were not collected in SA in 1995. Reference should be made to the report for 1992 for this data item.

#### **Table 3: Deciduous teeth: age-specific caries experience**

The mean number of decayed teeth shows modest variation among key ages, ranging from a low of 0.47 among children aged nine years to a high of 0.48 among seven year-olds. There is little age-associated decline in number of decayed teeth. Variation in mean dmft is less consistently associated with age, being highest among 8 year-olds (mean = 1.64). A pattern of reducing dmft among older children is consistent with natural exfoliation of teeth.

The percentage of caries experience due to decay (d/dmft) shows a strong age-associated decline, reducing from 70.4 per cent among children aged 5 years or less to 27.4 per cent for children aged 10 years or more. This pattern of deciduous caries experience among the youngest groups (dominated by patients new to the School Dental Service) indicates that they enter the dental program with a relatively high level of untreated caries.

The percentage of caries-free children (% dmft = 0) also shows an age-associated reduction from 72.4 per cent among 5 year-old children to 43.0 per cent among nine year-olds. The percentage of caries free children therefore mirrors the mean dmft prevalence.

#### *Changes since 1994*

The mean number of decayed teeth increased from 1994 in most ages, with there being a reduction in any age-related effect. There were no substantial changes in the mean dmft. Related to this, the percentage of caries experience due to decay (d/dmft) increased. There was also no substantial change in the percentage of children with no deciduous caries experience (dmft=0).

#### **Table 4: Permanent teeth: age-specific caries experience**

The mean number of decayed permanent teeth is consistently smaller than the mean number of decayed deciduous teeth for children aged 11 years or less. Although the figure increases

among older ages, it is substantially less than the highest mean number of decayed deciduous teeth. As expected, the mean DMFT increases quite consistently across age groups. The D/DMFT ratio indicated a corresponding decline, although the D component appeared to increase with age. The DMFT for 12 year-old children for 1995 was 0.61, and more than 65 per cent of children aged over 12 years have no caries experience.

#### *Changes since 1994*

There were reductions of in the mean DMFT, although most most age groups in the range 5 to 12 years had small reductions of less than 0.1 teeth. The declines in younger children are, however, substantial. Similarly, increases were observed in the percentage of caries-free children, and the D/DMFT ratio.

#### **Table 5: All teeth: age-specific caries experience**

Untreated caries in the combined deciduous and permanent dentitions exist for 21.6 to 32.1 per cent of children aged 5 to 12 years. Based on observations from previous tables, much of this untreated decay can be attributed to the deciduous dentition. Furthermore, it is noteworthy that the more extensive levels of untreated decay (3 or more deciduous or permanent teeth) occur in the younger age. This is further evidence that the most extensive levels of untreated decay occur in the deciduous dentition.

More than 97 per cent of children across all ages have no deciduous or permanent teeth missing due to caries ( $m+M=0$ ). As expected, the percentage of children with neither deciduous or permanent caries experience ( $dmft+DMFT=0$ ) declines among older ages, and 51.6 per cent of those aged 12 years have no caries experience.

#### *Changes since 1994*

There were no systematic changes in the percentage of children with decay ( $\% d+D=1$ ) in ages 7 to 12 years, and in the percentage of children with no caries experience ( $dmft+DMFT=0$ ).

#### **Table 6: Fissure sealants: age-specific prevalence**

Fissure sealants were recorded for the first time during 1990 in South Australia. Sealants were frequent in children aged 8 years or more. The prevalence of fissure sealants among those without permanent caries experience ( $DMFT=0$ ) was consistently greater than among those with some permanent caries experience ( $DMFT=1+$ ). This indicates that fissure sealants were being used preferentially in children with past caries experience.

#### *Changes since 1994*

There was evidence of a small decline in the average number of fissure sealants for most ages.

### Table 7: Immediate treatment needs

This data item was recorded for the first time in 1990 and refers to children who at the time of examination have, or are likely to develop within four weeks, pain, infection or serious life threatening conditions. It is intended to capture the more severe clinical conditions which may not be apparent from statistics such as the number of teeth affected with some caries experience. Extremely low percentages of children had immediate treatment needs, due probably to the sampling method of the Child Fluoride Study. Both deciduous and permanent caries experience (dmft and DMFT) were high for this group.

#### *Changes since 1994*

There has been no substantial changes across most age groups in the percentage of children sampled in need of immediate treatment

### Table 8: School Dental Service examinations

This table demonstrates that the great majority (over 85 per cent) of children over the age of 6 years had previously been examined within the School Dental Service. The percentage of children aged 4 years or less with a previous examination is difficult to interpret, as it may be expected that virtually all of them would receive a first examination.

The right hand side of the table refers to the period since the previous school dental service examination among children with a previous record of examination. There was a distinctive age-related pattern with younger children more likely than older children to have received a previous examination within the last 12 months. Approximately one-third per cent of children aged 5 years or less had received a previous examination within the previous 12 months.

#### *Changes since 1994*

There were no substantial changes in the pattern of care since 1994.

### Figure 1: Percentage of children with dmft=0, DMFT=0 and d+D=4+

This figure presents data contained in Tables 3, 4 and 5 to summarise the extent of dental health (represented by percentage with no caries experience) and the extent of more extensive untreated decay (represented by the percentage with d+D=4 or more).

***For further information contact:***

Mr Michael Davies  
AIHW Dental Statistics and Research Unit  
The University of Adelaide  
AUSTRALIA 5005

Phone: (08) 8303 4050  
Fax: (08) 8303 3444

**TABLE 1: DEMOGRAPHIC COMPOSITION OF THE SAMPLE**

Data for the Child Dental Health Survey are collected from a stratified random sample of children in all Australian States and Territories. In South Australia the sampling is 1:19. This ratio is achieved by systematically selecting every nineteenth record of data from all children examined in the School Dental Service. The following table describes the number of records processed from children in South Australia.

State/Territory: **South Australia**

Sampling Ratio: **1:19**

Data for period January–December 1995

Date of Report: 25th October 1996

Age (years)	UNWEIGHTED NUMBER OF RECORDS PROCESSED TYPE OF SAMPLING			WEIGHTED NUMBER OF CHILDREN IN SAMPLE <sup>1</sup>		
	Known date of birth			Males	Females	Persons
	Males	Females	Persons			
3	30	19	49	26	16	42
4	66	71	137	57	62	119
5	82	101	183	69	90	159
6	82	94	176	73	88	160
7	115	79	194	124	87	211
8	147	132	279	149	130	279
9	224	162	386	211	160	371
10	195	174	369	194	176	371
11	184	169	353	166	170	335
12	199	172	371	202	170	372
13	131	127	258	148	133	280
14	107	97	204	109	108	218
15	92	85	177	97	93	190
16	71	75	146	74	88	162
17	40	44	84	48	48	96
18	3	0	3	4	0	4
<b>TOTAL</b>	<b>1768</b>	<b>1601</b>	<b>3369</b>	<b>1751</b>	<b>1618</b>	<b>3369</b>

<sup>1</sup> Processed records are weighted to reflect the sampling scheme. Records from children with a known date of birth are weighted up, while records from children for whom age only is known are 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.

**TABLE 2: COUNTRY OF BIRTH (INCLUDING ABORIGINALITY)**

These data were not collected in South Australia in 1995.



**TABLE 3: DECIDUOUS TEETH: AGE-SPECIFIC CARIES EXPERIENCE<sup>1</sup>**

This table uses Statewide data to describe the dmft index and its components for individual (year of birth) ages. 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 is excluded. Age-specific indices denoted with an asterisk (\*) are those in which the relative standard error exceeds 40 per cent, and population estimates of these indices are statistically unreliable.

State/Territory: **South Australia**

Sampling ratio: **1:19**

Data for period January–December 1995

Date of report: 25th October 1996

Age (years)	Number of children in sample	decayed <sup>2</sup>		dmft		d/dmf	Children with dmft=0
		mean	sd	mean	sd	%	%
4	119	0.81	1.97	0.95	2.16	87.2	72.9
5	159	0.68	2.08	0.94	2.45	70.4	72.4
6	160	0.62	1.46	1.47	2.28	38.2	55.4
7	211	0.48	1.00	1.32	1.97	40.3	56.4
8	279	0.48	0.94	1.66	2.26	32.9	50.0
9	371	0.47	0.91	1.91	2.32	27.4	43.0
10	371	0.35	0.97	1.26	2.02	27.7	57.7

<sup>1</sup> Legend:           d - decayed deciduous teeth  
                   dmft - decayed, missing or filled deciduous teeth  
                   sd - standard deviation

<sup>2</sup> Including recurrent caries in filled teeth.

**TABLE 4: PERMANENT TEETH: AGE-SPECIFIC CARIES EXPERIENCE<sup>1</sup>**

This table uses Statewide data to describe the DMFT index and its components for individual (year of birth) ages. 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 is excluded. Age-specific indices denoted with an asterisk (\*) are those in which the relative standard error exceeds 40 per cent, and population estimates of these indices are statistically unreliable.

State/Territory: South Australia

Sampling ratio: 1:19

Data for period January–December 1995

Date of report: 25th October 1996

Age (years)	Number of children in sample	DECAYED <sup>2</sup>		DMFT		D/DMFT	Children with DMFT=0
		mean	sd	mean	sd	%	%
5	159	*	*	*	*	100	99.0
6	160	*	*	*	*	90.9	96.5
7	211	0.12	0.43	0.18	0.54	64.8	87.7
8	279	0.08	0.31	0.18	0.53	50.1	86.4
9	371	0.08	0.29	0.25	0.67	38.8	83.9
10	371	0.12	0.45	0.35	0.76	34.1	77.2
11	335	0.12	0.44	0.35	0.99	34.7	77.9
12	372	0.19	0.51	0.61	1.01	33.1	63.9
13	280	0.32	0.72	0.80	1.38	41.5	64.2
14	218	0.27	0.67	0.71	1.25	38.1	64.3
15	190	0.40	0.93	1.43	1.91	25.5	47.0
16	162	0.28	0.95	1.15	1.74	20.1	52.8
17	96	0.45	1.01	2.20	2.62	20.3	30.4
18	4	-	-	*	*	0.00	74.5

<sup>1</sup> Legend: D - decayed permanent teeth  
DMFT - decayed, missing or filled permanent teeth  
sd - standard deviation

<sup>2</sup> Filled but otherwise sound teeth which needed a replacement filling were included in the decayed index resulting in a very small over-estimation of the decayed and DMF indices of two per cent or less.

**TABLE 5: ALL TEETH: AGE-SPECIFIC PREVALENCE<sup>1</sup>**

This table uses Statewide data to describe the combined dmft and DMFT indices and their components for individual (year of birth) ages. 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 is excluded. Age-specific indices denoted with an asterisk (\*) are those in which the relative standard error exceeds 40 per cent, and population estimates of these indices are statistically unreliable.

State/Territory: **South Australia**

Sampling ratio: **1:19**

Data for period January–December 1995

Date of report: 25th October 1996

Age (years)	Number of children in sample	% of children with d+D=					% of children with		
		0	1	2	3	≥4	m+M=0	f+F=0	dmft+DMFT=0
4	119	74.2	8.9	5.6	*	7.4	99.7	95.2	72.9
5	159	78.3	8.2	3.4	4.2	5.9	98.5	90.9	72.1
6	160	73.5	8.7	8.0	5.7	4.1	99.1	67.2	55.1
7	211	69.3	16.7	6.0	3.3	4.6	97.8	66.5	51.6
8	279	69.4	15.4	8.9	3.4	2.8	97.9	56.9	47.4
9	371	66.9	20.1	7.1	4.0	2.0	98.5	47.5	38.8
10	371	77.8	11.5	5.6	3.0	2.1	98.9	58.4	49.3
11	335	79.4	15.2	3.6	*	*	99.1	63.6	55.7
12	372	78.4	14.6	5.6	*	*	99.3	61.8	51.6
13	280	77.5	14.3	5.3	*	*	100.0	67.0	57.3
14	218	81.0	12.0	3.4	3.6	0.0	99.8	74.3	62.7
15	190	77.7	13.0	3.8	3.0	*	99.0	51.2	45.2
16	162	85.1	9.7	*	*	*	99.2	58.4	51.5
17	96	74.1	16.2	*	*	*	99.0	37.2	28.7
18	4	100.0	0.0	0.0	0.0	0.0	100.0	74.5	74.5

<sup>1</sup> Legend:

- d - decayed deciduous teeth
- D - decayed permanent teeth
- m - deciduous teeth missing due to caries
- M - permanent teeth missing due to caries
- f - deciduous teeth restored due to caries
- F - permanent teeth restored due to caries
- dmft - decayed, missing or filled deciduous teeth
- DMFT - decayed, missing or filled permanent teeth

**TABLE 6: FISSURE SEALANTS: AGE-SPECIFIC PREVALENCE<sup>1</sup>**

This table uses State-specific data to describe the distribution of fissure sealants for individual (year of birth) ages, along with the caries experience of those who have fissure sealants and those who do not. 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 is excluded. Age-specific indices denoted with an asterisk (\*) are those in which the relative standard error exceeds 40 per cent, and population estimates of these indices are statistically unreliable.

State/Territory: **South Australia**

Sampling ratio: **1:19**

Data for period January–December 1995

Date of report: 25th October 1996

Age (years)	Number of children in sample <sup>2</sup>	Number of sealants		CHILDREN WITH DMFT=0		CHILDREN WITH DMFT=1+	
		mean	sd	number	% with F/S=1+	number	% with F/S=1+
6	160	*	*	155	*	6	12.7
7	211	0.15	0.63	186	4.9	26	19.0
8	279	0.47	0.98	241	19.9	38	37.9
9	371	0.75	1.26	311	28.6	60	49.9
10	371	0.93	1.36	286	34.2	85	53.6
11	335	0.98	1.50	261	29.4	74	58.1
12	372	1.23	1.57	238	35.5	134	67.5
13	280	1.35	1.83	180	37.3	100	73.6
14	218	1.72	1.93	140	54.5	78	73.5
15	190	2.04	2.38	89	45.8	101	77.4
16	162	2.45	2.36	85	60.2	76	78.5
17	96	2.31	2.26	29	53.1	67	79.2
18	4	*	*	3	0.0	1	100.0

<sup>1</sup> Legend: DMFT - decayed, missing or filled permanent teeth

<sup>2</sup> Data relating to second or subsequent examinations of children within this reporting period are eliminated.

**TABLE 7: IMMEDIATE TREATMENT NEEDS: AGE-SPECIFIC DISTRIBUTION<sup>1</sup>**

This table, based on State-wide data, describes the number and proportion of children in immediate need of dental treatment. This classification is accorded to children who have, or who are likely to develop within four weeks, oral pain or infection. The dental caries experience of this group of children is also described. 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 is excluded. Age-specific indices denoted with an asterisk (\*) are those in which the relative standard error exceeds 40 per cent, and population estimates of these indices are statistically unreliable.

State/Territory: South Australia

Sampling ratio: 1:19

Data for period January–December 1995

Date of report: 25th October 1996

Age (years)	Number of children in sample <sup>2</sup>	CHILDREN IN NEED OF IMMEDIATE TREATMENT											
		% of all No. children	dmft mean	sd	DMFT mean	sd	% with d+D=						
								0	1	2	3	4+	
4	161	0	0.0	-	-	-	-	-	-	-	-	-	-
5	159	0	*	5.00	-	-	-	0.0	0.0	0.0	0.0	100.0	0.0
6	160	0	*	4.00	-	-	-	0.0	0.0	0.0	100.0	0.0	0.0
7	211	2	*	5.84	-	0.84	-	0.0	0.0	0.0	0.0	100.0	0.0
8	279	1	*	6.00	-	-	-	0.0	0.0	100.0	0.0	0.0	0.0
9	371	2	*	3.63	-	0.82	-	0.0	*	0.0	*	0.0	0.0
10	371	3	*	*	*	*	*	0.0	*	0.0	*	*	*
11	335	3	*	*	*	*	*	0.0	*	*	0.0	0.0	0.0
12	372	1	*	-	-	1.00	-	100.0	0.0	0.0	0.0	0.0	0.0
13	280	1	*	1.26	-	6.37	-	0.0	0.0	0.0	*	*	*
14	218	0	0.0	-	-	-	-	-	-	-	-	-	-
15	452	3	*	-	-	1.97	1.25	*	*	0.0	0.0	0.0	0.0

<sup>1</sup> Legend: dmft - number of decayed, missing or filled deciduous teeth  
 DMFT - number of decayed, missing or filled permanent teeth  
 d - number of decayed deciduous teeth  
 D - number of decayed permanent teeth

<sup>2</sup> Data relating to second or subsequent examinations of children within this reporting period are eliminated.

**TABLE 8: SCHOOL DENTAL SERVICE EXAMINATIONS:  
AGE-SPECIFIC DISTRIBUTION**

This table describes the percentage distribution of children who have received initial and subsequent dental examinations in the School Dental Service. Data from all examinations of children who were examined during the report period are included in this table; percentage estimates denoted with an asterisk (\*) are those in which the relative standard error exceeds 40 per cent, and population estimates of these percentages are statistically unreliable.

State/Territory: South Australia

Sampling ratio: 1:19

Data for period January–December 1995

Date of report: 25th October 1996

Age (years)	Number of children examined	Previous examination in School Dental Service (%)			CHILDREN WITH PREVIOUS EXAMINATION Months since last examination <sup>1</sup> (%)			
		No	Yes	Unknown	0-6	7-12	13-24	25+
4	139	62.3	37.0	*	9.8	43.1	47.1	0.0
5	189	41.5	54.8	3.7	6.8	28.2	65.0	0.0
6	185	11.5	85.2	3.3	6.5	25.8	67.1	*
7	203	4.0	94.1	*	*	27.4	65.8	4.7
8	285	*	97.5	*	4.0	23.1	70.8	2.2
9	400	1.8	97.5	*	3.4	25.6	68.0	3.1
10	382	*	99.0	*	4.0	20.9	71.4	3.7
11	361	1.7	97.8	*	*	18.1	77.9	2.8
12	379	*	98.9	*	*	15.7	79.2	3.7
13	264	0.0	100.0	0.0	*	15.9	73.5	9.1
14	205	*	98.5	*	*	11.4	81.7	6.4
15	183	*	99.5	0.0	*	14.3	76.4	6.6
16	148	0.0	100.0	0.0	*	12.2	79.1	8.1
17	86	0.0	100.0	0.0	*	8.1	80.2	10.5
18	3	0.0	100.0	0.0	0.0	0.0	100.0	0.0

<sup>1</sup> Excludes those with no previous examination and where the date of previous examination is unknown.

**FIGURE 1: PERCENTAGE OF CHILDREN WITH  
dmft=0, DMFT=0 and d+D=4+**

