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# The Child Dental Health Survey New South Wales, 1994

*by*

The AIHW Dental Statistics  
and Research Unit

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Phone: (08) 303 5027  
Fax: (08) 303 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.

*DSRU Staff*

<i>Director</i>	<i>Professor A. John Spencer</i>
<i>Research Fellow</i>	<i>Dr Murray Thomson</i>
<i>Research Officers</i>	<i>Mr Fearnley Szuster</i>
	<i>Mr Michael Davies</i>
	<i>Mr David Brennan</i>
	<i>Mrs Judy Stewart</i>
	<i>Mr Knute Carter</i>
<i>Research Associate</i>	<i>Dr Danae Kent</i>

## THE CHILD DENTAL HEALTH SURVEY - NEW SOUTH WALES 1994

### Purpose of this report

This report continues the annual series providing descriptive statistics concerning child dental health in New South Wales. The report contains tables and figures. Information listed in the tables includes: the age, sex and country of birth/Aboriginality of children in the sample; their deciduous and permanent caries experience; frequency of fissure sealants; immediate treatment needs; and children's history of School Dental Service examinations. The figures combine and summarise information from four of the tables.

The data for this report were collected during the 1994 calendar year from patients of the New South Wales School Dental Service by dental therapists and dentists. A random sampling procedure was used to select approximately one in 16 patients. This was achieved by selecting those children whose birthday was on the 3rd or 30th of any month. The effective sampling ratios varied between regions. Provision was made for inclusion and numerical weighting of data from all children whose date of birth was unknown. When an individual child was sampled more than once during the calendar year, the information from only the first examination was included in Tables 1 to 7 (inclusive). Table 8 contains data from all examinations of sampled children.

The following sections briefly describe each table and provide a simple, summary statement highlighting differences between the 1994 and 1993 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.

### Table 1: Demographic composition of the sample

The majority of children in the sample (90.1 per cent) were aged between five and 12 years (inclusive). Within that range, seven year-olds were the most frequent individual age, while there tended to be smaller numbers of children towards the lower and upper limits of the age range. The age structure within the majority of the sample therefore reflects closely the age range of children who attend primary schools and who constitute the main target group of the School Dental Service. There were very small numbers of children aged more than 15 years or less than four years, and the data from them has been excluded from the subsequent tables describing dental health status (Tables 3 to 8). Children aged four years or between 13 and 15 years were represented in small numbers which results in low reliability of some computed statistics in Tables 3 to 8. Furthermore, they are likely to be less representative of the corresponding age groups of school children than is the case for the majority of the sample aged five to 12 years.

Males constituted 50.3 per cent of children in the full sample.

### *Changes since 1993*

The total sample size in 1994 was smaller than the preceding year by some 533 children. There were no substantial changes in the methodology between years, and the composition of the sample.

**Table 2: Country of birth including Aboriginality**

Australian-born non-Aboriginal persons comprised the great majority of both children and mothers. The second most frequent groups were children who were Aboriginal, and those born in Asia. New South Wales also has substantial numbers of children whose mothers were Australian-born Aborigines.

*Changes since 1993*

There were no substantial changes in the profiles of birthplace for either mothers or children.

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

The mean dmft prevalence among children aged 4 to 9 years varied across a narrow range, from 2.27 to 1.89 teeth. The deciduous caries experience of children aged more than 9 years naturally declines as teeth exfoliate. The range in the mean number of decayed deciduous teeth was less than that observed for dmft, decreasing from 1.96 among four year-olds to 0.84 among nine year-olds. As a consequence, there was a substantial difference in the d/dmft percentage which declined from 88.6 per cent among four year-olds to 47.2 among nine year-olds.

*Changes since 1993*

There were small decreases of 0.1 to 0.3 in the mean number of decayed deciduous teeth and dmft.

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

The mean numbers of decayed permanent teeth and DMFT were smaller than the corresponding means for deciduous teeth across the range of 5 to 11 years. In contrast to deciduous caries, the mean number of decayed and DMF teeth increased in a fairly consistent manner across increasing age groups. As a consequence, the percentage of DMFT due to decay (D/DMFT) and the percentage of caries-free children (DMFT=0) declined across age groups. It is noteworthy that more than 59 per cent of children aged 12 years or less were caries free (DMFT=0). The DMFT score for 12 year-olds was 1.11.

Among those aged 13 years or more, the age-associated increase in mean DMFT was greater: the mean numbers of decayed permanent teeth and DMFT for 15 year-olds are approximately 1.5 times as large as the corresponding means for 13 year-olds. However, in view of the apparently less representative nature of these older ages, it is likely that part of the differences could be related to other characteristics of older patients within the School Dental Service other than a simple ageing effect.

*Changes since 1993*

The mean DMFT of individual ages was similar to the corresponding figures for 1994 within the age range six to 12 years. Within the main age groups of six to 12 years, the mean number of decayed permanent teeth remained virtually unchanged in 1994 for ages 6 to 10.

There were small increases for children aged 11 years. There were negligible changes in the D/DMFT percentage and the percentage of children with DMFT=0 for most age groups.

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

Untreated decay in the combined deciduous and permanent dentitions ( $d+D=1, 2, 3$  or  $4+$ ) existed for between 32 to 44 per cent of children in the age range five to 12 years. The greatest likelihood of untreated decay within that age range occurred for 12 year-olds, although the most extensive levels of untreated decay ( $d+D=4$  or more) occurred in children aged 5 years.

In all key ages, more than 95 per cent of children had no deciduous or permanent teeth missing due to caries. The greatest likelihood of missing teeth was observed for nine year-olds, where 2.9 per cent had one or more missing teeth. Much smaller percentages of children avoided fillings, and this was associated with age. There was a reasonably consistent decline in the percentage of children with no caries experience in either deciduous or permanent dentition ( $dmft+DMFT=0$ ), from 53.2 per cent at age five to 38.3 per cent at age nine. The percentage fluctuated around 45 per cent among most older ages, reflecting the pattern of exfoliation of deciduous teeth. This statistic serves to demonstrate that more than 38 per cent of children at any of the key primary school ages (five to 12 years) have no experience of dental caries.

#### *Changes since 1993*

There were no substantial changes across years in the outcomes presented here.

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

Fissure sealants were prevalent among children aged 8 years or more. There is a tendency for children with some permanent caries experience ( $DMFT=1+$ ) to have a higher likelihood of sealants than children without caries experience ( $DMFT=0$ ). However the differential use of sealants appears to be limited. For example, 25.3 per cent of 12 year-olds with  $DMFT=1+$  had one or more fissure sealants, while 17.8 per cent of 12 year-olds with  $DMFT=0$  had fissure sealants.

#### *Changes since 1993*

There were small differences in the mean number of fissure sealants within some individual age groups. There was also a slight decrease in the difference in sealant prevalence for younger children between those with  $DMFT=0$  and  $DMFT=1+$ .

#### **Table 7: Immediate treatment needs**

Immediate treatment needs were recorded when, in the judgement of the clinical examiner, there was existing pain or infection or the likelihood of pain or infection developing within a four week period. Immediate treatment needs could also be recorded for life threatening conditions.

Between 11.6 and 20.2 per cent of children in the key age range of five to 12 years had immediate treatment needs. The percentage tended to be highest among younger ages. Those with immediate treatment needs had substantially higher mean dmft values than the overall sample (Table 3). For example, among six year-olds with immediate treatment needs, the mean dmft of 4.28 was approximately twice as large as the overall sample mean of 1.93. There was a similar trend for permanent DMFT, with approximately two-fold differentials between those with immediate treatment needs and the sample mean. Consistent with this overall picture was the relatively high percentages of children with four or more decayed teeth ( $d+D=4+$ ).

#### *Changes since 1993*

The percentage of children with immediate treatment needs and their pattern of deciduous and permanent caries experience was very similar to the figures for 1993.

#### **Table 8: School Dental Service examinations**

The left hand side of this table describes the percentage of children who were new patients (having had no previous dental examination) in the New South Wales School Dental service. The figure was highest for the youngest ages (less than six years) while fewer than 8 per cent of those aged 12 years had no previous examination. This pattern is expected, and indicates that most patients are enrolled during their early school years.

The right hand side of the table refers to children with previous examinations, and indicates their distribution according to time since last dental examination. Between one third and one half of children in most ages received examinations within 7 to 12 months of their previous examination. Periods of less than six months and 13-24 months were the other predominant re-examination intervals, with 13-24 months being the next most frequent recall interval. However, there was a tendency for younger age groups to have shorter re-examination intervals. Very few children aged ten years or less were re-examined after a period of two or more years, and the percentage was highest (greater than 10 per cent) among the oldest children aged 13 years or more.

#### *Changes since 1993*

There was a decrease in the percentage of children whose last examination was in the period of 0-6 months, with corresponding increases in each of the other recall intervals.

#### **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 summarize 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).

#### **Figure 2: Time since last dental examination**

This figure draws on information from Table 8, and selects six and 12 year-olds to demonstrate the variation in time since last examination.

*For further information contact:*

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

Phone: (08) 303 5027  
Fax: (08) 303 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 New South Wales the sampling is 1:16. The following table describes the number of records processed from children in New South Wales.

State/Territory: New South Wales

Sampling Ratio: 1:16

Data for period January-December 1994

Date of report: 27th October 1995

Age (years)	UNWEIGHTED NUMBER OF RECORDS PROCESSED TYPE OF SAMPLING						WEIGHTED NUMBER OF CHILDREN IN SAMPLE <sup>1</sup>		
	Known date of birth			Age only known			Males	Females	Persons
	Males	Females	Persons	Males	Females	Persons			
2	13	17	30	0	0	0	13	17	30
3	49	41	90	1	1	2	50	42	92
4	160	215	375	0	0	0	160	215	375
5	748	728	1476	14	10	24	762	738	1500
6	758	767	1525	7	8	15	765	775	1540
7	907	845	1752	8	16	24	915	861	1776
8	802	774	1576	16	10	26	818	784	1602
9	838	839	1677	13	11	24	851	850	1701
10	727	706	1433	11	11	22	738	717	1455
11	664	682	1346	9	9	18	673	691	1364
12	384	340	724	6	8	14	390	348	738
13	217	229	446	1	2	3	218	231	449
14	141	127	268	0	2	2	141	129	270
15	21	22	43	0	0	0	21	22	43
16	6	6	12	0	0	0	6	6	12
17	0	5	5	0	0	0	0	5	5
18	1	1	2	0	0	0	1	1	2
19	0	1	1	0	0	0	0	1	1
20	1	0	1	0	0	0	1	0	1
Total	6437	6345	12782	86	88	174	6523	6433	12956

<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)**

The country of birth of children is determined from information concerning birthplace of the child and mother. The number and percentage of children in each group is provided in this State-specific report.

State/Territory: New South Wales

Sampling Ratio: 1:16

Data for period January-December 1994

Date of report: 27th October 1995

COUNTRY OF BIRTH	CHILDREN		MOTHERS	
	Number <sup>1</sup>	%	Number	%
Australia (non-Aboriginal)	11664	90.0	10074	77.8
Australia (Aboriginal or TSI)	167	1.3	172	1.3
United Kingdom and Eire	64	0.5	340	2.6
Other English speaking	108	0.8	242	1.9
Southern Europe	69	0.5	276	2.1
Other Europe	49	0.4	145	1.1
Middle East	85	0.7	412	3.2
South East Asia	218	1.7	435	3.4
Other Asia	210	1.6	328	2.5
Other	125	1.0	248	1.9
Not known	197	1.5	275	2.1
Blank			9	0.1
<b>Total</b>	<b>12956</b>	<b>100.0</b>	<b>12956</b>	<b>100.0</b>

<sup>1</sup> Data are weighted to reflect the sampling scheme by correcting for the over-representation in the sample of children with an unknown date of birth and children from outside the Darwin region. Data relating to second or subsequent examinations of children within this reporting period are eliminated.

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: New South Wales

Sampling ratio: 1:16

Data for period January-December 1994

Date of report: 27th October 1995

Age (years)	Number of children in sample	decayed		dmft		d/dmf %	Children with dmft=0 %
		mean	sd	mean	sd		
4	375	1.96	3.22	2.27	3.59	88.6	52.0
5	1500	1.56	2.73	1.89	3.06	82.8	53.4
6	1540	1.25	2.16	1.93	2.82	66.2	50.6
7	1776	1.06	1.88	1.97	2.74	55.6	48.1
8	1602	0.97	1.68	2.09	2.63	48.8	44.4
9	1701	0.84	1.50	1.83	2.32	47.2	45.1
10	1455	0.63	1.26	1.46	2.13	46.0	53.3

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

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: New South Wales

Sampling ratio: 1:16

Data for period January-December 1994

Date of report: 27th October 1995

Age (years)	Number of children in sample	DECAYED		DMFT		Children with	
		mean	sd	mean	sd	D/DMFT %	DMFT=0 %
5	1500	0.01	0.16	0.02	0.17	88.2	98.9
6	1540	0.09	0.45	0.10	0.48	89.7	94.0
7	1776	0.16	0.59	0.21	0.68	75.0	88.2
8	1602	0.22	0.70	0.35	0.89	65.3	82.6
9	1701	0.28	0.79	0.46	1.00	57.7	76.0
10	1455	0.28	0.82	0.60	1.16	46.3	70.4
11	1364	0.41	1.29	0.81	1.63	46.3	64.8
12	738	0.60	1.59	1.11	2.08	47.8	59.3
13	449	0.69	1.30	1.62	2.24	44.4	47.2
14	270	0.90	1.98	1.95	2.83	40.3	43.3

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

TABLE 5: ALL TEETH: AGE-SPECIFIC CARIES EXPERIENCE<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: New South Wales

Sampling ratio: 1:16

Data for period January-December 1994

Date of report: 27th October 1995

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	375	53.6	10.7	9.1	5.1	21.6	98.7	90.9	52.0
5	1500	57.7	12.0	8.5	4.8	17.0	98.9	87.4	53.2
6	1540	57.8	13.4	8.6	5.5	14.7	97.6	76.7	48.8
7	1776	58.1	14.2	10.5	5.2	11.9	97.2	67.7	45.4
8	1602	56.2	16.8	9.6	6.8	10.5	95.8	60.2	40.5
9	1701	57.3	16.6	9.9	6.1	10.1	97.1	58.4	38.3
10	1455	60.7	16.8	11.0	4.5	7.1	97.2	58.5	41.0
11	1364	66.7	15.2	8.7	3.7	5.6	98.0	62.3	46.0
12	738	67.9	14.6	7.2	3.4	6.9	98.4	66.7	49.2
13	449	66.4	11.8	13.1	3.6	5.1	96.0	61.7	43.4
14	270	68.1	10.7	9.6	2.2	9.3	97.8	57.0	41.5

<sup>1</sup> Legend:

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

due to caries due to caries due to caries due to caries

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

This table uses Statewide 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: New South Wales

Sampling ratio: 1:16

Data for period January-December 1994

Date of report: 27th October 1995

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	1540	0.13	1.33	1448	2.0	92	12.0
7	1776	0.32	1.66	1566	7.4	210	14.3
8	1602	0.60	2.23	1324	14.1	278	15.8
9	1701	0.52	1.65	1293	14.3	408	20.3
10	1455	0.54	1.58	1024	15.6	431	18.8
11	1364	0.51	1.34	884	16.3	480	18.8
12	738	0.70	1.73	438	17.8	300	25.3
13	449	0.75	1.79	212	21.7	237	21.5
14	270	1.11	2.51	117	19.7	153	32.0

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

<sup>2</sup> Legend: F/S - number of fissure sealed teeth  
sd - standard deviation

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

This table, based on Statewide 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: New South Wales

Sampling ratio: 1:16

Data for period January-December 1994

Date of report: 27th October 1995

CHILDREN IN NEED OF IMMEDIATE TREATMENT												
Age (years)	Number of children in sample	No.	% of all children	dmft		DMFT		% with d+D=				
				mean	sd	mean	sd	0	1	2	3	4+
4	375	99	26.4	5.09	3.96	*	*	*	17.2	13.1	13.1	53.5
5	1500	303	20.2	4.91	3.93	0.05	0.32	4.3	19.8	18.2	9.2	48.5
6	1540	267	17.3	4.28	3.36	0.25	0.75	9.0	19.9	13.1	12.7	45.3
7	1776	325	18.3	4.10	3.15	0.52	1.07	12.0	22.5	20.0	10.8	34.8
8	1602	287	17.9	4.05	2.84	0.66	1.13	10.8	27.9	16.4	15.0	30.0
9	1701	274	16.1	3.19	2.59	0.80	1.43	15.3	25.5	18.2	13.5	27.4
10	1455	221	15.2	2.71	2.58	1.16	1.58	18.6	26.2	20.4	11.3	23.5
11	1364	158	11.6	1.58	2.18	2.03	3.22	22.2	27.2	22.2	8.9	19.6
12	738	97	13.1	0.63	1.23	2.77	3.61	23.7	23.7	16.5	9.3	26.8
13	449	60	13.4	0.63	1.53	3.27	2.81	21.7	20.0	33.3	*	18.3
14	270	40	14.8	*	*	3.98	4.05	25.0	22.5	17.5	*	32.5

<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

**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: New South Wales

Sampling ratio: 1:16

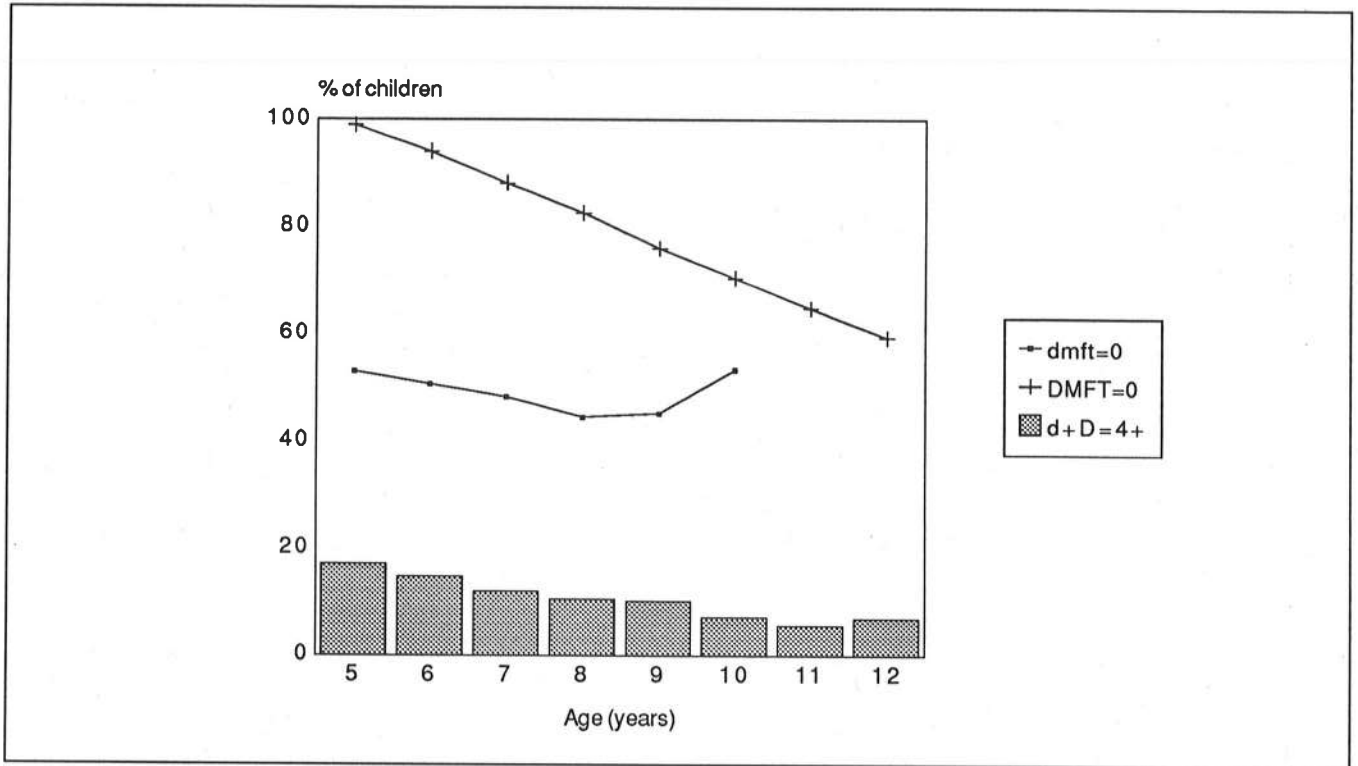
Data for period January-December 1994

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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	393	71.2	18.6	10.2	24.7	54.8	17.8	*
5	1610	63.6	20.3	16.2	29.1	53.1	15.6	2.1
6	1691	33.8	54.1	12.2	17.3	49.5	31.9	1.3
7	1964	19.3	69.7	10.9	15.3	45.4	33.7	5.6
8	1762	13.9	75.2	10.9	14.1	43.5	33.8	8.6
9	1876	10.9	78.8	10.3	12.7	41.3	36.1	9.8
10	1603	9.4	78.5	12.1	11.8	38.9	37.2	12.1
11	1515	8.7	79.7	11.6	12.0	39.4	37.6	11.0
12	850	7.6	80.4	12.1	15.0	35.3	37.5	12.2
13	486	9.5	77.8	12.8	9.0	33.1	39.2	18.8
14	301	9.0	80.1	11.0	9.5	31.1	34.0	25.0

<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+**



**FIGURE 2: TIME SINCE LAST DENTAL EXAMINATION**

