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# The Child Dental Health Survey, Western Australia 2002

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Dental Statistics & Research Unit  
AUSTRALIAN RESEARCH CENTRE  
FOR POPULATION ORAL HEALTH

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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**

Information listed in the tables of this report includes: the age and sex of children in the sample, their deciduous and permanent caries experience, frequency of fissure sealants, history of school dental service examinations, and regional statistics.

The report also provides selected trends, highlighting differences between the years 1998 and 2002. However, no formal hypothesis tests have been undertaken and descriptions of differences between years are intended as a guide to the reader rather than as a formal statistical evaluation.

## **Source of subjects and sampling**

The data used for this report were collected during the 2002 calendar year from Western Australia School Dental Service patients by dental therapists and dentists. A random sampling procedure was used to select approximately 1 in 8 patients. This was achieved by selecting those children whose birthday was on the 28th, 29th, 30th or 31st day of any month. Consequently, the data constitute a simple random sample.

## **Data preparation**

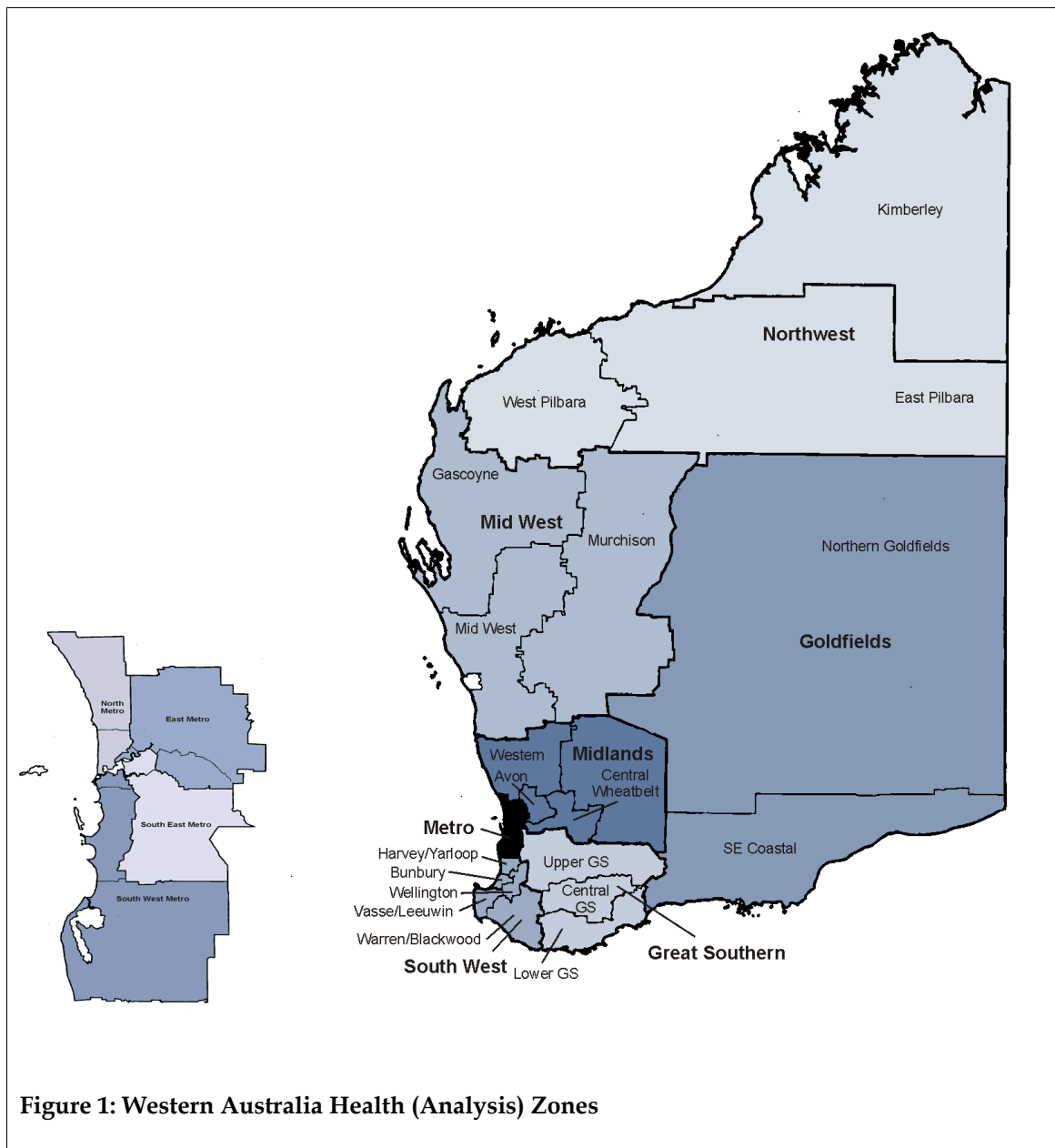
Data were collected on Optical Mark Reader (OMR) forms for scanning by Dental Services WA and then forwarded to the AIHW Dental Statistics and Research Unit (DSRU) for analysis.

The data were cleaned prior to analysis, both before and after it was received by DSRU, to correct data recording errors. As a result, a small number of cases were either corrected where applicable or deleted where it was apparent that they were the result of data recording errors that could not be reconciled.

## **Data analysis**

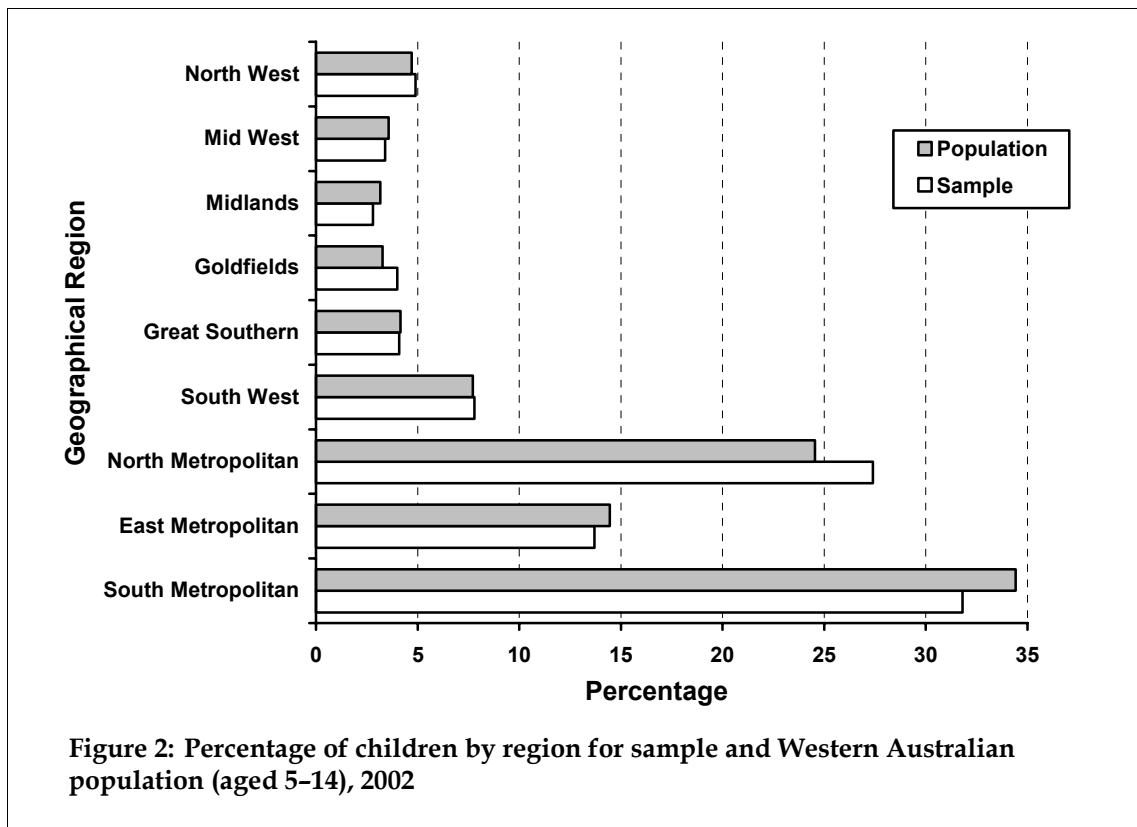
All data were weighted for the analyses to more accurately reflect the child population (5-14 years old) in Western Australia for 2002. A map showing the Health (Analysis) Zones of Western Australia is presented in Figure 1. Although the Health Department of Western Australia incorporates 32 individual Health Service areas, larger subdivisions of Western Australia are used for routine analytical purposes, each comprising a number of Health Services. The regions used here include six from rural areas (North West, Mid West, Midlands, Goldfields, Great Southern and South West) and three from metropolitan Perth and surrounds (North Metropolitan, East Metropolitan, and South Metropolitan - for the purpose of this report South East and South West Metropolitan have been combined).

The data were first weighted by months since last visit (which was used due to the under-representation of students on longer recall schedules in the sample). Children with examinations 12 months previous or less were given the same weight as it was assumed that each of these children would be seen at least once per year. Unit records were further weighted to reflect the Estimated Residential Population (ERP) of 5-14-year-olds according to statistical units within Western Australia as at 30 June 2002 as published by the Australian Bureau of Statistics (2002). Weighting was not carried out by individual age groups within each region or by sex of the child. Statistical units were mapped to the Health Zones as shown in Figure 1. Assignment of Health Zones to all unit records was based on the location of the clinic to which a child attended.



**Figure 1: Western Australia Health (Analysis) Zones**





The relative sample sizes and population estimates by Health Zone as a percentage of the total sample and of the Western Australian 5-14-year-old population are shown in Figure 2. In regions where there were a greater percentage of children in the population (grey bars) than in the sample (white bars), weights greater than 1.0 were generated for each sampled child. Table 1 shows that, as a result of weighting, the Mid West, Midlands, Great Southern, East Metropolitan and South Metropolitan zones were weighted up in the analysis (mean weights = 1.05, 1.14, 1.01 and 1.08 respectively) while North West, Goldfields, South West, and North Metropolitan zones were weighted down (mean weights = 0.97, 0.82, 0.99 and 0.89 respectively). The final unit record weights were applied such that the weighted contribution of each Health (Analysis) Zone was proportional to the percentage represented by that Health Zone in the Western Australian population.

The purpose of the weighting protocol was to produce estimates that are representative of those of the population covered by the School Dental Service for 2002. However, the estimates in this report cannot be applied to children who are not enrolled in the WA School Dental Service. Consequently, the results in this report do not represent the complete WA child population, but only that portion of the population that is enrolled in the WA School Dental Service. In Western Australia, approximately 85% and 70% of 5-12-year-olds and 13-16-year-olds respectively are enrolled in the School Dental Service, and hence estimates in this report may not differ substantially from estimates that would be obtained if all children in the State were surveyed.

**Table 1: Sample size and assigned weight by Health Zone**

Region	Number Sampled	Weight
North West	761	0.97
Mid West	531	1.05
Midlands	431	1.14
Goldfields	624	0.82
Great Southern	646	1.01
South West	1,219	0.99
North Metropolitan	4,282	0.89
East Metropolitan	2,145	1.05
South Metropolitan	4,968	1.08

It should be noted that all analyses up to and including Table 10 use the weighted distribution of children to derive results. However, months since last visit was not used to weight the data in Tables 9 and 10 because the results included time since last visit. Weighted numbers are rounded to the nearest whole number for ease of interpretation. No weighting is applied to the regional analyses in Tables 11 and 12.

Age-specific indices denoted with an asterisk (\*) are those in which the relative standard error exceeds 40% and population estimates of these indices are considered to be statistically unreliable and should be interpreted with due care.

## Demographic composition of the sample

Almost three-quarters of children in the sample (76.0%) were aged between 5 and 12 years inclusive, with between approximately 1,300 and 1,600 children in each individual age group within this range (see Table 2). However, children aged between 13 and 15 years were also represented in substantial numbers. There was some variation in the proportions of females and males in a number of the age groups, although these differences were generally less than 10%.

Data from the WA Dental Service already had children aged 4 years or less or aged 16 years or more, collapsed into the categories ' $\leq 4$ ' and ' $\geq 16$ ' respectively. The age structure within these categories can not be further determined. Because children aged  $\leq 4$  do not make up a primary age group of the SDS these children may not be presentative of the population of children aged  $\leq 4$  years in Western Australia and results for these children should be interpreted with caution.

**Table 2: Demographic composition of the sample**

Age (years)	Children in sample (unweighted)			Children in sample (weighted)		
	Males	Females	Persons	Males	Females	Persons
	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>
≤4	151	159	310	147	155	302
5	735	661	1,396	693	620	1,313
6	749	681	1,430	707	633	1,340
7	788	736	1,524	779	720	1,499
8	822	782	1,604	825	784	1,609
9	798	782	1,580	803	771	1,574
10	777	796	1,573	783	801	1,584
11	817	772	1,589	833	791	1,624
12	698	645	1,343	701	640	1,341
13	586	554	1,140	594	581	1,175
14	488	529	1,017	529	574	1,104
15	390	351	741	409	365	774
≥16	183	202	385	189	203	392
<b>Total</b>	<b>7,982</b>	<b>7,650</b>	<b>15,632</b>	<b>7,993</b>	<b>7,639</b>	<b>15,632</b>

## Deciduous teeth

The mean number of clinically detectable decayed teeth among children aged ≤ 4 to 12 years old declined steadily with age, from 1.54 to 0.23 (see Table 3). In contrast, the mean number of filled teeth climbed to a peak for 8-year-olds of 1.20 before declining. In a similar trend, mean dmft increased from 1.45 for 5-year-olds to 1.86 for 8-year-old children before declining. These findings must be interpreted in view of the exfoliation of deciduous teeth as children grow older. With increasing age increasingly higher proportions of children have no deciduous dentition. The number of teeth deemed missing due to caries was low for all age groups.

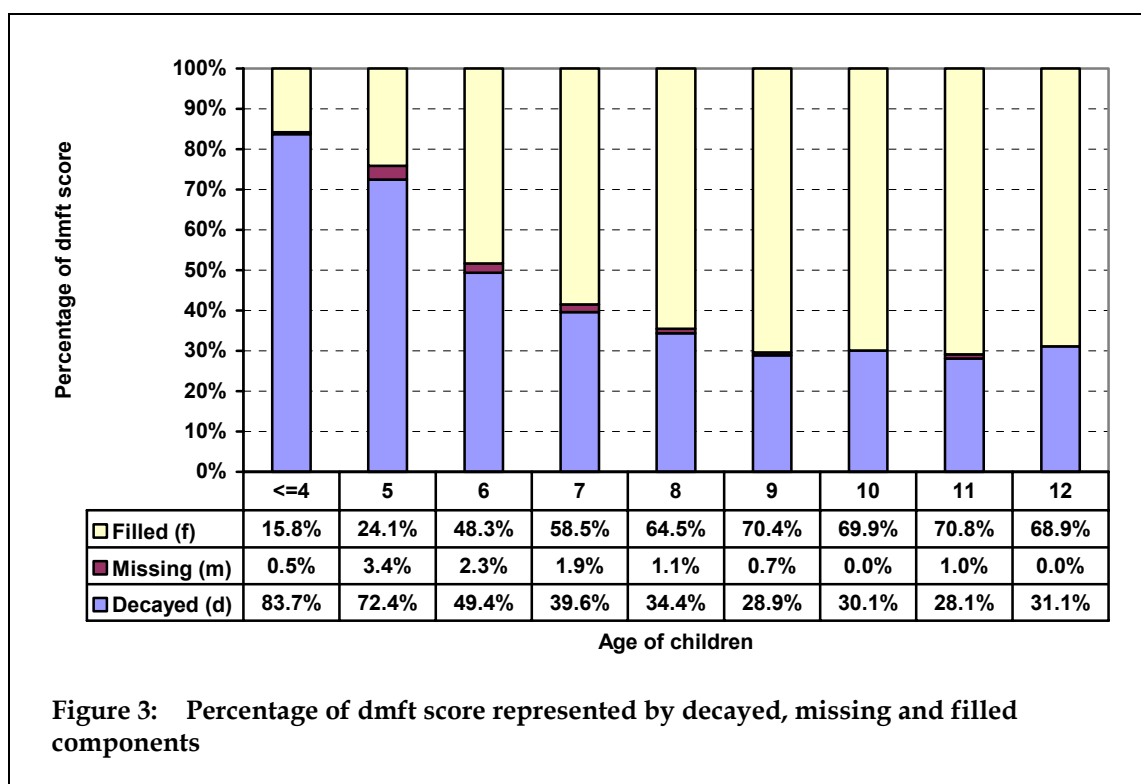
**Table 3: Deciduous dentition - decayed, missing and filled teeth by age**

Age	Children <i>n</i>	Teeth mean	Decayed (d)		Missing (m)		Filled (f)		dmft	
			mean	SD	mean	SD	mean	SD	mean	SD
≤4	302	19.84	1.54	2.80	0.01*	0.15*	0.29	1.41	1.84	3.13
5	1,313	19.33	1.05	2.11	0.05	0.45	0.35	1.13	1.45	2.58
6	1,340	17.23	0.85	1.73	0.04	0.35	0.83	1.63	1.72	2.70
7	1,499	14.22	0.63	1.35	0.04	0.29	0.93	1.68	1.59	2.32
8	1,603	12.15	0.64	1.33	0.02	0.21	1.20	1.94	1.86	2.44
9	1,552	10.56	0.44	0.97	0.01	0.18	1.07	1.62	1.52	1.98
10	1,439	8.56	0.40	0.91	0.01	0.11	0.93	1.50	1.33	1.86
11	1,110	6.23	0.27	0.75	–	–	0.68	1.22	0.96	1.52
12	614	4.58	0.23	0.81	–	–	0.51	1.05	0.74	1.40

The ratio of untreated decayed teeth to the total count of decayed, missing, and filled teeth serves as an indicator of how well a child's dental needs are being met. This is presented in Table 4 as the mean of individual children's d/dmft index. The percentage of caries experience due to decay (mean d/dmft index) showed an age associated decline, reducing from 74.0% for children aged 5 years old to 27.8% among 11-year-olds (Table 4). By comparison, the percentage of 'caries-free' children (% dmft = 0) shows a more modest reduction, from 60.3% among children aged 5 years old to 44.4% among 8-year-olds, before increasing to 66.0% for 12-year-olds.

**Table 4: Deciduous teeth – caries experience indices by age**

Age	Teeth present	Mean d/dmft index		dmft = 0	
	<i>n</i>	<i>n</i>	%	<i>n</i>	%
≤4	19.84	126	89.4	302	58.4
5	19.33	521	74.0	1,313	60.3
6	17.23	622	52.1	1,340	53.6
7	14.22	713	41.5	1,499	52.4
8	12.15	892	37.4	1,603	44.4
9	10.56	812	31.1	1,552	47.7
10	8.56	707	32.0	1,439	50.9
11	6.23	454	27.8	1,110	59.1
12	4.58	209	30.7	614	66.0



The ratio of untreated decayed teeth to the total count of decayed, missing, and filled teeth can also be expressed as the ratio of total decay in the population to total decayed, missing or filled teeth in the population (d/dmft ratio), and this is presented in Figure 3. Unlike the d/dmft index, the d/dmft ratio refers to the proportion of teeth with caries in the population. Thus, the ratio for 6-year-olds indicates that, among 100 teeth with caries experience among 6-year-olds, 49.4% had untreated decay. The d/dmft ratio shows a similar pattern to that of the mean dmft index, with the percentage d/dmft reducing across increasingly older age groups, declining from 72.4% for 5-year-old children to 31.1% among 12-year-olds. The percentage of dmft accounted for by filled teeth shows the opposite trend, increasing from 24.1% for children aged 5 years old to approximately 70% for children aged between 9 and 12 years old.

## Permanent teeth

Clinically detectable decay in the permanent dentition generally increased with increasing age (Table 5). As in the deciduous dentition, permanent teeth judged as missing due to caries were few although the average increased among the older children. The mean number of filled teeth rose steadily with increasing age, to 0.52 at age 12 and over 1 for children aged  $\geq 16$  years. The mean decay and DMFT also increased consistently across age groups, with mean dmft ranging from 0.05 for children aged 5 years to 1.73 for children aged  $\geq 16$  years. The mean DMFT score for 12-year-old children was 0.92.

**Table 5: Permanent dentition – decayed, missing and filled teeth by age**

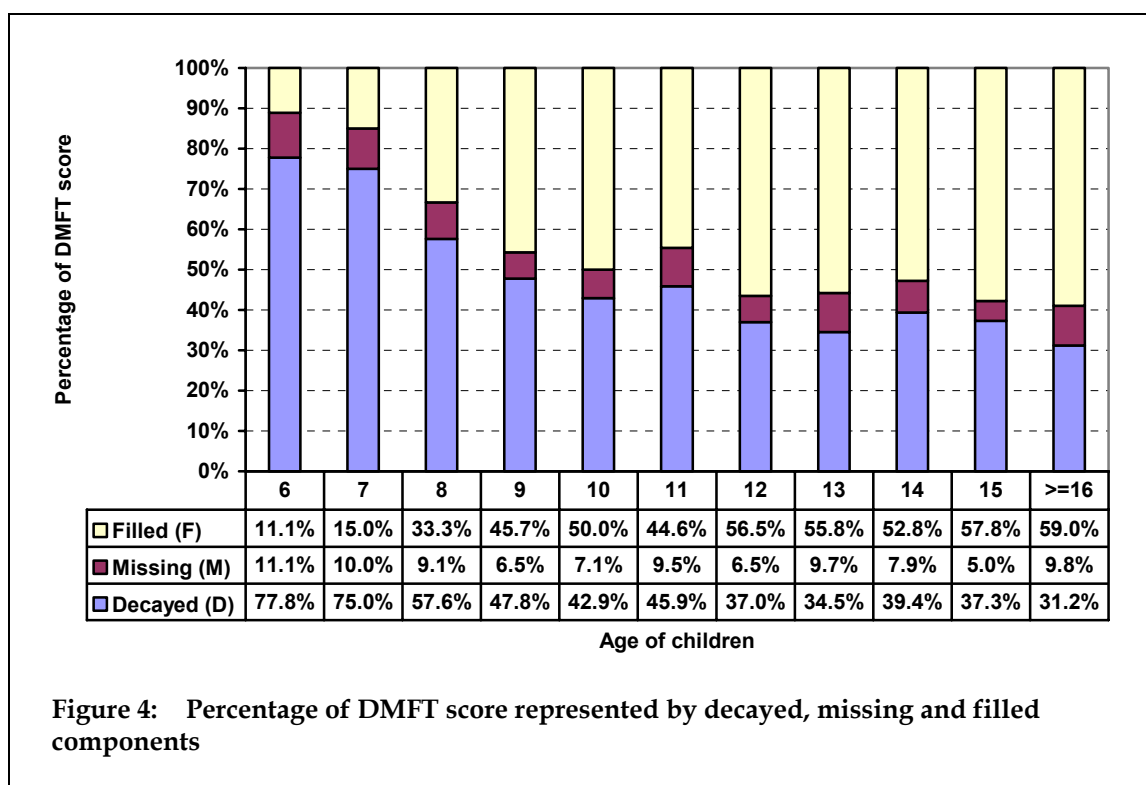
Age	Children <i>n</i>	Teeth mean	Decayed (D)		Missing (M)		Filled (F)		DMFT	
			mean	SD	mean	SD	mean	SD	mean	SD
5	382	3.67	0.05	0.29	0.00	0.05*	0.00	0.05*	0.05	0.32
6	1094	5.63	0.07	0.34	0.00	0.08*	0.01*	0.19*	0.09	0.43
7	1478	8.75	0.15	0.57	0.01	0.15	0.03	0.25	0.20	0.66
8	1604	11.28	0.19	0.57	0.03	0.25	0.11	0.46	0.33	0.81
9	1570	13.12	0.22	0.71	0.04	0.27	0.21	0.60	0.46	1.00
10	1582	16.24	0.24	0.70	0.05	0.30	0.28	0.69	0.56	1.07
11	1624	20.76	0.34	1.04	0.07	0.40	0.33	0.80	0.74	1.48
12	1340	24.02	0.34	0.96	0.05	0.33	0.52	1.21	0.92	1.63
13	1175	26.33	0.39	0.90	0.10	0.52	0.63	1.26	1.13	1.73
14	1104	26.99	0.50	1.27	0.10	0.51	0.67	1.43	1.27	2.08
15	773	27.31	0.60	1.65	0.08	0.54	0.93	1.59	1.61	2.54
$\geq 16$	392	27.36	0.54	1.29	0.18	0.73	1.02	1.68	1.73	2.28

\* relative standard error  $\geq 40\%$

The percentage of DMFT due to decay (mean D/DMFT index) and the percentage with no evidence of caries experience (DMFT = 0) both declined across age groups (Table 6). More than 60% of children in all age groups up to 11 years of age were 'caries free' in their permanent dentition. The D/DMFT ratio, which refers to the proportion of teeth with caries experience having untreated decay, showed a similar trend to the mean D/DMFT index, declining from 77.8% for 6-year-olds to 31.2% for children aged 16 years or older (Figure 4).

**Table 6: Permanent dentition – caries experience indices by age**

Age	Teeth present	Mean D/DMFT Index		DMFT = 0	
	<i>n</i>	<i>n</i>	%	<i>n</i>	%
5	3.67	12	95.1	382	97.0
6	5.63	63	86.9	1,094	94.3
7	8.75	179	78.4	1,478	87.9
8	11.28	313	62.2	1,604	80.5
9	13.12	390	45.1	1,570	75.2
10	16.24	481	41.3	1,582	69.6
11	20.76	554	44.7	1,624	65.9
12	24.02	547	38.5	1,340	59.2
13	26.33	523	35.9	1,175	55.5
14	26.99	522	38.6	1,104	52.7
15	27.31	407	32.6	773	47.4
≥16	27.36	219	28.5	392	44.3



## All teeth

Untreated clinically detectable caries in the combined deciduous and permanent dentitions existed for between 24.2% and 38.9% of children in all age ranges (see Table 7). The greatest likelihood of untreated decay occurred for children aged up to and including 4 years old. The most extensive levels of untreated decay (4 or more deciduous or permanent teeth) occurred in the younger age groups, with more than 5% of children aged 9 years or less being affected to this extent.

While no more than 5% of children aged up to 15 years had at least one deciduous or permanent tooth missing due to caries, much larger percentages presented with fillings, for which there was a consistent age-associated increase in children up to 9 years of age (47.7% with 1 or more fillings) followed by a decline to age 14 (31.5%) and a subsequent increase into the oldest age group (43.2%). There was also an increase in the percentage of children with caries experience in the combined deciduous and permanent dentition, from 40.2% for children aged 5 years old to 59.7% at ages 8 and 9. From the age of 9 there was an increase in the percentage of children with dmft+DMFT = 0 to age 13, with a subsequent decline in percentages into the oldest age groups.

**Table 7: All teeth – age-specific caries experience**

Age	Children <i>n</i>	d+D =						m+M = 0	f+F = 0	dmft+ DMFT = 0
		0	1	2	3	4	5+			
≤4	302	61.1	9.2	9.5	3.9	4.1	12.2	99.4	93.5	58.4
5	1,313	65.9	11.4	7.4	4.5	3.9	6.9	98.3	86.1	59.8
6	1,340	64.9	13.3	9.4	4.9	2.7	4.8	98.1	70.1	52.2
7	1,499	65.1	15.8	9.5	4.3	2.4	2.9	96.9	64.2	48.2
8	1,609	62.3	18.4	9.2	4.2	2.3	3.5	96.8	55.5	40.3
9	1,574	67.5	16.7	7.5	4.1	2.1	2.2	96.9	52.3	40.3
10	1,584	68.7	18.1	6.1	3.4	1.7	2.0	96.3	55.7	41.8
11	1,624	72.2	15.3	7.1	2.8	1.4	1.1	96.1	64.8	50.2
12	1,341	75.6	13.8	6.5	2.6	0.7	0.9	96.9	65.9	51.7
13	1,175	75.8	13.2	6.9	2.2	1.2	0.7	95.1	66.3	52.3
14	1,104	74.3	14.7	6.0	2.2	0.7	2.1	95.2	68.5	51.3
15	774	73.6	13.0	5.4	2.8	2.4	2.8	96.5	58.2	46.8
≥16	392	73.6	16.5	3.1	2.1	2.6	2.1	91.6	56.8	43.5

\* relative standard error ≥ 40%

## Fissure sealants

The mean number of fissure sealants per child increased with age although little variation occurred between the ages of 8 and 14 (Table 8). Overall, the mean numbers of fissure sealants ranged from 0.01 for 6-year-olds to 0.18 for children aged 13 and 16 years and older. There is some evidence of preferential use of fissure sealants among those with caries experience, indicated by the percentage of children with fissure sealants among those with caries experience compared to those with no caries experience, however these differences are not large.

**Table 8: Fissure sealants - age-specific experience**

Age	Children <i>n</i>	Sealants		Children with sealants			
				DMFT = 0		DMFT ≥ 1	
		mean	SD	<i>n</i>	%	<i>n</i>	%
6	1,340	0.01	0.18	1,278	0.5	63	9.0
7	1,498	0.10	0.57	1,320	3.8	178	5.6
8	1,608	0.16	0.66	1,295	5.9	313	9.7
9	1,574	0.16	0.65	1,184	6.7	390	7.4
10	1,584	0.17	0.68	1,103	7.6	481	7.2
11	1,624	0.13	0.61	1,070	4.9	554	7.5
12	1,341	0.17	0.71	794	6.5	547	8.9
13	1,175	0.18	0.99	652	5.3	523	8.9
14	1,104	0.14	0.58	582	7.1	522	6.6
15	774	0.17	0.85	368	5.6	407	9.0
≥16	392	0.18	0.84	174	7.9	219	7.1

## School Dental Service examinations

Table 9 demonstrates that the majority (at least 84%) of children 6 years of age or older were known to have had previously received examinations within the School Dental Service. A number of children in each age group were recorded as either having their first examination but were given a date of last examination or as not having their first examination but did not have a last examination date recorded. These children were not classified as either having had a previous examination or as having their first examination, and were not included in the results presented in Table 10.

Of those children known to have had a previous examination the majority had been 13–18 months previously (Table 10). A substantial number of children also had their last examination 7–12 months previously. Few children had had their previous examination either less than 6 months or more than 18 months previously. The mean time since last visit increased slightly with age, ranging from 12.35 months for 5-year-olds to 16.42 months for children aged 14.



**Table 9: School Dental Service examinations – age-specific distribution**

Age	Children examined <i>n</i>	Previous examination in School Dental Service		
		Yes %	No %	Unsure %
≤4	305	4.9	89.9	5.2
5	1,391	39.2	56.9	3.9
6	1,433	84.8	10.8	4.4
7	1,515	90.4	5.4	4.2
8	1,600	91.5	4.3	4.1
9	1,576	92.6	3.2	4.2
10	1,563	92.3	3.3	4.4
11	2,587	93.2	3.5	3.4
12	1,334	93.8	2.3	3.9
13	1,142	93.7	1.5	4.8
14	1,021	92.4	1.8	5.9
15	743	94.1	2.1	3.8
≥16	388	95.0	2.9	2.1

**Table 10: School Dental Service examinations – time since last visit**

Age	Children <i>n</i>	Months since last visit					mean	SD
		0–6 %	7–12 %	13–18 %	19–24 %	25+ %		
≤4	15	13.6*	59.6	26.8	0.0	0.0	10.01*	4.19*
5	546	4.5	51.0	43.2	1.2	0.2*	12.35	3.15
6	1,215	2.0	35.8	54.0	7.7	0.5	13.74	3.47
7	1,370	1.5	30.5	53.8	11.0	3.2	14.68	4.38
8	1,465	1.9	27.5	56.7	9.7	4.2	15.08	5.26
9	1,459	1.3	30.3	55.2	8.9	4.3	14.96	5.21
10	1,444	1.6	27.9	55.0	10.6	5.0	15.23	5.41
11	1,479	1.6	26.9	55.7	10.2	5.5	15.45	5.96
12	1,251	1.2	26.2	58.7	9.4	4.4	15.14	5.01
13	1,070	1.9	25.5	53.6	13.4	5.6	15.50	5.53
14	943	1.5	21.8	56.1	11.0	9.6	16.42	6.51
15	699	1.0	28.5	54.0	8.9	7.7	15.68	6.26
≥16	369	1.7	34.7	49.9	8.3	5.5	15.13	6.72

\* relative standard error ≥ 40%

## Caries experience by geographical location

Table 11 presents deciduous caries experience data for each of the Health (Analysis) Zones used in this report. Considerable variation can be seen in caries experience for the selected 5–6-year-old age group across geographical areas. Among these children, mean decay scores in the deciduous dentition ranged from 0.79 in the North Metropolitan zone to 1.78 in the North West zone. The mean number of teeth missing due to caries was also highest in the North West zone (mean = 0.13), while the mean number of filled teeth was highest in the North West and Mid West Health Zones, the lowest being in the Great Southern zone. Mean dmft scores were highest in the North West (mean = 2.92) and lowest in the North Metropolitan, Great Southern, and East Metropolitan zones (means = 1.39, 1.42 and 1.44). Consistent with these findings the percentage of children with dmft = 0 was highest in North Metropolitan (60.8%) and lowest in the North West zone (39.6%).

**Table 11: Deciduous caries experience for 5–6-year-old children by Health (Analysis) Zone**

	Children	Decayed (d)		Missing (m)		Filled (f)		dmft		dmft = 0
	<i>n</i>	mean	SD	mean	SD	mean	SD	mean	SD	%
North West	139	1.78	2.70	0.09	0.64	1.05	1.92	2.92	3.73	39.6
Mid West	94	1.18	2.67	0.05	0.34	1.01	1.99	2.24	3.40	48.9
Midlands	87	1.24	2.23	0.06	0.35	0.43	1.14	1.72	2.68	57.5
Goldfields	102	0.93	1.86	0.01	0.10	0.75	1.30	1.69	2.45	53.9
Great Southern	110	0.95	1.73	0.11	0.64	0.36	1.05	1.42	2.12	50.9
South West	192	1.04	1.79	0.01	0.14	0.78	1.55	1.83	2.59	50.0
North Metropolitan	814	0.79	1.85	0.03	0.39	0.57	1.46	1.39	2.64	60.8
East Metropolitan	402	0.84	1.72	0.04	0.49	0.57	1.31	1.44	2.35	59.2
South Metropolitan	884	0.93	1.84	0.04	0.37	0.63	1.46	1.59	2.62	56.0

The mean number of clinically detectable decayed teeth in 12-year-olds (see Table 12) was highest in the North West Health Zone and lowest in the Midlands zone. The mean number of filled teeth was highest in the Goldfields zone (mean = 0.73) and lowest in the Midlands and South West zones (means = 0.29 and 0.33) while DMFT scores were highest in the North West and lowest in the Midlands zones.

Approximately 71% of 12-year-olds in Midlands had no history of caries experience in their permanent dentition, while only 49.0% of 12-year-old children in the North West zone had a DMFT score of zero.

**Table 12: Permanent caries experience for 12-year-old children by Health (Analysis) Zone**

	Children	Decayed (D)		Missing (M)		Filled (F)		DMFT		DMFT = 0
	<i>n</i>	mean	SD	mean	SD	mean	SD	mean	SD	%
North West	49	0.82	1.69	0.14	0.65	0.45	0.94	1.41	2.18	49.0
Mid West	43	0.30	1.19	0.05	0.21	0.58	0.98	0.93	1.50	60.5
Midlands	35	0.17	0.51	0.06	0.34	0.29	0.71	0.51	0.98	71.4
Goldfields	56	0.45	0.99	0.04	0.27	0.73	0.37	1.21	1.78	57.1
Great Southern	64	0.39	0.83	0.03	0.18	0.42	0.92	0.84	1.17	56.3
South West	94	0.28	0.68	0.10	0.44	0.33	0.78	0.70	1.12	61.7
North Metropolitan	412	0.34	1.34	0.04	0.25	0.55	1.12	0.93	1.89	62.9
East Metropolitan	158	0.37	0.77	0.08	0.42	0.43	0.99	0.88	1.47	59.5
South Metropolitan	427	0.27	0.64	0.05	0.33	0.64	1.57	0.96	1.75	55.7

## Selected trends, 1998–2002

Presented below is a table and a series of figures of selected 5-year trends across the period 1998–2002. Trends are provided for sample size, deciduous and permanent caries experience, fissure sealants and time since last visit.

Across the period 1998–2002 deciduous caries experience increased for most age groups with only 9-year-olds appearing to indicate a decrease across this period (Figures 5–8). The percentage of children with no deciduous tooth caries has been gradually decreasing across the selected 5-year period (Figure 9).

Similar to the deciduous dentition, the mean number of permanent decayed teeth has increased for most age groups compared to between 1998 and 2002 (Figure 10). The mean number of filled teeth, however, has increased for some age groups but decreased for others, between 1998 and 2002 (Figure 11). Mean permanent DMFT traces a similar path to trends in mean decayed teeth, consistently increasing, albeit slightly, between 1998 and 2002 for most age groups (Figure 12). In contrast, the percentage of children with dmft = 0 has been gradually decreasing for most age groups between 1998 and 2002 (Figure 13).

Trends for the combined deciduous and permanent dentitions show that there has been little difference in the percentage of children with d+D=0 (Figure 14). However, there appears to have been increases across many age groups in the percentage of children with d+D≥4 (Figure 15). The percentage of children with no fillings shows inconsistent trends across the various age groups (Figure 16). The percentage of 5–8-year-olds with no caries experience in either dentition has decreased, however increases are apparent for other age groups (Figure 17).

The mean number of fissure sealed teeth has been gradually declining between 1998 and 2002 (Figure 18). Across the period 1998 to 2002 there has been a slight but continuous increase in the mean time since last visit in the School Dental Service for most age groups (Figure 19).

**Table 13: Sample size and percentage of total sample by region, 1998–2002**

Region	1998		1999		2000		2001		2002	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
North West	746	4.4	787	4.3	698	4.0	484	3.0	761	4.9
Mid West	645	3.8	583	3.2	569	3.2	564	3.5	531	3.4
Midlands	494	2.9	664	3.6	681	3.9	539	3.4	431	2.8
Goldfields	424	2.5	620	3.4	711	4.0	610	3.8	624	4.0
Great Southern	729	4.3	754	4.	789	4.5	546	3.4	646	4.1
South West	1455	8.6	1747	9.5	1585	9.0	1215	7.6	1219	7.8
North Metropolitan	5363	31.8	5582	30.3	5098	29.0	4784	29.9	4282	27.4
East Metropolitan	1923	11.4	2106	11.4	2000	11.4	2132	13.3	2145	13.7
South Metropolitan	5093	30.2	5528	30.0	5358	30.5	5131	32.1	4968	31.8
Missing	0	0.0	73	0.4	97	0.6	0	0.0	25	0.2
<i>Total</i>	<i>16872</i>	<i>100.0</i>	<i>18444</i>	<i>100.0</i>	<i>17586</i>	<i>100.0</i>	<i>16005</i>	<i>100.0</i>	<i>15632</i>	<i>100.0</i>

