27 July 2005

AMENDMENT

Obvious decay experience: Children's Dental Health in the United Kingdom 2003

Table 13 had the following two figures transposed in a previous release:

- 2003a estimate: revised decay criteria used in the 2003 survey (including visual dentine caries)
- 2003b estimate: pre-2003 decay criteria (excluding visual dentine caries)

This has now been corrected and an amended version is attached.

ONS apologises for any inconvenience caused.

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Obvious decay experience

Children's Dental Health in the United Kingdom 2003

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The 2003 Children's Dental Health Survey

The 2003 Children's Dental Health Survey, commissioned by the four United Kingdom Health Departments, is the fourth in a series of national children's dental health surveys that have been carried out every 10 years since 1973 in England and Wales and in the whole of the UK since 1983.

The survey provides information on the dental health of children in the United Kingdom, measures changes in oral health since the last survey in 1993 and provides information on children's experiences of dental care and treatment and their oral hygiene.

The 2003 survey was based upon a representative sample of children aged five, eight, 12 and 15 years of age attending government maintained and independent schools in the UK. A total of 12698 children were sampled within participating schools and asked to take part in a dental examination at school. In total 10381 children were examined, a response rate of 82%. Background data on children's oral hygiene and dental care and were requested by questionnaire from the parents of a random sub-sample of 5480 examined children. In total, 3342 questionnaires were returned, a response rate of 61%.

Details of the survey methodology can be found in the Children's Dental Health in the United Kingdom 2003 Technical Report available at http://www.statistics.gov.uk/children/dentalhealth/

Acknowledgements

Thanks are due to everyone who contributed to the 2003 Children's Dental Health Survey and the production of this report. In particular colleagues from the Dental Schools of the Universities of Birmingham, Dundee, Newcastle and Wales, the Dental Health Services Research Unit, Dundee and the Central Survey Unit of the Northern Ireland Statistics and Research Agency, the dentists and dental nurses who carried out the examinations (a list of dentists and dental nurses can be found in the Technical Report .

The examinations took place in schools. Local Education Authorities, headteachers and school staff gave their help and cooperation in the administration of the study. Most importantly, thanks go to the children who were examined, and the parents who completed questionnaires about their children's dental background.

Particular acknowledgement goes to Jan Gregory (1946-2004) for her considerable contribution to the series of adult and children's dental health surveys, as well as a wide range of other ONS surveys.

Notes on the tables and text

Proportionately larger samples were selected in Wales and Northern Ireland than in England to provide estimates for these three countries within the UK. The data needed to be reweighted in order to produce representative figures for the UK as a whole. Weighted bases are provided for UK estimates and unweighted sample sizes are provided for individual country comparisons.

There was no oversampling in Scotland relative to England as a separate analysis for Scotland was not required by the Scottish Executive.

Differences cited in the text are statistically significant ($p<0.05$) unless otherwise stated.

A dash in a table indicates a zero value, while an asterisk indicates a proportion of less than 0.5% or a mean of less than 0.05.

Figures presented in parentheses [ ] indicate a low base number of respondents and results are indicative only.

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Summary

This report presents clinical information on dental decay in the primary and permanent dentition. In the 2003 survey the criteria for assessing dental caries were changed from those used in the earlier surveys to reflect changes in the presentation of dentine decay. In order to compare the data on the condition of teeth in 2003 with those from 1983 and 1993, the 2003 data were re-classified according to the pre-2003 criteria. Where this report refers to trends in decay over time the conditions of children's teeth are assessed according to the pre-2003 criteria ($d_{3c}mft/D_{3c}MFT$, d_{3c}/D_{3c}), while results reporting the overall condition of children's teeth in 2003 use the revised 2003 criteria which include visual dentine caries ($d_{3cV}mft/D_{3cV}MFT$, d_{3cV}/D_{3cV}). In all cases clinical caries in enamel was excluded.

The proportion of five and eight-year-olds with filled primary teeth has declined since 1983. In both five and eight-year-olds filled primary teeth represented a smaller proportion of the total obvious decay experience than in the previous surveys. This indicates a decline in restorative care. The average number of filled primary teeth in five and eight-year-olds has also fallen since 1983. There were no statistically significant changes between the 1993 and 2003 surveys in the proportion of five and eight-year-olds with obvious decay experience ($d_{3c}mft$), or in the proportion having decay into dentine (d_{3c}), in the primary ('milk') teeth.

In permanent teeth, the proportion of eight, 12 and 15-year-olds with decay into dentine (D_{3c}) and with obvious decay experience ($D_{3c}MFT$) has decreased since 1983. The percentage point fall was particularly pronounced in the proportion of 15-year-olds with decay into dentine (D_{3c}); 42 % in 1983, 30 % in 1993 and 13 % in 2003. In 2003, 66% of 12-year-olds and 51% of 15-year-olds had no obvious decay experience ($D_{3c}MFT$). The average number of permanent teeth with decay into dentine (D_{3c}) or obvious decay experience ($D_{3c}MFT$) among eight, 12 and 15-year-olds decreased between the 1993 and 2003 surveys.

There was a decrease in the proportion of 12 and 15-year-olds with filled permanent teeth. The proportion of the total obvious decay experience represented by filled teeth among eight, 12 and 15-year-olds has increased since 1993. This indicates an increase in restorative care. The average number of filled permanent teeth also decreased among 12 and 15-year-olds.

In the primary dentition, use of the contemporary criteria to assess dentine caries in 2003 ($d_{3cv}mft$, d_{3cv}), resulted in little or no change to the proportion of children, or the mean number of teeth, affected. In the permanent dentition, use of the contemporary visual criteria resulted in sizeable changes to the results. For example, among 12-year-olds the proportion of children with obvious decay experience increased from 34% to 43%, the proportion with decay into dentine increased from 12% to 29%, the mean number of teeth with obvious decay experience increased from 0.8 to 1.1 and the mean number of teeth with decay into dentine increased from 0.2 to 0.5.

Variation in levels of decay was found among children in England, Wales and Northern Ireland in both primary and permanent teeth. The proportion of five and eight-year-olds with obvious decay experience ($d_{3cv}mft$) was lower in England than

in Wales or Northern Ireland and the average number of teeth affected by decay was also lowest in England. Among permanent teeth, a lower proportion of eight, 12 and 15-year-olds in England had obvious decay experience ($D_{3cv}MFT$) than in Northern Ireland and Wales. The average number of permanent teeth with obvious decay experience ($D_{3cv}MFT$) was lower in England than in Wales or Northern Ireland in all age groups.

There was evidence of some variation in levels of decay across geographic regions in England and Wales.

Introduction

The major part of the survey dental examination was an assessment of the obvious decay experience of children's teeth. This report presents clinical information on obvious dental decay experience in both the primary and permanent dentition.

Obvious decay experience is the sum of teeth which, at the time of the examination, had decay into dentine (including teeth that were filled in the past but which needed further treatment), filled teeth, or teeth that were missing due to decay. However, in primary teeth an assessment of teeth missing due to decay is complicated by the natural exfoliation of the teeth, making it difficult to determine whether a tooth was lost due to dental decay or whether it exfoliated naturally. Therefore, as in previous surveys, dental examiners were not asked to assess the reason for the absence of primary teeth.

In the 2003 survey the criteria for assessing dental caries were changed from those used in the earlier surveys to reflect changes in the presentation of dentine decay. In the previous surveys a tooth was recorded as decayed only if cavitated caries into dentine ($d_{3c}mft/D_{3c}MFT$, d_{3c}/D_{3c}) was present. By international convention the abreviation d_3/D_3 is used throughout this report, indicating clinically detectable decay into dentine. In 2003 an assessment of visual caries into dentine was included in the criteria ($d_{3cv}mft/D_{3cv}MFT$, d_{3cv}/D_{3cv}). Visual caries into dentine is carious demineralisation of the tooth which, although it extends clinically into the dentine, shows no obvious clinical cavitation. Full details of the 2003 and pre-2003 criteria can be found in Appendix A.

In this report, information on trends in dental decay over recent decades are given using results computed in the same way as the previous UK child dental health surveys (using d_{3c}/D_{3c} and $d_{3c}mft/D_{3c}MFT$ only), whilst the results reporting the overall condition of children's teeth in 2003 use d_{3cv}/D_{cv} and $d_{3cv}mft/D_{3cv}MFT$. In all cases, clinical caries in enamel is excluded from measures of dental decay.

Figure 1 2003 terminology for dental decay (caries)

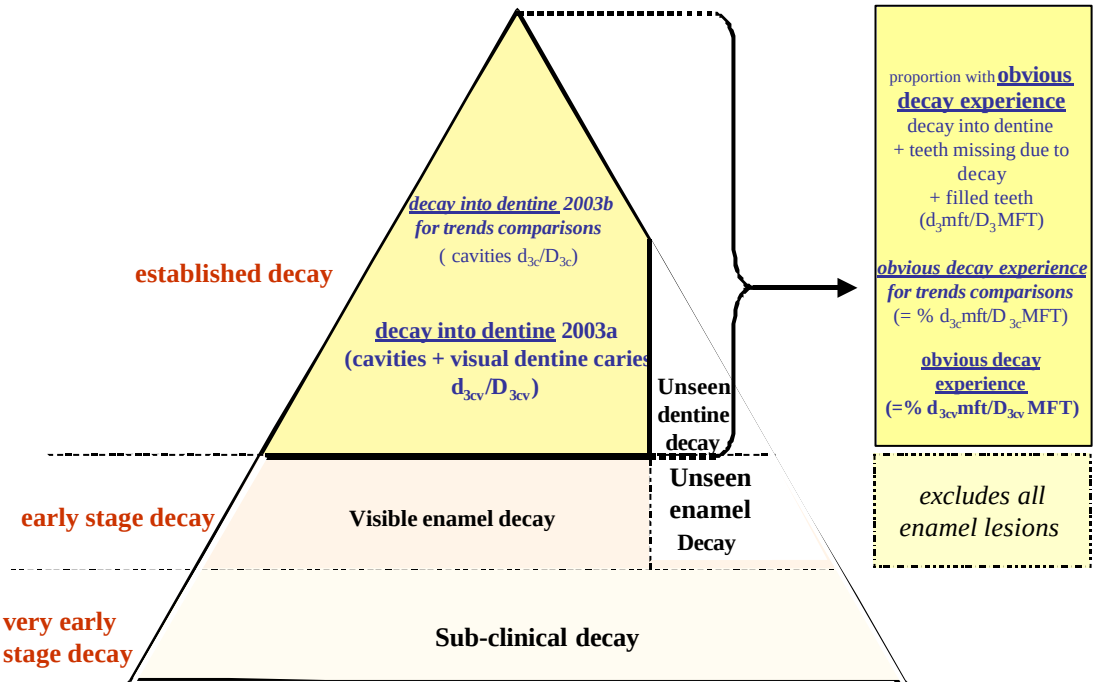


Figure 1 clarifies the 2003 terminology for obvious decay experience and indicates the decay information that is assessed by the criteria used in this survey. The figure shows that the established decay recorded in the 2003 and previous surveys captures only part of the total decay experience. Very early stage and early stage decay are not captured and some decay which could be identified in a dentist's surgery by radiography and other diagnostic aids will inevitably remain unseen. The figure also differentiates between the traditional measures of cavitated-only dentine decay and the lesions into dentine which are only discernible visually.

Trends in the condition of the primary ('milk') teeth

In 2003, less than half of five-year-olds (43%) had obvious decay experience (d_{3c}mft) in the primary teeth. Forty per cent of five-year-olds had at least one primary tooth with decay into dentine (d_{3c}) and 12 % had at least one filled primary tooth. Among eight-year-olds, 57 % had obvious decay experience (d_{3c}mft) in the primary teeth. Half of eight-year-olds (50%) had at least one primary tooth with decay into dentine (d_{3c}) and just over a quarter (26%) had at least one filled primary tooth.

Table 1

Table 1 Proportion of children with obvious decay experience in primary teeth by age (United Kingdom 1983, 1993, 2003)

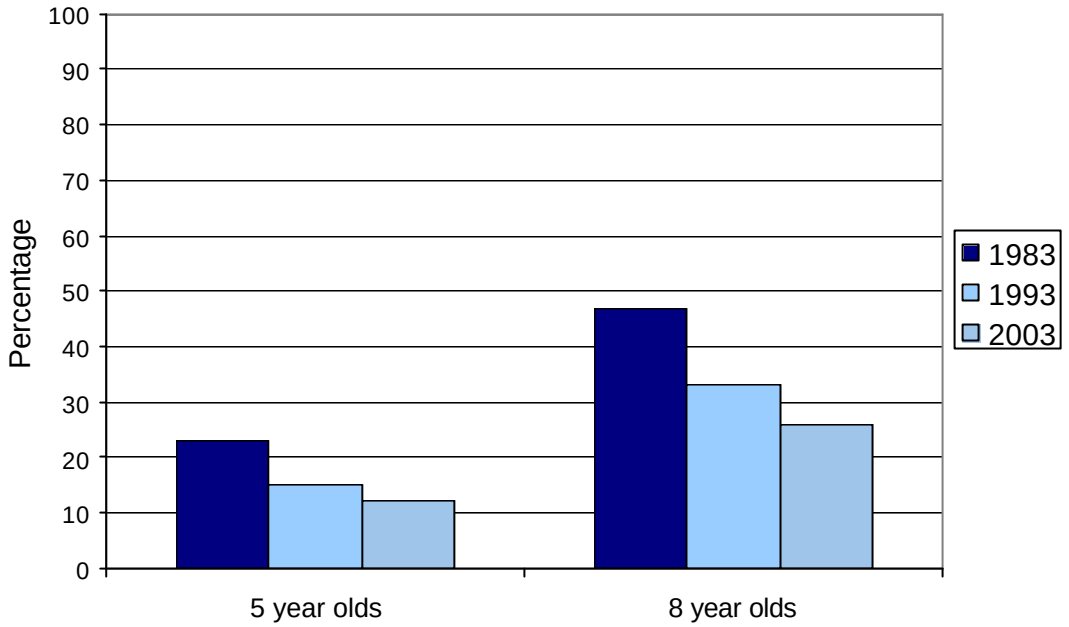
Tooth condition	Age	
	5	8
	Percentage of children:	
Decay into dentine		
1983	41	49
1993	40	50
2003a[+]	40	51
2003b[++]	40	50
Filled (otherwise sound)		
1983	23	47
1993	15	33
2003a[+]	11	24
2003b[++]	12	26
Obvious decay experience		
1983	50	70
1993	45	61
2003a[+]	43	57
2003b[++]	43	57
Filled teeth as a percentage of obvious decay experience		
1983	28	50
1993	17	35
2003a[+]	13	24
2003b[++]	15	28

[+] Criteria used for 2003 survey (d_{3cv}mft includes visual caries)
[++] Criteria used for 1993 survey (d_{3d}mft does not include visual caries)

There were no statistically significant changes between the 1993 and 2003 surveys in the proportion of five and eight-year-olds with obvious decay experience (d_{3c}mft) or teeth with decay into dentine (d_{3c}) in the primary teeth. There were decreases in the proportion of children with filled primary teeth. The proportion of five-year-olds with filled primary teeth decreased from 23 % in 1983, to 15% in 1993 and 12 % in 2003. In eight-year-olds the proportion with filled primary teeth fell from 47% in 1983, to 33% in 1993 and to 26% in 2003. In both age groups filled teeth represented a smaller proportion of the total obvious decay experience in primary teeth than in previous surveys. This indicates a decline in restorative care among primary teeth.

Table 1, Figure 2

Figure **2** Proportion of children with filled primary teeth (United Kingdom 1983, 1993, 2003)



Among both five and eight-year-olds there were no statistically significant changes between surveys in the average number of primary teeth with obvious decay experience (d_{3c}mft) or decay into dentine (d_{3c}). There were decreases in the average number of filled primary teeth for both age groups. The average number of filled teeth in five-year-olds decreased from 0.5 teeth in 1983, to 0.3 teeth in 1993 and 0.2 teeth in 2003 and in eight-year-olds decreased from 1.2 teeth in 1983 to 0.7 teeth in 1993 and 0.5 teeth in 2003.

Table 2

Table 2 Mean number of primary teeth with obvious decay experience by age (United Kingdom, 1983, 1993, 2003)

Tooth condition	Age	
	5	8
	Mean number of teeth:	
Decay into dentine		
1983	1.3	1.2
1993	1.4	1.3
2003a[+]	1.4	1.4
2003b[++]	1.4	1.3
Filled (otherwise sound)		
1983	0.5	1.2
1993	0.3	0.7
2003a[+]	0.2	0.4
2003b[++]	0.2	0.5
Obvious decay experience		
1983	1.8	2.3
1993	1.7	2.0
2003a[+]	1.6	1.8
2003b[++]	1.6	1.8

[+] Criteria used for 2003 survey (d_{3cv}mft includes visual caries)
[++] Criteria used for 1993 survey (d_{3c}mft does not include visual caries)

Estimated averages of the number of teeth with obvious decay experience for the whole sample could mask important information about the nature of decay among those children with decay experience. Table 3 displays trends between 1993 and 2003 in the average number of primary teeth with obvious decay experience (d_{3c}mft) among children who had obvious decay. The number of filled primary teeth declined in 2003 among eight-year-olds with obvious decay. There were no further differences.

Table 3

Table 3 Mean number of primary teeth with obvious decay experience in childrenwith obvious decay experience by age (United Kingdom, 1993, 2003)

Tooth condition	Age	
	5	8
	Mean number of teeth:	
Decay into dentine		
1993	3.1	2.1
2003a[+]	3.2	2.4
2003b[++]	3.2	2.3
Filled (otherwise sound)		
1993	0.6	1.1
2003a[+]	0.6	0.8
2003b[++]	0.6	0.9
Obvious decay experience		
1993	3.8	3.2
2003a[+]	3.7	3.2
2003b[++]	3.7	3.2

[+] Criteria used for 2003 survey (d_{3cv}mft includes visual caries)
[++] Criteria used for 1993 survey (d_{3c}mft does not include visual caries)

The condition of the primary teeth in the United Kingdom 2003

Tables 1.1 and 1.2 illustrate that in the primary dentition, use of the contemporary 2003 criteria for obvious decay experience (d_{3cv}mft) and decay into dentine (d_{3cv}) has little impact on estimates of the proportion of children, or the mean number of teeth, affected by decay. For the United Kingdom, over 4 out of 10 children showed signs of obvious decay experience (d_{3cv}mft) by the age of 5 years, while over half (57%) of eight-year-olds had obvious decay experience (d_{3c}mft).

There were differences in the proportion of children affected by decay in the primary teeth between countries of the United Kingdom. In both five and eight-year-olds, a lower proportion of children were affected by obvious decay experience (d_{3cv}mft), decay into dentine (d_{3cv}) or fillings in the primary teeth in England than in Wales and Northern Ireland. For example, 41% of five-year-olds in England had obvious decay experience (d_{3cv}mft) in the primary teeth, compared with 52% in Wales and 61% in Northern Ireland, while 54% of eight-year-olds in England had obvious decay experience (d_{3cv}mft) in the primary teeth, compared with 71% in Wales and 76% in Northern Ireland. A lower proportion of five-year-olds in Wales had obvious decay experience (d_{3cv}mft) and decay into dentine (d_{3cv}) in the primary teeth than in Northern Ireland.

Table 4

Table 4 Proportion of children with obvious decay experience (d_{3cv}mft) in primary teeth by country and age (United Kingdom, 2003)

	Country			
	England	Wales	Northern Ireland	United Kingdom
		Percentage of children:		
Decay into dentine				
5 year olds	38	48	57	40
8 year olds	48	64	70	51
Filled (otherwise sound)				
5 year olds	10	15	19	11
8 year olds	22	32	34	24
Obvious decay experience				
5 year olds	41	52	61	43
8 year olds	54	71	76	57
Unweighted sample size				
5 year olds	*1620*	*582*	*456*	*2538* !
8 year olds	*1547*	*573*	*462*	*2599* !

! Weighted bases presented for UK

A similar pattern was observed in the average number of primary teeth affected by decay in England, Wales and Northern Ireland. The average number of primary teeth with obvious decay experience (d_{3cv}mft), decay into dentine (d_{3cv}) or fillings was lower in England than in Wales and Northern Ireland among both five and eight-year-old children. For example, five-year-old children in England had an

average of 1.5 primary teeth with obvious decay experience (d_{3cv}mft), compared with an average of 1.9 teeth in Wales and 2.5 teeth in Northern Ireland, while eight-year-old children in England had an average of 1.7 primary teeth with obvious decay experience (d_{3cv}mft), compared with an average of 2.5 teeth in Wales and 2.8 teeth in Northern Ireland. Five-year-olds in Wales had a lower average number of primary teeth with obvious decay experience (d_{3cv}mft) and decay into dentine (d_{3cv}) than five-year-olds in Northern Ireland.

Table 5

Table 5 Mean number of primary teeth with obvious decay experience (d3cvmft) by country and age (United Kingdom, 2003)

	Country			
	England	Wales	Northern Ireland	United Kingdom
	Mean number of teeth:			
Decay into dentine				
5 year olds	1.3	1.6	2.2	1.4
8 year olds	1.3	1.8	2.1	1.4
Filled (otherwise sound)				
5 year olds	0.2	0.3	0.3	0.2
8 year olds	0.4	0.6	0.7	0.4
Obvious decay experience				
5 year olds	1.5	1.9	2.5	1.6
8 year olds	1.7	2.5	2.8	1.8

Regional differences in primary decay experience in England and Wales

Tables 1.6 and 1.7 show the proportion of children, and the mean number of primary teeth, with obvious decay experience (d_{3cv}mft) for government office regions of England. Among five-year-olds, the proportion of children with obvious decay experience (d_{3cv}mft) was significantly higher in London (51%) and the South West (50%) than in the East of England (33%), the East Midlands (38%), the West Midland (38%) and the South East (30%). A higher average number of primary teeth with obvious decay experience (d_{3cv}mft) in five-year-olds was found in London (2.2) and the South West (2.1) compared with all other regions.[1]

Tables 6 and 7

Table 6 Proportion of children with obvious decay experience (d3cvmft) in primary teeth by region and age (England , 2003)

Age	Region								
	East Midlands	East of England	London	North East	North West	South East	South West	West Midlands	Yorkshire & The Humber
					Percentage of children:				
5 year olds	38	33	51	43	46	30	50	38	52
8 year olds	49	42	66	53	66	37	62	58	70
Weighted base									
5 year olds	*200*	*248*	*267*	*136*	*276*	*382*	*130*	*308*	*188*
8 year olds	*177*	*283*	*232*	*157*	*325*	*376*	*165*	*322*	*147*

[1] Relatively large standard errors were associated with estimates for five-year-olds in Yorkshire and The Humber. Hence there were no statistically significant differences between this region and any others.

For eight-year-olds London, the North West, the South West and Yorkshire and The Humber differed from other regions, with a higher proportion of children with obvious decay experience (d_{3cv}mft): 66% in London, 66% in the North West, 62% in the South West and 70% in Yorkshire and The Humber. A higher average number of primary teeth with obvious decay experience (d_{3cv}mft) in eight-year-olds was found in London (2.2), the North West (2.1), the South West (2.1) and Yorkshire and The Humber (2.4) compared with other regions.

Tables 6 and 7

Table 7 Mean number of primary teeth with obvious decay experience (d3cvmft) by region and age (England, 2003)

Age	Region								
	East Midlands	East of England	London	North East	North West	South East	South West	West Midlands	Yorkshire & The Humber
	Mean number of teeth:								
5 year olds	1.2	1.0	2.2	1.5	1.7	1.0	2.1	1.3	2.1
8 year olds	1.3	1.3	2.2	1.7	2.1	1.1	2.1	1.6	2.4

In Wales, there was a lower proportion of five-year-olds with obvious decay experience (d_{3cv}mft) in North Wales (44%) than in South East (56%) and South West Wales (53%).. The average number of primary teeth with obvious decay in five-year-olds was 1.5 teeth in North Wales compared with 2.1 teeth in both South East and South West Wales. There were no statistically significant differences between regions of Wales in the proportion of eight-year-olds with obvious decay experience (d_{3cv}mft) or the average number of teeth with obvious decay for this age group. *Tables 8 and 9*

Table 8 Proportion of children with obvious decay experience (d3cvmft) in primary teeth by region and age (Wales, 2003)

Age	Region		
	North Wales	South East Wales	South West Wales
	Percentage of children:		
5 year olds	44	56	53
8 year olds	66	73	72
Unweighted sample size			
5 year olds	*208*	*210*	*164*
8 year olds	*195*	*200*	*178*

Table 9 Mean number of primary teeth with obvious decay experience (d3cvmft) by region and age (Wales, 2003)

Age	Region		
	North Wales	South East Wales	South West Wales
	Mean number of teeth:		
5 year olds	1.5	2.1	2.1
8 year olds	2.3	2.4	2.7

The condition of individual primary teeth

Table 10 shows obvious decay experience ($d_{3cv}mft$) in the individual primary teeth in the left side of the mouth (figures for the right side were almost identical and so are not shown). Not all primary teeth are equally likely to experience decay, and as Table 10 shows the majority of decay in five-year-olds was confined to the second and first primary molars, together with the central incisors. By the age of eight, the primary molars dominated the picture with more teeth decayed in the lower arch than the upper. There was little evidence of decay of the primary canines.

Table 10

Table 10 Obvious decay experience in individual primary teeth (proportion of children in whom the tooth has $d_{3cv}mft$) by age (United Kingdom, 2003)

Tooth type	Age	
	5	8
	Percentage of children:	
Incisors		
Upper left a	9	*
Upper left b	4	4
Lower left a	1	-
Lower left b	1	1
Canines		
Upper left c	2	3
Lower left c	2	2
Molars		
Upper left d	13	20
Upper left e	17	24
Lower left d	17	28
Lower left e	21	27
Weighted base	*2538*	*2599*

Trends in the condition of the permanent teeth

Among eight-year-olds in 2003, 14% had obvious decay experience ($D_{3c}MFT$) in the permanent dentition, 7% had decay into dentine (D_{3c}) and filled teeth, while 1% had at least one tooth missing due to decay. In twelve-year-olds, 34% had obvious decay experience ($D_{3c}MFT$) in the permanent dentition, 12% had decay into dentine (D_{3c}), 26% had at least one filled tooth and 3% had at least one tooth missing due to decay. Forty nine per cent of 15-year-olds had obvious decay experience ($D_{3c}MFT$) in the permanent dentition, 13% had decay into dentine (D_{3c}), 42% had at least one filled tooth and 6% had at least one tooth missing due to decay.

Table 11

Table 11 Proportion of children with obvious decay experience in permanent teeth by age (United Kingdom, 1983, 1993, 2003)

	Age		
	8	12	15
	Percentage of children:		
Decay into dentine			
1983	19	32	42
1993	12	24	30
2003a[+]	14	29	32
2003b[++]	7	12	13
Filled (otherwise sound)			
1983	25	69	85
1993	8	39	52
2003a[+]	7	25	41
2003b[++]	7	26	42
Missing due to decay			
1983	2	14	24
1993	1	7	7
2003	1	3	6
Obvious decay experience			
1983	38	81	93
1993	19	52	63
2003a[+]	19	43	57
2003b[++]	14	34	49
Filled teeth as a percentage of obvious decay experience			
1983	58	70	74
1993	37	58	68
2003a[+]	30	46	57
2003b[++]	52	69	77

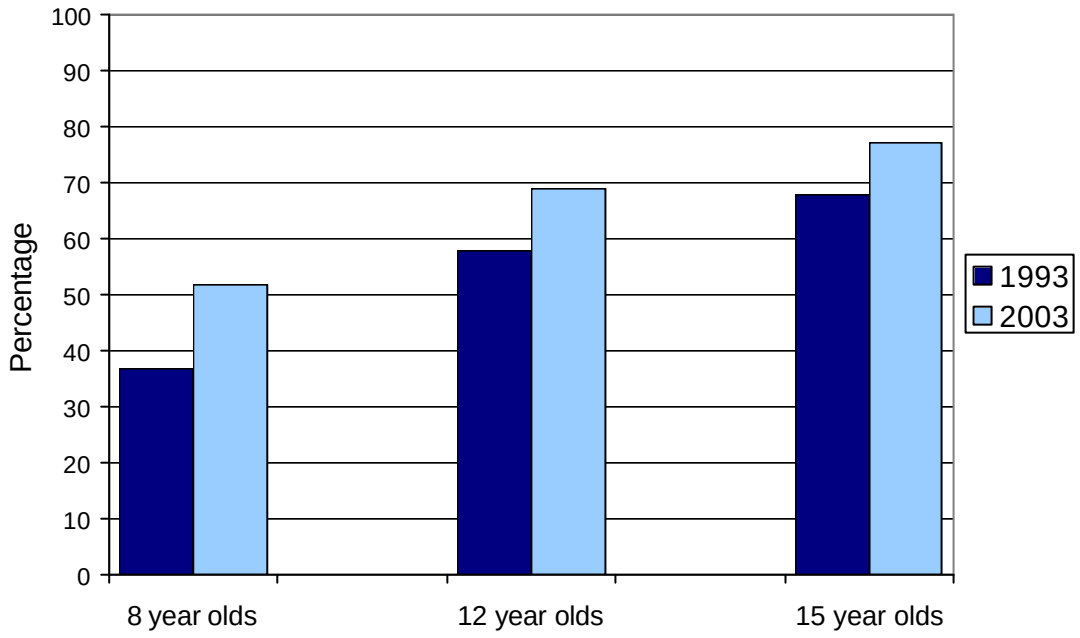
[+] Criteria used for 2003 survey ($D_{3cv}MFT$ includes visual caries)
[++] Criteria used for 1993 survey ($D_{3c}MFT$ excludes visual caries)

The proportion of children with obvious decay experience ($D_{3c}MFT$) in the permanent teeth and the proportion with at least one permanent tooth with decay into dentine (D_{3c}) decreased in all age groups since the previous surveys. The decrease was particularly pronounced in the proportion of 15-year-olds with decay into dentine (D_{3c}) in the permanent teeth 42% in 1983, 30% in 1993 and 13% in 2003. *Table 11*

The proportion of 12 and 15-year-olds with filled permanent teeth decreased since the last survey. The proportion fell by 13 percentage points in 12-year-olds, from 39% in 1993 to 26% in 2003 and by 10 percentage points in 15-year-olds, from 52% in 1993 to 42% in 2003. As well as an overall improvement in levels of decay since the last survey, filled permanent teeth among eight, 12 and 15-year olds represented a higher proportion of the total obvious decay experience ($D_{3c}MFT$) than in 1993 (Figure 3). This indicates an increase in restorative care. There was also a decrease in the proportion of 12-year-olds with permanent teeth missing due to decay, from 7% in 1993 to 3% in 2003.

Table 11, Figure 3

Figure 3 Filled teeth as a percentage of obvious decay experience by age (United Kingdom, 1993, 2003)



The average number of permanent teeth with obvious decay experience ($D_{3c}MFT$) and the average number of permanent teeth with decay into dentine (D_{3c}) decreased in all age groups since the previous surveys. Between the 1993 and 2003 survey the average number of permanent teeth with decay into dentine (D_{3c}) halved in eight-year-olds (to 0.1) and 12-year-olds (to 0.2) and more than halved in 15-year-olds (to 0.2). The average number of permanent teeth with obvious decay experience ($D_{3c}MFT$) fell from 0.4 teeth in 1993 to 0.2 teeth in 2003 in eight-year-olds, from 1.4 teeth in 1993 to 0.8 teeth in 2003 in 12-year-olds and from 2.5 to 1.6 teeth in 15-year-olds. Among 12 and 15-year-olds the average number of filled permanent teeth decreased since 1993: from 0.8 teeth in 1993 to 0.5 teeth in 2003 in 12-year-olds and from 1.7 teeth in 1993 to 1.2 teeth in 2003 in 15-year-olds.

Table 12

Table 12 Mean number of permanent teeth with obvious decay experience by age (United Kingdom, 1983, 1993, 200

	Age		
	8	12	15
	Mean number of teeth:		
Decay into dentine			
1983	0.3	0.6	1.0
1993	0.2	0.4	0.7
2003a[+]	0.2	0.5	0.8
2003b[++]	0.1	0.2	0.2
Filled (otherwise sound)			
1983	0.5	2.1	4.4
1993	0.1	0.8	1.7
2003a[+]	0.1	0.5	1.2
2003b[++]	0.1	0.5	1.2
Missing due to decay			
1983	*	0.3	0.6
1993	*	0.1	0.1
2003	*	*	0.1
Obvious decay experience			
1983	0.8	3.1	5.9
1993	0.4	1.4	2.5
2003a[+]	0.3	1.1	2.0
2003b[++]	0.2	0.8	1.6

[+] Criteria used for 2003 survey (D_{3cv}MFT includes visual caries)
[++] Criteria used for 1993 survey (D_{3c}MFT excludes visual caries)

Estimated averages of the number of decayed, missing and filled permanent teeth for the whole sample could mask important information regarding the nature of decay among those children who had decay experience. Table 13 shows trends between 1993 and 2003 in the mean number of teeth with obvious decay experience among children who had obvious decay. For these children the average number of permanent teeth with obvious decay experience (D_{3c}MFT) and decay into dentine (D_{3c}) decreased in all age groups. The reduction was most pronounced for 15-year-olds: for example the mean number of permanent teeth with decay into dentine (D_{3c}) in 15-year-olds halved, from 1.0 teeth in 1993 to 0.5 teeth in 2003. There was also a reduction in the number of missing teeth among 12-year-olds.

Table 13

Table 13 Mean number of permanent teeth with obvious decay experience in children with obvious decay experience by age (United Kingdom, 1993, 2003)

Tooth condition	Age		
	8	12	15
	Mean number of teeth:		
Decay into dentine			
1993	1	0.8	1.0
2003a[+]	1.2	1.2	1.3
2003b[++]	0.7	0.6	0.5
Filled (otherwise sound)			
1993	0.7	1.6	2.7
2003a[+]	0.5	1.2	2.0
2003b[++]	0.8	1.6	2.5
Missing due to decay			
1993	0.2	0.3	0.2
2003a[+]	0.1	0.1	0.2
2003b[++]	0.1	0.1	0.2
Obvious decay experience			
1993	1.9	2.7	3.9
2003a*	1.8	2.5	3.5
2003b[++]	1.6	2.3	3.2

[+] Criteria used for 2003 survey (d_{3cv}mft includes visual caries)
[++] Criteria used for 1993 survey (d_{3c}mft does not include visual caries)

Table 13 had the following two figures transposed in a previous release:

2003a estimate: revised decay criteria used in the 2003 survey (including visual dentine caries)

2003b estimate: pre-2003 decay criteria (excluding visual dentine caries)

This has been corrected in the table above. ONS apologises for any inconvenience caused.

The condition of the permanent teeth in the United Kingdom 2003

Tables 1.11 and 1.12 show that in the permanent dentition, use of the contemporary 2003 criteria for obvious decay experience ($D_{3cv}MFT$) and decay into dentine (D_{3cv}) increased the prevalence of decay detected among all age groups. When visual criteria were included in the assessment, the proportion of children with obvious decay experience increased from 14% to 19% for eight-year-olds, from 34% to 43% for 12-year-olds and from 49% to 57% for 15-year-olds. Proportions for decay into dentine increased from 7% to 14% in eight-year-olds, from 12% to 29% in 12-year-olds and from 13% to 32% in 15-year-olds. The proportion of filled teeth as a percentage of obvious decay experience fell when visual dentine caries were included: from 52% to 30 % for 8 year olds, from 69% to 46 % for 12 year olds and from 77% to 57% for 15 year olds.

Table 11

Estimates of the average number of teeth affected by decay also increased using the revised 2003 criteria. When using the revised criteria, the average number of teeth with obvious decay experience increased from 0.2 to 0.3 in eight-year-olds, from 0.8 to 1.1 in 12-year-olds and from 1.6 to 2.0 in 15-year-olds. The average number of teeth with decay into dentine doubled (to 0.2) in eight-year-olds, increased from 0.2 to 0.5 in 12-year-olds and increased from 0.2 to 0.8 in 15-year-olds.

Table 12

There were differences in the proportion of children affected by decay in the permanent teeth between countries of the United Kingdom. In all age groups, a lower proportion of children were affected by obvious decay experience ($D_{3cv}MFT$), decay into dentine (D_{3cv}) or fillings in the permanent teeth in England than in Northern Ireland. For example, 55% of 15-year-olds in England had obvious decay experience ($D_{3cv}MFT$) in the permanent teeth, compared with 78% in Northern Ireland. The proportion of eight, 12 and 15-year-olds with obvious decay experience ($D_{3cv}MFT$) was lower in England than in Wales: 17% for eight-year-olds in England compared with 26% in Wales,41% for 12-year olds in England compared with 54% in Wales, 55% of 15-year-olds in England compared with 65% in Wales. The only statistically significant differences in levels of obvious decay experience ($D_{3cv}MFT$) between Wales and Northern Ireland were among 12-year-olds: 54% in Wales compared with 73% in Northern Ireland.

Table 14

In all age groups, the proportion of children with filled permanent teeth was lower in England than in Wales or Northern Ireland, while the proportion with filled permanent teeth in Wales was lower than in Northern Ireland. A similar pattern

was observed among 12 and 15-year-olds for the proportion with at least one permanent tooth missing due to decay.

Table 14

Table 14 Proportion of children with obvious decay experience (D3cvMFT) in permanent teeth by country and age (United Kingdom , 2003)

	Country			
	England	Wales	Northern Ireland	United Kingdom
		Percentage of children:		
Decay into dentine				
8 year olds	13	18	25	14
12 year olds	28	35	44	29
15 year olds	31	35	46	32
Filled (otherwise sound)				
8 year olds	6	10	15	7
12 year olds	22	32	54	25
15 year olds	38	51	66	41
Missing due to decay				
8 year olds	1	1	1	1
12 year olds	2	4	14	3
15 year olds	5	9	17	6
Obvious decay experience				
8 year olds	17	26	34	19
12 year olds	41	54	73	43
15 year olds	55	65	78	57
Unweighted sample size				
8 year olds	1547	573	472	*2599* !
12 year olds	1356	559	462	*2689* !
15 year olds	1116	482	380	*2556* !

! Weighted bases presented for UK

Differences between countries were also evident in the average number of teeth affected by decay. In all age groups, the average number of permanent teeth with obvious decay experience ($D_{3cv}MFT$) was lowest in England, followed by Wales and highest in Northern Ireland. For example, the average number of permanent teeth with obvious decay experience ($D_{3cv}MFT$) for 15-year-olds was 1.8 in England, compared with 2.5 in Wales and 4.4 in Northern Ireland. This pattern was also found among eight-year-olds for the average number of permanent teeth with decay into dentine (D_{3cv}), while in 12 and 15-year-olds the average number of permanent teeth with decay into dentine (D_{3cv}) was higher in Northern Ireland than in England. Among 12 and 15-year-olds, the average number of filled permanent teeth was lower in England than in Wales or Northern Ireland, while the average number of filled permanent teeth in Wales was lower than in Northern Ireland.

Table15

Table 15 Mean number of permanent teeth with obvious decay experience (D3cvMFT) by country and age (United Kingdom , 2003)

	Country			
	England	Wales	Northern Ireland	United Kingdom
			Percentage of children:	
Decay into dentine				
8 year olds	0.2	0.3	0.5	0.2
12 year olds	0.5	0.7	1.1	0.5
15 year olds	0.8	0.8	1.2	0.8
Filled (otherwise sound)				
8 year olds	0.1	0.1	0.3	0.1
12 year olds	0.4	0.6	1.4	0.5
15 year olds	1.0	1.5	2.8	1.2
Missing due to decay				
8 year olds	*	*	*	*
12 year olds	*	0.1	0.3	*
15 year olds	0.1	0.2	0.4	0.1
Obvious decay experience				
8 year olds	0.3	0.5	0.8	0.3
12 year olds	1.0	1.4	2.7	1.1
15 year olds	1.8	2.5	4.4	2.0

Regional differences in permanent decay experience in England and Wales

Tables 1.16 and 1.17 show the condition of the permanent teeth among children within the government office regions of England. Among eight-year-olds, the North West and Yorkshire and The Humber were clearly different from all other regions, having a higher proportion of children with obvious decay experience ($D_{3cv}MFT$) : 27% in both regions. The East of England had a lower proportion (9%) of eight-year-olds with obvious decay experience ($D_{3cv}MFT$) than any other region. In 12-year-olds the highest proportion of children with obvious decay experience ($D_{3cv}MFT$) was found in Yorkshire and The Humber (59%), while the East of England had the lowest proportion (25%). A higher proportion of 15-year-olds had obvious decay experience ($D_{3cv}MFT$) in the East Midlands (64%), the North West (73%) and Yorkshire and The Humber (63%) than in the East of England (42%).

Table 16

Table 16 Proportion of children with obvious decay experience (D3cvMFT) in permanent teeth by region and age (England, 2003)

Age	Region								
	East Midlands	East of England	London	North East	North West	South East	South West	West Midlands	Yorkshire & The Humber
					Percentage of children:				
8 year olds	15	9	15	18	27	15	17	17	27
12 year olds	43	25	44	43	43	41	43	39	59
15 year olds	64	42	50	59	73	52	52	53	63
Weighted base									
8 year olds	*177*	*283*	*232*	*157*	*325*	*376*	*165*	*322*	147
12 year olds	*235*	*269*	*262*	*118*	*264*	*423*	*186*	*379*	*115*
15 year olds	*232*	*290*	*242*	*109*	*182*	*421*	*180*	*373*	*112*

Among eight and 12-year-olds there was a higher average number of permanent teeth with obvious decay experience ($D_{3cv}MFT$) in Yorkshire and The Humber (0.6 in eight-year-olds and 1.5 in 12-year-olds) compared with all other regions except the North West. In 15-year-olds, the highest average number of permanent teeth with obvious decay experience ($D_{3cv}MFT$) were observed in the North West (2.9) and Yorkshire and The Humber (2.8).

Table 17

Table 17 Mean number of permanent teeth with obvious decay experience (D3cvMFT) by region and age (England, 2003)

Age	Region								
	East Midlands	East of England	London	North East	North West	South East	South West	West Midlands	Yorkshire & The Humber
				Mean number of teeth:					
8	0.2	0.1	0.3	0.3	0.5	0.2	0.3	0.3	0.6
12	0.9	0.5	1.1	1	1.2	1.0	0.9	0.9	1.5
15	2.0	1.2	1.4	1.9	2.9	1.6	1.5	1.9	2.8

In Wales, a lower proportion of eight-year-olds in North Wales (19%) had obvious decay experience ($D_{3cv}MFT$) than eight-year-olds in South West Wales (34%). Among 12-year-olds a lower proportion (42%) in North Wales had obvious decay experience ($D_{3cv}MFT$) than in either South East Wales (58%) or South West Wales (56%). There were no statistically significant differences between regions in Wales in the proportion of 15-year-olds with obvious decay experience ($D_{3cv}MFT$).

Table 18

Table 18 Proportion of children with obvious decay experience (D3cvMFT) in permanent teeth by region and age (Wales, 2003)

Age	North Wales	South East Wales	South West Wales
8 year olds	19	24	34
12 year olds	42	58	56
15 year olds	69	65	61
Unweighted sample size			
8 year olds	*195*	*200*	*178*
12 year olds	*175*	*241*	*143*
15 year olds	*166*	*202*	*114*

Among eight–year-olds in Wales there was a higher average number of permanent teeth with obvious decay experience ($D_{3cv}MFT$) in South West Wales (0.6) compared with North (0.4) and South East (0.4) Wales. There were no statistically significant differences between the regions in Wales in the average number of teeth with obvious decay experience ($D_{3cv}MFT$) among 12 and 15-year-olds.

Table 19

Table 19 Mean number of permanent teeth with obvious decay experience (D3cvMFT) by region and age (Wales, 2003)

Age	North Wales	South East Wales	South West Wales
8 year olds	0.4	0.4	0.6
12 year olds	1.2	1.5	1.4
15 year olds	2.4	2.5	2.4

The condition of individual permanent teeth

Table 20 shows obvious decay experience ($d_{3cv}mft$) in the individual permanent teeth in the left side of the mouth (figures for the right side were almost identical and so are not shown). In 12-year-olds the majority of obvious decay experience ($D_{3cv}MFT$) is seen in the first permanent molars. By the age of 15 years although this dominance continues, there is more prominence of decay in the lower first molar and increasing involvement of the second molar and premolar teeth.

Table 20

Table 20 Obvious decay experience in individual permanent teeth (proportion of children in whom the tooth has D3cvMFT) by age (United Kingdom, 2003)

Tooth type	Age		
	8	12	15
	Percentage of children:		
Incisors			
Upper left 1	*	2	4
Upper left 2	-	2	4
Lower left 1	-	*	*
Lower left 2	-	*	*
Canines			
Upper left 3	*	-	*
Lower left 3	-	-	*
Premolars			
Upper left 4	*	1	3
Upper left 5	-	1	5
Lower left 4	*	*	*
Lower left 5	*	*	4
Molars			
Upper left 6	7	20	26
Upper left 7	-	2	10
Lower left 6	8	22	30
Lower left 7	-	3	15

Since 1983 the proportion of children with one or more first molars with obvious decay experience has fallen for eight, 12 and 15-year -olds when the $D_{3c}MFT$ measure is used. The proportion of children with one or more second molars with obvious decay experience in 2003 was similar to the 1993 survey. Among all age groups, obvious decay experience ($D_{3cv}MFT$) in the first permanent molars is lowest in England, intermediate in Wales and highest in Northern Ireland.

Tables 1.21 and 1.22

Table 21 Proportion of children with one or more first and second molars with obvious decay experience by age (United Kingdom, 1983, 1993, 2003)

Age	Percentage of children with one or more first permanent molars with experience of decay				Percentage of children with one or more second permanent molars with experience of decay			
	1983	1993	2003a[+]	2003b[++]	1993	1993	2003a[+]	2003b[++]
				Percentage of children				
8 year olds	37	18	18	13	-	-	-	-
12 year olds	79	50	41	32	17	6	7	5
15 year olds	91	56	51	43	64	30	27	20

[+] Criteria used for 2003 survey ($D_{3cv}MFT$ includes visual caries)
[++] Criteria used for 1993 survey ($D_{3c}MFT$ excludes visual caries)

Table 22 Proportion of children with one or more first permanent molars with obvious decay experience (D3cvMFT) by country and age (United Kingdom, 2003)

Age	England	Wales	Northern Ireland	United Kingdom
		Percentage of children:		
8 year olds	17	26	34	18
12 year olds	38	50	71	41
15 year olds	47	60	75	51
Unweighted sample size				
8 year olds	*1547*	*573*	*472*	*2599* !
12 year olds	*1356*	*559*	*462*	*2689* !
15 year olds	*1116*	*482*	*380*	*2556* !

! Weighted bases presented for UK

Prevalence of Sealants

Sealants are applied to the surfaces of the teeth to arrest or prevent decay. Among all age groups, the proportion of children with sealed permanent teeth was higher in England than in Wales or Northern Ireland, with the proportion in Wales being lower than in Northern Ireland. In 12-year-olds, the mean number of permanent teeth with obvious decay experience is lower in children with sealants than those who do not have sealants.

Tables 1.23 and 1.24

Table 23 Proportion of children with sealants on permanent teeth by age and country (United Kindom, 2003)

Age	Country			
	England	Wales	Northern Ireland	United Kingdom
			Percentage of children:	
8 year olds	11	17	32	13
12 year olds	22	25	40	25
15 year olds	28	31	49	30
Unweighted sample size				
8 year olds	*1547*	*573*	*472*	*2599*[!]
12 year olds	*1356*	*559*	*462*	*2689*[!]
15 year olds	*1116*	*482*	*380*	*2556*[!]

! Weighted bases presented for UK

Table 24 Mean number of permanent teeth with decay experience for children with and without fissure sealants by age (United Kingdom, 2003)

Age	Children with sealants	Children without sealants
	Mean number of teeth with decay experience	
8 year olds	0.4	0.3
12 year olds	0.9	1.4
15 year olds	1.9	2.1

The teeth that are sealed in the largest proportion of children (14% at ages 12 and 15 years) are the first permanent molars. Comparatively few other teeth are sealed among 12 and 15-year-olds, with second molars at age 15 years being the next most common (6%).

Table 25

Table 25 Sealants on individual permanent teeth (proportion of children in whom the tooth is sealed) by age (United Kingdom, 2003)

Tooth type	Age		
	8	12	15
	Percentage of children:		
Premolars			
Upper left 4	*	1	3
Upper left 5	-	1	3
Lower left 4	-	1	2
Lower left 5	-	1	2
Molars			
Upper left 6	8	14	14
Upper left 7	-	1	6
Lower left 6	8	14	14
Lower left 7	-	1	6
Weighted base	*2599*	*2689*	*2556*

For eight, 12 and 15-year-olds the trends in sealant provision across the UK indicate that there was an increase between 1983 and 1993, but that sealant use has declined over the last decade. This trend is clear in England for all age groups, in Wales and Northern Ireland where decay levels are higher sealant use in 15-years-olds has not declined over the last 10 years.

Table 26

Table 26 Proportion of children with sealants on permanent teeth by age and country (United Kingdom 1983,1993, 2003)

Age	England			Wales			Northern Ireland			United Kingdom		
	1983	1993	2003	1983	1993	2003	1983	1993	2003	1983	1993	2003
	Percentage of children:											
8 year olds	5	24	11	9	32	18	3	49	32	6	27	13
12 year olds	3	35	22	4	35	25	1	57	40	4	38	25
15 year olds	2	34	28	2	31	31	-	47	50	2	36	30

Appendix A: 2003 and pre-2003 criteria

2003 Criteria

Decay into dentine (D_{3cv})

All teeth with cavitated or visual dentine caries present and teeth that had restorations with visual and cavitated dentine caries**. Excludes teeth with enamel caries present.** Permanent teeth with decay into dentine are assumed to be those that are currently in need of operative treatment. (In primary teeth the decision as to whether to fill, review or extract such teeth would be taken in the knowledge that they will exfoliate naturally at some point in the future.)

Filled decay, otherwise sound

Teeth with amalgam, or other, fillings that had no cavitated or visual dentine caries present.

Missing due to decay

Teeth that had been extracted due to caries.

Obvious decay experience ($D_{3cv}MFT$)

All teeth with cavitated or visual dentine caries, restorations with cavitated or visual dentine caries, teeth with filled decay (otherwise sound) and teeth extracted due to caries. **Excludes teeth with enamel caries present**. The term obvious decay experience relates to teeth with dentinal cavities, missing teeth and filled teeth in the DMFT dental decay index.

Pre-2003 criteria

Decay into dentine (D_{3c})

All teeth with cavities into dentine and teeth that had restorations with cavitated dentine caries. **Excludes teeth with visual dentine caries or enamel caries present**. Permanent teeth with cavities into dentine are assumed to be those that are currently in need of operative treatment. (In primary teeth the decision as to whether to fill, review or extract such teeth would be taken in the knowledge that they will exfoliate naturally at some point in the future.)

Filled decay, otherwise sound

Teeth with amalgam, or other, fillings that had no cavitated dentine caries present.

Missing due to decay

Teeth that had been extracted due to caries.

Obvious decay experience (D_cMFT)

All teeth with cavitated dentine caries, restorations with cavitated dentine caries, teeth with filled decay (otherwise sound) and teeth extracted due to caries. **Excludes teeth with visual dentine caries or enamel caries present**. The term obvious decay experience relates to teeth with dentinal cavities, missing teeth and filled teeth in the DMFT dental decay index.

Appendix B The accuracy of survey results

Sources of error

Like all estimates based on samples, the results of the 2003 Children's Dental Health Survey are subject to variations and errors. The total error associated with any survey estimate is the difference between the estimate derived from the data collected and the true value for the population. The total error can be divided into two main types: random error and systematic error.

Random error

Random error occurs because survey estimates are based not on the whole population but only on a sample of it. There may be chance variations between such a sample and the whole population. If a number of repeats of the same survey were carried out, this error could be expected to average to zero. The size of the sample and the sample design influence the magnitude of these variations due to sampling.

Systematic error

Systematic error is often referred to as bias. Bias can arise because the sampling frame is incomplete, because of variation in the way the dental examination was carried out, or because non-respondents to the survey have different characteristics to respondents. When designing this survey considerable effort was made to minimise systematic error; this included training dental examiners and nurses to reduce variability between them. Nonetheless, some systematic error is likely to have remained, particularly from potential non-response bias, and the data were weighted to reduce any potential non-response bias.

Standard errors and design factors

Statistical theory enables estimates to be made of how close the survey results are to the true population values for each characteristic. A statistical measure of the variation, the standard error, can be estimated from the value obtained for the sample, and provides a measure of the statistical precision of the survey estimate. This allows for a confidence interval to be calculated around the sample estimate which gives an indication of the range in which the true population value is likely to fall. The confidence interval generally used in survey research is the 95% confidence interval; it comprises of approximately two (1.96) standard errors associated with the sample design; they cannot take account of potential errors such as non-response bias or random error due to the misunderstanding of questions.

For results based on simple random samples, without clustering or stratification, the estimation of standard errors is straightforward. However, the sample design of the Children's Dental Health Survey was not a simple random sample and

therefore a more complex design calculation is needed which takes account of the stratification and clustering of the sample design is necessary. Stratification tends to reduce the standard error, while clustering tends to increase it.

In a complex sample design, the size of the standard error depends on how the characteristic of interest is spread within and between the primary sampling units, and this is reflected in the way the data are grouped in order to calculate the standard error.

Tables B.1 to B.16 show the standard error and 95% confidence intervals for survey estimates (calculated using STATA, a statistical analysis software package). The tables do not cover all the topics discussed in the report but show a selection of estimates based on information from both the questionnaire and the dental examination. The tables also show the design factor, or deft; the ratio of the complex standard error to the standard error that would have resulted had the survey design been a simple random sample of the same size. This is often used to give a broad indication of the degree of clustering. The size of the design factor varies between survey variables reflecting the degree to which a characteristic is clustered within PSUs, or is distributed between strata. For a single variable the size of the factor also varies according to the size of the subgroup on which the estimate is based, and on the distribution of the subgroup between PSUs and strata. Design factors below 1.0 show that the complex sample design improved on the estimate that would have been expected from a simple random sample, probably due to the benefits of stratification; design factors gained from a simple random sample, due to the effects of clustering.

Table B.1 Standard errors and 95% confidence intervals for proportion of children with obvious decay experience in primary teeth (United Kingdom 2003)

		Percentage (p)	Unweighted sample	Standard error of p	95% confidence intervals	Deft
2003a criteria ($d_{3cv}mft$)						
Decay into dentine						
	5 year olds	40	2854	1.7	37-43	1.8
	8 year olds	51	2790	1.8	47-54	1.9
Filled teeth:						
	5 year olds	11	2854	0.8	9-12	1.5
	8 year olds	24	2790	1.0	22-26	1.3
Obvious decay experience						
	5 year olds	43	2854	1.6	40-46	1.8
	8 year olds	57	2790	1.6	54-60	1.8
2003b criteria ($d_{3c}mft$)						
Decay into dentine						
	5 year olds	40	2854	1.7	37-43	1.9
	8 year olds	50	2790	1.7	46-53	1.8
Filled teeth:						
	5 year olds	12	2854	0.9	10-14	1.4
	8 year olds	26	2790	1.0	24-28	1.3
Obvious decay experience						
	5 year olds	43	2854	1.6	40-46	1.8
	8 year olds	57	2790	1.7	54-60	1.8

Table B.2 Standard errors and 95% confidence intervals for mean number of primary teeth with obvious decay (United Kingdom 2003)

	Mean (p)	Unweighted sample	Standard error of p	95% confidence intervals	Deft
2003a criteria ($d_{3cv}mft$)					
Decay into dentine					
5 year olds	1.4	2854	0.10	1.2 - 1.6	2.27
8 year olds	1.4	2790	0.07	1.3 - 1.5	1.99
Filled teeth:					
5 year olds	0.2	2854	0.02	0.2 - 0.2	1.24
8 year olds	0.4	2790	0.03	0.3 - 0.5	1.34
- experience					
5 year olds	1.6	2854	0.10	1.4 - 1.8	2.13
8 year olds	1.8	2790	0.71	0.4 - 3.2	1.74
2003b criteria ($d_{3c}mft$)					
Decay into dentine					
5 year olds	1.4	2854	0.10	1.2 - 1.6	2.22
8 year olds	1.3	2790	0.07	1.2 - 1.4	1.95
Filled teeth:					
5 year olds	0.2	2854	0.02	0.1 - 0.2	1.24
8 year olds	0.5	2790	0.03	0.4 - 0.6	1.35
- experience					
5 year olds	1.6	2854	0.11	1.4 - 1.8	2.13
8 year olds	1.8	2790	0.07	1.7 - 1.9	1.74

Table B.3 Standard errors and 95% confidence intervals for proportion of children with obvious decay experience in permanent teeth (United Kingdom 2003)

	Percentage (p)	Unweighted sample	Standard error of p	95% confidence intervals	Deft
2003a criteria ($d_{3cv}mft$)					
Decay into dentine					
8 year olds	14	*2790*	*0.8*	12-16	1.4
12 year olds	29	*2595*	*1.5*	26-32	1.7
15 year olds	32	*2142*	*1.8*	28-36	1.8
Filled otherwise sound					
8 year olds	7	*2790*	*0.6*	6-8	1.3
12 year olds	25	*2595*	*1.1*	23-27	1.3
15 year olds	41		*1.8*	37-44	1.7
Missing due to decay					
8 year olds	1	*2790*	*0.2*	1-1	1.0
12 year olds	3	*2595*	*0.5*	2-4	1.5
15 year olds	6	*2142*	*0.6*	5-7	1.2
Obvious decay experience					
8 year olds	19	*2790*	*1.0*	17-21	1.4
12 year olds	43	*2595*	*1.5*	40-46	1.6
15 year olds	57	*2142*	*1.8*	53-60	1.7
2003b criteria ($d_{3c}mft$)					
Decay into dentine					
5 year olds	7	2790	0.6		1.8
8 year olds	13	2595	1.1		1.6
12 year olds	13	2142	0.9		1.3
Filled otherwise sound					
5 year olds	7	2790	0.7		1.4
8 year olds	30	2595	1.4		1.6
12 year olds	43	2142	1.8		1.7
Missing due to decay					
5 year olds	1	2790	0.2		1.0
8 year olds	3	2595	0.5		1.4
12 year olds	6	2142	0.6		1.2
Obvious decay experience					
5 year olds	13	2790	0.9		1.3
8 year olds	38	2595	1.7		1.8
12 year olds	50	2142	2.0		1.9

Table B.4 Standard errors and 95% confidence intervals for mean number of permanent teeth with obvious decay experience (United Kingdom 2003)

Characteristic	Percentage (p)	Unweighted sample	Standard error of p	95% confidence intervals	Deft
2003a criteria ($d_{3cv}mft$)					
Decay into dentine					
8 year olds	0.2	2790	*0.02*	0.2 - 0.2	1.4
12 year olds	0.5	2595	*0.04*	0.4 - 0.6	1.6
15 year olds	0.8	2142	*0.06*	0.7 -0.9	1.8
Filled otherwise sound					
8 year olds	0.1	2790	*0.01*	0.1 - 0.1	1.2
12 year olds	0.5	2595	*0.03*	0.4 - 0.6	1.3
15 year olds	1.2	2142	*0.10*	1.0 - 1.4	1.8
Missing due to decay					
8 year olds	*	2790	*	*	1.1
12 year olds	*	2595	*	*	1.3
15 year olds	0.1	2142	*0.01*	0.0 - 0.2	1.2
Obvious decay experience					
8 year olds	0.3	2790	*0.02*	0.3 - 0.3	1.3
12 year olds	0.1	2595	*0.05*	1.0 - 1.2	1.5
15 year olds	2.0	2142	*0.10*	1.8 - 2.2	1.8
2003b criteria ($d_{3c}mft$)					
Decay into dentine					
8 year olds	0.1	2790	0.01	0.08 - 0.12	1.23
12 year olds	0.2	2595	0.02	0.16 - 0.24	1.27
15 year olds	0.2	2142	0.03	0.14 - 0.26	1.35
Filled otherwise sound					
8 year olds	0.1	2790	0.01	0.08 - 0.12	1.18
12 year olds	0.5	2595	0.03	0.44 - 0.56	1.45
15 year olds	1.2	2142	0.08	1.04 - 1.36	1.82
Missing due to decay					
8 year olds	*	2790	*	*	1.14
12 year olds	*	2595	*	*	1.31
15 year olds	0.1	2142	0.01	0.08 - 0.12	1.24
Obvious decay experience					
8 year olds	0.2	2790	0.01	0.18 - 0.22	1.23
12 year olds	0.8	2595	0.04	0.72 - 0.88	1.41
15 year olds	1.6	2142	0.09	1.42 - 1.78	1.70

Table B.5 Standard errors and 95% confidence intervals for proportion of children with obvious decay experience in primary teeth (England 2003)

Characteristic	Percentage (p)	Unweighted sample	Standard error of p	95% confidence intervals	Deft
2003a criteria ($d_{scv}mft$)					
Decay into dentine					
5 year olds	38	1620	2.0	34-42	1.6
8 year olds	48	1547	2.0	44-52	1.6
Filled teeth:					
5 year olds	10	1620	1.0	8-12	1.4
8 year olds	22	1547	1.1	20-24	1.1
experience					
5 year olds	41	1620	1.9	37-45	1.6
8 year olds	54	1547	1.9	50-58	1.5

Table B.6 Standard errors and 95% confidence intervals for mean number of primary teeth with obvious decay experience (d3cvmft) (England 2003)

Characteristic	Percentage (p)	Unweighted sample	Standard error of p	95% confidence intervals	Deft
2003a criteria (d_{3cv}mft)					
Decay into dentine					
5 year olds	1.3	1620	0.12	1.1 - 1.5	2
8 year olds	1.3	1547	0.08	1.1 - 1.5	1.7
Filled teeth:					
5 year olds	0.2	1620	0.02	0.2 - 0.2	1.1
8 year olds	0.4	1547	0.03	0.3 - 0.5	1.1
experience					
5 year olds	1.5	1620	0.12	1.3 - 1.7	1.8
8 year olds	1.7	1547	0.08	1.5 - 1.9	1.4

Characteristic	Percentage (p)	Unweighted sample	Standard error of p	95% confidence intervals	Deft
2003a criteria (d_{3cv},mft)					
Decay into dentine					
5 year olds	48	582	2.2	44-52	1
8 year olds	64	573	2.8	58-69	1.4
Filled teeth:					
5 year olds	15	582	1.6	12-18	1
8 year olds	32	573	1.8	28-36	0.9
experience					
5 year olds	52	582	2.3	48-56	1.1
8 year olds	71	573	2.7	66-76	1.4

Table B.7 Standard errors and 95% confidence intervals for proportion of children with obvious decay experience in primary teeth (Wales 2003)

Table B.8 Standard errors and 95% confidence intervals for mean number of primary teeth with obvious decay experience (d3cvmft) (Wales 2003)

Characteristic	Mean (p)	Unweighted sample	Standard error of p	95% confidence intervals	Deft
2003a criteria (d_{3cv}mft)					
Decay into dentine					
5 year olds	1.6	582	0.10	1.4 - 1.8	1
8 year olds	1.8	573	0.10	1.6 - 2.0	1.2
Filled teeth:					
5 year olds	0.3	582	0.06	0.2 - 0.4	1.3
8 year olds	0.6	573	0.05	0.5 - 0.7	1
experience					
5 year olds	1.9	582	0.07	1.8 - 2.0	0.6
8 year olds	2.5	573	0.11	2.3 - 2.7	1.1

Table B.9 Standard errors and 95% confidence intervals for proportion of children with obvious decay experience in primary teeth (Northern Ireland 2003)

Characteristic	Percentage (p)	Unweighted sample	Standard error of p	95% confidence intervals	Deft
2003a criteria ($d_{s_{cv}}mft$)					
Decay into dentine					
5 year olds	57	456	3.1	51-63	1.3
8 year olds	70	472	2.4	65-75	1.2
Filled teeth:					
5 year olds	19	456	2.3	15-24	1.3
8 year olds	34	472	2.2	30-38	1
- experience					
5 year olds	61	456	2.8	56-66	1.2
8 year olds	76	472	2.2	72-80	1.1

Table B.10 Standard errors and 95% confidence intervals for mean number of primary teeth with obvious decay experience (d3cvmft) (Northern Ireland 2003)

Characteristic	Percentage (p)	Unweighted sample	Standard error of p	95% confidence intervals	Deft
2003a criteria (d_{3cv}mft)					
Decay into dentine					
5 year olds	2.2	456	0.16	1.9 - 2.5	1.2
8 year olds	2.1	472	0.11	1.9 - 2.3	1.2
Filled teeth:					
5 year olds	0.3	456	0.04	0.2 - 0.4	1
8 year olds	0.7	472	0.05	0.6 - 0.8	1
experience					
5 year olds	2.5	456	0.18	2.2 - 2.8	1.2
8 year olds	2.8	472	0.12	2.6 - 3.0	1.1

Table B.11 Standard errors and 95% confidence intervals for proportion of children with obvious decay experience (D3cvMFT) in the permanent teeth (England 2003)

Characteristic	Percentage (p)	Unweighted sample	Standard error of p	95% confidence intervals	Deft
2003a criteria (d_{3cv}mft)					
Decay into dentine					
8 year olds	13	*1547*	*1.0*	11-15	1.2
12 year olds	28	*1356*	*1.6*	25-31	1.4
15 year olds	31	*1116*	*2.0*	27-35	1.4
Filled otherwise sound					
8 year olds	6	*1547*	*0.1*	6-6	1.1
12 year olds	22	*1356*	*1.1*	20-24	1
15 year olds	38	*1116*	*2.1*	34-42	1.4
Missing due to decay					
8 year olds	1	*1547*	*	1-1	0.8
12 year olds	2	*1356*	*0.1*	2-2	1.4
15 year olds	5	*1116*	*0.1*	5-5	1.1
Obvious decay experience					
8 year olds	17	*1547*	*1.1*	15-19	1.2
12 year olds	41	*1356*	*1.7*	38-44	1.2
15 year olds	55	*1116*	*2.0*	51-59	1.4

Table B.12 Standard errors and 95% confidence intervals for mean number of permanent teeth with obvious decay experience (D3cvMFT) (England 2003)

	Percentage (p)	Unweighted sample	Standard error of p	95% confidence intervals	Deft
2003a criteria (d_{3cv}mft)					
Decay into dentine					
8 year olds	0.2	1547	*0.02*	0.2 - 0.2	1.2
12 year olds	0.5	1356	*0.04*	0.4 - 0.6	1.4
15 year olds	0.8	1116	*0.07*	0.7 - 0.9	1.5
Filled otherwise sound					
8 year olds	0.1	1547	*0.01*	0.1 - 0.1	1
12 year olds	0.4	1356	*0.03*	0.3 - 0.5	1.2
15 year olds	0.1	1116	*0.09*	0 - 0.3	1.7
Missing due to decay					
8 year olds *		1547	*	*	1
12 year olds *		1356	*	*	1.2
15 year olds	0.1	1116	*0.01*	0.1 - 0.1	1.1
Obvious decay experience					
8 year olds	0.3	1547	*0.02*	0.3 - 0.3	1.1
12 year olds	1.0	1356	*0.05*	0.9 - 1.1	1.3
15 year olds	1.8	1116	*0.11*	1.6 - 2.0	1.5

Table B.13 Standard errors and 95% confidence intervals for proportion of children with obvious decay experience (D3cvMFT) in the permanent teeth (Wales 2003)

Characteristic	Percentage (p)	Unweighted sample	Standard error of p	95% confidence intervals	Deft
2003a criteria (d_{3cv}mft)					
Decay into dentine					
8 year olds	18	*573*	*3.3*	12-24	2.1
12 year olds	35	*559*	*3.6*	28-42	1.4
15 year olds	35	*482*	*6.0*	23-47	2.7
Filled otherwise sound					
8 year olds	10	*573*	*1.4*	7-13	1.1
12 year olds	32	*559*	*2.0*	28-36	1
15 year olds	51	*482*	*4.1*	43-59	1.8
Missing due to decay					
8 year olds	1	*573*	*	1-1	1.2
12 year olds	4	*559*	*0.1*	4-4	0.8
15 year olds	9	*482*	*1.6*	6-12	1.3
Obvious decay experience					
8 year olds	26	*573*	*3.5*	19-33	1.9
12 year olds	54	*559*	*2.7*	49-59	1.3
15 year olds	65	*482*	*5.7*	54-76	2.6

Table B.14 Standard errors and 95% confidence intervals for mean number of permanent teeth with obvious decay experience (D3cvMFT) (Wales 2003)

Characteristic	Percentage (p)	Unweighted sample size	Standard error of p	95% confidence intervals	Deft
2003a criteria (d_{3cv}mft)					
Decay into dentine					
8 year olds	0.3	573	*0.05*	0.2 - 0.4	1.7
12 year olds	0.7	559	*0.08*	0.5 - 0.9	1.6
15 year olds	0.8	482	*0.15*	0.5 - 1.1	2.2
Filled otherwise sound					
8 year olds	0.1	573	*0.02*	0.1 - 0.1	1.2
12 year olds	0.6	559	*0.06*	0.5 - 0.7	1.2
15 year olds	1.5	482	*0.21*	1.1 - 1.9	2.1
Missing due to decay					
8 year olds *		573	*	*	1.4
12 year olds	0.1	559	*0.01*	0.1 - 0.1	1
15 year olds	0.2	482	*0.04*	0.1 - 0.3	1.6
Obvious decay experience					
8 year olds	0.5	573	*0.07*	0.4 - 0.6	1.8
12 year olds	1.4	559	*0.13*	1.2 - 1.6	1.8
15 year olds	2.5	482	*0.37*	1.8 - 3.2	2.8

Table B.15 Standard errors and 95% confidence intervals for proportion of children with obvious decay experience (D3cvMFT) in the permanent teeth (Northern Ireland 2003)

Characteristic	Percentage (p)	Unweighted sample	Standard error of p	95% confidence intervals	Deft
2003a criteria (d_{3cv}mft)					
Decay into dentine					
8 year olds	25	*472*	*2.3*	20-29	1.2
12 year olds	44	*462*	*3.6*	37-51	1.6
15 year olds	46	*380*	*4.0*	38-54	1.6
Filled otherwise sound					
8 year olds	15	*472*	*1.9*	11-19	1.2
12 year olds	54	*462*	*4.0*	46-62	1.7
15 year olds	66	*380*	*3.0*	60-72	1.3
Missing due to decay					
8 year olds	1	*472*	*	1-1	1
12 year olds	14	*462*	*1.8*	10-18	1.2
15 year olds	17	*380*	*2.6*	12-22	1.3
Obvious decay experience					
8 year olds	34	*472*	*2.3*	28-39	1
12 year olds	73	*462*	*4.7*	64-82	2.3
15 year olds	78	*380*	*3.2*	72-84	1.5

Table B.16 Standard errors and 95% confidence intervals for mean number of permanent teeth with obvious decay experience (D3cvMFT) (Northern Ireland 2003)

Characteristic	Percentage (p)	Unweighted sample	Standard error of p	95% confidence intervals	Deft
2003a criteria (d_{3cv}mft)					
Decay into dentine					
8 year olds	0.5	472	*0.05*	0.4 - 0.6	1.2
12 year olds	1.1	462	*0.14*	0.9 - 1.4	1.8
15 year olds	1.2	380	*0.18*	0.8- 1.6	1.7
Filled otherwise sound					
8 year olds	0.3	472	*0.04*	0.2 - 0.4	1.2
12 year olds	1.4	462	*0.13*	1.2 - 1.6	1.6
15 year olds	2.8	380	*0.25*	2.3 - 3.3	1.6
Missing due to decay					
8 year olds	*	472	*	*	1
12 year olds	0.3	462	*0.06*	0.2 - 0.4	1.5
15 year olds	0.4	380	*0.08*	0.2 - 0.6	1.5
Obvious decay experience					
8 year olds	0.8	472	*0.06*	0.7 - 0.9	1.1
12 year olds	2.7	462	*0.26*	2.2 - 3.2	2
15 year olds	4.4	380	*0.38*	3.7 - 5.2	1.8