national STATISTICS

Impact of oral health

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 5, 8, 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

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The examinations took place in schools. Local Education Authorities, headteachers and school staff gave their help and co-operation 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. Deprived schools were also oversampled in relation to non-deprived schools to provide estimates for school deprivation status groups. The data needed to be reweighted in order to produce representative figures for the UK as a whole. Details of the weighting procedure are provided in the CDH technical report.

All estimates presented in this report are weighted. 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.

Summary

The 2003 Children's Dental Health asked parents to consider whether their children had experienced any problems in the previous 12 months as a result of the condition of their teeth and gums. At least one problem was reported by the parents of 22% of five-year-olds, 26% of eight-year-olds, 34% of 12 year olds and 28% of 15 year olds. In most cases children were reported as having been affected by only one problem.

Children's usual dental attendance pattern was related to their reported experience of oral problems. Among all age groups, children who attended the dentist regularly were less likely to be reported as having problems due to their oral condition than those who only visited the dentist when having trouble with their teeth. For instance, at least one problem was reported by parents of 25% of 15 year olds who were regular attenders compared to 39% for children who attended only when having trouble with their teeth.

The types of problems assessed included things like pain, problems chewing or talking, feeling self-conscious or embarrassed, becoming less cheerful or irritable. The most common problem reported was pain, which was reported most often among 12 year olds. Experience of pain on occasion or more often was reported by the parents of 16% of five-year-olds, 20% of eight-year-olds, 26% of 12 year olds and 20% of 15 year olds.

Among all age groups, children described as only attending a dentist when they have trouble with their teeth were more likely to be reported as having experienced oral pain. For instance, 31% of eight year olds who only visited the dentist when having trouble were reported to have experienced pain compared with 18% of occasional and 16% of regular attenders.

Experience of problems was associated with decay experience and periodontal health. Children with obvious decay experience in primary teeth were more likely to be reported to have had at least one oral problem and had a higher average number of problems than those with no obvious decay. For instance 32% of 5 year olds with obvious decay had experienced at least one problem (average of 0.6 problems) compared with 14% of those with no obvious decay (average of 0.2 problems). A similar finding was observed for permanent teeth among eight and 12 year olds.

Among 12 and 15 year olds a larger proportion of children with unhealthy gums (38% and 32% respectively) were reported to have experienced a problem compared children with healthy gums (25% and 24% respectively).

Introduction

The way in which children are affected by their oral condition is as important as the amount or extent of disease they have experienced. A measure to assess the impact of oral condition was introduced into the 1998 Survey of Adults Dental Health in the United Kingdom[1] and it was considered to be important to assess this in children in 2003. The number of questionnaire items that could be devoted to this was a consideration as unlike in the survey of adults, the questionnaire was self-completed and had to be kept to an acceptable length. Also, at the time of the survey no validated or accepted measures of impact in children had been developed. The 1998 adult survey used a framework developed by Slade and Spencer[2], based upon Locker's[3] adaptation of the of the World Health Organisation's classification of impairments, disabilities and handicaps[4]. The children's dental health survey questionnaire was designed for completion by the parents or guardians of those who took part, although older participants may have filled the questionnaire in themselves. Therefore it was unnecessary to try to frame questions which could be answered by both very young children and by teenagers. It was decided to develop a "generic" type of impact measure in which the questions were framed to directly reflect the impact dimensions specified in the 1998 survey of adults. The questions dealt with each of the issues identified in the adult survey plus an item on general health in terms of the frequency that they were experienced over the 12 months preceding the survey.

The impact questions were developed by the consortium undertaking the survey then tested by the Qualitative Methods Applied to Surveys (QMAS) Unit at ONS. The testing involved an expert review of the questions by a survey methodologist and cognitive testing. Cognitive testing explores the mental process by which respondents reach an answer to a question and aids the development of a questionnaire by suggesting unambiguous question-wording, layout and routing that respondents understand in the way the researcher intends. The final list of 8 questions developed from this cognitive testing procedure is shown in Figure 1.

The overwhelming majority of the questionnaires were completed by the parents of the participants (91%) with help from the participant in a further 9% of cases. No more than 1% of respondents felt they were unable to answer a question and ticked the "Don't Know" option.

Figure 1 The Impact Questions

Problems with teeth, gums or mouth can affect children in different ways.

These questions ask about how your child may have been affected by ANY problems with their teeth, gums or mouth whether or not your child has seen a dentist about them.

For each statement, ✓ how often, if at all, your child has been affected in that way in the last 12 months.

In the last 12 months...	Not at all	Rarely	Occasionally	Fairly often	Very often	Don't know
... has your child had toothache or a sore mouth (include painful mouth ulcers or mouth infections)?	1	2	3	4	5	6
...has your child had any difficulties using their teeth, gums or mouth such as problems chewing or talking?	1	2	3	4	5	6
In the last 12 months has anything to do with your child's teeth, gums or mouth...						
...made your child embarrassed, self-conscious or worried?	1	2	3	4	5	6
…affected your child's activities, such as causing them to stop eating certain foods or playing a musical instrument?	1	2	3	4	5	6
…affected your child's emotions such as making them less cheerful or more irritable?	1	2	3	4	5	6
…affected your child's social life, such as stopping them playing or speaking with friends?	1	2	3	4	5	6
In the last 12 months...						
...has your child's general health been affected by problems with his/her teeth, gums or mouth?	1	2	3	4	5	6
…was your child's life, as a whole, made significantly worse because of problems with his/her teeth, gums or mouth?	1	2	3	4	5	6

Impact of Oral Health

The parents of most of the children in all age groups did not think their children had been affected by their oral condition in the preceding year. Some form of impact was reported by the parents of 22% of five-year-olds, 26% of eight-year-olds, 34% of 12-year-olds and 28% of 15-year-olds. The majority of those whose parents or guardians thought they had been affected in some way by their oral condition were only affected by one problem; 13% of five-year-olds 16% of eight-year-olds, 22% of 12-year-olds and 17% of 15-year-olds. Multiple types of problem were reported for 9% of five-year-olds 10% of eight-year-olds, 12% of 12-year-olds and 12% of 15-year-olds. *Table 1*

Table 1 Proportion of children with number of reported oral condition problems experienced at least *occasionally* in the preceding 12 months by age (United Kingdom, 2003)

Number of problems reported	Age			
	5	8	12	15
		Percentage of children:		
None	78	74	66	72
One	13	16	22	17
Two	4	6	5	6
Three	3	2	4	3
Four	1	1	2	2
Five or more	1	1	1	1
Weighted base	1373	1424	1374	1309

Percentages may not add to 100 due to rounding

In each age group, boys and girls were reported to have experienced a similar number of problems. The mean number of problems ranged from 0.4 in five-year-old boys to 0.6 in 12-year-old boys and 0.4 in five-year-old girls to 0.5 in 15-year-old girls.

Table 2

Table 2 Mean number and proportion of children with reported oral condition problems experienced at least *occasionally* in the preceding 12 months by age and sex

	Mean number of problems	Percentage with at least one problem	*Weighted base*
Boys			
5 year olds	0.4	20	*654*
8 year olds	0.4	22	*679*
12 year olds	0.6	34	*737*
15 year olds	0.4	28	*637*
Girls			
5 year olds	0.4	23	*719*
8 year olds	0.5	29	*745*
12 year olds	0.5	33	*638*
15 year olds	0.5	28	*672*

Among eight-year-olds a higher proportion of girls (29%) were said to have experienced some problem during the preceding 12 months compared with eight-year-olds boys (22%). The experience of problems did increase to some extent with age with 23% of 5 year old boys reportedly having some problem in the preceding year as compared with 28% of 15 year old boys and 22% of 5 year old girls reportedly having some problem in the preceding year as compared with 28% of 15 year old girls. However, this was not linear, as problems seemed to be reported most often in 12-year-olds; 34% of 12-year-old boys and 33% of 12-year-old girls were said to have experienced some problem in the year preceding the survey.

Table 2

The pattern of experience of problems arising from oral condition was similar in England, Northern Ireland and Wales. In England and Wales children with the most reported problems were 12-year-olds, with eight-year-olds most affected in Northern Ireland.

Table 3

Table 3 Mean number and proportion of children with reported oral condition problems experienced at least *occasionally* in the preceding 12 months by age and country (United kingdom, 2003)

	Mean number of problems	Percentage with at least one problem	*Unweighted sample size**
England			
5 year olds	0.4	22	*553*
8 year olds	0.4	26	*547*
12 year olds	0.6	35	*456*
15 year olds	0.5	30	*358*
Wales			
5 year olds	0.3	22	*218*
8 year olds	0.4	30	*193*
12 year olds	0.8	38	*165*
15 year olds	0.6	31	*140*
Northern Ireland			
5 year olds	0.3	16	*112*
8 year olds	0.6	25	*128*
12 year olds	0.5	24	*101*
15 year olds	0.3	21	*88*
United Kingdom			
5 year olds	0.4	22	*1373*
8 year olds	0.4	26	*1424*
12 year olds	0.6	34	*1375*
15 year olds	0.5	28	*1309*

* weighted bases shown for United Kingdom

The quality and frequency of the problems experienced in shown in Table 4. Where some form of problem was reported to be experienced it was generally described as being

experienced occasionally rather than more frequently. The most common problem reported to have been experienced in the preceding year was pain, which was reported most often among 12-year-olds. Experience of pain on occasion was reported more often in the 12-year-old age group (22%) during the preceding 12 months than in any other age group (14-16%). Pain was experienced fairly often by 2% of five-year-olds, 3% of 8 and 12-year-olds and 4% of 15-year-olds in the year preceding the survey and a small proportion of 8, 12 and 15-year-olds were said to have experienced oral pain very often in the preceding 12 months.

Table 4

Table 4 Proportion of children reported as having oral condition problems occasionally, fairly often or very often in the preceding 12 months by age

	Frequency of problem by age											
	Occasionally				Fairly often				Very often			
Type of problem	5	8	12	15	5	8	12	15	5	8	12	15
Pain												
Toothache or sore mouth	14	16	22	15	2	3	3	4	*	1	1	1
Impact on oral function												
Problems chewing, talking	4	4	4	6	1	*	*	1	1	*	1	*
Impact on self-confidence												
Embarrassed, self-conscious or worried	3	5	6	6	1	1	1	1	*	*	1	1
Impact on orally-related activity												
Stopped playing musical instrument	3	3	4	5	1	*	2	2	1	*	1	1
Impact on emotions												
Becoming less cheerful or more irritable	4	4	5	4	*	1	1	1	*	*	1	*
Impact on social functioning												
Stopping playing or speaking to friends	1	1	1	1	*	*	-	*	*	*	1	*
Impact on General Health												
General health effected	2	1	1	*	*	*	*	-	*	-	*	*
Impact on Life Overall												
Life as a whole made worse	1	2	2	1	*	-	-	-	*	*	*	-

Table 5 shows that more 12-year-olds (26%) were reported to have experienced occasional or more frequent pain in the year preceding the survey than any other age group. Effect on oral function was reported to have affected 6% of five-year-olds and 7% of 15-year-olds occasionally or more often in the preceding year. A lower proportion of five-year-olds were reported to have had their self-confidence affected occasionally or more often in the 12 months preceding the survey than any other age group. This problem was more commonly reported to affect older children; 10% of 12-year-olds and 9% of 15-year-olds were said to have experienced some effect on their self-confidence in the year before the survey. Similar proportions were reported to have had an orally-related activity affected; 4% of five-year-olds and eight-year-olds, 6% of 12-year-olds and 7% of 15-year-olds were

reported to have experienced some problem with an orally-related activity as a result of their oral condition. In some, the condition of their mouths was thought to have led to their emotional outlook on life being affected (for example, being less cheerful or more irritable); 4% of five-year-olds, 6% of 8 and 12-year-olds and 4% of 15-year-olds were reported to have experienced some form of emotional impact as a result of their oral condition. The more far-reaching consequences of oral condition were rarely encountered, but a few children in every age group (under 2% of their group) were reported to have had their social functioning, their general health or their life in general affected by some aspect(s) of their oral condition.

Table 5

Table 5 Proportion of children reported as having oral condition problems occasionally or more often in the preceding 12 months by age

	Age			
Type of problem	5	8	12	15
		Percentage of children:		
Pain				
Toothache or sore mouth	16	20	26	20
Impact on oral function				
Problems chewing, talking	6	5	5	7
Impact on self-confidence				
Embarrassed, self-conscious or worried	4	7	10	9
Impact on orally-related activity				
Stopped playing musical instrument	4	4	6	7
Impact on emotions				
Becoming less cheerful or more irritable	4	6	6	4
Impact on social functioning				
Stopping playing or speaking to friends	1	1	2	1
Impact on General Health				
General health effected	2	2	2	*
Impact on Life Overall				
Life as a whole made worse	2	2	2	1
Weighted base	1370	1417	1371	1302

Twenty-seven per cent of 12 year old boys and 24% of 12 year old girls had some experience of oral pain in the year preceding the survey. Generally the consequences of oral condition appear to be fairly evenly distributed between sexes. However, among eight and 15-year-olds more girls (9% & 11%) were reported to be have had problems with self-confidence as a result of their oral condition than boys (5% & 6%); and more eight-year-old girls 8 (23%) were reported to have experienced some oral pain over the preceding 12 months compared with boys of the same age (16%). *Table 6*

Table 6 Proportion of children reported as having oral condition problems occasionally or more often in the preceding 12 months by age and sex

	Boys				Girls			
Type of problem	5	8	12	15	5	8	12	15
Pain								
Toothache or sore mouth	16	16	27	22	17	23	24	19
Impact on oral function								
Problems chewing, talking	6	4	6	6	6	6	5	8
Impact on self-confidence								
Embarrassed, self-conscious or worried	3	5	10	6	5	9	10	11
Impact on orally-related activity								
Stopped playing musical instrument	3	4	7	7	6	4	5	8
Impact on emotions								
Becoming less cheerful or more irritable	3	5	7	3	5	6	4	6
Impact on social functioning								
Stopping playing or speaking to friends	1	1	2	1	2	1	2	2
Impact on General Health								
General health effected	2	1	1	1	2	2	2	-
Impact on Life Overall								
Life as a whole made worse	2	1	2	1	1	3	2	1
Weighted base	654	679	737	637	719	745	638	672

The pattern of problems experienced in England, Northern Ireland and Wales was broadly similar but there was some variation between countries in certain age groups. Among 12-year-olds, fewer children in Northern Ireland (18%) were reported to have experience of oral pain compared with England (28%) and Wales (27%). Problems with oral function were reported for a higher proportion of 12-year-olds in Wales (9%) compared with Northern Ireland (2%).

Table 7

Table 7 Proportion of children reported as having oral condition problems occasionally or more often in the preceding 12 months by age and country

	England				Wales				Northern Ireland			
Type of problem	5	8	12	15	5	8	12	15	5	8	12	15
Pain												
Toothache or sore mouth	16	20	28	21	19	24	27	24	14	23	18	16
Impact on oral function												
Problems chewing, talking	6	5	5	8	4	3	9	6	6	7	2	2
Impact on self-confidence												
Embarrassed, self-conscious or worried	4	8	9	8	1	7	11	11	-	4	11	8
Impact on orally-related activity												
Stopped playing musical instrument	4	4	6	8	3	3	11	9	2	9	6	5
Impact on emotions												
Becoming less cheerful or more irritable	4	6	6	4	3	4	11	6	5	7	6	2
Impact on social functioning												
Stopping playing or speaking to friends	1	1	2	2	1	-	3	2	-	2	2	-
Impact on General Health												
General health effected	2	1	1	*	1	4	3	-	4	6	2	-
Impact on Life Overall												
Life as a whole made worse	2	2	2	1	1	3	3	2	2	4	4	2
Unweighted sample size	*553*	*547*	*456*	*358*	*218*	*193*	*165*	*140*	*112*	*128*	*101*	*88*

Impact of oral health and social factors

There was some variation in the average number of problems experienced and the proportion of children affected by problems according to the socio-economic status of household, as measured by the National Statistics Socio-economic Classification (NS-SEC). Five-year-olds from an intermediate background and eight-year-olds from a managerial or professional background were reported to have fewer problems than others of the same age.

Table 8

Table 8 Mean number and proportion of children with reported oral condition problems experienced at least *occasionally* in the preceding 12 months by age and socio-economic status of household

	Mean number of problems	Percentage with at least one problem	*Weighted base*
Managerial & Professional			
5 year olds	0.4	23	*604*
8 year olds	0.3	21	*540*
12 year olds	0.6	33	*548*
15 year olds	0.4	23	*518*
Intermediate			
5 year olds	0.2	13	*248*
8 year olds	0.4	25	*259*
12 year olds	0.6	38	*266*
15 year olds	0.6	30	*266*
Routine and Manual			
5 year olds	0.4	25	*378*
8 year olds	0.6	32	*483*
12 year olds	0.5	31	*449*
15 year olds	0.5	32	*387*

Table 9 shows that a lower proportion of five-year-olds from the intermediate occupational group were reported to have experienced pain (9%), impact on an orally-related activity (1%) and emotional impact (-%) compared with those from either managerial and professional or routine and manual backgrounds. A lower proportion of eight-year-olds from managerial and professional backgrounds were reported to have experienced problems with pain (14%) and oral function (2%) than children from other backgrounds and a lower proportion were reported to have experienced an impact on their life overall (1%) compared with eight-year-olds from routine and manual backgrounds (4%). Among 15-year-olds, a higher proportion of children from routine and manual backgrounds were reported to have experienced pain (25%) compared with the managerial and professional group and impact on self-confidence (6%) compared to children from intermediate backgrounds (14%).

Table 9

Table 9 Proportion of children reported as having oral condition problems occasionally or more often in the preceding 12 months by age and household socio-economic status

	Socio-economic status of household and age											
	Managerial & Professional				Intermediate				Routine and Manual			
Type of problem	5	8	12	15	5	8	12	15	5	8	12	15
Pain												
Toothache or sore mouth	16	14	26	14	9	21	31	20	22	27	22	25
Impact on oral function												
Problems chewing, talking	6	2	5	5	4	4	6	11	5	9	5	8
Impact on self-confidence												
Embarrassed, self-conscious or worried	4	7	11	9	3	7	9	14	2	9	9	6
Impact on orally-related activity												
Stopped playing musical instrument	5	4	8	6	1	3	4	9	5	6	4	8
Impact on emotions												
Becoming less cheerful or more irritable	4	3	8	5	*	7	3	5	8	8	6	3
Impact on social functioning												
Stopping playing or speaking to friends	1	2	2	2	-	-	*	-	1	1	1	1
Impact on General Health												
General health effected	2	1	2	-	-	2	2	-	3	2	1	-
Impact on Life Overall												
Life as a whole made worse	1	1	3	1	-	2	1	1	3	4	2	*
Weighted base	*604*	*540*	*548*	*518*	*248*	*259*	*266*	*266*	*378*	*483*	*449*	*387*

The pattern of responses for children grouped according to the deprivation status of their school did not follow a consistent pattern[1]. Some problems were reported more frequently in deprived schools at certain ages but less frequently reported for others. Table 10 indicates that three of the four the statistically significant findings run opposite to the expectation that deprivation is associated with poorer health outcomes. Twelve-year-olds from schools classified as deprived were less likely to be reported to have experienced pain (17%) than those in non-deprived schools (27%) and were less likely to have experienced problems with an orally related activity (1%) compared with non-deprived schools (6%). A lower proportion of 15-year-olds from deprived schools (3%) were reported to have experienced an impact on their emotions such as being less cheerful or more irritable than

[1] Schools were classified as 'deprived' if over 30% of children were eligible for free school meals

15-year-olds in non-deprived schools (9%). Alternately, a higher proportion of 12-year-olds from deprived schools were reported to have experienced an emotional impact (12%) than those in non-deprived schools (6%).

Table 10

Table 10 Proportion of children reported as having oral condition problems occasionally or more often in the preceding 12 months by age and school deprivation status

	School deprivation status and age							
	Deprived				Non Deprived			
Type of problem	5	8	12	15	5	8	12	15
Pain								
Toothache or sore mouth	16	21	17	19	16	19	27	20
Impact on oral function								
Problems chewing, talking	6	4	3	2	6	5	6	7
Impact on self-confidence								
Embarrassed, self-conscious or worried	5	4	13	3	4	8	9	9
Impact on orally-related activity								
Stopped playing musical instrument	4	4	1	2	5	4	6	8
Impact on emotions								
Becoming less cheerful or more irritable	5	6	12	1	4	5	6	5
Impact on social functioning								
Stopping playing or speaking to friends	2	3	1	-	1	1	2	2
Impact on General Health								
General health effected	5	4	1	2	2	1	2	*
Impact on Life Overall								
Life as a whole made worse	2	3	1	-	2	2	2	1
Weighted base	189	182	106	125	1184	1242	1268	1184

Impact of Oral Health and Dental Health Behaviour

The extent to which a person is affected by their oral health may affect the ways in which they adopt preventive health behaviour. The impact measure used in this survey asked parents whether they felt their child had been affected in particular ways by their oral health. As it is often the parent who instigates a dental visit their perception of the way in which their child is affected by their oral condition may be a critical factor in initiating a dental visit. Among those aged eight years or over who did not attend a dentist, over a third were reported to have experienced a dental problem, during the year. Among eight-year-olds alone, more of those who did not attend a dentist during the year were also reported to have experienced a problem (38%) over the same time in comparison to those who did attend a dentist (25%).

Table 11

Table 11 Mean number and proportion of children who visited the dentist in the last 12 months with reported oral condition problems experienced at least occasionally in the preceding 12 months by age

	Mean number of problems	Percentage with at least one problem	*Weighted base*
Dental visit			
5 year olds	0.4	23	*1201*
8 year olds	0.4	25	*1328*
12 year olds	0.6	34	*1266*
15 year olds	0.5	27	*1158*
No dental visit			
5 year olds	0.3	17	*172*
8 year olds	0.6	38	*96*
12 year olds	0.6	35	*108*
15 year olds	0.7	38	*151*

Table 12 shows how children's dental attendance pattern is related to their reported experience of oral problems. This shows a clear relationship between the habit of visiting a dentist and the reported experience of oral problems; among eight, 12 and 15-year-olds regular attenders were less likely to be reported as having had a problem in the preceding year than those who attended only when having trouble with their teeth. Among five-year-olds occasional attenders, but not regular attenders, were less likely to have experienced a problem over the preceding year compared with those attending only with trouble.

Table 12

Table 12 Mean number and proportion of children with reported oral condition problems experienced at least occasionally in the preceding 12 months by age child's dental attendance pattern

	Mean number of problems	Percentage with at least one problem	*Weighted base*
Regular attendance			
5 year olds	0.3	20	*749*
8 year olds	0.3	20	*853*
12 year olds	0.5	31	*831*
15 year olds	0.4	25	*771*
Occasional attendance			
5 year olds	0.4	17	*129*
8 year olds	0.4	30	*159*
12 year olds	0.5	27	*185*
15 year olds	0.4	23	*198*
Only if trouble with teeth			
5 year olds	0.5	28	*408*
8 year olds	0.8	38	*353*
12 year olds	1.0	47	*294*
15 year olds	0.7	39	*263*

Table 13 presents the individual impact problems reported to be experienced over the preceding 12 months according to children's dental attendance pattern. Children described as only attending a dentist when they have trouble with their teeth were more likely to be reported to have experienced oral pain during the preceding year. Overall, 23% of five-year-olds; 31% of eight-year-olds; 38% of 12-year-olds and 29% of 15-year-olds who were said to attend only when they have some trouble with their teeth were also reported to have had toothache or other oral pain in the 12 months before the survey. Other types of problem also seem to be experienced more by children who are subject to an emergency-only approach to attending a dentist. Effects on oral function was more commonly experienced by in-trouble attenders aged 8, 12 and 15 than those of the same age who were said to attend for regular dental check-ups. Impact on self-confidence was more prevalent among eight and 12-year-olds who only attend a dentist when they had some trouble with their teeth compared with those who attend for regular check-ups. However, the reverse was the case in 15-year-olds where a higher proportion of regular attenders were reported to have had their self-confidence affected than those who were said only to attend when they have some trouble with their teeth. A higher proportion of eight-year-olds who only attended a dentist when having trouble with their teeth were reported to have had any orally-related activities affected as a result of the condition of their mouth than other eight-year-olds. A low percentage of children who attended a dentist for regular check-ups were reported to have experienced an impact on their emotions in comparison to children who only went to a dentist for emergency treatment. Whilst at the most severe end of the impact scale, children aged 8 and 12 who were described as regular attenders were significantly less likely than those who only attend when having trouble with their teeth to be reported to have had their lives affected by their oral condition. This severe level of

impact was reported to have been encountered at least occasionally by 3% of five-year-olds, 5% of eight-year-olds and 4% of 12-year-olds who only attend a dentist when having some trouble with their teeth.

Table 13

Table 13 Proportion of children reported as having oral condition problems occasionally or more often in the preceding 12 months by age and child's dentalattendance pattern

	Child's dental attendance pattern and age											
	Regular				Occasional				Only if trouble with teeth			
Type of problem	5	8	12	15	5	8	12	15	5	8	12	15
Pain												
Toothache or sore mouth	14	16	24	18	14	18	17	15	23	31	38	29
Impact on oral function												
Problems chewing, talking	5	3	4	5	5	4	3	7	7	9	10	12
Impact on self-confidence												
Embarrassed, self-conscious or worried	3	4	7	11	3	13	9	6	5	11	18	4
Impact on orally-related activity												
Stopped playing musical instrument	4	2	5	7	6	2	8	5	4	10	9	8
Impact on emotions												
Becoming less cheerful or more irritable	2	3	4	2	4	5	8	3	9	12	11	10
Impact on social functioning												
Stopping playing or speaking to friends	1	1	1	1	2	-	2	1	2	2	5	5
Impact on General Health												
General health effected	*	1	1	*	2	1	-	-	4	4	5	-
Impact on Life Overall												
Life as a whole made worse	*	1	1	1	1	1	2	-	3	5	4	1
Weighted base	749	853	831	771	129	159	185	198	408	353	294	263

Impact of Oral Health and Dental Health

What is the relationship between disease as determined by the survey dental examination and the subjective impact of oral condition determined primarily by the reports of the children's parents? Table 14 compares the experience of obvious decay in primary teeth with the parental report of some form of oral problem. Among both five and eight-year-olds a higher proportion of children with obvious decay experience in their primary dentition were reported to have had an oral problem and had experienced a greater number of problems than children of the same age with no obvious decay experience.

Table 14

Table 14 Mean number and proportion of children with reported oral condition problems experienced at least occasionally in the preceding 12 months by age and obvious decay experience in primary teeth

	Mean number of problems	Percentage with at least one problem	*Weighted base*
Obvious decay experience			
5 year olds	0.6	32	*575*
8 year olds	0.5	31	*822*
No obvious decay			
5 year olds	0.2	14	*798*
8 year olds	0.3	19	*602*

Likewise, in permanent teeth a higher proportion of eight and 12-year-olds with obvious had experienced problems due to their oral condition than those without obvious decay. There were no statistically significant differences among 15-year-olds.

Table 15

Table 15 Mean number and proportion of children with reported oral condition problems experienced at least occasionally in the preceding 12 months by age and obvious decay experience in permanent teeth

	Mean number of problems	Percentage with at least one problem	*Weighted base*
Obvious decay experience			
8 year olds	0.7	35	*271*
12 year olds	0.7	38	*565*
15 year olds	0.5	30	*766*
No obvious decay			
8 year olds	0.4	24	*1153*
12 year olds	0.5	30	*810*
15 year olds	0.5	26	*543*

Table 16 shows that a higher proportion of five and eight-year-olds with obvious decay experience in the primary teeth were reported to have experienced problems compared with children without obvious decay. Additionally five-year-olds with obvious decay in their primary teeth were more likely than those without to be reported to have experienced some form of effect on their oral function; an effect on their self-confidence; or an effect on an orally related activity or their life overall.

Table 16

Table 16 Proportion of children reported as having oral condition problems occasionally or more often in the preceding 12 months by age and obvious decay experience in primary teeth

	Decay experience and age			
	Obvious decay		No obvious decay	
Type of problem	5	8	5	8
Physical pain				
Toothache or sore mouth	25	24	10	14
Functional Limitation				
Problems chewing, talking	9	6	4	4
Psychological discomfort				
Embarrassed, self-conscious, worried	7	8	2	7
Physical disability				
Affected/stopped activities	8	5	2	3
Psychological disability				
Affected emotions	9	7	1	4
Social disability				
Affected social life	2	1	1	2
General health				
Affected general health	4	2	1	1
Handicap				
Life as a whole made worse	4	3	*	1
Weighted base	575	822	798	602

Among children with obvious decay experience in the permanent teeth, eight-year-olds and 15-year-olds were more likely to reported to have experienced pain than those without obvious decay experience. (Table 24 <TABLE 24 – actual table 11>). A higher proportion of eight-year-olds with experience of obvious decay in their permanent teeth were also reported to have avoided particular orally related activities; to be considered to have experienced an effect on their general health or to have seemed like their life as a whole was affected as a result of their oral condition. Twelve-year-olds with some obvious decay in their permanent dentition were more likely to have experienced an impact on self-confidence than 12-year-olds with no obvious decay experience in their permanent dentition. *Table 17*

Table 17 Proportion of children reported as having oral condition problems occasionally or more often in the preceding 12 months by age and obvious decay experience in permanent teeth

	Decay experience and age					
	Obvious decay			No obvious decay		
Type of problem	8	12	15	8	12	15
Pain						
Toothache or sore mouth	26	30	24	18	23	15
Impact on oral function						
Problems chewing, talking	8	4	8	4	6	5
Impact on self-confidence						
Embarrassed, self-conscious or worried	10	12	8	7	8	10
Impact on orally-related activity						
Stopped playing musical instrument	9	6	7	2	6	8
Impact on emotions						
Becoming less cheerful or more irritable	6	9	3	5	4	6
Impact on social functioning						
Stopping playing or speaking to friends	1	2	2	1	1	1
Impact on General Health						
General health effected	4	3	*	1	1	*
Impact on Life Overall						
Life as a whole made worse	5	3	*	1	1	2
Weighted base	*271*	*565*	*766*	*1153*	*810*	*543*

Experiencing some form of oral problem was more common in the presence of unhealthy gums. A higher proportion of 12 and 15-year-olds with unhealthy gums were reported to have experienced a problem compared with those of a similar age with healthy gums. Among five and 12-year-olds, more problems were experienced on average by those with unhealthy gums compared with those with healthy gums.

Table 18

Table 18 Mean number and proportion of children with reported oral condition problems experienced at least occasionally in the preceding 12 months by age and presence of unhealthy gums

	Mean number of problems	Percentage with at least one problem	*Weighted base*
Unhealthy gums			
5 year olds	0.5	26	*441*
8 year olds	0.4	26	*956*
12 year olds	0.6	38	*921*
15 year olds	0.5	32	*719*
Healthy gums			
5 year olds	0.3	20	*932*
8 year olds	0.5	25	*468*
12 year olds	0.4	25	*453*
15 year olds	0.5	24	*590*

Among 12 and 15-year-olds, a higher proportion of those with unhealthy gums was reported to have experienced pain in the last year than children of the same age with healthy gums. Five-year-olds with unhealthy gums were more likely to be reported to have experienced an effect on the function of their teeth, to have experienced an effect on an orally-related activity, or to have had their social activity affected by the condition of their mouth in the year before the survey examination.

Table 19

Table 19 Proportion of children reported as having oral condition problems occasionally or more often in the preceding 12 months by age and presence of unhealthy gums

	Gum condition and age							
	Unhealthy gums				Healthy gums			
Type of problem	5	8	12	15	5	8	12	15
Pain								
Toothache or sore mouth	17	20	30	24	16	18	18	15
Impact on oral function								
Problems chewing, talking	9	5	6	7	4	4	4	7
Impact on self-confidence								
Embarrassed, self-conscious or worried	5	7	10	8	3	9	8	9
Impact on orally-related activity								
Stopped playing musical instrument	3	4	4	8	8	4	7	7
Impact on emotions								
Becoming less cheerful or more irritable	5	5	7	3	4	7	4	5
Impact on social functioning								
Stopping playing or speaking to friends	3	1	2	1	*	2	1	2
Impact on General Health								
General health effected	3	1	1	*	2	3	2	*
Impact on Life Overall								
Life as a whole made worse	3	2	2	*	1	2	2	2
Weighted bases	*441*	*956*	*921*	*719*	*932*	*468*	*453*	*590*

A higher proportion of 12-year-olds with visible plaque (36%) had experienced problems than those without visible plaque (27%).

Table 20

Table 20 Mean number and proportion of children with reported oral condition problems experienced at least occasionally in the preceding 12 months by age and presence of plaque

	Mean number of problems	Percentage with at least one problem	*Weighted base*
Visible plaque			
5 year olds	0.5	23	*662*
8 year olds	0.4	25	*1130*
12 year olds	0.6	36	*1015*
15 year olds	0.5	30	*862*
No visible plaque			
5 year olds	0.3	20	*711*
8 year olds	0.6	27	*294*
12 year olds	0.5	27	*360*
15 year olds	0.5	26	*447*

Table 21 shows that proportion of children reported to have experienced oral problems according to whether they had visible plaque.

Table 21

Table 21 Proportion of children reported as having oral condition problems occasionally or more often in the preceding 12 months by age and presence of plaque

	Presence of plaque and age							
	Plaque visible				No plaque visible			
Type of problem	5	8	12	15	5	8	12	15
Pain								
Toothache or sore mouth	17	20	28	22	16	19	21	18
Impact on oral function								
Problems chewing, talking	8	5	5	7	4	4	5	6
Impact on self-confidence								
Embarrassed, self-conscious or	4	7	10	7	3	10	8	11
Impact on orally-related activity								
Stopped playing musical instrument	6	3	6	6	4	7	5	9
Impact on emotions								
Becoming less cheerful or more	6	4	6	4	3	10	5	5
Impact on social functioning								
Stopping playing or speaking to	2	1	2	2	*	2	2	1
Impact on General Health								
General health effected	2	1	2	*	2	3	2	1
Impact on Life Overall								
Life as a whole made worse	2	2	2	1	1	3	2	*
Weighted base	662	1130	1015	862	711	294	360	447

Twelve-year-olds with visible plaque were more likely to be reported as having experienced pain in the preceding 12 months than children of the same age with no plaque. Among five-year-olds proportionately more of those with plaque were likely to be considered to have had the functioning of their mouth affected; to have experienced an effect on their emotions; or to have had their social functioning affected than five-year-olds with no plaque. While among eight-year-olds more of those with plaque were considered to have had an orally related activity effected or to have experienced an effect on their emotions as a result of their overall oral condition than eight-year-olds with no plaque.

Table 21

While there was no overall difference in the number of problems experienced by children with malocclusion (Table 22) there were differences in the experience of specific types of problem (Table 23). Among 12-year-olds, children with some malocclusion were more likely to be regarded as having experienced an effect on their self-confidence or emotions than 12-year-olds with no malocclusion. Fifteen-year-olds with malocclusion were more likely to be thought to have had their oral function affected than 15-year-olds without malocclusion.

Table 22 and Table 23

Table 22 Mean number and proportion of children with reported oral condition problems experienced at least occasionally in the preceding 12 months by age and orthodontic treatment need

	Mean number of problems	Percentage with at least one problem	*Weighted base*
Malocclusion present			
12 year olds	0.6	36	*470*
15 year olds	0.5	28	*244*
Malocclusion absent			
12 year olds	0.5	31	*762*
15 year olds	0.4	25	*846*

Table 23 Proportion of children reported as having oral condition problems occasionally or more often in the preceding 12 months by age and orthodontic treatment need

	Orthodontic treatment need and age			
	Malocclusion present		Malocclusion absent	
Type of problem	12	15	12	15
Pain				
Toothache or sore mouth	23	20	27	19
Impact on oral function				
Problems chewing, talking	6	10	4	4
Impact on self-confidence				
Embarrassed, self-conscious or worried	14	6	5	5
Impact on orally-related activity				
Stopped playing musical instrument	3	4	7	2
Impact on emotions				
Becoming less cheerful or more irritable	6	8	5	2
Impact on social functioning				
Stopping playing or speaking to friends	3	2	1	1
Impact on General Health				
General health effected	3	1	1	-
Impact on Life Overall				
Life as a whole made worse	3	3	1	*
Weighted base	470	244	762	846

Pain, self-confidence, emotional impact and having an orally related activity affected were experienced by proportionately more 12 and 15-year-olds with crooked teeth than without. A higher proportion of eight-year-olds with crooked teeth were reported to have had their oral function; their orally related activities, their self confidence or their emotions affected by their oral condition than children with no crooked teeth. Among five-year-olds, children with crooked teeth were more likely to be thought to have had their self-confidence or emotions affected than children with no crooked teeth.

Table 24

Table 24 Proportion of children reported as having oral condition problems occasionally or more often in the preceding 12 months by age and reported crooked teeth

	Parents report of appearance of teeth and age							
	Crooked teeth				No crooked teeth			
Type of problem	5	8	12	15	5	8	12	15
Pain								
Toothache or sore mouth	22	24	27	23	15	18	25	19
Impact on oral function								
Problems chewing, talking	7	8	8	11	6	3	4	5
Impact on self-confidence								
Embarrassed, self-conscious or worried	9	13	16	15	3	5	4	6
Impact on orally-related activity								
Stopped playing musical instrument	8	7	9	14	4	2	4	5
Impact on emotions								
Becoming less cheerful or more irritable	9	8	10	9	4	4	3	2
Impact on social functioning								
Stopping playing or speaking to friends	2	2	2	2	1	1	1	1
Impact on General Health								
General health effected	2	1	*	*	3	2	4	*
Impact on Life Overall								
Life as a whole made worse	1	3	3	2	2	1	1	*
Weighted base	*197*	*490*	*569*	*389*	*1159*	*911*	*794*	*917*

More children of all ages with protruding teeth were considered to have had some form of problem with their oral function and to have had an orally related activity affected over the preceding year in comparison to children with no protruding teeth. Twelve and 15-year-olds with protruding teeth were more likely to be considered to have had their self-confidence or general health affected by their overall oral condition than children of the same age with no protruding teeth. Five-year-olds with protruding teeth were more likely to have had their emotions or life in general affected in comparison with children of the same age without protruding teeth.

Table 25

Table 25 Proportion of children reported as having oral condition problems occasionally or more often in the preceding 12 months by age and reported protruding teeth

	Parents report of appearance of teeth and age							
	Protruding teeth				No protruding teeth			
Type of problem	5	8	12	15	5	8	12	15
Pain								
Toothache or sore mouth	20	22	28	25	16	19	25	20
Impact on oral function								
Problems chewing, talking	19	9	11	14	5	4	3	6
Impact on self-confidence								
Embarrassed, self-conscious or worried	7	19	18	16	3	5	6	8
Impact on orally-related activity								
Stopped playing musical instrument	11	8	9	15	4	3	4	6
Impact on emotions								
Becoming less cheerful or more irritable	15	15	6	7	4	3	5	4
Impact on social functioning								
Stopping playing or speaking to friends	4	2	3	3	1	1	1	1
Impact on General Health								
General health effected	6	2	4	2	2	2	*	*
Impact on Life Overall								
Life as a whole made worse	10	3	4	2	1	2	1	1
Weighted base	81	268	325	185	1280	1138	1034	1108

Five-year-olds reported to have marks on their teeth were affected by more impacts than those without any apparent marks. They were more likely to be reported to have experienced functional or emotional problems; to have had their self confidence affected; to have had some orally related activities affected; to have had their social functioning affected or to be thought to have had their life in general affected by their overall oral condition. In addition 12-year-olds with marks on their teeth were more likely than those without to be thought to have experienced pain and problems with self-confidence.

Table 26

Table 26 Proportion of children reported as having oral condition problems occasionally or more often in the preceding 12 months by age and reported marks on teeth

	Parents report of appearance of teeth and age							
	Marks on teeth				No marks on teeth			
Type of problem	5	8	12	15	5	8	12	15
Pain								
Toothache or sore mouth	22	20	38	21	15	20	24	20
Impact on oral function								
Problems chewing, talking	12	4	2	12	5	4	3	6
Impact on self-confidence								
Embarrassed, self-conscious or worried	11	12	17	12	3	7	9	8
Impact on orally-related activity								
Stopped playing musical instrument	14	3	7	4	3	4	6	8
Impact on emotions								
Becoming less cheerful or more irritable	9	3	8	4	4	6	6	4
Impact on social functioning								
Stopping playing or speaking to friends	5	*	1	4	1	1	2	1
Impact on General Health								
General health effected	3	1	1	-	2	2	2	*
Impact on Life Overall								
Life as a whole made worse	6	3	4	2	1	2	2	1
Weighted base	*195*	*244*	*175*	*147*	*1171*	*1171*	*1190*	*1158*

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Appendix A 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 A1 to A9 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 A1 Standard errors and 95% confidence intervals for proportion of children reported as having oral condition problems occasionally or more in the preceding 12 months by age (United Kingdom, 2003)

Type of problem	Percentage (p)	Unweighted sample size	Standard error of p	95% confidence intervals	Deft
Pain					
Toothache or sore mouth					
5 year olds	16	962	1.5	13-19	1.2
8 year olds	20	932	1.6	17-23	1.2
12 year olds	26	805	1.9	22-30	1.2
15 year olds	20	640	2.0	16-24	1.3
Impact on oral function					
Problems chewing, talking					
5 year olds	6	962	1.1	4-8	1.4
8 year olds	5	932	0.9	3-7	1.2
12 year olds	5	805	0.9	3-7	1.2
15 year olds	7	640	1.7	4-10	1.7
Impact on self-confidence					
Embarrassed, self-conscious or worried					
5 year olds	4	962	0.8	2-6	1.3
8 year olds	7	932	1.0	5-9	1.2
12 year olds	10	805	1.5	7-13	1.5
15 year olds	9	640	1.3	6-12	1.2
Impact on orally-related activity					
Stopped playing musical instrument					
5 year olds	4	962	0.7	3-5	1.1
8 year olds	4	932	0.8	2-6	1.2
12 year olds	6	805	1.0	4-8	1.3
15 year olds	7	640	1.0	5-9	1.0
Impact on emotions					
Becoming less cheerful or more irritable					
5 year olds	4	962	0.8	2-6	1.2
8 year olds	5	932	0.9	3-7	1.2
12 year olds	6	805	0.9	4-8	1.1
15 year olds	4	640	0.8	2-6	1.1
Impact on social functioning					
Stopping playing or speaking to friends					
5 year olds	1	962	0.4	0-2	1.0
8 year olds	1	932	0.3	0-2	0.9
12 year olds	2	805	0.6	1-3	1.2
15 year olds	1	640	0.6	0-2	1.3
Impact on General Health					
General health affected					
5 year olds	2	962	0.5	1-3	1.1
8 year olds	2	932	0.4	1-3	1.1
12 year olds	2	805	0.5	1-3	1.2
15 year olds	0	640	0.2	*	0.9
Impact on Life Overall					
Life as a whole made significantly worse					
5 year olds	2	962	0.6	1-3	1.3
8 year olds	2	932	0.6	1-3	1.3
12 year olds	2	805	0.5	1-3	1.1
15 year olds	1	640	0.4	0-2	1.1
Percentage reporting at least one problem					
5 year olds	22	962	1.8	18-26	1.4
8 year olds	26	932	1.6	23-29	1.1
12 year olds	34	805	2.2	30-38	1.3
15 year olds	28	640	2.2	24-32	1.3
Mean number of impact problems reported					
5 year olds	0.4	962	0.03	0.34-0.46	1.2
8 year olds	0.4	932	0.04	0.32-0.48	1.2
12 year olds	0.6	805	0.04	0.52-0.68	1.2
15 year olds	0.5	640	0.04	0.42-0.58	1.1

Table A2 Standard errors and 95% confidence intervals for proportion of five-year-olds reported as having oral condition problems occasionally, fairly often or very often in the preceding 12 months by school deprivation status (United Kingdom, 2003)

Type of problem	Percentage (p)	Unweighted sample size	Standard error of p	95% confidence intervals	Deft
Pain					
Toothache or sore mouth					
Not deprived	16	745	1.7	13-19	1.2
Deprived	16	217	2.0	12-20	0.8
Impact on oral function					
Problems chewing, talking					
Not deprived	6	745	1.2	4-8	1.4
Deprived	6	217	2.6	1-11	1.6
Impact on self-confidence					
Embarrassed, self-conscious or worried					
Not deprived	4	745	1.0	2-6	1.4
Deprived	5	217	2.1	1-9	1.4
Impact on orally-related activity					
Stopped playing musical instrument					
Not deprived	5	745	0.8	3-7	1.1
Deprived	4	217	1.5	1-7	1.1
Impact on emotions					
Becoming less cheerful or more irritable					
Not deprived	4	745	0.8	2-6	1.1
Deprived	5	217	2.1	1-9	1.4
Impact on social functioning					
Stopping playing or speaking to friends					
Not deprived	1	745	0.5	0-2	1.2
Deprived	2	217	1.0	0-4	1.1
Impact on General Health					
General health affected					
Not deprived	2	745	0.5	1-3	1.2
Deprived	5	217	0.7	3-6	0.5
Impact on Life Overall					
Life as a whole made significantly worse					
Not deprived	2	745	0.6	1-3	1.3
Deprived	2	217	1.0	0-4	1.1
Percentage reporting at least one problem					
Not deprived	22	745	2.1	18-26	1.4
Deprived	19	217	2.2	15-23	0.8
Mean number of impact problems reported					
Not deprived	0.4	745	0.40	*	1.2
Deprived	0.4	217	0.09	0.22-0.58	1.2

Table A3 Standard errors and 95% confidence intervals for proportion of eight-year-olds reported as having oral condition problems occasionally, fairly often or very often in the preceding 12 months by school deprivation status (United Kingdom, 2003)

Type of problem	Percentage (p)	Unweighted sample size	Standard error of p	95% confidence intervals	Deft
Pain					
Toothache or sore mouth					
Not deprived	19	725	1.5	16-22	1.0
Deprived	21	207	4.8	12-30	1.7
Impact on oral function					
Problems chewing, talking					
Not deprived	5	725	0.9	3-7	1.2
Deprived	4	207	1.6	1-7	1.2
Impact on self-confidence					
Embarrassed, self-conscious or worried					
Not deprived	8	725	1.2	6-10	1.2
Deprived	4	207	1.9	0-8	1.4
Impact on orally-related activity					
Stopped playing musical instrument					
Not deprived	4	725	0.9	2-6	1.2
Deprived	5	207	1.6	2-8	1.1
Impact on emotions					
Becoming less cheerful or more irritable					
Not deprived	5	725	1.0	3-7	1.2
Deprived	6	207	1.8	2-10	1.1
Impact on social functioning					
Stopping playing or speaking to friends					
Not deprived	1	725	0.3	0-2	1.0
Deprived	3	207	1.4	0-6	1.2
Impact on General Health					
General health affected					
Not deprived	1	725	0.4	0-2	1.0
Deprived	4	207	1.7	1-7	1.3
Impact on Life Overall					
Life as a whole made significantly worse					
Not deprived	2	725	0.6	1-3	1.3
Deprived	3	207	1.5	0-6	1.2
Percentage reporting at least one problem					
Not deprived	26	725	1.6	23-29	1.0
Deprived	24	207	4.5	15-33	1.5
Mean number of impact problems reported					
Not deprived	0.4	725	0.04	0.32-0.48	1.1
Deprived	0.5	207	0.08	0.34-0.66	1.1

Table A4 Standard errors and 95% confidence intervals for proportion of 12-year-olds reported as having oral condition problems occasionally, fairly often or very often in the preceding 12 months by school deprivation status (United Kingdom, 2003)

Type of problem	Percentage (p)	Unweighted sample size	Standard error of p	95% confidence intervals	Deft
Pain					
Toothache or sore mouth					
Not deprived	26	698	2.0	22-30	1.2
Deprived	17	107	4.3	9-25	1.2
Impact on oral function					
Problems chewing, talking					
Not deprived	6	698	1.0	4-8	1.1
Deprived	3	107	2.0	*	1.3
Impact on self-confidence					
Embarrassed, self-conscious or worried					
Not deprived	9	698	1.6	6-12	1.5
Deprived	13	107	3.5	6-20	1.1
Impact on orally-related activity					
Stopped playing musical instrument					
Not deprived	6	698	1.1	4-8	1.2
Deprived	1	107	0.5	0-2	0.7
Impact on emotions					
Becoming less cheerful or more irritable					
Not deprived	6	698	1.0	4-8	1.1
Deprived	12	107	3.9	4-20	1.2
Impact on social functioning					
Stopping playing or speaking to friends					
Not deprived	2	698	0.6	1-3	1.2
Deprived	1	107	0.7	0-2	0.7
Impact on General Health					
General health affected					
Not deprived	2	698	0.6	1-3	1.2
Deprived	0	107	0.5	*	0.7
Impact on Life Overall					
Life as a whole made significantly worse					
Not deprived	2	698	0.6	1-3	1.1
Deprived	1	107	0.6	0-2	0.5
Percentage reporting at least one problem					
Not deprived	34	698	2.4	29-39	1.3
Deprived	26	107	5.1	16-36	1.2
Mean number of impact problems reported					
Not deprived	0.6	698	0.05	0.50-0.70	1.2
Deprived	0.5	107	0.12	0.26-0.74	1.2

Table A5 Standard errors and 95% confidence intervals for proportion of 15-year-olds reported as having oral condition problems occasionally, fairly often or very often in the preceding 12 months by school deprivation status (United Kingdom, 2003)

Type of problem	Percentage (p)	Unweighted sample size	Standard error of p	95% confidence intervals	Deft
Pain					
Toothache or sore mouth					
Not deprived	20	556	2.3	15-25	1.3
Deprived	19	84	3.0	13-25	0.7
Impact on oral function					
Problems chewing, talking					
Not deprived	7	556	1.9	3-11	1.7
Deprived	3	84	2.4	*	1.4
Impact on self-confidence					
Embarrassed, self-conscious or worried					
Not deprived	9	556	1.4	6-12	1.2
Deprived	3	84	2.4	*	1.3
Impact on orally-related activity					
Stopped playing musical instrument					
Not deprived	8	556	1.1	6-10	0.9
Deprived	2	84	1.4	*	1.0
Impact on emotions					
Becoming less cheerful or more irritable					
Not deprived	4	556	0.9	2-6	1.0
Deprived	1	84	1.2	*	0.9
Impact on social functioning					
Stopping playing or speaking to friends					
Not deprived	2	556	0.6	1-3	1.2
Deprived	0	84	0.0	*	-
Impact on General Health					
General health affected					
Not deprived	0	556	0.1	*	0.5
Deprived	2	84	1.6	*	1.1
Impact on Life Overall					
Life as a whole made significantly worse					
Not deprived	1	556	0.4	0-2	1.1
Deprived	0	84	0.2	*	0.4
Percentage reporting at least one problem					
Not deprived	29	556	2.4	24-34	1.2
Deprived	21	84	3.2	15-27	0.7
Mean number of impact problems reported					
Not deprived	0.5	556	0.05	0.40-0.60	1.1
Deprived	0.3	84	0.06	0.18-0.42	1.0

Table A6 Standard errors and 95% confidence intervals for proportion of five-year-olds reported as having oral condition problems occasionally, fairly often or very often in the preceding 12 months by socio-economic classification (NS-SEC) of household (United Kingdom, 2003)

Type of problem	Percentage (p)	Unweighted sample size	Standard error of p	95% confidence intervals	Deft
Pain					
Toothache or sore mouth					
Managerial/professional occupations	16	372	2.4	11-21	1.3
Intermediate occupations	9	176	2.2	5-13	1.1
Routine and manual occupations	22	308	3.4	15-29	1.4
Impact on oral function					
Problems chewing, talking					
Managerial/professional occupations	6	372	1.5	3-9	1.2
Intermediate occupations	4	176	1.9	0-8	1.3
Routine and manual occupations	5	308	1.7	2-8	1.3
Impact on self-confidence					
Embarrassed, self-conscious or worried					
Managerial/professional occupations	5	372	1.5	2-8	1.4
Intermediate occupations	3	176	1.2	1-5	0.9
Routine and manual occupations	2	308	1	0-4	1.2
Impact on orally-related activity					
Stopped playing musical instrument					
Managerial/professional occupations	5	372	1.2	3-7	1.0
Intermediate occupations	1	176	0.7	0-2	1.1
Routine and manual occupations	5	308	1.4	2-8	1.1
Impact on emotions					
Becoming less cheerful or more irritable					
Managerial/professional occupations	4	372	1.2	2-6	1.1
Intermediate occupations	0	176	0.1	*	0.5
Routine and manual occupations	8	308	2	4-12	1.3
Impact on social functioning					
Stopping playing or speaking to friends					
Managerial/professional occupations	1	372	0.7	0-2	1.1
Intermediate occupations	0	176	0	*	*
Routine and manual occupations	0	308	0.3	*	0.8
Impact on General Health					
General health affected					
Managerial/professional occupations	2	372	0.7	1-3	1.0
Intermediate occupations	0	176	0	*	*
Routine and manual occupations	3	308	1.2	1-5	1.3
Impact on Life Overall					
Life as a whole made significantly worse					
Managerial/professional occupations	1	372	0.3	*	0.8
Intermediate occupations	0	176	0	*	*
Routine and manual occupations	3	308	1.2	1-5	1.3
Percentage reporting at least one problem					
Managerial/professional occupations	23	372	3.6	16-30	1.6
Intermediate occupations	13	176	3.8	6-20	1.5
Routine and manual occupations	25	308	3.4	18-32	1.4
Mean number of impact problems reported					
Managerial/professional occupations	0.4	372	0.05	0.30-0.50	1.3
Intermediate occupations	0.2	176	0.04	0.12-0.28	1.0
Routine and manual occupations	0.5	308	0.06	0.38-0.62	1.1

Table A7 Standard errors and 95% confidence intervals for proportion of eight-year-olds reported as having oral condition problems occasionally, fairly often or very often in the preceding 12 months by socio-economic classification (NS-SEC) of household (United Kingdom, 2003)

Type of problem	Percentage (p)	Unweighted sample size	Standard error of p	95% confidence intervals	Deft
Pain					
Toothache or sore mouth					
Managerial/professional occupations	14	318	2.6	9-19	1.3
Intermediate occupations	21	177	4.1	13-29	1.3
Routine and manual occupations	27	343	3	21-33	1.3
Impact on oral function					
Problems chewing, talking					
Managerial/professional occupations	2	318	0.7	1-3	0.8
Intermediate occupations	4	177	2.3	*	1.6
Routine and manual occupations	9	343	1.9	5-13	1.3
Impact on self-confidence					
Embarrassed, self-conscious or worried					
Managerial/professional occupations	7	318	1.3	4-10	0.9
Intermediate occupations	7	177	2.3	2-12	1.2
Routine and manual occupations	9	343	2.2	5-13	1.5
Impact on orally-related activity					
Stopped playing musical instrument					
Managerial/professional occupations	4	318	1.4	1-7	1.3
Intermediate occupations	3	177	2.3	*	1.7
Routine and manual occupations	6	343	1.4	3-9	1.1
Impact on emotions					
Becoming less cheerful or more irritable					
Managerial/professional occupations	3	318	1	1-5	1.0
Intermediate occupations	7	177	2.3	2-12	1.2
Routine and manual occupations	7	343	1.9	3-11	1.3
Impact on social functioning					
Stopping playing or speaking to friends					
Managerial/professional occupations	1	318	0.7	0-2	1.1
Intermediate occupations	0	177	0	*	*
Routine and manual occupations	1	343	0.6	0-2	1.1
Impact on General Health					
General health affected					
Managerial/professional occupations	1	318	0.6	0-2	1.1
Intermediate occupations	2	177	1.2	0-4	1.2
Routine and manual occupations	2	343	0.9	0-4	1.0
Impact on Life Overall					
Life as a whole made significantly worse					
Managerial/professional occupations	1	318	0.5	0-2	1.1
Intermediate occupations	2	177	1.2	0-4	1.1
Routine and manual occupations	4	343	1.4	1-7	1.4
Percentage reporting at least one problem					
Managerial/professional occupations	21	318	3.2	15-27	1.4
Intermediate occupations	25	177	4.7	16-34	1.4
Routine and manual occupations	32	343	2.9	26-38	1.2
Mean number of impact problems reported					
Managerial/professional occupations	0.3	318	0.05	0.20-0.40	1.1
Intermediate occupations	0.4	177	0.12	0.16-0.64	1.6
Routine and manual occupations	0.6	343	0.08	0.44-0.76	1.2

Table A8 Standard errors and 95% confidence intervals for proportion of 12-year-olds reported as having oral condition problems occasionally, fairly often or very often in the preceding 12 months by socio-economic classification (NS-SEC) of household (United Kingdom, 2003)

Type of problem	Percentage (p)	Unweighted sample size	Standard error of p	95% confidence intervals	Deft
Pain					
Toothache or sore mouth					
Managerial/professional occupations	26	324	2.4	21-31	1.0
Intermediate occupations	31	150	5.9	19-43	1.5
Routine and manual occupations	22	264	3.3	16-28	1.3
Impact on oral function					
Problems chewing, talking					
Managerial/professional occupations	5	324	1.7	2-8	1.5
Intermediate occupations	6	150	2.2	2-10	1.1
Routine and manual occupations	5	264	1.8	1-9	1.3
Impact on self-confidence					
Embarrassed, self-conscious or worried					
Managerial/professional occupations	11	324	2.1	7-15	1.2
Intermediate occupations	9	150	4.2	1-17	1.8
Routine and manual occupations	9	264	2	5-13	1.1
Impact on orally-related activity					
Stopped playing musical instrument					
Managerial/professional occupations	8	324	2.2	4-12	1.4
Intermediate occupations	5	150	1.9	1-9	1.1
Routine and manual occupations	4	264	1.7	1-7	1.4
Impact on emotions					
Becoming less cheerful or more irritable					
Managerial/professional occupations	8	324	1.5	5-11	1.0
Intermediate occupations	3	150	1.3	0-6	0.9
Routine and manual occupations	6	264	1.8	2-10	1.3
Impact on social functioning					
Stopping playing or speaking to friends					
Managerial/professional occupations	2	324	1	0-4	1.2
Intermediate occupations	0	150	0.2	*	0.5
Routine and manual occupations	1	264	0.6	0-2	1.2
Impact on General Health					
General health affected					
Managerial/professional occupations	2	324	0.9	0-4	1.3
Intermediate occupations	2	150	1.5	*	1.3
Routine and manual occupations	1	264	0.8	*	1.1
Impact on Life Overall					
Life as a whole made significantly worse					
Managerial/professional occupations	3	324	1.1	1-5	1.2
Intermediate occupations	1	150	0.9	*	1.0
Routine and manual occupations	2	264	0.9	0-4	1.1
Percentage reporting at least one problem					
Managerial/professional occupations	33	324	2.9	27-39	1.1
Intermediate occupations	38	150	6.7	25-51	1.7
Routine and manual occupations	31	264	4.1	23-39	1.4
Mean number of impact problems reported					
Managerial/professional occupations	0.6	324	0.07	0.46-0.74	1.1
Intermediate occupations	0.5	150	0.11	0.28-0.72	1.6
Routine and manual occupations	0.5	264	0.07	0.36-0.64	1.3

Table A9 Standard errors and 95% confidence intervals for proportion of 15-year-olds reported as having oral condition problems occasionally, fairly often or very often in the preceding 12 months by socio-economic classification (NS-SEC) of household (United Kingdom, 2003)

Type of problem	Percentage (p)	Unweighted sample size	Standard error of p	95% confidence intervals	Deft
Pain					
Toothache or sore mouth					
Managerial/professional occupations	14	253	3	8-20	1.4
Intermediate occupations	20	127	4	12-28	1.1
Routine and manual occupations	25	203	3.9	17-33	1.3
Impact on oral function					
Problems chewing, talking					
Managerial/professional occupations	5	253	1.6	2-8	1.2
Intermediate occupations	11	127	3.9	3-19	1.4
Routine and manual occupations	8	203	2.9	2-14	1.5
Impact on self-confidence					
Embarrassed, self-conscious or worried					
Managerial/professional occupations	9	253	2.6	4-14	1.5
Intermediate occupations	14	127	3.7	7-21	1.2
Routine and manual occupations	6	203	2	2-10	1.2
Impact on orally-related activity					
Stopped playing musical instrument					
Managerial/professional occupations	6	253	1.7	3-9	1.2
Intermediate occupations	9	127	2	5-13	0.8
Routine and manual occupations	8	203	1.9	4-12	1.0
Impact on emotions					
Becoming less cheerful or more irritable					
Managerial/professional occupations	5	253	1.4	3-8	1.1
Intermediate occupations	5	127	2.7	0-10	1.4
Routine and manual occupations	3	203	1.5	0-6	1.2
Impact on social functioning					
Stopping playing or speaking to friends					
Managerial/professional occupations	2	253	0.9	0-4	1.1
Intermediate occupations	0	127	0	*	*
Routine and manual occupations	1	203	0.6	0-2	1.1
Impact on General Health					
General health affected					
Managerial/professional occupations	0	253	0	*	*
Intermediate occupations	0	127	0	*	*
Routine and manual occupations	0	203	0.2	*	0.6
Impact on Life Overall					
Life as a whole made significantly worse					
Managerial/professional occupations	1	253	0.8	*	1.2
Intermediate occupations	0	127	0.3	*	0.5
Routine and manual occupations	0	203	0.1	*	0.5
Percentage reporting at least one problem					
Managerial/professional occupations	23	253	3.8	16-30	1.4
Intermediate occupations	30	127	4.3	22-38	1.1
Routine and manual occupations	32	203	4.0	24-40	1.2
Mean number of impact problems reported					
Managerial/professional occupations	0.4	253	0.08	0.24-0.56	1.4
Intermediate occupations	0.6	127	0.11	0.38-0.82	1.1
Routine and manual occupations	0.5	203	0.07	0.36-0.64	1.1