Children's Dental Health Survey

Executive Summary
England, Wales and Northern Ireland, 2013

Introduction

The 2013 Children's Dental Health (CDH) Survey, commissioned by the Health and Social Care Information Centre (www.hscic.gov.uk), is the fifth in a series of national children's dental health surveys that have been carried out every ten years since 1973.

The 2013 survey provides statistical estimates on the dental health of 5, 8, 12 and 15 year old children in England, Wales and Northern Ireland, using data collected during dental examinations conducted in schools on a random sample of children by NHS dentists and nurses. The survey measures changes in oral health since the last survey in 2003, and provides information on the distribution and severity of oral diseases and conditions in 2013.

The survey oversampled schools with high rates of free school meal eligibility to enable comparison of children from lower income families[1] (children eligible for free school meals in 2013) with other children of the same age, in terms of their oral health, and related perceptions and behaviours[2].

The 2013 survey dental examination was extended so that tooth decay (dental caries) could be measured across a range of detection thresholds. This reflects the way in which the detection and management of tooth decay has evolved towards more preventive approaches to care, rather than just providing treatment for disease. This survey provides estimates for dental decay across the continuum of caries, including both restorative and preventive care needs[3].

Complementary information on the children's experiences, perceptions and behaviours relevant to their oral health was collected from parents and 12 and 15 year old children using self-completion questionnaires. The self-completion questionnaire for older children was introduced for the 2013 survey.

[1] In 2013 when this survey took place, a free school meal was a statutory benefit available **only** to school aged children from families who received other qualifying benefits (such as Income Support).
[2] Differences in clinical outcomes between socio-economic groups are likely to reflect different attitudes, behaviours and experiences relevant to oral health that may also be mediated through other demographic characteristics such as ethnicity and country of birth
[3] Estimates from the four detection thresholds measured in the 2013 survey are available in Report 2.

Headline findings

There were reductions in the extent and severity of tooth decay present in the permanent teeth of 12 and 15 year olds overall in England, Wales and Northern Ireland between 2003 and 2013. Large proportions of children, however, continue to be affected by disease, and the burden of disease is substantial in those children that have it.

- In 2013, nearly a half (46%) of 15 year olds and a third (34%) of 12 year olds had "obvious decay experience"[4] in their permanent teeth. This was a reduction from 2003, when the comparable figures were 56% and 43% respectively.
- The proportions of children with some untreated decay into dentine[5] in permanent teeth have also reduced, from 32% to 21% of 15 year olds and from 29% to 19% of 12 year olds.
- In 2013, nearly a third (31%) of 5 year olds and nearly a half (46%) of 8 year olds had obvious decay experience in their primary teeth[6]. Untreated decay into dentine in primary teeth was found in 28% of 5 year olds and 39% of 8 year olds.
- In 5 year olds, the average number of primary teeth with obvious decay experience (dmft) was 0.9. Among 5 year olds with such decay, the average number of teeth affected was 3.0.
- In 12 year olds, the mean (average) number of permanent teeth affected by obvious decay experience (DMFT) was 0.8. Among 12 year olds with any such decay, the mean number of teeth affected was 2.5.

Children who were from lower income families (eligible for free school meals) are more likely to have oral disease than other children of the same age.

- A fifth (21%) of the 5 year olds who were eligible for free school meals had severe or extensive tooth decay, compared to 11% of 5 year olds who were not eligible for free school meals.
- A quarter (26%) of the 15 year olds who were eligible for free school meals had severe or extensive tooth decay, compared to 12% of 15 year olds who were not eligible for free school meals

Oral health affects the health and wellbeing of older children and their families.

- A fifth of 12 and 15 year olds (22% and 19% respectively) reported experiencing difficulty eating in the past three months.
- More than a third (35%) of 12 year olds and more than a quarter (28%) of 15 year olds reported being embarrassed to smile or laugh due to the condition of their teeth.
- Overall, 58% of 12 year olds and 45% of 15 year olds reported that their daily life had been affected by problems with their teeth and mouth in the past three months.

[4] Obvious decay experience includes untreated decay requiring fillings or tooth extraction, fillings and teeth lost because of decay, dmft for primary teeth and DMFT for permanent teeth
[5] Decay into dentine is current, untreated tooth decay requiring fillings or tooth extraction
[6] Trends were not possible for decay in primary teeth due to methodological changes to the process for securing consent from parents of 5 and 8 year olds for the survey dental examination. See section 2.1.5 of Report 2 for more information.

- More than a third (35%) of the parents of 15 year olds reported that their child's oral health had impacted on family life in the last six months; 23% of the parents of 15 year olds took time off work because of their child's oral health in that period.

Oral health perceptions and behaviours

A majority of older children were positive about their oral health. About half of 12 year olds (51%) and three fifths of 15 year olds (60%) were satisfied with the appearance of their teeth.

Reported problems with oral health were common, however, and these impacted on children and their families.

- A fifth of 12 and 15 year olds (22% and 19% respectively) reported experiencing difficulty eating in the past three months; 35% of 12 year olds and 28% of 15 year olds reported being embarrassed to smile or laugh due to the condition of their teeth.
- Over a fifth (23%) of the parents of 15 year olds said that they had taken time off work because of their child's oral health in the last six months; 7% of parents of 5 year olds said this.

A majority of children behaved in ways that were likely to promote oral health. In most cases the proportion of children engaging in these behaviours was similar to 2003. There were sizeable proportions of children whose behaviours were less positive.

- Over four fifths of 12 year olds (81%) and 15 year olds (82%) reported attending the dentist for a check-up. Parents said that nine in ten children of all ages did so.
- More than three quarters of older children reported brushing their teeth twice a day or more often (77% of 12 year olds and 81% of 15 year olds). Parents said that more than eight in ten children of all ages did so.
- A minority of older children, 16% of 12 year olds and 14% of 15 year olds, reported consuming sugary drinks four or more times a day, putting them at increased risk of developing dental caries.

Children who were from lower income families (eligible for free school meals) were more likely than children who were not eligible to report, or have reported by their parents, behaviours that were likely to have a negative impact on their oral health.

- Not attending the dentist for a check-up (26% compared to 15% in 15 year olds; 19% compared to 9% in 5 year olds).
- Brushing their teeth less than twice a day (28% compared to 18% in 15 year olds; 31% compared to 15% in 5 year olds).
- Consuming sugary drinks four or more times a day (26% compared to 13% in 12 year olds; 26% compared to 12% in 15 year olds)7.

Dental disease and damage in children

- In terms of trends in tooth decay, the percentage of 12 year olds affected by obvious decay experience (DMFT) in permanent teeth reduced from 43% in 2003 to 34% in 2013. In 15

[7] Note that data on reported daily frequency of sugar consumption is only available for 12 and 15 year olds

year olds, there was a reduction from 56% to 46%. More than half of 15 year olds in England, Wales and Northern Ireland had no obvious decay experience in 2013[8].

- The proportion of 12 and 15 year olds with untreated decay into dentine (DT) also reduced, from 29% to 19% in 12 year olds, and from 32% to 21% in 15 year olds.
- The reduction in previous decades in the proportion of older children with untreated dentine cavities (generally more advanced decay) in permanent teeth has not continued. Around one in ten 12 year olds (10%) and 15 year olds (11%) in 2013 had such cavities, a similar proportion of children as in 2003.

The distribution of decay is very uneven within children of all ages in 2013. The burden of disease for those that have disease is more extensive than average population estimates suggest.

- In 5 year olds the mean number of teeth affected by obvious decay experience (dmft) was 0.9. The percentage of 5 year olds affected by obvious decay experience (dmft) in their primary teeth was 31%, and the mean number of teeth affected for these 5 year olds with any such decay was 3.0.
- In 12 year olds, the mean number of permanent teeth affected by obvious decay experience (DMFT) was 0.8. Among the 34% of 12 year olds with any such decay, the mean number of teeth affected was 2.5.

Lower income measured by free school meal eligibility was associated with substantial inequalities in the likelihood of having tooth decay.

- In 5 year olds, four tenths (41%) of those eligible for free school meals had obvious decay experience in primary teeth, compared to three tenths (29%) of other children of the same age.
- In 15 year olds, three fifths (59%) of those eligible for free school meals had obvious decay experience in permanent teeth, compared to four fifths (43%) of other children of the same age.

The proportions of children with decay and the average number of teeth affected are larger once initial stage enamel decay is counted with decay into dentine, as "clinical decay".

- In 5 year olds, the mean number of teeth affected by clinical decay experience was 1.8 and the percentage of 5 year olds with clinical decay experience in primary teeth was 49%.
- The mean number of primary teeth with untreated clinical decay in 5 year olds was 1.7, compared to the 0.8 teeth affected by untreated decay into dentine.
- In 12 year olds, the mean number of teeth affected by clinical decay experience was 2.0 and the percentage of 12 year olds with clinical decay experience in permanent teeth was 57%.
- The mean number of permanent teeth with untreated clinical decay in 12 year olds was 1.6, compared to 0.4 teeth affected by untreated decay into dentine.

[8] Unavoidable changes in consent methodology for younger children mean that we cannot reliably assess trends over time for 5 and 8 year olds.

The results also show a varied picture across England, Wales and Northern Ireland in terms of disease prevalence, the relative make-up of the caries burden and the use of preventive care strategies.

Substantial proportions of children were also affected by non-carious conditions[9] in 2013.

- There was some evidence of reduction over time of the prevalence of some of these conditions. For example, the proportion of children with enamel defects (opacities) decreased from 35% in 2003 to 28% in 2013. The proportion of 12 and 15 year olds with plaque on their teeth also decreased (from 74% to 64% in 12 year olds and from 64% to 50% in 15 year olds.
- The proportions of children affected by tooth surface loss into dentine and pulp are low and consistent over time, although any such damage is a significant burden to have at the age of 15.
- Overall, 40% of 15 year olds had gingivitis, a similar level to 2003. No 15 year olds were found to have deep pockets (greater than 5.5mm). Shallow pockets (greater than 3.5mm but less than 5.5mm) were uncommon, affecting less than 5% of 15 year olds.

Good oral health in children

A composite indicator of good overall oral health combined an absence of obvious decay experience, no calculus and no severe tooth surface loss.

- Using this combined measure, nearly two fifths (38%) of children had good overall oral health.
- This was more common in England (39%) than in Wales (33%) or Northern Ireland (31%).
- Good overall oral health was also more common for 5 year olds (52%) than older children (34% of 8 year olds, 37% in 12 year olds and 30% in 15 year olds).

Severe or extensive tooth decay and oral health "burden"

Where severe or extensive decay occurs, it is important as it places a disproportionate burden on the child, their family and health services. Children were categorised as having severe or extensive decay where they exceeded a threshold on one or more of a set of indicators including those that indicated many affected teeth or some individual teeth where there was gross decay or sepsis.

- Approximately one in seven of the 5 and 15 year old children were classified as having either extensive or severe caries or both conditions (13% and 15%).
- Differences were found by country, with Wales (22% at ages 5 and 15) and Northern Ireland (19% at age 5 and 36% at age 15) showing a higher proportion with a severe or extensive decay burden than England (13% at age 5 and 14% at age 15).

[9] "Non-carious conditions" refers to a range of other oral health conditions including tooth surface loss, enamel defects (opacities), traumatic damage and periodontal condition. For more information, see section 2.1.4 in Report 2.

- Amongst 15 year olds, the high figure (36%) with severe or extensive decay in Northern Ireland was largely because of the high numbers of young people in Northern Ireland with five or more teeth with obvious decay experience, mostly in the form of filled teeth.
- There was a strong and consistent relationship between lower income and severe or extensive decay. For example, 26% of the 15 year olds who were eligible for free school meals had severe or extensive decay, compared to 12% of the rest.

There are other conditions which result in a substantial burden to the child, family or health services. In children, the need for orthodontic care is an important consideration

- At the age of 15, the proportion of children who still had a need for orthodontic treatment and were not receiving it was higher amongst children who were eligible for free school meals than among other children (32% compared to 17%). Such a difference was not apparent in 12 year olds.

The impact of oral disease

There are benefits from good oral health and costs from bad oral health on transition to adulthood in terms of subjective health and wellbeing. Older children were asked if they experienced any of eight different problems related to the condition of their teeth and mouth[10].

- Two fifths (39%) of 15 year olds with good overall oral health had experienced at least one of these problems related to the condition of their teeth and mouth in the last three months, compared with 48% of those with less good oral health.
- More than half (54%) of 15 year olds who had severe or extensive decay had at least one of these problems in the last three months, compared with 44% of 15 year olds without severe or extensive decay.

[10] The problems asked about in relation to older children's teeth and mouth were (in order): Difficulty in eating, difficulty speaking clearly, difficulty cleaning teeth, difficulty relaxing (including sleeping), whether felt different (e.g. being more impatient, irritated, easily upset), difficulty smiling, laughing and showing teeth without being embarrassed, difficulty doing homework, difficulty enjoying being with people