

Dental Health in Children and Young People

Introduction

Good oral health is essential to a child's general health, contributing to the development of a healthy child. It also has an effect on a child's psychosocial wellbeing and self-esteem. Children develop milk teeth as infants and adult teeth between the ages of six and twelve. Consumption of food and drinks high in sugar is linked to tooth decay as well as weight gain. Families benefit from advice about how to keep teeth healthy (food/drinks, brushing and having regular check-ups) from Dentists, The Healthy Child programme, Children's Centres and National Public Health campaigns.

Summary

Tooth decay is the most common oral disease affecting children and young people in England, yet it is largely preventable. Poor oral health can impact upon a child's ability to sleep, eat, speak, play and socialise with other children; causes pain, infections and is a leading cause of hospital admissions in older children. Oral health can also be used as a proxy measure for an unhealthy diet, tobacco use, harmful use of alcohol, and physical inactivity. In Norfolk around 18% of five-year olds show signs of dental decay (lower than the national average). There is consistent evidence that the amount of sugars consumed is linked to the development of dental caries and limiting sugars to less than 5% of energy intake will minimise the risk of dental caries throughout the life course.¹

Headlines

All children should see a dentist at least once a year and some dentists recommend more frequent check-ups. In 2015/16 in Norfolk 87% of children and young people aged 2-18 visited a dentist at least once in the year. This is highest among the school age group of 6-15 (94% of children aged 6-10 and 92% aged 11-15), and lower among pre-school children (aged 2-5 only 67% visited the dentist in a year) and young people aged 16-18 (68%) (See Figure 1). This suggests there may be a need to promote dental visits to parents of young children, to ensure the child gets used to going to the dentist at an early age and to encourage teenagers to maintain regular visits.²

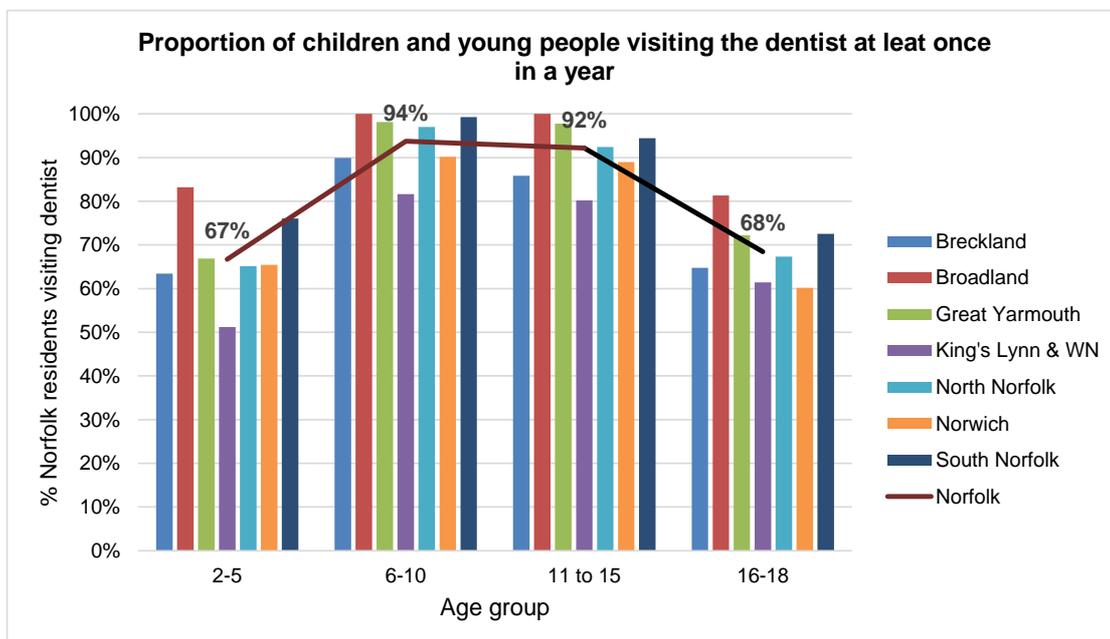


Figure 1: Proportion of children visiting the dentist at least once in the year 2015/16. Source: NHS Business Services Authority Dental Data

The Children's Dental Health Survey 2013 found that children whose parents said their child went to the dentist for regular check-ups experienced less tooth decay than those who went only when their child had

¹ Moynihan, P. J., Kelly, S. A. M. 2013. "Effect on Caries of Restricting Sugars Intake: Systematic Review to Inform WHO Guidelines." Journal of Dental Research. URL: <http://jdr.sagepub.com/content/93/1/8>

² NHS Business Services Authority Dental Data 2015/16

trouble or never went (12% compared to 22%).³ Figure 1 shows there is also quite a lot of variation across the districts for children attending annual dental check-ups, for example over 81% of 2-5 year olds visited a dentist in North Norfolk compared to just 51% in Norwich. Generally Norwich had the lowest rate in each age group. Great Yarmouth was similar to the Norfolk average for dental visits, but saw far more children having appointments for dental treatment. Overall nearly a quarter of children and young people (22%) attending a dentist had a “general band 2 appointment” (which usually means a filling), and 5% had a “urgent appointment” (due to severe infection, toothache or an accident) over the course of the year, ranging from 4% in Breckland, King’s Lynn, North and South Norfolk - to 8% in Great Yarmouth (5% in Broadland, 6% in Norwich).⁴

The most extreme evidence of poor dental health are tooth extractions as a result of caries which are carried out in hospital. The East of England Region has had the fewest children admitted to hospital for extractions (for caries and non-caries) over the last few years.

Oral health in children in Norfolk is generally good. In the most recent 2014/2015 National Dental Epidemiology Programme (NDEP) survey 81.7% of five year olds in Norfolk were seen to be free from dental decay. This compares with averages for East of England of 79.7% and England 75.2%. The proportion varies across Norfolk districts, from 91% in South Norfolk to just 73% in Norwich (see figure 2) but all areas are statistically similar to, or better than, the national average.⁵

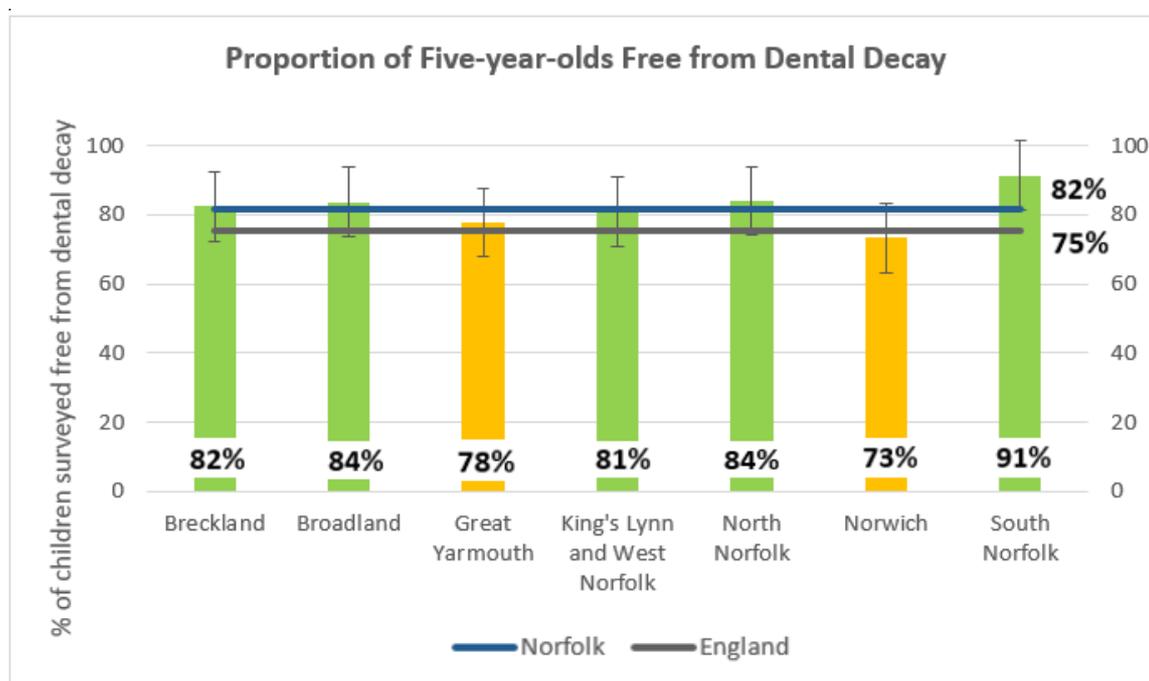


Figure 2: Proportion of five-year-olds free from dental decay. Source: Dental Public Health Epidemiology Programme for England: oral health survey of five-year-old children 2015. Note: Where bars are coloured red they are significantly worse than National average, yellow is no difference and green is significantly better.

The average number of decayed missing and filled teeth (dmft) in 5 year olds was 0.7 compared with East of England 0.7 and England 0.8.⁴ However population averages can mask oral health inequalities. Five year old children who suffer from dental decay in Norfolk have on average 3.8 decayed missing or filled teeth. This compares with an average of 3.2 for East of England and 3.4 for England.

Finished Consultant Episodes (FCEs) for children and adolescents aged 0-19 in Norfolk for hospital dental extraction (with caries as primary diagnosis) as a rate (percentage of the population of 0-19 year olds in that

³ Child Dental Health Survey 2013, England, Wales and Northern Ireland (2015) CDHS Report 4 Burden of Dental Disease <http://content.digital.nhs.uk/catalogue/PUB17137>

⁴ NHS Business Services Authority Dental Data 2015/16

⁵ Public Health England, Public Health Outcomes Indicator 4.01 “Proportion of five year old Children free from dental decay”. Source: Dental Public Health Epidemiology Programme for England: oral health survey of five-year-old children 2015 <https://fingertips.phe.org.uk/profile/cyphof/data#page/3/qid/8000025/pat/6/par/E12000006/ati/102/are/E10000020/iid/92441/age/34/sex/4>

district ONS Mid 2014 Population Estimates) is shown in Figure 3. This demonstrates the variation of extractions across the Districts.⁶ The rate demonstrates the variation across districts removing the impact of population size. Note; these are hospital extractions only i.e. not at the Dentist. Table 1 gives the values for these extractions, where * is shown the number has been suppressed to protect either a number less than 6 or to suppress the possibility of calculating another given value in the original data.⁵

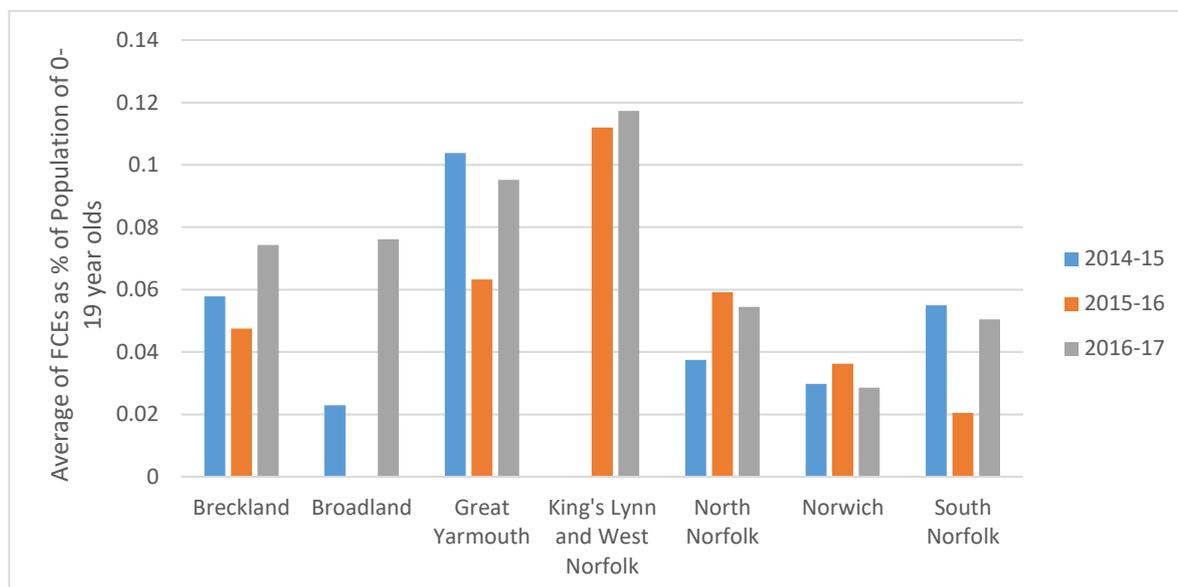


Fig 3. Average of FCEs as % of Population (caries as Primary diagnosis) of 0-19 year olds by Norfolk district 2014/15-2016/17⁷

	2014-15	2015-16	2016-17
Breckland	17	14	22
Broadland	6	*	20
Great Yarmouth	23	14	21
King's Lynn and West Norfolk	*	36	38
North Norfolk	7	11	10
Norwich	9	11	9
South Norfolk	16	6	15

Table 1. FCEs for extraction with caries as primary diagnosis of 0-19 year olds by Norfolk district 2014/15- 2016/17⁶

Influences on Health and Wellbeing

Poor oral health can impact upon a child's ability to sleep, eat, speak, play and socialise with other children; it causes pain, infections and is a leading cause of hospital admissions in older children. Oral health is therefore a fundamental part of overall health and wellbeing and when children are not healthy, this affects their ability to develop, learn and thrive. In the long-term there are associations between oral disease and the other major chronic non-communicable diseases, namely diabetes, cardiovascular diseases, cancers, and chronic respiratory diseases.⁸

Untreated tooth decay can lead to young children needing dental treatment under general anaesthesia, which presents a small but real risk of life-threatening complications for children.⁹ Tooth decay was the 14th most common reason for hospital admissions in children aged ten to fourteen years old in Norfolk in 2012/15. There are around 400 tooth extractions in total (caries and non-caries) carried out on children in Norfolk hospitals each year, 82% of cases are aged 10-19.¹⁰

⁶ http://www.nwph.net/dentalhealth/Extractions_270317.aspx Public Health England. Dental Health Extractions data. Hospital episodes for teeth extraction among children 0-19yrs 2011-12 to 2016-17.

⁷ http://www.nwph.net/dentalhealth/Extractions_270317.aspx Public Health England. Dental Health Extractions data. Hospital episodes for teeth extraction among children 0-19yrs 2011-12 to 2016-17.

⁸ Public Health England (2014) Local authorities improving oral health: commissioning better oral health for children and young people: An evidence-informed toolkit for local authorities.

⁹ The Royal College of Anaesthetists (2008) Your child's general anaesthetic for dental treatment.

¹⁰ Hospital Episode Statistics 2012-2015. Copyright © 2016, re-used with the permission of The Health & Social Care Information Centre. All rights reserved.

Consuming too much sugar can lead to tooth decay and is also linked to weight gain.¹¹¹²¹³ In 2010, the World Health Organisation (WHO) commissioned a systematic literature review on the effects of sugars on dental caries. This showed consistent evidence of a relationship between the amount of sugars consumed and dental caries development. Analysis of the data suggests that there may be benefit in limiting sugars to less than 5% of energy intake to minimise the risk of dental caries throughout the life course.¹⁴

Furthermore, the Scientific Advisory Committee on Nutrition (SACN) find a clear link between the consumption of sugars-containing foods and sugars-containing beverages and the incidence of dental caries both in deciduous and permanent teeth. SACN reviewed 11 cohort studies that identified a relationship between consumption of sugars-containing foods and the incidence of dental caries in deciduous dentition in children. They also reviewed seven cohort studies that presented evidence on the relationship between dental decay in children and sugars-sweetened beverages. A greater frequency of consumption was also found to be associated with higher incidence of dental caries.¹⁵

The SACN reviewed randomised control trials, which indicated that consumption of sugars-sweetened beverages, as compared with non-calorically sweetened beverages, results in weight gain and an increase in BMI in children and adolescents. Prospective cohort studies also generally confirm the link between sugars-sweetened beverages and increased obesity.¹⁶¹⁷

Social, environmental, population context

People living in deprived communities consistently have poorer oral health than people living in richer communities. The Children's Dental Health Survey 2013 found that children who were eligible for free school meals were twice as likely to display severe dental decay at age five compared to other children (21% versus 11%). This is attributed to behavioural/lifestyle factors as children eligible for free school meals also reported less frequent tooth brushing, less frequent dental attendance, drinking more sugary drinks and less water than more affluent groups.¹⁸

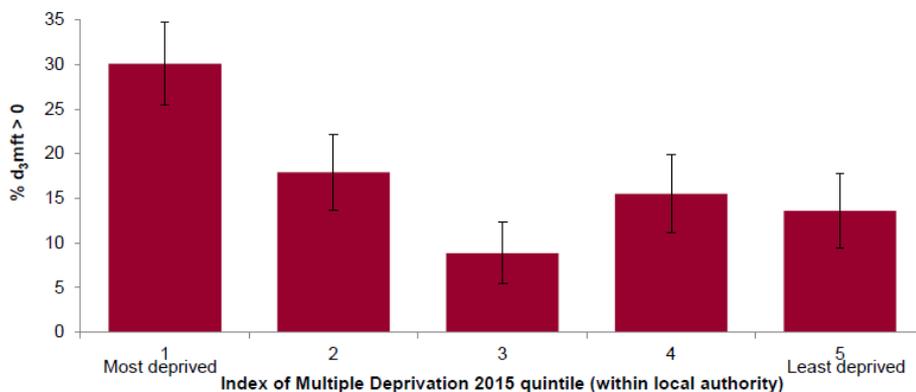


Fig 4. Prevalence of decay by Index of Multiple Deprivation 2015 quintiles for Norfolk local authority (including 95% confidence intervals)¹⁹

¹¹ <https://www.gov.uk/government/publications/sugar-reduction-from-evidence-into-action>

¹² http://bmjopen.bmj.com/content/6/6/e011052?utm_source=TrendMD&utm_medium=cpc&utm_campaign=BMJOp_TrendMD-0

¹³ <http://www.actiononsugar.org/>

¹⁴ Moynihan, P. J., Kelly, S. A. M. 2013. "Effect on Caries of Restricting Sugars Intake: Systematic Review to Inform WHO Guidelines." Journal of Dental Research. URL: <http://jdr.sagepub.com/content/93/1/8>

¹⁵ Scientific Advisory Committee on Nutrition. 2014. "Draft Carbohydrates and Health Report" pp.98-99

¹⁶ NHS Choices, 2014. "Obesity," URL: <http://www.nhs.uk/Conditions/Obesity/Pages/Introduction.aspx>

¹⁷ <http://adc.bmj.com/content/103/1/5>

¹⁸ Child Dental Health Survey 2013, England, Wales and Northern Ireland (2015) CDHS Report 4 Burden of Dental Disease <http://content.digital.nhs.uk/catalogue/PUB17137>

¹⁹ <http://content.digital.nhs.uk/article/2595/Hospital-admissions-for-tooth-decay-highest-amongst-Englands-most-deprived>

Poor oral health may be indicative of dental neglect and wider safeguarding issues. Dental neglect is defined as “the persistent failure to meet a child’s basic oral health needs, likely to result in the serious impairment of a child’s oral or general health or development”. Dental teams can contribute to a multi-agency approach to safeguard children and guidance is available to support this role.²⁰

Current services, local plans and strategies

All children are eligible for free dental healthcare on the NHS. There are 132 Dental Practices in Norfolk as well as Community Dental Services that provide specialised dental care to certain groups of children. Dental services are commissioned by NHS England.

Children’s Centres and other Early Years services are encouraged to promote good oral health and registration with a dentist. Norfolk’s Healthy Child Programme visit all families five times in the first two-years (antenatal, new birth, six weeks, one year and two years), and one of the issues they discuss is good dental health. The Healthy Child Programme encourages parents to register with a dentist when the child reaches two, which is reviewed at the 3.5 year school readiness check carried out alongside pre-school immunisations. School Nursing teams offer ‘transition into high school’ reviews that cover dental health and registration again at Year 6, they also offer support to PSHE delivery in schools and a texting service (Chathealth) for students to contact them directly about any health issues.

Tooth decay is the most common reason for 5–9 year olds in England to be admitted to hospital, for extractions. The NHS spends £3.4 billion on all age dental care and an estimated additional £2.3 billion is spent in the private dental market.²¹

The SACN recently concluded that sugar consumption increases the risk of consuming too many calories, the risk of tooth decay, and that consumption of sugar sweetened beverages is associated with increased risk of type 2 diabetes and linked to higher weight in children.¹⁷ As a first major step towards tackling childhood obesity, a soft drinks levy will be introduced across the UK from April 2018. Public Health England (PHE) is leading on this reformulation programme, engaging with all sectors of the food industry to reduce the amount of sugar in the foods that contribute most to children’s intakes by 20% by 2020, with a 5% reduction in the first year. The programme covers products that are intended for the very young and children up to the age of 18 years.²²

Considerations for Health and Wellbeing Board and Commissioners

Efforts are being put in place to reduce this burden. In June 2014 Public Health England (PHE) published, *Delivering better oral health*²³: an evidence-based toolkit for preventing dental caries in children’s oral health, outlining evidence-based interventions and advice on how dental professionals can provide preventative advice and treatment for their patients. PHE published further guidance, *Local authorities improving oral health: commissioning better oral health for children and young people*²⁴. This was produced to support local authorities in developing strategies to improve child oral health.

Local authorities are statutorily required to provide or commission oral health promotion programmes to improve the health of the local population, to an extent that they consider appropriate in their areas. They are also required to support oral health surveys. The oral health surveys are carried out as part of the Public Health England (PHE) dental public health intelligence programme.²⁵

Oral diseases are largely preventable; and there is a need to develop interventions to achieve sustained and long-term improvements in oral health and reduce inequalities. Improvements in oral health over the past 30 years have been largely unrelated to clinical treatment.²⁶ The greatest impact has been made by social,

²⁰ Public Health England (2014) *Local authorities improving oral health: commissioning better oral health for children and young people: An evidence-informed toolkit for local authorities.*

²¹ <https://www.england.nhs.uk/2014/02/improve-dental-cta/>

²² <https://www.gov.uk/government/publications/childhood-obesity-a-plan-for-action>

²³ <https://www.gov.uk/government/publications/delivering-better-oral-health-an-evidence-based-toolkit-for-prevention>

²⁴ <https://www.gov.uk/government/publications/improving-oral-health-an-evidence-informed-toolkit-for-local-authorities>

²⁵ As above

²⁶ Watt et al. (2012) Integrating the common risk factor approach into a social determinants framework. *Community dentistry and oral epidemiology* 40.4, pp. 289-296.

economic and environmental factors alongside the widespread use of fluoride toothpaste. There is potential for further decline by reducing sugar consumption, and appropriate exposure to fluorides and fissure sealants. Commissioners should consider how to promote evidence-based treatments and maintain awareness about the importance of regular tooth brushing, regular dental check-ups and restricting sugary food and drinks.

Examples of Public Health interventions to improve children's dental health on a population level include targeted supervised tooth brushing programme, a targeted fluoride varnish programme, water fluoridation, and targeted provision of toothbrushes. Many scientific studies from around the world have shown that fluoride varnish is effective in reducing the decay rate in children when used in addition to brushing teeth regularly with fluoride toothpaste.²⁷ 20% of courses of dental treatment on Norfolk children included fluoride varnish in 2015/16, compared to 37% on average in England.²⁸ This may mean that this preventative intervention could be better promoted in Norfolk.

Anglian water state that fluoride is not added to the water in Norfolk, whereas some Health Authorities do fund water suppliers to raise the level of fluoride, for example in areas of Bedfordshire, North Nottinghamshire and parts of Lincolnshire. From April 2013, the Secretary of State for Health became responsible for funding of existing fluoridation schemes and Local Authorities became responsible for proposing any new schemes, changes to existing schemes, and carrying out the public consultations.²⁹

Oral health is pertinent to ensure good general health and wellbeing in children and young people. Norfolk has levels of decay that are lower than the average for England. Although oral health has been generally improving additional measures are required to reduce the burden of the disease. A special focus should be put in places of higher deprivation.

²⁷ NHS Scotland – Childsmile and fluoride varnish <http://www.child-smile.org.uk/professionals/about-childsmile/childsmile-and-fluoride-varnish.aspx>

²⁸ NHS Dental Statistics England 2015-16 <http://content.digital.nhs.uk/catalogue/PUB21701>

²⁹ <http://www.anglianwater.co.uk/household/water-quality/fluoridation.aspx>

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NHS Dental Statistics England 2015-16
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