



**UK National
Screening Committee**

Screening for Dental Caries in Children aged 6 to 9 years.

External review against programme appraisal criteria
for the UK National Screening Committee (UK NSC)

Version: Two

January 2013

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Jan 2013

(consultation comments addressed 12/04/2014)

Summary

The National Screening Committee recommended in 1996 that population screening for dental disease in children aged 6 to 9 years should be discontinued. This recommendation should be upheld because:

There is no new evidence that screening children for dental disease between the ages of 6 and 9 by the school dental service in England is effective,

- there is evidence that preventive measures work if accessed,
- the level of dental disease in children continues to fall although inequalities persist,
- the screening test has a low sensitivity and high specificity,
- new systems for delivering general dental services, to which a high proportion of children attend, are being introduced. These services promote prevention, undertake case finding and provide clear pathways for treatment.

However, there remain a number of children who are at high risk of dental disease due to social factors. They are also less likely to attend a general dental practitioner. This population require special consideration. Other high risk groups due to other medical conditions and education disabilities may also require special consideration.

1 Introduction

This paper uses evidence published up to October 2012 on screening for dental caries in children aged between 6 and 9 years against the UK National Screening Committee (NSC) Criteria for appraising the viability, effectiveness and appropriateness of a screening programme.¹

The present NSC recommendation, published in 2006, was to discontinue population screening for dental disease among children aged 6 to 9 years.²

For this update a literature review was carried out in October 2012 on English language literature published January 2005 to October 2012.

Background

The NHS salaried dental services had been undertaking statutory dental inspections of school children (screening) since 1918 to identify those in need of further examination and treatment and to advise parents or carers of the action they should take.

Research in the 1980s started to question the aims and effectiveness of the screening examinations. Results of a large Randomised Control Trial (RCT) published in 2006 demonstrated that school dental screening (as undertaken then) was “ineffective at a population level in reducing levels of untreated disease and increasing attendance of those who need treatment.”³

On 7 November 2006, the UK National Screening Committee (UK NSC) recommended to the UK Chief Dental Officers that there was no evidence to support the continued population screening for dental disease among children aged 6 to 9 years. The Committee's recommendation was based in part on the view that the resources currently used for screening could be used more effectively in other ways to tackle oral health inequalities.²

The Department of Health (DH) wrote to Primary Care Trusts (PCTs)⁴ to advise them that the decision as to whether to continue with school dental screening in England was a matter for individual PCTs. This letter said that in areas of the country where oral health is poor and screening can be shown to be effective in reducing levels of untreated dental disease, there might be a case for continuing to commission a screening programme, subject to receiving positive consent from parents/carers. However, where PCTs decide to discontinue with a dental screening programme, it was likely that this would free up on average some 4-5% of the workforce hours (for dentists and dental nurses) of salaried primary dental care services. The exact percentage of released workforce hours depended on the volume of screening that was being carried out at that time. The letter also said that many salaried dental services had already discontinued school screening in light of the guidance on the need for positive consent. Following a review of procedures used for obtaining consent for all dental examinations in schools (whether conducted for screening or surveys) it was deemed necessary to obtain positive consent from either the child (if he/she was judged to be competent to give consent) or from the parents (or relevant person with parental responsibility).⁴

The UK NSC noted that there was a marked social inequality in the incidence and prevalence of dental disease and the use of services, even after access to services was improved.² On this basis, the UKNSC assumed that any resources freed up by discontinuing screening would most likely be used in other ways to reduce oral health inequalities. They suggested this might be done by boosting the capacity of salaried dental services to reduce waiting times for special needs groups or for those children and adults who are unable to receive treatment through general dental services; and/or epidemiological surveys.

The DH also said that the Department for Education and Skills supported health promotion activities in schools and that information about the work of health professionals, including salaried dentists, in schools would be included in the Department's 'extended school programme', which aims to increase parental involvement in schools. However, as there was no standard, centrally prescribed paperwork for conducting procedures for the admission of children to schools it was for each school to devise its own arrangements.⁴

PCTs were therefore advised to:

- review their programmes for screening the dental health of school children in the light of the advice from the National Screening Committee,
- consider, where PCTs decide to discontinue with screening, how resources can be used most effectively to address inequalities in oral health in other ways,
- work with schools and local authorities to introduce arrangements for parents/carers to give consent to their children receiving dental inspections in connection with epidemiological surveys.⁴

Most PCTs decided to discontinue population based school dental screening although some did continue a service in schools for children with special needs.

2 The Condition

2.1 The condition should be an important health problem

2.2. The epidemiology and natural history of the condition, including development from latent to declared disease, should be adequately understood and there should be a detectable risk factor, disease marker, latent period or early symptomatic stage

The condition

Dental caries is one of the most common preventable childhood diseases. It is the primary cause of oral pain and tooth loss. It can be arrested and potentially reversed in its early stages, but is often not self-limiting and without proper care, caries can progress until the tooth is destroyed.⁵

Dental caries, also known as tooth decay or a cavity, is a bacterial infection that can occur when bacteria colonize a tooth surface in the presence of dietary carbohydrates, especially refined sugars. The bacteria metabolize the carbohydrates, producing lactic acid, which over time demineralises the tooth structure.⁶ The earliest visible manifestation is the appearance of a demineralised area on the tooth surface, which presents either as a small white spot on a smooth surface or a pit or fissure. At this stage, a caries lesion is usually reversible. If oral conditions do not change, demineralization will continue with the tooth surface losing its natural contour and a “cavity” developing. When this occurs restorative treatment is necessary to prevent the continuation of the caries process. If left untreated the caries will eventually result in inflammation and pressure on the nerve leading ultimately to tooth loss.

Progression of individual caries lesions is typically slow, but it can be extremely rapid in a small proportion of individuals and especially in primary teeth, which have thinner enamel. Because dental caries is a chronic disease of microbial origin, the elimination of active caries lesions through treatment does not necessarily mean that the disease has

been eradicated. An individual's risk for dental caries can change with time, as the factors that cause caries change, leading to new caries events around already treated lesions or on previously unaffected tooth surfaces.

The first set of teeth in children called deciduous teeth or primary teeth, start to erupt at about six months of age. Secondary or permanent teeth occur from about six years. Most of the secondary teeth are usually in place by twelve to fourteen years of age. The third molar teeth or wisdom teeth usually erupt between seventeen and twenty-one years.

Dental caries can occur soon after eruption of the primary teeth, starting at 6 months of age. Referred to as early childhood caries (ECC), dental caries in preschool children can take several forms. The most severe form has a pattern of early initial attack on the maxillary incisors with the attack continuing on other teeth as they erupt.⁷ Dental caries incidence begins in the permanent teeth at about 6 years with the eruption of central incisors and the first permanent molars.

Dental caries in primary teeth has short and longer-term negative consequences. Caries lesions often cause pain because they can progress rapidly in primary teeth and involve the pulp before they are either detected or treated. Regardless of their degree of progression, lesions cavitated into dentin require reparative treatment or tooth extraction; both are frequently traumatic experiences for young children. Longer-term consequences of dental caries in primary teeth include an increased probability of caries in the permanent dentition and possible loss of arch space. Lack of treatment for caries in primary teeth will often result in the premature loss of the primary teeth, especially molars, which are at risk for the longest period. Premature loss of primary molars can lead to loss of arch space as the first permanent molars drift into the missing tooth spaces. The result can be crowding of the permanent teeth, the severity of which depends on the amount of lost space. Anterior tooth crowding affects aesthetics and may require corrective orthodontic treatment.

Prevalence

Worldwide, most children and an estimated ninety percent of adults have experienced caries, with the disease most prevalent in Latin America, the Middle East, and South Asia, and least prevalent in China.⁸ In the United States, dental caries is the most common chronic childhood disease, being at least five times more common than asthma.⁹ It is the primary pathological cause of tooth loss in children. The number of cases has decreased in developed countries. This decline is usually attributed to the widespread use of fluoridated toothpaste.¹⁰ Nonetheless; countries that have experienced an overall decrease in cases of tooth decay continue to have a disparity in the distribution of the disease which is associated with low income families.^{5,10,11} Increased risk of dental caries is also associated with idiopathic juvenile arthritis.

The classic "DMF" (decay/missing/filled) index is one of the most common methods for assessing caries prevalence as well as dental treatment needs among populations.⁵ This index is based on clinical examination by using a probe, mirror and cotton rolls. Because the DMF index is done without X-ray, it underestimates real caries prevalence and treatment needs.

The United Kingdom has undertaken a dental survey of the oral health of a representative sample of 5, 8, 12 and 15 year olds since 1973. In 2003 10,381 children participated which was a response rate of 83%. The survey method has recently changed thus the direct comparison of results is not possible. However, it is clear that the level of caries has reduced significantly since 1973 with a flattening of that reduction since 1993 especially in the younger age group. It is suggested that in the older age group with permanent teeth the impact of fluoride toothpaste is important but it is not understood why the dental health of under five year olds has not got progressively better in the same way as with older children.

In the 2008 survey the following results were found for England.¹² The results for the survey undertaken in 2012 are awaited.

Five year olds		Twelve year olds	
Dental decay: percentage free of dental decay in England			
69.1		66.5	
In both age groups highest in North East and lowest in the South East			
Severity of dental decay of those affected in England: average number of decayed, missing or filled teeth (D3MFT)			
1.11		0.75	
Highest in the North West and lowest in the South East for both age groups			
The number of decayed teeth			
0.87		0.32	
The number of filled and missing teeth (due to dental decay)			
Filled	0.12	0.35	
Missing	0.12	0.07	

In twelve year olds the reduction in children experiencing dental caries has fallen from 90% in 1973 to 50% in 1993 and 33% in 2009. Dental health in 12 years old is among the best in Europe.

The survey of 2008 was the first where consent for participation in the survey was required. Only a small proportion of parents actively stated that they did not want their child included in the survey but non attendance was far more common. The non responders in the survey tended to be from more deprived areas. There is an established relationship between deprivation and dental decay whereby children from more deprived areas tend to have higher levels of dental decay. The 2008 data was weighted for deprivation but the missing data may mean a lower level of caries was reported. In previous surveys the response rates of 75% and above had been readily achieved and considered by the British Association of School and Community Dentists to provide sufficient confidence to enable publication and comparison with the results of previous surveys. In England during 2007/08, only 66.8% of the drawn sample was included in the final analysis therefore national level comparisons with previous surveys could not be made with confidence. Response rates varied widely from 58.4% in London to 75.1% in Oxfordshire and Berkshire. There were also localised variation with a response rate of 24.3% in Bournemouth and Poole compared to 90.3% in Tameside & Glossop. Although the results of the 2008 survey are not directly comparable with those of the previous series for the reasons outlined, the ranking of the geographical area and the geography of the inequality (more disease in those with the greatest deprivation) in disease levels is broadly consistent with previous surveys. When the 2011/12 data is available (due spring 2013) a better comparison will be possible

Conclusion

The prevalence of dental caries in children in the UK has fallen considerably but remains the main cause of dental disease and loss of teeth. The limited reduction in 5 years olds' deciduous teeth is concerning. It is a disease associated with deprivation and in those populations dental disease levels are higher.

2.3. All the cost-effective primary prevention interventions should have been implemented as far as practicable

Prevention

In 2005 the DH published *Choosing Better Oral Health: An Oral Health Plan for England*.¹¹ It stated that "due to the considerable improvement in dental health in England over the last 30 years there had been a radical change in the way in which dentistry is delivered in England moving away from a treatment focused service to a more preventive model of care." This plan was followed in 2007 with an evidence-based toolkit for prevention guidance to help promote oral health and prevent oral disease in all patients.¹³ The tool-kit was updated in 2009¹⁴ and a 2013 version is anticipated.

The Department of Health in 2011 embarked on a new approach to the way the NHS dental primary care dental contract should be delivered. A series of pilot projects have been set up and are currently being evaluated. The Pilot programme was extended in November 2102. There is an expectation that these pilot projects will ultimately lead to a new clinical pathway driven approach to the way primary dental care is delivered; in particular prevention of dental disease is expected to take a more central role. It is anticipated that a new national primary dental care contract will be in place by 2014 (later delayed to 2015 or 2016).

A pilot of the new approach in 70 dental practices across England began in summer 2011. Research carried out by ICM Research in April - June 2012 explored how the new approach was working.¹⁵ More than 95% of the respondents to the survey described themselves as satisfied with their experience of NHS dental care at their primary dental practice in the last nine months. They considered that they had better understanding of how to look after their (or their children's) teeth and gums. Dentists and practice staff also report positively on the new Clinical Care Pathway. Included in the pathway is a new Oral Health Assessments (OHA) which replaces routine check-up appointments. This proved longer to administer than anticipated but the majority (82%) of dentists and practice staff surveyed feel that OHAs enable them to deliver better care to patients by encouraging self care and supporting communication with patients. To date there are no results on outcomes in relation to changes in oral health and specifically children and caries.

The toolkit for primary prevention has clear evidenced based advice according to age and level of disease risk.¹⁴ The main focus is on twice daily brushing of teeth with fluoride toothpaste and reducing sugary drinks and food. The guidance also advises fluoride varnishes twice yearly for children over the age of 3 years.

Approaches to the prevention of dental caries involve;

- attempts to reduce the microbiological burden,
- reduce the availability of refined sugars,
- increasing the resistance of teeth, or some combination of these approaches.

Reducing the microbiological burden is the focus of interventions using antimicrobial rinses and dentifrices and behavioural interventions to improve oral hygiene and thus remove the bacterial plaque coating tooth surfaces. Behavioural interventions are also used to reduce the availability of fermentable carbohydrates through changes in the diet and frequency of ingestion of refined sugar. Increasing the resistance of teeth is typically achieved through the use of sealants and fluorides.

Sealants are applied to the occlusal surfaces of molars and premolars, denying bacteria access to these often hard-to-clean areas. Fluorides are used both topically (fluoride

dentifrices, rinses, gels, foams, and varnishes) and systemically (fluoridated water, dietary fluoride supplements) for both prevention and management (i.e. remineralisation) of dental caries. After exposure, fluoride becomes available in plaque, saliva, and the tooth's outer layer, where it increases resistance to acid dissolution, serves as a reservoir for demineralisation of the initial caries lesions, or acts as a bacterial inhibitor when released through acid.

The Cochrane library has eighteen systematic reviews of trials to prevent caries. All these reviews have been edited by the Cochrane Oral Health Group.¹⁶

Fluorides

A Cochrane review published in 2009 by Marinho et al considered the use of fluoride toothpaste. They stated that fluoride toothpaste has been used for three decades and remain the bench mark for preventive measures. They determined that children who brush their teeth at least once a day with a toothpaste that contains fluoride will have less tooth decay with fewer decayed, missing and filled permanent teeth after three years (regardless of whether their drinking water was fluoridated). Twice a day use increased the benefit. No conclusion could be reached about the risk that using fluoride toothpastes could mottle teeth (fluorosis), an effect of chronic ingestion of excessive amounts of fluoride when children are young.¹⁷ The same group identified that topical fluorides such as mouth rinses and gels do not appear to be more effective at reducing tooth decay in children and adolescents than fluoride toothpaste. Their review of trials found that fluoride toothpastes, mouth rinses and gels reduce tooth decay in children and adolescents to a similar extent but toothpastes are more likely to be regularly used. There was no strong evidence that varnishes are more effective than other types of topical fluoride.¹⁸ Fluoride varnishes are however commonly used and they reported that trials show that fluoride varnishes applied professionally two to four times a year would substantially reduce tooth decay in children and could substantially reduce tooth decay in both milk teeth and permanent teeth. They considered that more, high quality research was needed to be sure of how big a difference the treatment makes, and to study acceptability and adverse effects.¹⁹ On reviewing concerns about fluorosis or teeth mottling the same review group identified that there is stronger evidence that higher levels of fluoride (1000 parts per million (ppm) or more) in toothpaste are associated with an increased risk of fluorosis when given to children under 5 to 6 years of age. Despite this they considered that for some children (those considered to be at high risk of tooth decay by their dentist), the benefit to health of preventing decay may outweigh the risk of fluorosis and in such circumstances, careful brushing by parents/adults with toothpastes containing higher levels of fluoride would be beneficial.²⁰

Dental health education

Unhealthy sugar consumption habits are known to be associated with high rates of dental decay. Members of the dental team may assess patients' diets and give dental health education by highlighting areas where diet could be improved to reduce dental disease. Whether patients/parents take note of advice given to them and change their diet as a result, is less certain. A Cochrane review published in 2012, was undertaken to determine whether efforts by dentists and other dental staff members are successful in changing patients' diets.²¹ The review looked at studies where dietary advice was given in a dental surgery or a similar place, and where the advice was given by one member of staff to an individual patient. The studies considered all age groups and parents on behalf of their children. Five studies were identified. Two of these were concerned with diet advice concerning general health. In both there was a change to healthier behaviour following the advice. Three studies attempted to change sugar consumption habits in order to reduce dental decay. In two out of these three studies there were also other types and forms of advice given at the same time, for example about tooth brushing. It was therefore impossible to say whether changes in diet came about because of the diet advice given or because they were subtly influenced by the other messages. For example: advice on tooth brushing might make patients more aware of their oral health resulting in changes to their diet. The conclusion of the Cochrane review was that studies concerning sugar consumption are of relatively weak quality and that the evidence for dietary advice aiming to change sugar consumption is poor and further studies in this area should be considered. They considered that oral health promotion per se has not been shown to be effective unless fluoride is included in the intervention.

Pit and Fissure Sealants

A 2008 set of evidence based clinical recommendations by the American Dental Association Scientific Committee stated that pit and fissure sealants should be placed on pits and fissures of children's primary teeth when it is determined that the tooth, or the patient, is at risk of experiencing caries and sealants should be placed on pits and fissures of children's and adolescents' permanent teeth when it is determined that the tooth, or the patient, is at risk of experiencing caries.²² According to the Scottish Intercollegiate Guidelines, Preventing Caries in High Risk Children; "the selection of patients who will benefit from sealants most is based on the risk of caries."²³ The British Society of Paediatric Dentistry policy document provides details on patient and tooth Selection.²⁴ A Cochrane review published in 2010 determined that "there was some evidence on the superiority of pit and fissure sealants over fluoride varnish application in the prevention of occlusal decays. However, current scarcity of data limited recommendations on whether to apply pit and fissure sealants or fluoride varnishes on occlusal surfaces."²⁵

Fluoride tablets are also commonly used but a 2011 Cochrane review identified that they are no better in children over six years than topical fluoride supplements.²⁶

Fluoride in the water

The available evidence shows that water fluoridation is effective in reducing caries. A 2000 comprehensive systematic review found that fluoridation was statistically associated with a decreased proportion of children with cavities equivalent to preventing 40% of cavities. The review found that the evidence was of moderate quality.²⁷

Currently, approximately 10% of England's population, or about 6 million people, benefit from a water supply where the fluoride content either naturally or artificially is at the optimum level for dental health. In terms of population coverage, the West Midlands is the most extensively fluoridated area, followed by parts of the North East of England. In 2003 the law was changed enabling Strategic Health Authorities to require water companies to fluoridate water supplies providing there is support from the local population following consultation. SHAs were abolished in 2012 and the responsibility was placed with Local authorities. It remains a complex issue ethically and there is considerable resistance from some parts of the population.

Conclusion

Regular tooth brushing with fluoride toothpaste is an effective measure however it requires continued behavioural change and in some families this is not achieved. It is the most commonly used.²⁸ The Department of Health considers prevention to be a key part of dental care and policies support this.

3 The Test

3.1. There should be a simple, safe, precise and validated screening test.

3.2. The distribution of test values in the target population should be known and a suitable cut-off level defined and agreed.

3.3. The test should be acceptable to the population

The basis of any dental examination and screen is a visual clinical examination of the mouth. A comprehensive review in 2001 estimated a sensitivity of lesion detection of 39–59% in both the enamel and dentine of occlusal surfaces. The variation was due to differing study methodology. Specificity was high (about 95% or greater), but no one overall estimate was provided. Thus, examiners could miss half the lesions present on occlusal surfaces but were unlikely to misclassify any healthy occlusal surfaces as decayed using this method.²⁹

Traditionally this examination and screen has been done by a trained dental practitioner. Brocklehurst in 2012³⁰ reported that with minimal training, “different members of the dental team have shown the potential to perform screening to a similar standard as primary care dentists”. They suggest that this would need further testing in a clinical setting and that the social acceptability of such a skill based services would need investigating.

The 2004 USPTF review of screening for caries considered that conventional clinical examinations for dental caries had a disappointingly poor sensitivity with the consequence that unaided visual diagnosis fails to detect many lesions, particularly those still at a stage amenable to preventive interventions.³¹ At that point they suggested that “there is consequently a range of research underway seeking to identify diagnostic aids with high sensitivity and specificity which do not employ ionising radiation. Although the electrical and optical methods show promise and may lead to important breakthroughs in the near term, at present the use of dental radiography is still indicated.” A 2010 report on the use of an interactive risk predictive method called the cariogram showed it only had a 63.3% diagnostic accuracy.³²

The clinical screening test provided previously by the school screening service aimed to identify those children with caries and refer them on to the general dental service for treatment. Within the general dental service children are seen regularly and assessed for caries at each visit. This is not a systematic population screening service but could be considered to be a case finding screen. The success of this in relation to ensuring a caries free child depends on parents bringing children to the dentists and the dentists being able to assess that child’s risk of caries. Based on that level of risk the dentist should determine the appropriate recall period for that child. Guidance from the National Institute for Health and Clinical Excellence suggests that for children this should not be any longer than 12 months and not shorter than three months.³³ Brocklehurst in his paper on patient assessment in general practice called this regular visit a screening test.³⁴ However, as it is integrated with a clinical treatment component, not formally set up on a population basis and relates to a series of tests rather than one single test; for the purpose of this review it will not be considered as a screening programme.

Conclusion

There is a well accepted clinical procedure to screen for dental caries which to date has a low sensitivity.

3.5. There should be an agreed policy on the further diagnostic investigation of individuals with a positive test result and on the choices available to those individuals

Any child identified as having caries by the salaried dental service is referred to a primary care dentist for further diagnosis and treatment.

4. The Treatment

4.1. There should be an effective treatment or intervention for patients identified through early detection, with evidence of early treatment leading to better outcomes than late treatment

4.2. There should be agreed evidence- based policies covering which individuals should be offered treatment and the appropriate treatment to be offered

4.3. Clinical management of the condition and patient outcomes should be optimised in all healthcare providers prior to participation in a screening programme

There are two main types of treatment for tooth damage due to caries. Removal or some form of restoration of the tooth usually known as a filling.

There are a wide range of dental restorative materials that have been introduced in the last two decades. A Cochrane review published in 2009 looking at materials used in fillings in primary teeth and found few trials comparing different materials for the same outcome. The only conclusion made was that RCTs are urgently needed.³⁵

When dental decay has reached the tooth's nerve, extraction is the commonest treatment. A 2003 Cochrane review of treatment at this point found no evidence for which treatment, aiming to preserve the tooth, was most effective. The modern trend is toward preservation and prevention rather than extraction.^{36,5}

One of the most commonly used and comparatively cheap filling materials is dental amalgam (a mixture of mercury and metal alloy particles). A 2009 Cochrane review looking at the added benefit of using an adhesive to bond amalgam to the tooth structure and thus extending the life of the filling found only one study and no evidence that bonding had any effect of the survival of the filling over a 2 year period.³⁷

As well as the materials used for fillings the question of how much of the tooth should be removed before filling needs to be considered. A Cochrane review published in 2008 found that partial extraction is preferable in deep lesions. Four trials were found on which this advice is based.³⁸

An RCT in Wales measuring the relative cost and effectiveness of sealants and varnish in the prevention of dental decay started in April 2011 and it is expected that the results will be published in 2017. The FICTION trial in the UK is exploring cost effectiveness of filling decayed primary teeth. The trial started in April 2010 and it is anticipated that the results will be published in early 2018.

The changes in general dental practice delivery discussed above in paragraph 2.3 aim to enhance the level of service provided.

Conclusion

There is a large amount of information on treating caries. Not all of this is evidence based and variation in practice is common.

5. The Screening Programme

5.1. There should be evidence from high quality Randomised Controlled Trials that the screening programme is effective in reducing mortality or morbidity. Where screening is aimed solely at providing information to allow the person being screened to make an “informed choice” (eg. Down’s syndrome, cystic fibrosis carrier screening), there must be evidence from high- quality trials that the test accurately measures risk.

The information that is provided about the test and its outcome must be of value and readily understood by the individual being screened

The 2006 recommendation of the NSC, not to support screening of 6 to 9 year olds in the school dental service and the subsequent DH advice to PCTs to consider if they should commission dental screening, was based primarily on the results of an RCT published in 2006.³ The objective of the study was to determine if school dental screening of children reduces untreated disease or improves attendance at the population level. A four-arm cluster-randomized controlled trial was undertaken in the northwest of England. In total, 16,864 children aged 6-9 years in 168 schools were randomly allocated to 3 test groups: traditional method where the school dentists referred according to clinical opinion, new method where the referral decision was determined by a consensus group or a leaflet sent to all parents encouraging them to go to a dentist if their child had dental problems or the school dentist advised it. The control group received no intervention. There were no significant differences in caries increment in the primary and secondary dentitions or in the proportions of children attending a dentist after screening between the control group and the three intervention arms. The conclusion was that school dental screening delivered according to three different models was not effective in reducing levels of active caries or in increasing attendance at the dentist in the population under study.

There have been no further studies of screening published in the literature that refute

this conclusion.

6. Conclusions

The evidence remains that screening for dental caries in 6 to 9 year old is not recommended. This is based on the lack of evidence that the school dental screening service increased the level of children being seen by a dentist and did not reduce the level of active caries.

There is no new evidence to refute the previous recommendation.

Prevention of caries is the policy of choice and this should be promoted for all children. Primary dental services should be accessible to all to ensure effective dental health promotion and early treatment when required. More pro-active methods of reaching non-attending children in areas with high levels of dental decay and children at high risk of dental decay or with special needs should be investigated.

6.1. Implications for policy

Dental oral health and caries prevention especially in more socially deprived populations should be promoted.

6.2. Implications for research

The evidence for caries treatment and the most effective forms of prevention including for those children less likely to participate in dental services should be pursued.

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