

SIGN 138

Dental interventions to prevent caries in children

A national clinical guideline



Background

Dental caries (tooth decay) is a preventable disease. Dental biofilm (plaque) is a naturally occurring layer of bacteria and salivary proteins present in the mouth that builds up on exposed tooth surfaces. If not removed, the bacteria metabolise dietary carbohydrates releasing acid into the biofilm layer which, over time, can demineralise the enamel and dentine giving rise to caries. The process is dynamic and can be controlled so that early lesions do not progress or established lesions can be arrested.

The need for a guideline

Dental health in Scotland has shown a steady improvement since the 1980s. The proportion of primary one pupils with no obvious dental decay has risen from 42% in 1988 to 67% in 2012. However, this still means that nearly a third of Scottish children suffer with a preventable disease and this burden is greatest in those from disadvantaged backgrounds with just 50% of primary one pupils from the most deprived quintile of the population free of obvious decay compared with 81% from the least deprived quintile.

While wider public health- and population-based programmes such as the Childsmile programme are important to develop and maintain there are still marked differences in the use and delivery

of preventive approaches in dental practice. Consequently, there is still a need to review and update the evidence in order to clarify which techniques and approaches are the most effective.

Due to variation in frequency of presentation of children to primary dental care services it is particularly important to take full advantage of episodes when children attend for dental care. The preventive potential of one-to-one interactions between members of the dental care team and children should be maximised by focusing attention on key interventions and messages.

The challenge for healthcare professionals is to....

- continue to improve the oral health of Scottish children, with particular emphasis on those from the most socioeconomically deprived quintiles.
- increase the proportion of children receiving fluoride varnish in line with the Scottish Government's HEAT target for "at least 60% of 3- and 4 year old children in each SIMD quintile to receive at least two applications of fluoride varnish per year by March 2014.
- ensure the application of fissure sealants to permanent molars of all children as soon after eruption as possible.

Remit

The guideline will provide recommendations based on current evidence for best practice in dental interventions to prevent caries in children aged 0-18 years carried out by dental care teams within dental practices in Scotland. The guideline will focus on advice or interventions that are applied at an individual rather than a population level. This does not imply that population-based approaches are not important or not recommended.

In Scotland, population-based approaches designed specifically to improve children's dental health are delivered within the Childsmile programme. Policies, regulatory structures and targeted community interventions to reduce alcohol or sugar consumption, for example, can impact positively on health outcomes and reduce marked inequalities in health. Coordinated action to tackle the determinants of health is needed to reduce health inequalities in Scotland, however, reviewing the efficacy of these inter-related public health approaches is beyond the remit of this guideline. Nevertheless, dental care teams should remain aware of the need to address the broader determinants of health and recognise their role within the wider public health workforce.

The guideline does not consider the optimum diet for preventing dental caries nor the effects of foods on the development of dental decay.

The NHS Health document “Oral Health and Nutrition Guidance for Professionals” contains diet and nutrition advice with specific information on the link between diet and tooth decay. It also contains between-meals food and drink advice for adults and children which aims to reduce harms across dental and other health outcomes. There is a particular emphasis on children under the age of five years.

This guideline replaces SIGN guideline 47 on preventing dental caries in children at high caries risk and SIGN guideline 83 on prevention and management of dental decay in the pre-school child.

While the majority of the guideline has been newly developed, the section on predicting caries risk has been drawn from these previous guidelines.

Potential users

This guideline will be of interest to health care professionals providing oral health advice to children in a one-to-one situation. It is intended for members of the dental care team. It may also be of interest to parents and carers, primary care and public health staff and others involved in children’s health, well-being and development.

