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Oral fluoride delivery systems; current concepts and applications

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Dental caries is considered one of the most common chronic and infectious diseases in the developing world and a major oral health problem in most industrialized countries. Fluoride plays the major role in prevention of dental caries. The cariostatic effect of fluorideis believed to be mostly exerted by its topical rather than systemic effectsthrough the constant presence at the plaque-saliva-enamel interface. Fluoride-containing products such as dentifrices, mouthrinses and topically applied gels provide caries preventive benefits via the topical mechanisms of inhibition of demineralisation, enhancement of remineralisation and inhibition of bacterial enzymes. However, in cases of high bacterial challenge and/or xerostomia or salivary dysfunction, even high levels of fluoride therapy may be insufficient to balance the effect of the pathological factors, and caries process. Furthermore, the biggest problem with the home-use products is the need for patient compliance on a daily basis. Fluoride was incorporated into a number of dental restorative and orthodontic materials to act as fluoride reservoir intraorally. These dental materials exhibit a burst effect and the fluoride release is short lived. The continuous release of fluoride from intraoral fluoride-releasing devices has been demonstrated to provide significant sustained elevation of salivary fluoride levels for prolonged periods and to enhance remineralisation of early enamel lesions in situ. An overview of the oral fluoride delivery systems will be highlighted.

Biography

Nahla Al Ibrahim has graduated from King Saud University, Saudi Arabia with a bachelor in dental surgery. She joined University of Leeds, UK for postgraduate studies in Pediatric Dentistry and graduated with distinction. She won the Charles and Eleanor Knowels Prize in Child Dental Health for the best dissertation and won the Maxine Pollard Prize in Pediatric Dentistry for the best clinical presentation cases in 2007. She was granted the Canadian Fellowship in Pediatric Dentistry by the Royal College of Dentists of Canada in 2008. Currently, she works in National Guard Health Affairs, Saudi Arabia as a consultant in Pediatric dentistry. She is interested in implementing and improving research in dental field, Hypnotism and Conscious Sedation and use of intraoral appliances (Palatal Plates) for speech correction.

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