



Dentistry/Oral Medicine

Maneuverable Bristles Toothbrush

Avraham Zini, DMD, MPH, Department of Community Dentistry, School of Dental Medicine, The Hebrew University of Jerusalem and Hadassah University Hospital.

Background

Dental plaque is a biofilm (usually of a clear color) that builds up on the teeth. If not removed regularly, it can lead to tooth decay (caries) or periodontal problems (such as gingivitis). The microorganisms that form the biofilm are almost entirely bacteria (mainly *Streptococcus mutans* and anaerobes), with the composition varying by location in the mouth. The microorganisms present in dental plaque are all naturally present in the oral cavity, and are normally harmless. However, failure to remove plaque by regular tooth brushing means that they are allowed to build up into a thick layer. Those microorganisms nearest the tooth surface convert to anaerobic respiration; it is in this state that they start to produce acids which consequently lead to demineralization of the adjacent tooth surface, and dental caries. Saliva is also unable to penetrate the build-up of plaque and thus cannot act to neutralize the acid produced by the bacteria and remineralize the tooth surface.

The removal of dental plaque is the main aim of most dental care. Frequency and quality of brushing and flossing is important. The majority of the population in the world relies on the easiest and most popular brushing method – the horizontal technique.

There is a need to provide a manually operated, non-electrical toothbrush that achieves a 45 degree angle of contact between bristles and the surface of the tooth and gum.

Market

The oral care retail market is worth \$7.5 billion and is headed for \$8.9 billion by 2012.

The Innovation

Our invention consists of a toothbrush with maneuverable bristles. The toothbrush will be able to remove biofilm by a horizontal motion, which will translate into a unique movement, important for cleaning the periodontal pocket. The user will be able to reach the pockets, while continuing to use the horizontal scrub technique such that the brushing session is considerably shortened and the pressure applied is significantly reduced.

Contact

Stuart Bernstein
Business Development, Medical Devices
Tel: +972-2-6777906
Email: stuart@hadasit.co.il