

# Plaque Control with Newer Dimension in Children

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## Abstract

Plaque management is the routine removal of dental plaque, oral biofilm and also the avoidance of its accumulation on the teeth surface and other adjacent parts of the oral cavity. Occurrence of the common gingival and the periodontal diseases in the oral cavity is due to the presence of dental plaque which is the utmost primary etiological factor related to this. Dental caries along with periodontal disease are the major diseases that start very early during childhood and which should be stopped before the gradual onset of the disease. Dental plaque management using distinct approaches and agents benefit track the onset of periodontal diseases. An aggregation of multiple oral hygiene edification and mechanical skilled teeth brushing at regular time intervals will avoid the progression of dental caries and periodontal diseases almost entirely. Hereby, this article provides an overview of mechanical plaque control approaches with certain changes to include children and adolescents for successful dental plaque management.

**Keywords:** *Plaque control; Dental plaque; toothbrush; oral biofilm; Dental floss, Periodontal diseases*

## Introduction

One of the most important changes in dentistry has been the advent of modern theory and dental care focused on prevention and not any substitution. Despite these significant health changes, dental disorder appears to be a persistent health issue.<sup>1</sup> The two dominant dental illnesses begin in childhood, namely dental caries and periodontal disease, and have long sequelae. Before the insidious onset of these conditions, primary preventive dental care should start early in life. The key etiological factor for the development of periodontal diseases is the dental plaque, which is a common but highly variable structural entity resulting from colonization and growth of micro-organisms consisting of different species and strains embedded in an extracellular matrix. Biofilm formation inhibition and mechanical removal tend to be

the leading procedures for dental caries and periodontal disease prevention and treatment.<sup>2</sup> Specific routine oral hygiene is essential for oral health by brushing and using other aids in accordance with professional plaque inspection. This article focuses on efficient plaque management procedures with significant advances in oral disease prevention and good oral hygiene maintenance.<sup>3</sup>

**Dental plaque:** Dental plaque, also referred to as “Oral Biofilm,” maybe characterized just as the smooth tenacious substance adhering the tooth surfaces which is not easy to get rid of by just rinsing with water, although seeing more precisely, it is a variably specific structural entity resulting from the salivary glycoproteins and extracellular microbial products in the form of a biofilm-forming on the hard, non-shedding surfaces in the mouth. Dental plaque is mainly composed of both organic (polysaccharides, protein, glycoproteins from saliva, lipid) and inorganic (Ca, Na, P, K, F and GCF). It is mainly classified as two types the supragingival and subgingival dental plaque.<sup>4-7</sup>

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**Importance of plaque control:** Dental plaque is directly linked with dental diseases. There is a clear correlation between plaque and gingivitis and it would be prudent to consider temporal factors because it is determined that the best way to avoid periodontal disease

is by introducing adequate plaque control steps. Plaque management decreases the risk of periodontal diseases. Thus, the personalized use of mechanical and chemical agents to prevent the onset of diseases is necessary.<sup>8</sup>

**Mechanical plaque control aids:** The most commonly used oral hygiene aid by William Addis first invented in 1780 is by far the most widely known and accepted method of teeth cleaning. Toothbrushes plays an exceptional role in the prevention of periodontal diseases and their progression is very significant.

**The various mechanical aids are:**

Toothbrush, Depending on function: Manual & Powered

Depending on the diameter of bristles: Soft, Medium, Hard, Interdental Aids, Dental floss, Interdental brushes, Wooden tips, Tongue Scrapers

**Table 1. ADA Specification of toothbrush**

Length	1-1.25 inches
Width	5/16 to 3/8 inches
Rows	2-4 rows/bristles
Tufts	5-12/row
Bristles	80-86/tuft

**NEWERTOOTHBRUSHESMODIFICATIONS**

**Powered toothbrush:** The first electric toothbrush came much later and was first used in the 1960s as an alternative to manual toothbrushing process. Brush head present in the powered toothbrush act as a power source which provides different motions. Earlier, it was introduced with movement back and forth. Powered toothbrushes display different modes of movement, such as oscillating/rotating, side-to-side (sonic), and counter-oscillating, circular motion, which makes them useful. Later on, numerous studies have confirmed that powered toothbrushes when compared with manual are more effective.<sup>9-12</sup>

**Ultrasonic toothbrush:** The ultrasonic toothbrush is a manual toothbrush, in which the brush head is mounted in a Piezoelectric ultrasonic emitter which is operated by a power supply in the handle at 1.6 MHz. The ultrasound force killing plaque and the smooth, gentle healing wave action of sonic vibration reach the gumline to a depth of 5 mm. Emmi-dent is the first ultrasonic toothbrush to have its non-abrasive nano-bubbles toothpaste produced. The

se brushes can be used immediately after undergoing oral surgery, like that of implants. It is mild enough to prevent damage to the teeth and gums. It is very painless for the use in areas with sensitivity along the teeth and gingival areas.<sup>13</sup>

**Ionic toothbrush:** Ionic toothbrush operates on the polarity principle, that each element in nature has a positive or negative charge. Plaque removal is improved by ionic interaction, along with the natural mechanical action of the bristles on the tooth surface.<sup>14</sup>

**Chewable toothbrush:** It is a minuscule pliable tooth-brush that are feasible for value without water. There stand availability of various flavors in the market like mint, bubblegum. Bristles are attached with smaller sized toothpaste stick which are breakable and made of plastic. The best about a chewable toothbrush is it can even be used in the absence of water, proving it useful for small children.

**Tooth towelettes:** If tooth brushing is not possible it is an effective plaque removal process. Finger brushes are mounted on the index finger of the brushing hand, and the agility and sensitivity of the finger are used to clean the teeth.

**Foam brushes:** Foam brushes imitate a plastic fluffy sponge soaked on a stick with chlorhexidine. They are used particularly in medically compromised and immunocompromised patients to reduce the risk of oral and systemic infection.<sup>15</sup>

**Interproximal Brushes:** The above-mentioned brush mainly the cone-shaped that are manufactured along with the presence of bristle that is arranged above the handle of the brush and can be exceptionally used for scrubbing the broad, irregularly placed, or else the round tooth surfaces present adjoining the immense interdental space and widely purchasable in various size.

**End-Tufted Brushes:** They are a category of toothbrush that is used to clean along the gingival sulcus present bordering the teeth surface. Bristles are designed in a sharp arrow decoration which enables nearer gum adaptation which is suitable for cleaning along the areas between crowns, bridges, misalignment teeth, and fixed orthodontic appliances.<sup>16-18</sup>

**Interdental Cleaning Aids:**

**Dental Floss:** Dental floss is a very common interdental cleaning process. Supragingival and

subgingival dental plaque is successfully removed by flossing but requires manual effectiveness.

**Powered flossing devices:** One of the latest advances in mechanical plaque control is the powered flossing device. These consist of nylon tips that move quickly between the teeth and are very sensitive to the gums. The se are equally effective as the manual ones.

**Wooden Tips:** These are smooth, triangular-shaped tips that could be positioned in the gingiva and slip in interdental space through contact to the surface of the proximal tooth. Along with soft debris removal also decreases the gingival inflammation.<sup>19,20</sup>

**Oral irrigation:** A dental water jet or else the water flosser in other words well-known as the oral irrigator (OI) act as an electrical system that conveys a pulsating fluid stream (including chlorhexidine, stannous fluoride, iodine solution, antibiotics such as 5% tetracycline hydrochloride) utilizing controlled pressure aimed at removing interdental furthermore subgingival plaque biofilm covering tooth surfaces to lower inflammation as a result of inflammation. It is a power directed or else non-power directed device which provides a marked function of a pulsed or substantial water stream for debris removal. It is an additional aid in oral hygiene. This method is healthy and provides the general public with benefit for gingival safety, but does not routinely clean the interproximal spaces. One such device is Waterpik is an oral irrigation system which consists of a reservoir and a handle with replaceable tips, which varies according to use.<sup>21</sup>

**Dentifrices:** Toothpastes consist of sodium fluoride and monofluorophosphate are found to be communally available as Cheerio gel and Colgate (fluoridated along with anti-cariou properties) to remineralize carious lesion. Brushing twice a day after 3 years with the use of fluoride-containing toothpaste and brushing in-between the teeth day to day with floss or with any other interdental cleaner is endorse. The se are effectual in the degradation of plaque as well as gingivitis.<sup>22-25</sup>

## Conclusion

With recent advancements and changing lifestyles, it's very important to look after ones personal hygiene approach which includes the most important one the oral hygiene. Good oral hygiene reduces the risk of periodontal problems and dental caries. Dental plaque is one of the most important factors causing dental problems

must be effectively reduced and prevented. The most effective way to get rid of the frequent dental plaque accumulation is through mechanical plaque monitoring. The se recent advancements should be started in daily practice, which will reduce plaque accumulation and are less time-consuming. Further developments are on the way which may reduce and control plaque easily, and effectively within seconds.

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