

# Advance Oral Cleaning Device

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**ABSTRACT:** *In order to prevent the incidence of dental diseases such as dental caries, gingivitis and periodontal disease, routine mechanical removal of bacterial plaque is necessary. The comprehensive regular removal of dental plaque and debris using intra-oral cleaning devices includes oral hygiene activities. Tooth brushes are the oral hygiene aids most widely used. As technology improved, as an alternative to manual tooth brushing, powered toothbrushes came into being. The driven toothbrush was designed to assist individuals with difficulties with manual dexterity or other physical disabilities. In many styles and modes of operation, they are available. The early models had a basic back and forth motion and plaque control was ineffective. The popularity of powered toothbrushes increased with the advent of newer models that integrated the rotation oscillation action (ROA) and optional characteristics such as timer, pressure sensor and Bluetooth. The use of a powered toothbrush is now indicated not only for individuals with various skills, but also for the general public. A matter of constant discussion is the superiority of the powered toothbrush over the manual brush in terms of plaque reduction and periodontal health improvement.*

**KEYWORDS:** *Toothbrush, Disease, Cleaning, Plaque, Dental, Hygiene, Health care.*

## INTRODUCTION

Tooth cleaning has been an important part of oral hygiene routine across many cultures around the world from the times of antiquity. Oral hygiene practices involve the thorough daily removal of dental plaque and debris by the toothbrush without injuring the soft tissue. Tooth brushes are the most widely used oral hygiene aids. It is the principal instrument in general use for accomplishing the goal of plaque control. The very first powered toothbrushes were introduced in the 1940s. It took decades until the advantages of powered toothbrushes were accepted by the dental profession and consumers to be of considerable (clinically relevant) benefit.

For current and reliable information about oral health care behaviors, dental clients look to oral health practitioners, especially dental hygienists. The influx of oral health care aids, including new designs of both manual and power toothbrushes, has led consumers to a great deal of uncertainty about the effectiveness and protection of new models. In order to make evidence-based suggestions to their clients, it is also important that dental hygienists be informed about toothbrushes and tooth brushing[1]. A variety of cultures around the world have used many different materials for brushing the teeth from such tree twigs such as "Neem" and "Miswak" to bird feathers and hog fur. Ancient people chewed twigs from highly aromatic plants.

To raise their cleaning surface, tiny twigs were eventually mashed at one end. Chewing these twigs freshened the breath and spread out fibers to clean the surfaces of the tooth and gum at the ends of the twig. Chew sticks contain tannins and antibacterial oils that can help avoid or kill plaque. After the dental professional or the person has thoroughly cleaned the teeth, soft microbial dental plaque continuously reforms the tooth surfaces. Over time, plaque is the main agent in the growth of caries, periodontal disease, and the three conditions for which individuals seek professional treatment most frequently are measured. If plaque is completely removed with home care procedures, particularly in the interproximal and gingival areas, these dental disease conditions can be prevented[2].

Dental plaque in dental caries, gingivitis, and periodontitis is the main causal factor. For the prevention of periodontal disease and caries, good oral hygiene by successful tooth brushing has a key role in oral health. As many manual devices evolve into their electronic equivalents, the electrical version of the toothbrush has also been developed. To minimize or avoid dental disease, the device is intended to remove adherent plaque and food debris from teeth. In the 1940's, the very first driven toothbrushes were introduced. The plaque is a thin, colorless film containing bacteria and attached to the surface of the teeth that can form at any time. If the above plaque is mixed with the sugar found in the consultation intake, acidity may form. Within a prolonged time, the acidity found in the oral cavity will kill hard tissue of teeth that will decriminalize the surface of the email and form caries. Oral hygiene is a problem when it comes to orthodontic care. If there is no reason to improve oral hygiene with care, the harm could be worse and orthodontic therapy would be pointless.

Plaque management encourages good health of the gingival and periodontal, reduces tooth decay and maintains lifelong oral health. Chemical and mechanical methods include the different methods widely used for plaque removal. The main and most commonly accepted method of plaque removal is among the varied mechanical aids available for tooth brushing. Tooth brushing done with an efficient technique has been found to be a highly successful plaque control measure over an acceptable period of time.

## LITERATURE REVIEW

The causative agent of major dental illnesses such as caries and periodontal disease is dental plaque. In a classic study by Loe et al, plaque as an etiological agent was first described. The change to gram-negative plaque flora was due to it, and it was noted that when patients resumed their oral hygiene procedures, gingivitis was reversible. A significant concern of the dental community is the use of preventive procedures to ensure optimum oral health occupation. A number of measures of oral hygiene were used until the invention of the toothbrush. Excavations in which chew sticks, tree twigs, bird feathers, animal bones, and porcupine quills have been found have confirmed this.

Choosing a suitable toothbrush must be considered according to the needs of a person. Various things need to be taken into account in tooth brushing. Several experts have developed different methods of brushing teeth using a manual toothbrush that has been developed for each condition. Circular bass adjustment is the type of tooth brushing that has made recommendations for set orthodontics. Based on the research conducted by Winatha in 2014, the decrease in the plaque index of a user of a specially adapted orthodontic toothbrush is more successful compared to the user of a non-orthodontic manual toothbrush compared to a fixed orthodontic user.

Tooth brushing is the oral hygiene practice most widely suggested and practiced in North America and is performed ubiquitously in developed nations. It is known to be a key mechanical means of eliminating significant Plaque quantities for the prevention of oral disease, including gingivitis and dental caries, while retaining dental aesthetics and halitosis prevention. Although mechanical removal of plaque is the primary mechanism of action of tooth brushing, it is also used as a means of delivering chemotherapeutic agents via toothpaste.

The toothbrush with Bluetooth technology is a demanding electric toothbrush that incorporates smart technology. In order to make our everyday brushing even smarter, the Diamond clean smart electric toothbrush integrates Bluetooth technology. This new age electric toothbrush, with the aid of smart sensor technology, offers data that allows us to take better care of gums and teeth. We can have a virtual image sensed by a pressure sensor once connected to the brushing app, whether we are brushing too hard or not. The trouble areas in our mouth are displayed on a 3D mouth map, and the Touch Up feature can catch missed spots while brushing[3].

People will be directed by the position sensor to enhance the brushing coverage. This customized coaching is designed to lead to better dental habits and healthier gums and teeth. Trials of longer duration are required to fully evaluate powered brushes. Data on the long-term benefits of powered toothbrushes would be valuable in their own right and could be used to trial other outcomes such as the adverse effects and benefits in the prevention of periodontitis and dental caries. Moreover, more trials would lend greater power to systematic reviews of the effectiveness of powered toothbrushes via a voluntary non-probability sampling procedure, daily toothbrush users were chosen, interviewed using a standardized questionnaire to determine their demographic profiles and oral hygiene behaviors, then subjected to oral clinical evaluation. Regular brush users have been described as individuals who in the last year have reported using tooth brushes of some sort at least once a day. Good general health, absence of chronic diseases such as diabetes and hypertension, no past or current history of smoking were other inclusion requirements[4].

A powered toothbrush is an AC-powered or battery-powered system consisting of a motor-containing handle that provides mechanical motion to a quickly moving brush head with

filaments. To minimize or avoid dental disease, the device is intended to remove adherent plaque and food debris from teeth. In terms of proper technique and length, the powered toothbrush was introduced to motivate patients to brush correctly. For orthodontic users, specially modified toothbrushes may offer a higher degree of impact when used, particularly orthodontic wire cleansing and the bottom of the teeth. The width of the bracket can be reached by the presence of a shorter brush in the center of the toothbrush point; thus, the operation of the toothbrush is not impeded. The operation of the toothbrush will remove excess food bacteria concealed on the crown of the incisor or occlusive and gingival and bracket. The lateral side of the toothbrush, on the other hand, has a wider degree of brush that can hit the tooth surface that can cover interdental surfaces.

## CONCLUSION & DISCUSSION

In order to fully evaluate powered brushes, trials of longer duration are required. Data can be useful in their own right on the long-term benefits of powered toothbrushes and could be used to test other results, such as adverse effects and benefits in the prevention of periodontitis and dental caries. A greater reduction of plaque and gingival bleeding scores is achieved with operated toothbrushes. Individuals who prefer powered toothbrushes can be assured complete control of brush handling and successful plaque removal, although there was not much statistical difference between powered and manual brushes. But, they're protected with powered brushes, as no trial compared durability and reliability of using manual versus powered brushes; it is not possible to make clear recommendations of toothbrush superiority. Even though, considering the cost of powered brushes, manual brushes may be the choice for our routine use. Still, it's the brilliant technology which people have to go in for achieving effective plaque control by an individual.

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