

Review Article

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Achieve a Brighter Smile: Essential Brushing Techniques

Anil Melath¹, Jilu Jessy Abraham^{2*}, Arjun MR², Akhila B³ and Akhila Surendran³

¹MDS, Principal & HOD Department of Periodontics, Mahe Institute of Dental Sciences, Chalakkara, Mahe- 673310, India

²MDS, Reader, Department of Periodontics, Mahe Institute of Dental Sciences, Chalakkara, Mahe- 673310, India

³Final Year Student, Mahe Institute of Dental Sciences, Chalakkara, Mahe- 673310, India

ABSTRACT

Brushing is the process used to remove plaque and debris by an individual. It is the duty of a dentist to teach and aid the patient about proper brushing techniques that is suitable for that individual and also the patient should be aware about each brushing techniques and how to do each technique. Nowadays patients are more concerned about their oral health so having a good knowledge about each brushing techniques will make use of it. This article aims to evaluate the different brushing techniques such as The Bass method, Modified Bass method, Modified Stillman's technique, Fones method, Vertical method, Charter's method, Scrub brush method, Roll technique, Physiologic-smith method It also includes objectives of tooth brushing, types and parts of tooth brush, time and frequency of brushing, ill effects of improper brushing, maintenance and replacement of toothbrush [1].

*Corresponding author

Jilu Jessy Abraham, MDS, Reader, Department of Periodontics, Mahe Institute of Dental Sciences, Chalakkara, Mahe- 673310, India.

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Introduction

The main method of prevention of caries, periodontal diseases, and other oral diseases is by the effective removal of plaque from the interproximal and gingival areas. The majority of people are unaware of how to remove plaque from all tooth surfaces [2]. The effectiveness of tooth brushing depends on the design of tooth brush, duration of brushing, parental involvement in case of children, manipulative skill and proper brushing method [1].

History of Tooth Brushing

They were first introduced in China as early as 1600 B.C. and was introduced into the western world in 1640 [3]. Different cultures across the world have used various materials for brushing like: twigs of 'neem' and 'miswak', bird feathers and pig hair. China made "chewing sticks" from aromatic tree twigs for oral care fresh breath. In 1938 nylon came into use in the construction of toothbrush. Powered toothbrushes were actively promoted after 1960.

ADA Specifications of a Tooth Brush [4]

Brushing Surface

- 1-1.25 inches in length
- 5/16 to 3/8 inches in width
- 2 to 4 rows of bristles
- 5 to 12 tufts/row

Objectives of Tooth Brushing [5]

- To clean teeth and interdental spaces of food remnants, debris and stain etc.
- To prevent plaque formation
- To disturb and remove plaque
- To stimulate and massage gingival tissue

- To clean the tongue

Types of Toothbrushes [6]

- Manual toothbrush
- Powered toothbrush
- Interdental brush
- Ecological toothbrushes
- Sonic toothbrush
- Ultrasonic toothbrush
- Ionic toothbrush

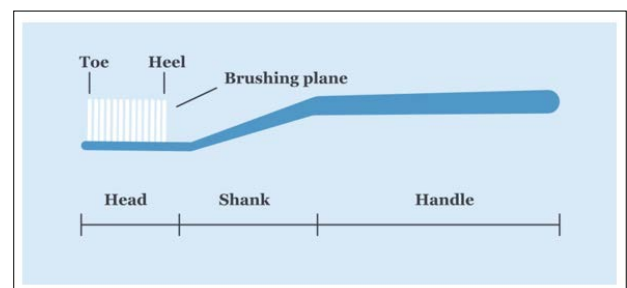


Figure 1: Parts of Tooth Brush

Tooth Brushing Force

Manual tooth brush requires more brushing force than sonic tooth brushes. Patients having severe tooth wear, exposed and eroded dentin surfaces use sonic tooth brushes to reduce abrasion. Patients having erosive lesion confined to enamel do not require sonic tooth brushes. Medium bristle tooth brush has higher abrasive force than soft bristle toothbrush.

Average manual brushing force is (1.6 ± 0.3 N), which is higher than that of sonic tooth brushing, which is (0.9 ± 0.2 N). Patient having tooth wear, eroded dentin must use sonic toothbrush [7].

Studies have shown that more the brushing force more plaque can be removed. When force greater than 4N is used efficacy will be lowered [8].

Frequency of Brushing

Brushing twice a day is recommended by dentist for the prevention of oral diseases. In Low socio-economic status the frequency of brushing will be very low and the prevalence of dental caries is so higher in adults. In a study conducted on changes in brushing frequency age, sex is some of the main factors which affects the frequency of brushing [9].

Brushing Techniques

Methods of tooth brushing are

- The Bass method
- Modified bass method
- Modified Stillman's technique
- Fones method
- Vertical Method
- Charter's method
- Scrub Brush method
- Roll technique
- Physiologic – Smith method

The Bass Method

The Bass method is introduced by Charles Cassidy Bass.

Most widely used method of brushing, effective in removing dental plaque present below the gingival margin. Kremers L and Zhang JH showed in their studies that removal of interdental plaque is more effective in bass technique than other techniques [10,11].

Indications

- Adaptable for open interproximal areas, cervical areas below the height of contour of enamel and root surfaces that are exposed.
- Indicated for patients with or without periodontal involvement.

Technique

Bristles of the toothbrush is placed 45° to gingiva and it is moved

in circular motions. Strokes are repeated 20 times, 3 teeth at a time. The brush is inserted vertically in the lingual aspect of anterior teeth and the heel of brush is pressed into the gingival sulcus and proximal surfaces at 45° angulation. Activation of the bristles is done by pressing the bristles firmly against the pits and fissures in the case of cleansing the occlusal surfaces.

In a study conducted it was found that in the case of bass method, brushes with finer filaments having less achievement in cleaning than the brushes having broader filaments [12].

Advantages

- Effective in the removal of plaque.
- Easy to learn.
- Provides good stimulation to gingiva.

Disadvantages

- It consumes a lot of time.
- Dexterity requirement is too high in the case of certain patients.

Modified Bass Technique

It is the most effective brushing technique reported. Improved control of supragingival plaque and there is a decrease in gingival inflammation in this technique compared to other techniques [13].

In a study conducted by Smita.P.Patil, Prashant. B.Patil on the effectiveness of different tooth brushing techniques on removal of dental plaque in children of Gulbarga they concluded that modified Bass technique is effective than horizontal scrub brush technique and fones technique which is the least effective technique [14].

Indications

- It is indicated as a routine oral hygiene measure.
- Indicated in intrasulcular cleansing.

Technique

It combines the vibratory and circular movements of the bass technique with sweeping motion of roll technique. Bristles of the toothbrush is held at 45° to the gingiva. Bristles are vibrated by moving the handle of the toothbrush in a back-and-forth motion. Bristles of the toothbrush are swept over the sides of teeth towards the occlusal surface in a single motion.

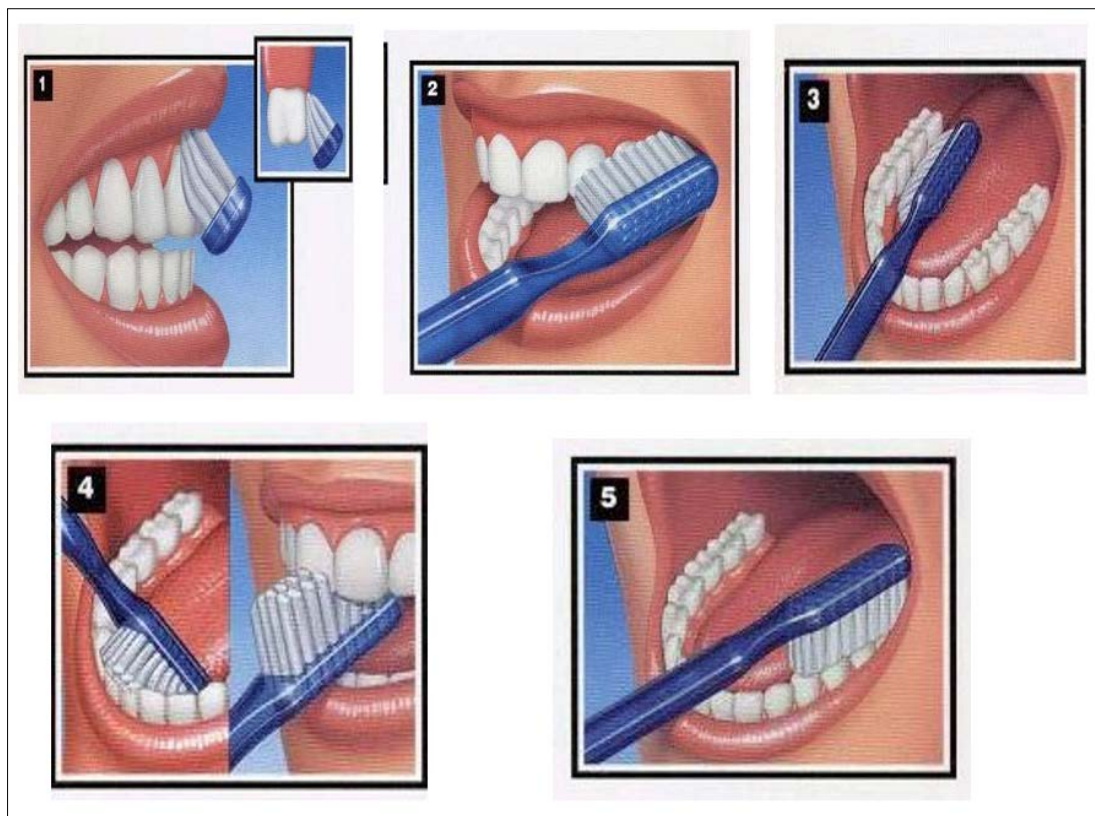


Figure 2

Advantages

- Excellent sulcus cleaning is obtained by this method.
- Good interproximal cleaning.
- Good stimulation of gingiva.

Disadvantage

- Dexterity of wrist is required.

Modified Stillman's Technique

In modified stillman's technique the bristles of the brush are placed at 45° on the gingiva and the surface of tooth. Little movements are made and then the brush is rolled coronally the full tooth length. It is then repeated for 5 to 10 times for each area of the tooth [15]. This technique is recommended in areas with progressive gingival recession and root exposure to minimize abrasive tissue destruction. Brush is moved with short, back and forth strokes in coronal direction.



Figure 3

Indications

- Removal of dental plaque from cervical areas below the height of contour of enamel and exposed proximal surfaces.
- Gingival massage and general application for cleaning the surfaces of the tooth.
- Indicated in cases where there is progressive gingival recession and exposure of root.

Disadvantages

- Consumes a lot of time.
- If not following the proper technique of brushing it leads to the epithelial attachment damage.

Fones Method or Circular/ Scrub Method

Indication

- Used in young children
- Indicated for physically or emotionally handicapped individuals
- Indicated in patients who lack dexterity.

Technique

- The child is asked to stretch his/her arms so they will be parallel to the floor.
- The child is then asked to make big circles in the air.
- The circles will be reduced in diameter until very small circles are made in front of the mouth.
- The child will be now ready to make circles on the teeth with the toothbrush.



Figure 4

Advantages

- Very easy to learn
- Less time is required

Disadvantages

- Trauma to gingiva
- Interdental areas cannot be properly cleaned.
- Detrimental for adults who use brush vigorously.

Vertical Method – Leonards Method [16]

Technique

- In this method head of the brush is rotated 45° by using the handle of brush.
- The buccal surfaces on one side of the teeth are brushed.
- Same side mandibular lingual surfaces and opposite side maxillary lingual surfaces are brushed.
- With the teeth edge to edge, the brush is placed with the filaments against the teeth at right angles to the long axes of the teeth.
- Up and down strokes are applied on the tooth surfaces with a slight rotation after striking the gingival margin.
- To massage the gums sides of the bristles are used [16].

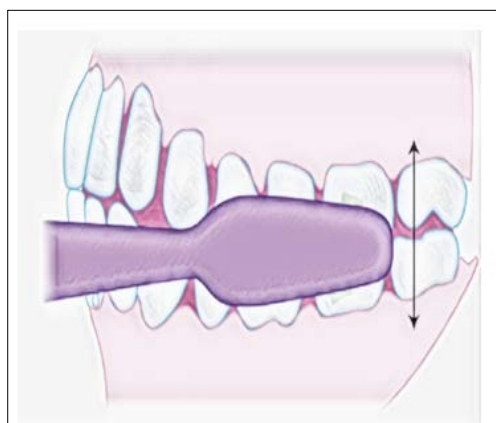


Figure 5

Advantage

- Most convenient method
- Effective in small children with deciduous teeth.

Disadvantage

- Interdental spaces of permanent teeth of adults cannot be

properly cleaned by this method.

Charter’s Method

Technique

- A soft /medium multi – tufted toothbrush is used.
- Bristles are at an angle of 45° to the gingiva, directed coronally.
- Bristles are activated by mild vibratory strokes, the bristles end lying interproximally.

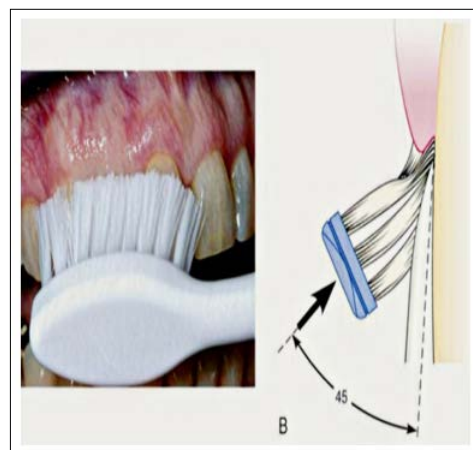


Figure 6

Advantage

- Massage and stimulation for marginal and interdental gingiva.

Disadvantages

- Ends of the brush do not engage the gingival sulcus to remove subgingival bacterial accumulation.
- Digital dexterity requirements are very high.

Scrub Brush Method

- Vigorous horizontal, vertical and circular motions are required in this technique.

Disadvantages

- Removal of plaque is not effective by this technique.
- Recession of gingiva occurs.
- Abrasion of tooth surface occurs.

The Roll Technique / Rolling Stroke Method / ADA Method / Sweep Method

It is good for patients having normal gingival tissues.

Technique

- Toothbrush bristles are placed at 45° angulation and then rolled across the occlusal surfaces of the tooth.
- Wrist should be flexible for doing this technique of brushing.

Indications

- Used in children
- Used in patients having limited dexterity.

Advantage

- Provides stimulation of gingival and massage of gingiva.

Disadvantages

- Laceration of the alveolar mucosa by too high brushing
- Development of punctuate lesions.

Physiologic Method -Smith Method

- This brushing technique is described by Smith and advocated later by Bell.
- Main principle of this technique is that the toothbrush should follow the physiologic pathway, by which the food traverses during mastication.

Technique

- Toothbrush bristles are pointed incisally or occlusally and moved along and over the surfaces of tooth and the gingiva.
- A gentle sweeping motion from incisal or occlusal surfaces of tooth to the facial surfaces and then over gingiva.

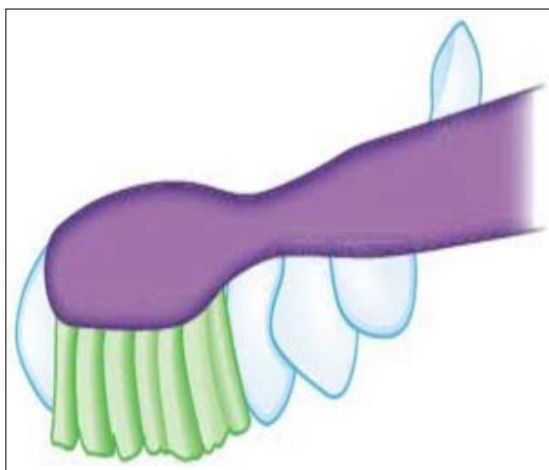


Figure 7

Advantages

- It is a natural self-cleansing mechanism.
- Good supragingival cleaning is obtained by this technique.

Disadvantage

- Interdental spaces are not properly cleaned.

Ill Effects of Improper Toothbrushing [17]

For the maintenance of a healthy teeth and supporting structures proper brushing techniques should be followed. Vigorous brushing and the use of wrong method of brushing will leads to abrasion of the tooth, irritation of gingiva and recession of gingiva. If high pressure is applied during brushing traumatic injuries occurs. Gingival abscess can occur by the implantation of bristles of toothbrush. Bacteria enters into the bloodstream can cause bacteremia and they are concern to rheumatic heart disease patients.

Maintenance and Replacement of Toothbrush

Through toothbrush various microorganisms can transmit into the oral cavity. Toothbrush should always be placed in dry areas because wet surfaces will lead to proliferation of bacteria. It should be kept always in open air with the heading the brush upright without any contact with other brushes. A toothbrush should be replaced every 3-4months or when the bristles are frayed [18].

Practices that should be followed for the maintenance of a toothbrush are

- Never share your toothbrush with anyone [18].
- Bristles of the brush should be cleaned by using some antibacterial soap or hydrogen peroxide [18].
- Flush the toilet by always the lid closed, otherwise the water during flushing will contaminate on the toothbrush [18].

- Place the toothbrush in a dry area.
- Always be kept in open air.
- Replace the toothbrush after 3 to 4 months.

Conclusion [2]

- Single tooth brushing can clean buccal and lingual surfaces but cannot clean occlusal pits and fissure. No tooth brushing procedure clean all interproximal plaque. Dentist should aware with various toothbrush product and different brushing methods. Any method that is thought should be effective and not damaging to hard and soft tissue. And also, should not cause any excessive tooth wear. In initiating effective tooth brushing, it is important to 1.)Select the appropriate tooth brush which is suitable for the user.
- Teach a brushing method needed to meet special need.
- Assess thorough and effective tooth brushing as a part of the oral hygiene program.

Conflict of Interest: Nil

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