

Mechanical Plaque Control

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❖ Microbial plaque biofilm control, also referred to as periodontal self-care, is an effective way of treating and preventing gingivitis and is an essential part of all procedures involved in the treatment and prevention of periodontal diseases.

❖ Therefore, regular personal oral hygiene is required for proper oral elimination of supragingival plaque.

❖ **Motivation**

• Oral hygiene education is essential to the primary prevention of gingivitis. Improvement in a patient's oral hygiene is often accomplished through cooperative interaction between the patient and the dental professional

• Thus, well-motivated patients who are compliant with professional advice and instructions are likely to achieve and sustain ideal levels of plaque control.

❖ **Oral hygiene instructions (OHI)**

• Oral hygiene education consists not only of knowledge transfer; it must also consider current habits and personal skills.

• Patients often present with non-specific brushing techniques and need sufficient support to establish methods that are appropriate for their respective needs.

❖ **Mechanical plaque control measures**

A. **Tooth brushing**

B. **Interdental cleansing aids:**

1. Dental Floss.
 2. Interproximal Brush
 3. Tooth Pick
 4. Rubber Tip
- C. **Oral irrigation**
- D. **Miswak**

A.Toothbrush

- The most widespread mean of actively removing plaque at home is tooth brushing.
- It is generally recommended that patient brush their teeth at least twice daily.
- Most clinicians recommend that toothbrushes be replaced every 3 to 4 months.

❖ **The outcomes of tooth brushing are dependent on:**

1. The Design of The Brush.
2. The Skill of The Individual Using the Brush.
3. The Frequency of Brushing.
4. The Duration of Brushing.

❖ **specification of toothbrushes.**

- Length : 1 to 1.25 inches
- Width : 5/16 to 3/8 inches
- No. of rows : 2 to 4 rows of brushes
- No. of tufts : 5 to 12 per row
- No. of bristles : 80 to 85 per tuft

❖ **Tooth brushing Methods**

- There is no single oral hygiene method that is correct for every patient. The morphology of the dentition (crowding, spacing, gingival phenotype, etc.), the type and severity of periodontal tissue destruction, and the patient's own manual dexterity determine what kind of hygiene aids and cleaning techniques should be recommended.

- The ideal brushing technique is the one that allows for complete plaque removal in the least possible time, without causing any damage to tissues .
- Methods of tooth brushing can be classified based on the position and motion of the brush.

❖ **Horizontal brushing(scrub) technique**

- The most commonly used tooth brushing method.
- Most individuals use horizontal brushing because it is simple.
- The head of the brush is positioned perpendicular to the tooth surface, and then a horizontal back-and forth scrubbing movement is applied .
- Unfortunately, gingival and enamel damage can occur with aggressive stroke and too firm of bristle.

❖ **Vertical brushing [Leonard (1939)] technique**

- Is similar to the horizontal brushing technique, but the movement is applied in the vertical direction, using up-and-down strokes.

❖ **Circular brushing [Fones (1934)] technique**

- Is performed with the teeth closed, the brush placed inside the cheek, and a fast circular motion applied that extends from the maxillary gingiva to the mandibular gingiva, using light pressure.
- Back-and-forth strokes are used on the lingual and palatal tooth surfaces.

❖ **The vibratory technique [Stillman (1932)]**

- The head of the brush is positioned in an oblique direction toward the apex, with the filaments placed partly in the gingival margin and partly on the tooth surface.
- Light pressure, together with a vibratory movement, is then applied to the handle, while the filament tips are maintained in position on the tooth surface.
- Stillman method was designed for the massage and stimulation of the gingiva and for cleaning the cervical areas of the teeth.

❖ **Roll technique (modified stillman technique)**

- With the modified stillman technique , the head of the brush is positioned in an oblique direction toward the apex of the teeth, with the filaments placed partly in the gingival margin and partly on the tooth surface.
- Next, the head of the brush is rolled over the gingiva and teeth in an occlusal direction.

❖ **The vibratory technique [Charters (1948)]**

- Compared to the Stillman technique, the position of the brush head is reversed. The head of the brush is positioned in an oblique direction, with the filament tips directed toward the occlusal or incisal surfaces. short back and forth vibratory strokes.

- **This method is particularly effective in cases with:**

1. Receded interdental papillae because the filament tips can easily penetrate the interdental space.
2. Orthodontic patients.

- Charters method was originally developed to increase cleansing effectiveness and gingival stimulation in the interproximal areas.

- ❖ **Sulcular brushing [Bass (1948)] technique**

- The head of the brush is positioned in an oblique direction toward the apex. so that the bristles are angled approximately 45° to the long axis of the tooth.

- The brush is moved in a back-and-forth direction using short strokes.

- The Bass method is widely accepted as an effective method for removing plaque, not only at the gingival margin but also subgingivally.

- ❖ **The modified Bass technique**

- The term modified bass technique indicate a final sweep with a tooth brush toward the occlusal surfaces.

- After activation of the brush head in a back-and-forth direction, the head of the brush is rolled from the gingiva line toward occlusal direction, making it possible for some of the filaments to penetrate interdentally.

B. Interdental Cleaning Aids

- Any toothbrush, regardless of the brushing method used, does not completely remove interdental plaque biofilms. This is true for all patients, even for periodontal patients with wide-open embrasures

- The majority of dental and periodontal diseases originate in interproximal area.

- Common aids for interdental hygiene are **dental floss, interdental brushes, rubber tips, and wooden or plastic tips.**

- ❖ **Dental Floss**

- Dental floss is the most widely recommended tool for removing biofilm from proximal tooth surfaces

- ❖ **Technique for the Use of Dental Floss**

- Dental floss should be held securely in the fingers or tied in a loop.

- The floss is slipped between the contact areas of the teeth and wrapped around the proximal surface, and removes plaque by using several up-and-down strokes. The process must be repeated for the distal surface of tooth.

- ❖ **Interdental Brushes**

- The most effective plaque biofilm removal method for interdental areas, where the papilla does not completely fill the space, is the use of interdental brushes,also Cleaning of concave or irregular proximal tooth surfaces.

- A comparison study between dental floss and interdental brush in patients with sever to moderate periodontitis, showed that interproximal brushes remove slightly more interproximal plaque and that the patients found them easier to use.

- An interdental brush of any style is inserted through the interproximal spaces and moved back and forth between the teeth with short strokes. The diameter of the brush should be slightly larger than the gingival embrasures to be cleaned.

❖ Wooden Toothpick

- Wooden toothpicks are used either with or without a handle
- Access is easier from the buccal surfaces for tips without handles but is limited primarily to the anterior and bicuspid areas.
 - Technique/ Soft triangular wooden picks or plastic picks are placed in the interdental space with the base of the triangle resting on the gingiva and the sides in contact with the proximal tooth surfaces . The pick is then moved in and out of the embrasure several times to remove the biofilm.

❖ Rubber Tips

- The rubber tip should be placed into the embrasure space, resting on the gingiva, and used in a circular motion.

C. Oral Irrigation

- The oral irrigator effectively removes biofilm and is as effective as dental floss when added to tooth brushing.
 - They are particularly helpful for removing debris from inaccessible areas around orthodontic appliances and fixed prostheses.

D. Miswak

- The miswak, a traditional chewing stick for cleaning teeth, is made from the plant *Salvadora persica*.
- Oral hygiene may be improved by complementing traditional miswak use with modern technological developments such as tooth brushing.

May Allah accept all of our prayers and supplications during Ramadan