

# Primary care

## Prevention of periodontal diseases

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The dental plaque is the essential cause of the periodontal disease, its elimination prevent gum disease.

The goals of plaque control are the prevention of the gingival margin infection, prevention of gingivitis and prevention of the initiation of periodontitis.

In general, **preventive dentistry** can be divided into three different levels:

### 1 - Primary prevention:

- like vaccination of children against many diseases to prevent a disease to occur, and arrest the disease process before treatment becomes necessary.

### 2-Secondary prevention:

- to prevent occurrence of disease like plaque control in gingivitis.

### 3-Tertiary prevention:

- permanent destruction had been occurred and preventive measures should be used to replaced lost tissues and to prevent the progression of the disease and to rehabilitate the patient to the point that function is as near as possible .

So we have **three methods** of the **plaque control**:

**Mechanical plaque control.**

**Chemical plaque control .**

**Professional plaque control**

### Mechanical plaque control:

involves **motivation** and **instruction** to your patient, it is the responsibility of the dentist to well-motivate the patient since this method of a plaque control is the self.-performed plaque control which means the patient himself practice these measures.

### Steps of motivation

A-Information: -

explanation should be given to the patient about the reasons for good oral hygiene.

Demonstrate to the patient the disease (swollen gingiva, bleeding on probing) using a hand mirror, then demonstrate the cause (dental plaque) either directly by scraping off a deposit or by discoloring agents.

Explain how plaque starts to grow immediately after tooth brushing; so that regular removal is necessary and that it can't be rinsed away.

Then demonstrate how to remove it.

B- Testing the acquisition of knowledge: -

test the patient indirectly to be sure that he understands the previous information you gave to him.

C- Changing the patient attitude: -

making the patient see the cause of the disease (dental plaque) by disclosing agent or by hand mirror will help in changing his attitude.

D- Changing of behavior: -

when the patient acquires all the previous points, his behavior will be changed to have good oral hygiene.

After motivation has been finished, instruction should be given to the patient by learning him tooth brushing supplemented by interdental aids.

### **Tooth brush (design and function)**

The best tooth brush is the one being properly used: -

- 1- Straight with short head.
- 2- Multi-tufted with short medium or soft nylon bristles.
- 3- Rounded end to prevent damage of gingiva.

### **Lesion produced by oral hygiene measures'' damage to:**

- Soft tissues + Hard tissues
- **Caused by:**
- Extensive tooth brushing ----- Wrong use of the interdental aids

**Frequency of plaque removal:**

- **A** - Every 24-48 hrs
- B- Improved periodontal health associated with increase the frequency of the tooth brush up to **twice/day**,
- C- Cleaning 3 or *more* day don't appear to further improve perio-condition.
- D- Cleaning once a day with all necessary tools is sufficient if it is performed correctly.

**Tooth brushing methods**

many tooth brushing methods have been developed and many of them carry the individual **name** like Bass, Stillman, Charter or indicate the **action** to be followed such as roll or scrub (horizontal) but there is no one method is superior on the other.

**The objectives of tooth brushing are to:**

- Remove and disturb plaque formation -
- Clean teeth of food, debris and stains
- Stimulate gingival tissue
- Apply fluoride dentifrice.

**Bass method: -**

it is important to note that the Bass technique was the 1st to focus on the removal of plaque from the gingival sulcus.

The tooth brush is positioned in the gingival sulcus at 45° angles to the long axis of the tooth exerting gentle vibratory pressure back and forth motion.

**Stillman method: -**

this method developed to provide gingival stimulation.

The brush is positioned 45° with the long axis of the tooth with part of the brush resting on the gingiva and the other part on the tooth, a vibratory motion is used with a slight pressure to stimulate the gingiva.

**charter methods:**

this *charter* method is effective in cases with receded interdental papillae when the interdental spaces are open and thus accessible to the penetration of brush bristles.

The bristles are directed towards the occlusal surface at 45° to the occlusal plane with a vibratory back and forth motion

### **Horizontal method**

the bristles placed perpendicular to the tooth crown, the brush is moved back and forth motion in short horizontal strokes Over prolong period with excessive pressure, it can result in **gingival recession and tooth abrasion.**

### **Roll method**

the bristles placed parallel to and against the attached gingiva, then sweep in area until reach the occlusal surface,

the bristles became at right angle to the tooth surface as the brush passes over the crown.

This method stimulates the gingiva and if the bristles positioned too deep in the vestibule the area may be **traumatized.**

### **Interdental aids:**

Using the interdental aids depend on the following: -

Dexterity of the patient.

Morphology of the dentition.

Spaces between the teeth.

### **1-Dental floss:**

indicated for narrow interdental spaces, we have waxed and unwaxed dental floss, waxed dental floss used for example with class II restoration while unwaxed floss used when fluoride application is needed on the tooth surfaces.

### **2-Tooth picks (stimudent):**

It is fine for **slightly open spaces.**

They are triangular in cross section coincide with the shape of Interproximal areas.

The base of the triangle rest on the gingival tissues while the apex is between the teeth.

### **3-Interdental brushes**

used for interdental spaces that are **wide open** and for root irregularities

#### **The disadvantages of mechanical plaque control**

Depend on the dexterity of the patient.

- Need effort
- Time consuming
- Need continuity and follow up

#### **Chemical plaque control**

Chemicals that influence the dental plaque include:

**Antiseptics.**

**Antibiotics.**

**Antiseptics.**

The most common type of the Antiseptics used as anti plaque agent is **chlorhexidin gluconate** (CHX) which has an important role in treatment of gingivitis and prevention of periodontal disease.

As a mouth rinse (CHX) has 100 % anti plaque activity but for supragingival only.

#### **Method of use and concentration**

In the morning, the patient rinse his mouth with 10 ml (0.2%) of CHX mouth washes for one minute and then spits out the residue.

In the evening, the same routine is repeated, the mouth wash may be used alone where tooth brush is difficult or in conjunction with conventional tooth brushing.

Brushing will further improve oral hygiene and minimize possible staining.

The patient should brush his teeth 1st and wait for 30 minute then rinse his mouth with CHX because the salts in the mouth paste will inhibit the action of CHX.

After the use of CHX mouth rinse, we ask the patient not to rinse his mouth 'with water or eat for at least 30 minute.

70 % of the mouth rinse will be expectorated and 30 % retained on the tooth surface, pellicle, bacteria and oral epithelia.

### **Advantage of CHX**

Stable Not toxic

Has long time of action CHX has the advantage of adsorption to the tooth surface, bacterial surface and oral epithelia and is subsequently slowly released into oral cavity within 8-12 hrs.

### **Mechanism of action**

Both bacteria and tooth surface are negatively charged and are bridged by calcium ions.

CHX has a competitive ion for saliva calcium so will prevent bacteria from attachment to the tooth and to each other so it will prevent plaque formation

### **Indication of CHX Mouth wash or clinical uses: -**

CHX mouth wash is useful whenever adequate tooth brushing is difficult or impossible: -

a-After periodontal surgery

it has shown that CHX reduce plaque level and reduce gingival inflammation and promote healing after periodontal surgery.

b-Management of oral ulcers such as aphthous ulcers or patient suffering from ANUG.

C-Treatment of denture stomatitis and oral candidiasis.

D- CHX can be used to maintain a high standard of oral hygiene in special patients such as handicapped patients, rheumatic, hospitalized or patients with hemorrhagic tendency.

E-Patients 'wearing orthodontic appliances

### **Side effect**

Discoloration of teeth and restorations

-Transient taste disturbances (bitter taste)

-Generalized allergic reactions to CHX but are extremely rare.

-Rarely cause obstructive parotitis.

-High concentration of CHX may cause epithelial desquamation

**Other chemical materials used as mouth rinses: -**

Listerine (phenolic compound) - has 30 % of the effect of CHX.

Triclosan - has 50 % of the effectiveness of CHX.

Sanguinarine (natural plant) - 30 % of CHX action.

**Antibiotics:**

can be used only as **adjunct** because of the following problems: -

Development of resistant micro-organisms.

Hypersensitivity to certain types of drugs.

Side effect of many antibiotics.