

# ORAL HEALTH CARE TOOLS

## "WHAT SHOULD WE USE FOR HEALTHY MOUTH"

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20/4/2025

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KEY WORDS: Oral health, toothbrush,  
interdental brush, power flosser, dentifrices.



## Introduction

Oral health is not just about having good teeth; it is also a sign of whole-body health, since studies show that the mouth is the first place where people's health begins. Ignoring oral health is linked to several dental diseases that can spread to other organs, including the heart. Therefore, we must know what are the appropriate daily tools to maintain good oral and dental health [1].

## Toothbrosh

### Origin of toothbrush

The concept of creating a toothbrush back around 1500 years BC, where it began with the Babylonians and the Chinese when they creating the "chew stick", which was regarded as a primitive brush. In Chinese culture, the first brush was created 1000 years ago, and its bristles were composed of horse hair. Regarding the electric brush, the first one to be sold commercially was in the United States in 1960 [2].

### Parts of toothbrush [2].

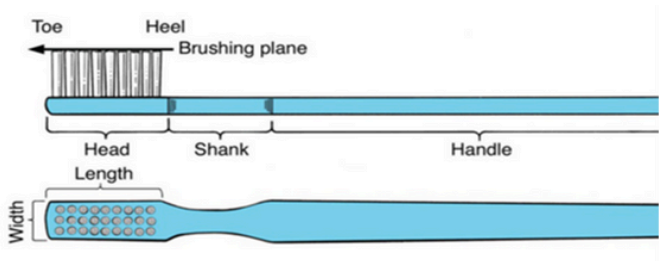


Figure1: Parts of toothbrush (2).

### Dimensions

Dimensions recommendations vary in different countries, in general there are consideration should be considered in recommending toothbrush to patients, covering two to three of posterior teeth by head brush is the right size of length, and when the toothbrush head covers the intercuspatal distance of first molar this is the right size of width [2].

| ADA Recommendations for Dimensions |                                  |
|------------------------------------|----------------------------------|
| Total brush length                 | 15 – 19 cm (6 – 7.5 inches)      |
| Head (length of brushing plane)    | 25.4 – 31.8 mm (1 – 1.25 inches) |
| Width                              | 7.9 – 9.5 mm (5/16 – 3/8 inch)   |
| Bristle or filament height         | 11 mm (7/16 inch)                |

Figure 2. ADA Recommendations for Dimensions (2).

### Shape

The shape of brush handle is very significant and should be easy to grasp to increase the control during brushing and avoid slipping or rotating, sharp corners or projections should be avoided and lightweight is necessary. Patients with disability, elderly patients and children may be large handle is good choice [2].

Brush head design

5-12 tufts long and 3-4 rows wide is the ideal for the length of brush head design. The variety in rounded, tapered and angled of the brush head are the ideal size and shape, taking into consideration of arrangement the bristles tufts as shown in Figure3 [2].

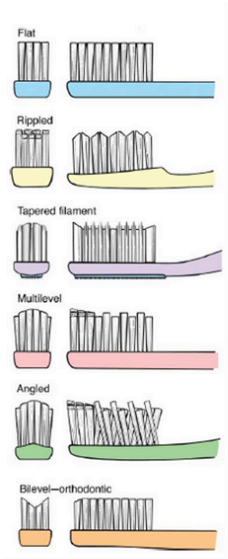


Figure 3. consideration of arrangement the bristles tufts (2)

Efficiency in biofilm removal

Regarding the brush's ability to effectively remove bacteria, some research has found no difference between brush bristle types, but other research suggests that curved bristles are more effective than straight bristles. The effectiveness and efficiency of bacterial removal depend on the people's health and level of comprehension, people with dental issues, misalignment, exposed roots, or other difficult areas are more likely to accumulate bacteria and have trouble getting rid of them [3][4][5].

Filamint or Bristels

Most current toothbrushes have nylon filaments.

| • Comparison of Natural Bristles and Synthetic Bristles or Filaments |                                                                                                                                                                         |                                                                                                                                                                |
|----------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                      | NATURAL BRISTLES                                                                                                                                                        | BRISTLES/FILAMENTS                                                                                                                                             |
| Source                                                               | Historically made from hair of hog or wild boar.                                                                                                                        | Synthetic, plastic materials, primarily nylon.                                                                                                                 |
| Uniformity                                                           | No uniformity of texture. Diameter or wearing properties depending upon the breed of the animal, geographical location, and season in which the bristles were gathered. | Uniformity controlled during manufacturing.                                                                                                                    |
| Diameter                                                             | Varies depending on portion of the bristle taken, age, and life of animal.                                                                                              | Ranges from extra soft at 0.075 mm (0.003 inch) to hard at 0.3 mm (0.012 inch).                                                                                |
| End shape                                                            | Deficient, irregular, frequently open ended.                                                                                                                            | End-rounded.                                                                                                                                                   |
| Advantages and disadvantages                                         | Cannot be standardized. Wears rapidly and irregularly. Hollow ends allow microorganisms and debris to collect inside.                                                   | • Rinse clean, dry rapidly. Durable and maintained longer. End-rounded and closed, repel debris and water. • More resistant to accumulation of microorganisms. |

Figure 4: Filament or Bristles of toothbrush (5).

According to some evidence, bristles with rounded heads are less harmful to the gums than bristles with non-rounded heads (5).

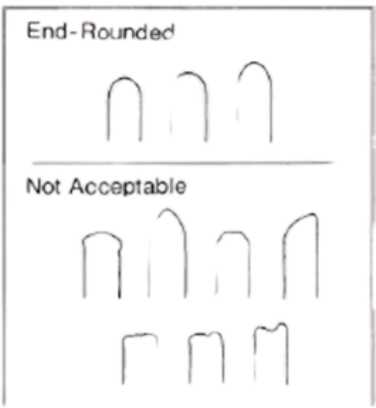


Figure 5. Comparison between rounded and non-rounded heads (5).

Power toothbrushes

The results of some studies have shown that the effectiveness of the electric toothbrush is better than the manual toothbrush in removing bacteria. The electric toothbrush has made it easier for people to use the brush, thus helping to maintain oral and dental health, especially for people with disabilities, orthodontic treatment, prosthodontic treatment, aggressive brushers and for parents or caregivers when must brush for the patient [6].

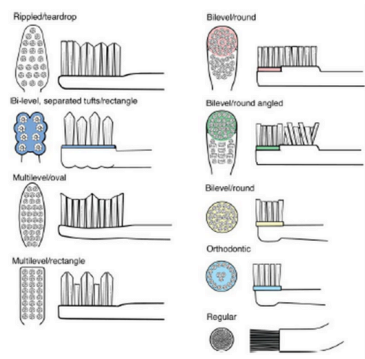


Figure 6. electric brush heads (6)

Interdental brushes

Tooth brushing alone cannot accomplish biofilm removal from proximal tooth surfaces and adjacent gingiva to the same degree that it does for the facial, lingual, and palatal aspects. Therefore, interdental biofilm control is essential to complete the patient’s oral self-care [7][8].

Indications of use interdental brush

For Removal of Dental Biofilm and Debris, Proximal tooth surfaces adjacent to open embrasures, orthodontic appliances, fixed prostheses, dental implants, periodontal splints and space maintainers are well suited to interdental brushes and cleaners. Concave proximal surfaces are used where dental floss and other interdental aids cannot reach. attachment loss, the interdental brush is often more effective than floss [8].

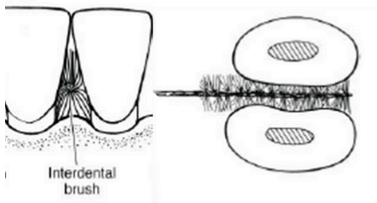


Figure 7. interdental brush (8)

# Dental floos

Although the recommendations for daily dental floss are important, patient compliance and understanding of use are limitations. All dental professionals should determine the effectiveness of flossing for patients and explain it to them in correct ways. Waxed or unwaxed dental floss research has shown no difference in plaque removal between them, dental floss coating with wax may help to slip the floss through contact area [9].

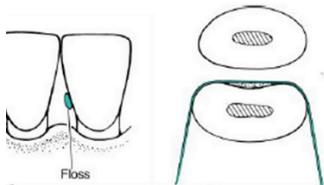


Figure 9. Dental floss (9)

Power flosser

Several types of power flossers are available. The most common and widespread recently is air flosser, which uses burst of air and water droplets to disrupt dental biofilm. Some studies show the Power flosser is less effective in biofilm removal not as other interproximal aids, while other studies show the Power flosser better for reduction of bleeding [10].



Figure 10. Power flosser (10)

# Dentifrices

The benefits of using dentifrices may be preventive, therapeutic, or cosmetic. A dentifrice is a substance applied with a toothbrush or other applicator for removal of biofilm, stain, and other soft deposits from the gingiva and tooth surfaces. Most dentifrices share a common composition of ingredients needed for a stable formulation. Although fluoride has long been recognized as an anticariogenic agent, the addition of stannous fluoride to a dentifrice was problematic because of lack of compatibility with abrasive agents. The first caries-preventive dentifrice contained stannous fluoride It became available commercially in 1955. Xylitol, a flavoring agent in some dentifrices, has been shown to provide anticaries benefits [11][12].

### Active components of dentifrices

Many active substances included in today's dentifrices may help reduce dental cavities, dentin hypersensitivity, biofilm formation, gingivitis, calculus formation, and bad breath. Fluoride was the first active ingredient added to a dentifrice. Significant advancements have been made in this field since then. Anticaries are one of the areas where these active substances are beneficial, antigingivitis/antibiofilm and antisensitivity [13][14].

### Fluoride concentration in toothpaste

| Age                                  | Concentrations | Quantity of daily use |
|--------------------------------------|----------------|-----------------------|
| From the first tooth up to 24 months | 1000 ppm       | Grain of rice         |
| 24 months to 6 years                 | 1000 ppm       | Pea size              |
| + 6 years                            | 1450-1500 ppm  | 1-2 inch              |

Figure 11. Fluoride concentration in toothpaste (15)

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