



Review Article

Interdental Aids – A review

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ABSTRACT

People brush their teeth for a variety of reasons: to feel revitalised and confident, to maintain a healthy smile, and to avoid bad breath and disease. Oral hygiene is critical for oral health preservation because it eliminates microbial plaque and prevents it from accumulating on teeth and gingivae.

Control of the plaque is crucial for the management of periodontal diseases, but not all patients are at the same risk of disease development, and the difficulties depend on clinical findings. The clinical presentations and risk assessment for individual patients are to be adapted to the oral hygiene techniques and recommendations.

Interdental aids are available in a variety of forms, including dental floss, interdental brushes, rubber tips, wooden tooth picks, water jets, and oral irrigators. Each of these options has distinct advantages and disadvantages.

The appropriate interproximal cleaning aid is determined by the ease of use, the size of the interproximal space, the individual's acceptability, dexterity, and motivation. Thus, the dentist can make a recommendation based on the unique characteristics of each patient.

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1. Introduction

The public's awareness of the importance of personal oral hygiene is growing. People brush their teeth for a variety of reasons, which includes feeling refreshed and confident, having a nice smile, and avoiding bad breath and disease. Oral hygiene is critical for oral health preservation because it eliminates microbial plaque and prevents it from accumulating on teeth and gingivae.¹

1.1. Interdental space – How important is this?

Interdental space, also known as interproximal space, refers to the spaces between teeth. At certain points, referred to as

contact points, two teeth come into contact. There is a space beneath the contact points that is usually occupied by the gum tissue known as the interdental papilla. The interdental gingiva fills the space between two teeth apical to the point of contact known as embrasures. This is important, because plaque accumulation risks are higher at interdental sites, both anterior and posterior in the mouth. There is a greater risk of periodontal lesions and caries as the interproximal areas of premolars are the primary sites of the residual plaque. In interproximal areas, gingivitis and periodontitis are generally more severe than in facial regions.²

Inter-proximal food lodgement can, at times, lead to inflammation. The length of the interdental papilla varies. As a result, there is room for accumulation of food debris below the contact point. A multitude of studies show that plaque is the culprit for initiation of

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gingivitis and periodontitis which must be prevented and controlled. Brushing is more effective at cleaning buccal and lingual surfaces than interproximal surfaces. Hence the use of interdental aids becomes important in cleaning of the interproximal areas.

2. Interdental Aids

Various interdental cleaning aids, such as dental floss, interdental brushes, or rubber-tipped water flossers (irrigators), wooden sticks assist in plaque removal.

2.1. Dental floss

Floss is a cord that must be gently inserted beneath the contact point of teeth and used in a to-and-fro or up-down motion to remove plaque. It is beneficial in teeth with close contacts and densely packed areas. Because it is technique-dependent, patient compliance and acceptance are extremely low. Additionally, when not used properly, it carries the risk of injuring the gums. Due to the pathogenic nature of dental plaque and the fact that dental floss disrupts and removes some interproximal plaque, it has been hypothesised that flossing should reduce gingival inflammation.³ Dental floss has long been accepted as having a beneficial effect on plaque removal. Dental flossing helps to remove subgingival plaque 2-3.5 mm below the tip of papilla.³⁻⁵

Flossing is effective at reducing gingival inflammation and plaque levels.⁶ However, in a systemic review conducted by Berchier et al (2008), says that there is no scientific evidence behind the use of floss.⁷ Furthermore, the cleaning of large interdental areas, root surfaces, or concavities is not at all effective by a dental floss. These periodontally involved dentitions become more prevalent as one ages, as decreased dexterity and visual acuity further complicate flossing.

2.2. Interdental brush (IDB)

In the 1960s, interdental brushes were introduced. Most brushes have a handle, a steel wire, and many bristles. Patients with root sensitivity may be bothered by this metal wire, in which there is plastic coating seen above the metal wire.⁸ IDBs have been shown to be extremely effective at cleaning interproximal areas because they can reach areas that a normal tooth brush cannot. Acceptance by the patient is preferable to flossing. Sizes ranging from 1.9 to 14 mm in diameter can be determined and used efficiently in an atraumatic manner. Additionally, interdental brushes can be used to deliver antibacterial or desensitising agents to exposed sensitive root areas.⁸

2.3. Woodsticks

They are made of soft wood to facilitate adaptation to the interdental space and to prevent gingival injury. Woodsticks are intended for mechanical plaque removal from interdental surfaces. By rubbing the sides against the interproximal tooth surfaces friction is generated, which helps in removal of bacterial plaque. They are not to be confused with toothpicks, which are used to remove food debris following a meal.⁹ They are available in a variety of shapes, including round, rectangular, and triangular. The round woodstick is far too thick and blunt to reach the tooth's lingual half. Additionally, the rectangular woodstick is ill-suited for interdental cleaning, as the device is too malleable to clean lingually. A triangle-shaped wood stick appears to be the optimal shape for the interproximal space. Interdental wood sticks are inserted with the triangle's base resting on the gingival side. Woodsticks have been shown to be effective in removing subgingivally located interdental plaque that is not visible and thus not evaluated by the plaque index. Woodsticks' physical action in the interdental space may have a definite beneficial effect on interdental gingival inflammation.¹⁰

2.4. Oral irrigators

In 1962, the oral irrigator was introduced. This device has shown to be safe and is likely to benefit gingival health for a sizable portion of the general population that does not regularly clean interproximal spaces.¹¹⁻¹³ The irrigator was developed to help remove plaque and soft food debris from the mouth using a mechanical jet of water. Antimicrobial agents can be used with oral irrigators as well.¹⁴

3. Discussion

Dental plaque containing a pathogenic, dysbiotic microflora is required for the development of dental caries, gingivitis, periodontitis, and peri-implant diseases.^{15,16} Patient care levels vary significantly and are frequently suboptimal. Despite the American Dental Association's (ADA) recommendation that individuals brush for two minutes twice daily,¹⁵ the average person brushes their teeth for 45-70 seconds daily.¹⁷ It has been estimated that the use of regular and sustained flossing had a patient compliance rate of two percent. The findings have shown that manual tooth brushing is insufficient for gingival inflammation, and interdental hygiene treatments are required to ensure patient personalised care.^{18,19} Furthermore, enhancing the efficacy of oral hygiene measures over time necessitates several cycles of oral hygiene training and reinforcement.²⁰⁻²² Considering the low prevalence of frequent flossing and interdental tooth brushing in the general population, as well as the poor performance of all oral hygiene interventions, effective communication and patient targeting to improve oral hygiene are crucial for all

dental healthcare providers.²³ Systematic review has shown that Psychological interventions, such as social cognition models, cognitive behavioural therapy, and motivational interviewing, have been shown to improve patient compliance with oral hygiene measures.²⁴

4. Conclusion

Interdental cleaning aids are critical for maintaining optimal gingival health and avoiding oral disease. There are numerous devices available for use; however, interproximal brushes have been shown to be more widely accepted in practise when used in conjunction with tooth brushing. The appropriate interproximal cleaning aid is determined by the ease of use, the size of the interproximal space, the individual's acceptability, dexterity, and motivation. Thus, the dentist can make a recommendation based on the unique characteristics of each patient.

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6. Conflict of Interest

The authors declare no potential conflicts of interest concerning the authorship and publication of this article.

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