Guideline on the role of dental prophylaxis in pediatric dentistry

Originating Committee
Clinical Affairs Committee
Review Council
Council on Clinical Affairs

Adopted
1986
Reaffirmed
1996
Revised

Purpose
The American Academy of Pediatric Dentistry (AAPD), as an advocate for optimal oral health of infants, children and adolescents, must educate caregivers and other interested third parties on the indications for and benefits of a dental prophylaxis in conjunction with a periodic oral health assessment.

Methodology
This guideline is based on a review of current preventive, restorative and periodontal literature as well as the AAPD's Policy on the Use of a Caries-risk Assessment Tool (CAT) and the American Academy of Periodontics (AAP) guidelines on periodontal diseases in children and adolescents.

Background/literature review
There are several indications for a dental prophylaxis, including:
1. removal of plaque from teeth;
2. removal of extrinsic stains from teeth;
3. polishing teeth after removal of calculus;
4. facilitation of a thorough clinical oral examination;
5. education and introduction of the child to dental procedures.

Dental prophylaxis can be performed using a brush or rotary cup or brush.
1. removal of plaque, stain and calculus
2. elimination of factors that influence the buildup and retention of plaque
3. demonstration of proper oral hygiene methods to the patient/caregiver
4. facilitation of a thorough clinical examination
5. introduction of the child to dental procedures.

Microbial plaque is the primary etiological factor in caries and periodontal disease\textsuperscript{7,8}. Although it may be possible to remove most plaque using mechanical oral hygiene aids, many patients do not have the motivation or skill to maintain a plaque-free state for extended periods of time.\textsuperscript{9} Clinical studies show that “self-administered plaque control programs alone, without periodic professional reinforcement, are inconsistent in providing long-term inhibition of gingivitis.”\textsuperscript{9}

The type of professional prophylaxis recommended is based on an individual patient’s risk-assessment for caries and periodontal disease. The clinician should use CAT\textsuperscript{1} to determine caries risk and the AAP guidelines\textsuperscript{2} for periodontal risk. This assessment includes:

- medical history/current systemic health including medications
- age and cooperation of the patient
- compliance of the patient and family
- past and current caries
- family history of caries
- past and current periodontal health
- family history of periodontal disease
- oral hygiene
- presence of plaque
- presence of gingivitis
- presence of calculus
- presence of extrinsic stain
- local factors that would influence the buildup and retention of plaque

A prophylaxis can be performed using gauze, cloth, toothbrush or rubber cup on the incisors of an infant only. Once the molars have begun to erupt, manual or power toothbrush\textsuperscript{10-12}, rubber cup and/or hand instruments followed by site specific flossing may be used. Benefits of each option are shown in Table 1.

The literature cites a number of studies that show a prophylaxis is not necessary prior to the application of topical fluoride.\textsuperscript{13-26} Conversely, Christensen and Bangerter have shown in vivo that an insignificant amount of the fluoride-rich layer of enamel is removed with a rubber cup prophylaxis.\textsuperscript{27}
**Table 1: Benefits of Prophylaxis Options**

<table>
<thead>
<tr>
<th></th>
<th>Plaque Removal</th>
<th>Stain</th>
<th>Calculus</th>
<th>Polish/Smooth</th>
<th>Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cloth/Gauze (C/G)*</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Toothbrush (TB)</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Power Brush (PB)</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Rubber Cup (RC)</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Hand Instruments (HI)</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

*only on the incisors of an infant

**Recommendations**

1. The dental prophylaxis should be used as part of a comprehensive preventive program designed to improve children's ability to maintain their personal oral health. The use of dental prophylaxis should be considered as an educational tool to allay patient fears regarding the manipulation of oral tissues.

2. A patient-appropriate dental prophylaxis should be performed when indicated, in conjunction with oral hygiene instruction, periodic oral examination visits and other indicated preventive care.

A periodic professional prophylaxis should be performed to:

- instruct the caregiver and child or adolescent in proper oral hygiene techniques
- remove microbial plaque and calculus
- polish hard surfaces in order to minimize the accumulation and retention of plaque
- remove extrinsic stain
- facilitate the examination of hard and soft tissues
- introduce the young child and apprehensive patient to dental procedures.

In Diagram 1 (below), these indicators are known as “rationale factors”.

A patient’s risk for caries/periodontal disease, as determined by the patient’s dental provider, should help determine the interval of the prophylaxis.

Determination of the necessity of a topical fluoride treatment is based upon the AAPD Guidelines for Fluoride Therapy. If a rubber cup prophylaxis is performed, fluoride pastes and/or fluoride-impregnated rubber cups are recommended, especially if it is not followed by a topical fluoride application.
Diagram 1.

Decision Tree for Dental Prophylaxis

Moderate to high risk for caries/periodontal disease "rationale factor" Parental preference

PROPHYLAXIS

Infant (C/G, TB, RC, HI) Child (TB, PB, RC, HI) Adolescent (TB, PB, RC, HI)

If no "rationale factor" is present and the infant, child or adolescent is at low risk for caries and periodontal disease, prophylaxis is performed at the discretion of the clinician.

References


