Session D
Home Oral Hygiene Revisited. Options and Evidence

Alberto Sicilia/Bernita Bush Gissler/Ioannis Fourmousis

After minor revisions, the position paper was reviewed and accepted by the group. It was recognized that oral hygiene education is a fundamental topic in the Dental Hygienists' curricula. Therefore, the group revisited oral hygiene practices to identify new developments in the field and how these should be implemented in the hygienists' curricula.

Oral Health Prev Dent 2003; 1: Supplement 1: 423-425.

Scope and Questions

1) IN TEACHING ORAL HYGIENE PRACTICES, WHAT ARE THE RATIONALES AND PRIORITIES ATTRIBUTED TO MECHANICAL VS. CHEMICAL, AND MANUAL VS POWERED TOOTH CLEANSING TECHNIQUES IN THE HYGIENISTS' CURRICULA?

In order to achieve an optimal level of oral hygiene mechanical plaque control (manual toothbrushes and interdental cleaning aids) has been found to be effective. This is a cost-effective approach and therefore should have priority in the hygienists' curricula.

The review has provided evidence that oscillating/rotating and counter-rotational powered toothbrushes can be more effective in terms of reduction of plaque and gingival inflammation compared to manual brushes. Powered toothbrushes mentioned in the review do not refer to battery-operated toothbrushes. In the hygienists' curricula, powered toothbrushes should be recommended for patients not achieving an adequate level of plaque control. Powered toothbrushes may be helpful tools for patients with fixed orthodontic appliances.

In general, chemical plaque control should not replace mechanical plaque control. In patients unable to perform mechanical plaque control, chemical products providing effective plaque inhibition (gingivitis reduction) should be recommended.

2) HOW ARE HYGIENE PRACTICES IMPLEMENTED?

Identification of Target Groups

The following target groups and recommendations were identified:

- **General population**
  Brushing at least once a day (efficient plaque removal) with fluoride toothpaste, advise interdental cleansing according to individual needs
- **Children**
  Brushing twice a day with fluoride toothpaste
- **Periodontitis patients**
  Brushing at least once a day (efficient plaque removal) with fluoride toothpaste. Interdental cleansing with a selection of products according to individual needs is essential
- **High risk caries**
  Brushing at least twice a day with fluoride toothpaste, advice on interdental cleansing according to individual needs, and utilization of additional fluoride preparations
- **Patients with special needs**
  Brushing at least once a day (efficient plaque removal) with fluoride toothpaste, advise interdental cleansing and chemical plaque control according to individual needs.

Tools
The following tools for implementation of oral hygiene practices were identified:

- Product tools
  - Manual toothbrushes
  - Powered toothbrushes
  - Interdental cleansing devices

- Educational tools
  - Dental models
  - Disclosing solutions
  - Audiovisual aids
  - Multimedia aids.

The hygienist should acquire the skills to utilize all tools to promote a behavioral change of the patients' oral hygiene habits.

Monitoring of Clinical Success

Hygienists should be able to apply dichotomous indices to monitor dental plaque and gingival inflammation and register their oral distribution.

Hygienists should be able to identify not only clinical success, but also side effects of oral hygiene practices on soft and hard tissues.

Role of Chemical Plaque Control in Primary and Secondary Prevention

In both primary and secondary prevention mechanical plaque control in combination with fluoride toothpaste is the first choice. Chemical plaque control could serve as an adjunct for patients unable to perform adequate oral hygiene. Due to side effects of efficacious chemical agents indications for long-term use are limited.

3) HOW IS TEACHING OF POWERED TOOTHBRUSHES IMPLEMENTED?

- **Relative efficacy**
  Dental hygienists should be aware that there is evidence that oscillating/rotating and counter-rotational powered toothbrushes can be more effective in terms of reduction of plaque and gingival inflammation compared to manual brushes. This implies that these powered toothbrushes should be considered part of the regular oral hygiene armamentarium.

- **Awareness of the public related to the effectiveness**
  There are many different study designs regarding the efficacy of the use of toothbrushes. The hygienist should be taught the skills to judge the merits of such studies.

- **Instruction of techniques**
  Dental hygienists should be taught the indications, the principles, the efficacy and the brushing technique with powered toothbrushes. Within their curricula hygienists should have the opportunity to use and demonstrate the correct use of various powered toothbrushes. They should be trained to communicate these techniques to their patients.

4) WHAT IS THE ROLE OF INTERDENTAL CLEANSING IN THE LIGHT OF RECENT DEVELOPMENTS?

There have been recent product developments, such as new forms of dental floss with or without chemical adjuncts, reduced diameter interdental brushes and wood sticks, powered driven interdental cleaners, etc.

There is a definite lack of research in this area. There is evidence based in short-term studies of the efficacy of interdental cleansing to reduce dental plaque. There is limited evidence in long-term studies concerning the efficacy of treatment to gingival inflammation. Nevertheless, interdental cleansing should be an integral part of oral hygiene instruction protocols according to individual needs.

In periodontitis patients the use of interdental brushes is more efficient than the use of dental floss for the removal of interdental plaque. In patients with closed interdental spaces, where interdental cleansing is indicated, dental floss should be the first choice. Hygienists should look for a suitable alternative in noncompliant patients. Power driven interdental cleaners have not demonstrated a greater efficacy than dental floss.

5) WHAT SHOULD THE HYGIENISTS' CURRICULA TEACH IN TERMS OF POWERED AND MANUAL TOOTH BRUSHING AND INTERDENTAL CLEANSING?

In order to achieve optimal level of oral health, oral hygiene products are not only important, but their effective use is also influenced by patients' compliance, motivation and their ability to utilize them.

For example, the reviewed studies showed that mechanical plaque removal with manual toothbrushes failed to achieve a level of plaque control desirable to maintain periodontal health. Therefore, it is essential that the dental hygienist should provide the patient with ongoing professional oral hygiene education.

- **Manual tooth brushing**
  Mechanical plaque control (manual toothbrushes) is a cost-effective approach to achieving oral health and therefore should have priority in the hygienist's curriculum. The evidence points out the benefits of new brush designs and brushing techniques, which aim to optimize approximal plaque removal. Such products and techniques should be introduced in hygienists' curricula.

- **Powered tooth brushing**
  Dental hygienists should be aware that oscillating/rotating and counter-rotational powered toothbrushes could be more effective in terms of reduction of plaque and gingival inflammation compared to manual brushes. This implies that these powered toothbrushes should be considered part of the regular oral hygiene armamentarium.
  Dental hygienists should be taught the indications, the principles, the efficacy and the brushing techniques for powered toothbrushes. Within their curriculum hygienists should have the opportunity to learn how to use and to demonstrate the correct use of various forms of powered toothbrushes. They should be trained to communicate these techniques to their patients.

- **Interdental cleansing**
  In patients with closed interdental spaces, where interdental cleansing is indicated, dental floss should be the first choice. Hygienists should look for a suitable alternative in noncompliant patients.
  In patients with open interdental spaces and patients with periodontitis the use of interdental brushes is more efficient than the use of dental floss for the removal of interdental plaque.