In the 1970s and 1980s research suggested that supragingival plaque control every two weeks following SRP would provide better clinical health outcomes and reduced levels of sublingual microbes. Following these initial findings, no additional research was done. More recently, researchers have used molecular genetic testing to determine that colonization of specific pathogens supragingivally might in fact contribute to subgingival colonization. These tests have identified the desirable microbial profile compatible with periodontal health when weekly dental hygiene visits are provided.

Researchers at Gaurulhos University in Brazil wanted to know if twice daily rinsing with chlorhexidine (CHX) was as beneficial as twice weekly supragingival plaque control visits begun during SRP and carried out for 63 days. Sixty subjects participated in the study, divided into three groups: SPR plus twice daily CHX rinsing, SPR plus bi-weekly professional plaque control plus a placebo rinse, and the control group of SRP plus a placebo rinse. SRP was completed using local anesthesia and primarily hand instruments. It was done by periodontists in four to six, one-hour visits over at most, a 21-day period.

Bi-weekly supragingival plaque control and CHX rinsing both resulted in greater healing and reductions in subgingival pathogens than SRP alone. At six months, those rinsing with CHX showed slightly greater gain in clinical attachment levels and more reduction in the number of moderate to deep pockets. They also had more reductions in pathogens, due in part to reductions in bacteria on the tongue and mucous membranes.

Clinical Implications: Providing bi-weekly supragingival plaque control during and after SRP and especially rinsing twice daily with CHX provides for better healing.


CHX rinsing improves SRP outcomes

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**Photodynamic therapy best after repeated treatments**

Photodynamic therapy (PDT) is now available in Canada and Europe. PDT uses a photosensitizer solution injected subgingivally that binds to bacteria. A cold laser light of a specific wavelength is applied to the outside of the tissue. The laser light activates the photosensitizer, changing the energy levels of molecules and releases oxygen that destroys the bacteria. This technology has been used in medicine to treat tumors. It's now used as an adjunct to SRP and has shown reductions in bleeding on probing.

Researchers at the University of Bern in Switzerland wanted to know if PDT would provide better healing when used several times during maintenance therapy. The test subjects were 10 maintenance patients with 70 residual pockets measuring 5mm or more. The test group received the PDT following debridement. The control group received the same treatment, but with a non-activated laser. Patients were seen for periodontal maintenance at three, six and 12 months.

The greatest probing depth reductions were seen in the test group with nearly a millimeter reduction compared to none in the control group after six months. Bleeding scores were reduced more in the test group, from 97 percent at baseline to 64 percent at three months, 67 percent at six months and 77 percent at 12 months. In the control group, bleeding scores remained constant at 84, 84, 90 and 87 percent.

The benefits of PDT seem to be greatest at six months following repeated applications.

**Clinical Implications:** Photodynamic therapy, when available in the United States might provide an effective adjunct for periodontal maintenance patients.


**Maintenance therapy found cost effective**

The goals of periodontal therapy are to stop disease progression, achieve health in the supporting tissues and preserve the teeth. Periodontal maintenance therapy is an essential part of tooth preservation, however research studies rarely report the number or costs of these visits.

Researchers at the University of Heidelberg in Germany wanted to measure the financial costs of saving teeth through periodontal maintenance therapy as compared to the alternatives of tooth replacement. They evaluated nearly 100 patients after 10 years of periodontal therapy.

The government established dental fee schedule was used to determine costs for periodontal maintenance, SRP, and various restorative procedures. Fees were totaled and divided by the number of teeth to determine a per-tooth treatment fee, which could then be compared to implant and restorative fees.

Despite treatment plans calling for four maintenance visits a year patients averaged 14 visits over 10 years with nine visits for the non-compliers and 20 for the regular compliers. Some teeth received no SRP during this time and others received SRP 14 times. Patients seen more frequently averaged a lower cost per tooth compared to higher costs per tooth for those who had more sporadic maintenance visits.

Tooth survival rate was 96.4 percent with 155 of 2,249 teeth lost. Comparing maintenance fees with implant and prosthetic fees showed significantly higher costs to replace lost teeth. Several factors influenced costs per tooth, including tooth type, initial bone loss, furcation involvement, abutment status, and previous regenerative surgery.

**Clinical Implications:** Periodontal maintenance therapy provides high value for retaining teeth, compared to implants and bridgework.

Probiotics are live microorganisms that provide health benefits. Most common are *Lactobacillus acidophilus* and *Bifidus* that are often used to control antibiotic induced diarrhea in children. Probiotics are considered an alternative to antibiotics in some cases. Researchers on the Medical Faculty at the University of Leipzig in Germany tested a probiotic milk drink to determine if it would impact experimental gingivitis.

Fifty medical and dental students participated in the two-month study. Half the group drank a probiotic milk drink containing *Lactobacillus casei* daily and the control group received no placebo drink. The probiotic concentration was 100 billion per 100 milliliters. Subjects were examined at baseline, eight weeks and four days later, after stopping all oral hygiene. Clinical indices were recorded and in two sites gingival crevicular fluid was collected.

After eight weeks, there were no differences clinically between the test and control groups for plaque levels or gingival bleeding. Following four days without oral hygiene, the test group had more buccal and lingual plaque than the control group and both groups had similar bleeding scores.

Crevicular fluid analysis showed changes in the test group that indicated immunological changes. Both elastase and myeloperoxidase activity were higher in the control group before and after the four days of experimental gingivitis, indicating more inflammation.

Clinical Implications: The probiotics added to the milk drink didn’t produce measurable changes in the plaque scores, but changes in subgingival cytokines suggest a positive impact on the immune response.


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**Frequent DH visits important for those with orofacial clefts**

The progression from embryo to fetus occurs between the seventh and 12th weeks of gestation. At this time, the maxillary and palatal processes merge to form the lips, the palate and the alveolar process of the maxilla. Cleft lip occurs with a failure of the nasal and maxillary processes to merge. Cleft palate is caused by incomplete fusion of the palatal processes. Infants born with orofacial clefts require treatment by medical and dental specialists.

In 1959, a special program was developed at University Hospital in Bern, Switzerland to provide multidisciplinary care for these infants. Twenty years later, in 1979, 80 subjects were examined to determine periodontal health adjacent to clefts. While attachment levels were similar between cleft and non-cleft sites, more bone loss was evident adjacent to clefts.

In 1993, 26 of the 80 subjects were examined again. None of them had been receiving periodontal maintenance at the university, but instead were seeing their general dentists once or twice a year. The cleft sites showed more periodontal breakdown than the control sites. In 2004, 20 subjects were available for reevaluation. Both cleft and control sites now had high plaque and bleeding scores. More periodontal destruction was evident at cleft sites, with a half of a millimeter more attachment loss compared to control sites.

Despite once or twice yearly visits to their general dentist, these people did not effectively remove plaque and consequently suffered from periodontal disease.

Clinical Implications: Strict periodontal maintenance therapy schedules should be followed for those with cleft palate and cleft lip, when signs of periodontal disease are present to prevent disease progression.