

# What's New in Dentistry

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**Prophylactic antibiotics not necessary after third molar extraction.** Surgical removal of mandibular third molars is one of the most frequently performed procedures in oral and maxillofacial surgery. This procedure is commonly recommended after orthodontic therapy. However, the prescribing of antibiotics after third molar surgery remains controversial. In a study published in the *Journal of Oral and Maxillofacial Surgery* (2004;62:3–8), researchers evaluated the effect of the application of two different antibiotics, amoxicillin and clindamycin, after removal of third molars in a prospective, randomized controlled clinical study over a 2.5 year period. In this study, 528 mandibular third molars were surgically removed in 288 patients during a period of 30 months. The average age of the sample was 20.7 years. Three groups were established. In the first group, amoxicillin was administered twice daily for five days after surgery. In the second group, clindamycin was given three times daily for five days. The third group was a control and received no antibiotic medication. The investigators evaluated differences in mouth opening, incidence of infection, incidence of dry socket, pain, and other side effects between the three groups. The results of this study showed no significant difference between the groups regarding the overall occurrence of local infection symptoms after surgery. The same was true for differences in mouth opening and pain scores. The rate for dry sockets was the same in each group and did not vary significantly. In conclusion, the results of this study show that prophylactic antibiotic treatment after the removal of lower third molars does not reduce the rate of infection or other adverse symptoms and therefore is not recommended for routine use.

**Limited evidence of caries prevention with fissure sealants of permanent first molars.** Pit and fissure sealants have been used widely in pediatric dentistry for over three decades in order to prevent caries, mainly in the occlusal surfaces of premolars and molars. The method of sealing fissures was introduced in the late 1960s and involves the application of a thin layer of resin directly on the fissures after pretreatment with acid. Of course, the method is technique-sensitive, and the ease of placement has improved with light-cured composites and the addition of fluoride to the resin. However, are these sealants really effective? A study published in *Acta Odontologica Scandinavica* (2003;61:321–330) performed a meta-analysis of 13 investigations that used resin-based or glass ionomer sealant materials that had been placed in the first molars of

children up to 14 years of age. The researchers evaluated the caries incidence in these studies a minimum of two years after the sealants had been placed. The results of this study showed that the relative caries risk reduction in permanent first molars was 33%. The effect depended on the retention of the sealant. In conclusion, this investigation suggests limited evidence that fissure sealing of permanent first molars with resin-based materials has a caries-preventive effect.

**Six-year follow-up of indirect resin inlays looks promising.** The use of resin composite restorations in dentistry has increased gradually during the past decade, due partly to improvements in resin-bonded materials, partly to changes in restorative techniques, and partly to the demands of patients for more esthetic restorations. Although direct resin restoration techniques have been enhanced, these restorations are not ideal because of shrinkage of the material and leakage of the margins. In an attempt to overcome some of the problems associated with the direct placement technique, an indirect inlay technique has been developed. Polymerization shrinkage takes place outside the mouth, thus limiting the shrinkage to that of the thin luting cement layer. However, are indirect inlays really an improvement over direct composite restorations? This question was evaluated in a study published in *Acta Odontologica Scandinavica* (2004;61:247–251). The sample consisted of 25 consecutive patients who requested esthetic posterior restorations at a major university in Scandinavia. A total of 64 restorations were placed in these patients. All cases were replacements of unsatisfactory or failed class II amalgam or directly placed resin composite restorations. After removal of old fillings and tooth structure, impressions were made, and inlays or onlays were produced in an indirect technique using light-cured composite. Then the restorations were luted with light cured composite. These restorations were re-evaluated up to six years later. The results showed that indirectly placed inlays and onlays made from any of the various composite materials performed equally well over the evaluation period. This study concluded that the indirect resin composite inlay/onlay technique should be considered as an alternative to direct restoration in the approximal posterior region.

**Ten-year survival of nonsubmerged implants is very high.** Implant restoration of missing teeth has become routine in dentistry. In the past two decades, the numbers of implants placed has increased tremendously. Now, re-

searchers are able to evaluate retrospectively these patients to determine the long-term stability of restored implants. A study published in the *International Journal of Oral and Maxillofacial Implants* (2004;18:826–834), evaluated the outcome of 468 ITI implants placed in consecutively treated patients from 1989 to 1998 in a university setting in Europe. The implants were manufactured by Institute Straumann in Waldenburg, Switzerland. The age range of the patients at the time of implant placement ranged from 18 to 88 years with an average age of 58.2 years. After the implants were placed, healing periods of four months in the mandible and six months in the maxilla were observed before restoration. At follow-up examinations, several criteria were evaluated to determine success, such as gingival index, plaque index, mobility, radiographic analysis, and bone loss. If bone resorption reached one thread, the implant was considered a failure. After 10 years the long-term stability was calculated. During the healing period, two implants were lost and classified as early failures. After loading with restorations, eight more implants became mobile and failed. Therefore the 10-year cumulative survival and success rate was 99.2%. In conclusion, the ITI solid-screw titanium implant is a highly predictable implant over its first 10 years.

**Mastic chewing gum is a useful antiplaque agent.** Antibacterial agents including chemical plaque inhibitors have

been used successfully to maintain supragingival cleanliness and gingival health. Chlorhexidine is a strong antibacterial agent, but side effects such as discoloration of the teeth and unpleasant taste occur when this chemical is prescribed for an extended period. Therefore, there is still a need for antiplaque agents that can be used on a daily basis in susceptible patients with minimal side effects. Mastic is a resin exudate from a plant. Earlier studies have indicated that mastic contains some substances that have antibacterial and anti-inflammatory potential. A study published in the *Journal of Periodontology* (2003;74:501–505), evaluated the antiplaque effect of mastic incorporated in chewing gum. The sample consisted of 20 dental students. The subjects were periodontally healthy. The study involved a seven-day randomized investigation. Patients were asked to chew either mastic chewing gum or placebo chewing gum daily over a seven-day period. No other mechanical oral hygiene methods were used during that time. Then the degree of plaque accumulation and gingival inflammation were compared between the two groups. The total number of bacterial colonies was significantly reduced during the four hours of chewing mastic gum compared to the placebo gum. The mastic group showed a significantly reduced plaque index and gingival index compared to the placebo group. The results of this study suggest that mastic chewing gum is a useful antiplaque agent in reducing bacterial growth in saliva and plaque formation on teeth.