Statement Regarding Use of Dental Lasers for

Excisional New Attachment Procedure (ENAP)

A recent commercial advertisement describes a "revolutionary . . . breakthrough in periodontal surgery that regenerates new attachment" through the application of "a patented Laser ENAP procedure."1 Despite FDA approval for sulcular debridement, the use of lasers for ENAP and gingival curettage as proposed in the advertisement and several recent journal articles 2-8 should be evaluated in light of the available evidence.

The ultimate applicability for a specific treatment modality must be based on scientific evidence and critical review of the literature. As noted in the 1996 World Workshop in Periodontics, an evidence-based approach involves systematic evaluation of available information, where randomized, controlled, double-blind studies are more relevant than uncontrolled case reports. The latter studies rarely present concurrent controls and therefore the effectiveness of treatment is likely to be overestimated.9

The ENAP was first described in 1976 as "a definitive subgingival curettage performed with a knife."10 Like subgingival curettage, the ENAP results in "a long, thin epithelial attachment and a minimal amount of connective tissue attachment."11 The only published human clinical study comparing gingival curettage to the ENAP found no significant differences in probing depth reduction or gains in attachment.12

It should be noted that the preponderance of evidence indicates that curettage fails to achieve any clinical result that cannot be accomplished by routine scaling and root planing.13-16 The Academy is not aware of any published data that indicates that the ENAP laser procedure is any more effective for these purposes than traditional scaling and planing.17-27

To date, there are only four published human studies involving a total of 57 patients that have evaluated the effects of subgingival laser application.4, 5, 17, 18 All four papers report reductions in putative periodontal pathogenic microbes following laser treatment. Two of the papers also reported laser induced root damage.4, 17 The remainingtwo papersdid not evaluate treated teeth for root damage.5 Elimination of pocket epithelium by gingival curettage, ENAP or other internal bevel incision designs appears not only nearly impossible but unnecessary for long-term therapeutic goals.28-30 In addition, there are no published data that demonstrate that either curettage or ENAP are effective in periodontal regeneration. To the contrary, there is peer reviewed evidence, both in vivo and in vitro, that use of lasers for ENAP procedures and/or gingival curettage may place patients at risk for damage to root surfaces and subjacent alveolar bone 31, 32 that, in turn, could render these tissues incompatible to normal cell attachment and healing.

In conclusion, The Academy is not aware of any randomized blinded controlled longitudinal clinical trials, cohort or longitudinal studies, or case-controlled studies indicating that "laser ENAP" or "laser curettage" offers any advantageous clinical result not achieved by traditional periodontal therapy. Moreover, published studies suggest that use of lasers for ENAP procedures and/or gingival curettage could render root surfaces and adjacent alveolar bone incompatible with normal cell attachment and healing.

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This statement was developed by the Committee on Research, Science and Therapy and approved by the Board of Trustees of The American Academy of Periodontology in August 1999, as a statement for the profession. This statement is based on the published studies referenced at the end of this statement. However, there may be unpublished studies of which the Academy is unaware.