



GOULD'S GUMS GAZETTE

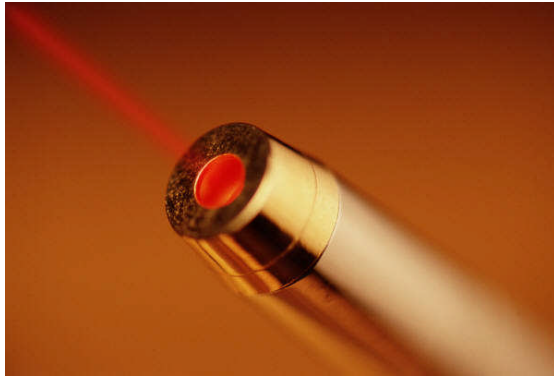
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Photoactivated Disinfection of Periodontal Pockets



Clinicians and scientists are becoming increasingly alarmed about the steep rise in the number of antibiotic-resistant bacteria caused mainly by the inappropriate use of antibiotics. This may be particularly relevant in the case of periodontal disease, since it can be treated successfully with antibiotics.

A new and exciting method of killing bacteria in periodontal pockets has been developed (The Periowave System) that uses a photosensitizing solution and low-intensity red laser that claims to destroy periodontal pathogens that conventional scaling and root planing leave behind.

The photosensitizing solution is introduced into the periodontal pocket and binds with the bacterial cell wall. Once activated by the laser, there is production of reactive oxygen which lethally disrupts the cell wall and in addition, inactivates bacterial toxins

such as lipopolysaccharides. The process is site specific, and there is no chance of causing bacterial resistance.

Early clinical trials show a significant reduction in probing depth and increase in clinical attachment when photoactivated disinfection was used in conjunction with scaling and root planing when compared to root planing alone.

We will be among the first periodontal offices in Canada to be testing this system, and we'll keep you posted as to the results

Which Treatment for Periodontal Pocketing Works the Best?

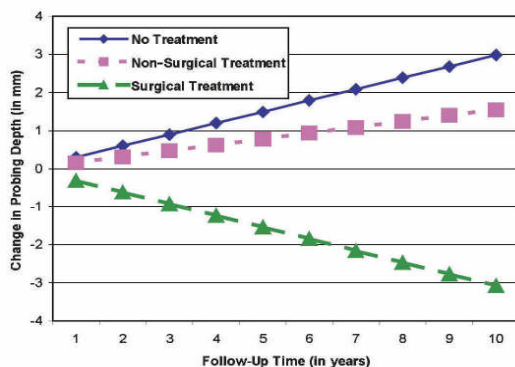
The assumption that surgical pocket reduction would prolong the life of the dentition was challenged in the 1970's with the publication of a number of clinical studies from Sweden and the United States. The results, which revolutionized our thinking at the time, appeared to show that both surgical and non-surgical treatment (SPT or supportive periodontal treatment) were equally effective in stopping the progression of periodontal disease over time.

Critical Problems with the Original Studies

Many years after the studies were originally published, several problems with the conclusions were discovered. **The first was that the Swedish researchers had only studied single rooted teeth.** As well, patients who dropped out during the course of the study were not included in the results, which meant that only highly motivated patients (usually with good oral hygiene) were left. However, the biggest flaw in all the studies was that **average scores for each patient had been used for comparison rather than scores for individual teeth.** This meant that positive or negative changes at individual sites were inadvertently masked.

Limitations of SPT

A recent study by **Harrel and Nunn** in the **Journal of Periodontology** studied patients in private practice who had been seen for examination and then had either elected to have no treatment, SPT or pocket correction surgery. They followed the progress of the patients over a 10 year period with the results shown in the accompanying graph.



Harrel and Nunn's conclusion was that when individual teeth are used as the basis for analysis, teeth that received no treatment or non-surgical treatment showed a significant worsening of probing depths, furcation involvement, mobility and prognosis over a ten year period when compared to teeth that received surgical treatment. However, for teeth receiving SPT, the rate of increase was less than having no treatment at all. **While not every patient is a candidate for periodontal surgical treatment, we now know that there can be a difference in long term outcomes, and this is information about which our patients need to be made aware.**

Other Limitations of SPT

One thing that it is important to remember is that only regenerative periodontal surgical techniques (e.g. Emdogain enamel matrix protein and certain kinds of bone grafting) have the potential to actually **regenerate** lost periodontal tissues (bone, PDL and cementum) as can be seen in the following clinical examples.

