**Laser Dentistry**

**The Diode Laser — The Diode Laser for Gingival Recountouring in Cosmetic Dentistry**

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**Introduction:**

Previously in these clinical technique articles in *Dentistry Today,* I have discussed the role of the diode laser for gingivoplasty in conjunction with restorative dentistry (1) as well as with orthodontics (2). The diode gingivectomy is the most common laser procedure in dentistry (3) and can make dealing with gingival hyperplasia simpler in many situations. When dealing with aesthetic dentistry, the diode laser can focus on the "white" part of the smile — namely the dentition. If we indeed add our focus to the "pink" portion of the patient's smile, and look at symmetry of gingival zeniths when dealing with anterior bonding, then the diode laser can often be a life saver for making cases just that much better. (4-6)

**Principles of Smile Recountouring:**

When using the Picasso Lite and World (7w) lasers for the treatment of gingival recountouring around anterior teeth, the clinician should first evaluate the amount of gingival tissue that is present, and the esthetic demands of the case. In situations where minimal attached tissue is present, careful thought should be given to whether a diode laser is the best tool for the situation. Kneal et al has suggested that a minimum of 1mm of attached tissue be present before using the diode laser to ablate tissue (8).

Dr. David Sarver wrote a series of three excellent articles looking at the role of the diode laser in orthodontics in 2004 and 2005, (10-12) In part 1 he looked at the principles of shape and proportionality of anterior teeth. As for many general dentists has been on the tooth structure and reshaping incisal edges, but gingival recountouring of soft tissues can yield better length to width proportions on teeth. A focus on gingival shape and gingival contour is essential when altering soft tissue proportions of anterior teeth. Many of these principles are covered through cosmetic dentistry articles dealing with smile design. Generally, the gingival heights of the maxillary central should be symmetrical in shape, and correspond to the height of the canines, whereas the lateral incisors can be 1/2 -1/more coronal. The zygomatic bone should ideally be 70-80% of the length of the tooth. Therefore, the diode laser can be used to help with:

1. Improving gingival shape and contour, 2. Lengthening crowns, 3. Idealizing tooth combination, and 4. Resolving crownheight asymmetries.

**Clinical Case: Single Central Recountouring**

Male aged 40 years old wanted to improve anterior esthetics on extensively restored central incisors. The soft tissue on the upper right central was not harmonious and not symmetrical with the adjacent central incisor. Probing revealed a pocket of 4mm, so soft tissue crown lengthening was possible. The diode laser was used to remove tissue on the right central incisor, and for crown troughing as well. Final postoperative results show nice white and pink components to the smile.

**Fig. 3: Gingival disharmony on centrals.**

**Fig. 8: Healing at 2 weeks.**

**Fig. 7: Final appearance of crowns placed.**

The diode laser can be a great soft tissue handpiece for many areas of restorative dentistry and the ability to improve gingival harmony with selective soft tissue refinement can provide for optimal treatment results during esthetic treatment.

**References:**

8. Lee KA. Laser-assisted gingival tissue procedures in aesthetic dentistry. Post Proced Alcohol Dent. 2007;13(06)abstract suppl 262.