It would be wonderful if our pediatric patients never had to experience “The Shot.” Dental scientists have been working for years through the National Institute for Health to eradicate tooth decay. There may well be a vaccine someday that will prevent dental caries (tooth decay) and periodontal (gum) disease. For now we dentists still have to remove tooth decay to prevent its spread, which eventually would lead to abscesses and toothaches. Since 1997, dentists in the United States have been using lasers to reduce drilling, and in some cases lasers prevent the need for a shot.

The “light saber” of dentistry is the newest weapon in the fight against tooth decay. The dental laser is the latest modern innovation for the 21st century. Lasers have proven safe and effective for many surgical procedures, caries removal, cavity preparation, pulp treatment, and soft tissue surgery. Receiving FDA approval (1997) for use in adults and children, the erbium laser offers an alternative to the high-speed drill, eliminating fear and patient discomfort. The diode laser offers the advantage of less bleeding and faster healing compared to a scalpel.

The laser is revolutionizing dental care — just as it has so many other areas of our lives. With the use of dental lasers, dentists can provide patients with a new method of dental care that can often be performed without the use of local anesthesia.

How does it work?
The erbium chromium:YSGG laser searches for water. Since enamel has approximately 3% to 5% water, dentin about 20% water, and carious dentin even more water, the laser searches for the water molecules. The laser then microexplodes (ablates) the molecules of enamel, dentin, and caries in the path of the invisible laser beam. This microexplosion is not seen or felt by the patient. The slight “popping” sound of the laser has been found to be very tolerable for most children.

Does it hurt? Most patients find laser procedures remarkably comfortable, so comfortable in fact that in many cases no numbing is required. People who have experienced laser treatment report feeling nothing more than the touch of the handpiece and an occasional slight sensation of warmth.

Does the laser save time in preparing a cavity? No! However, the additional time that the laser takes to remove the affected tooth material is a trade-off for the typical wait for local anesthesia. Therefore, the procedure per tooth takes about the same amount of time. Since the patient does not have the typical numb feel-

For more on this topic, go to www.dentaleconomics.com and search using the following key words: dental lasers for kids, diode laser, erbium laser, Dr. Fred Margolis.

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Pulpotomy performed with Er,Cr:YSGG laser (Biolase Waterlase MD®)
Are dental lasers for kids?

Dental lasers can be useful in the following ways:

- Class I through Class VI preparation of carious teeth
- Gingival hyperplasia
- Gingivoplasty
- Frenectomy (labial and lingual)
- Exposure of teeth to aid tooth eruption
- Operculectomy
- Gingival removal to expose areas for restorations
- Aphthous ulcers and herpes labialis
- Pulp therapy
- Abnormal gingival architecture associated with orthodontic movement
- Excision of soft tissue tumors, including fibromas and mucoceles
- Uncovering implants
- Bleaching teeth
- Low-level laser therapy (biostimulation)
- Periodontal therapy

Advantages in using dental lasers:

- No anesthesia for cavity preparation in the majority of patients due to the analgesic effect of the laser
- No waiting for the patient to be anesthetized in the majority of patients
- No concern about the patient biting his or her lip, cheek, or tongue
- More pleasant experience due to not being anesthetized
- Less bleeding than scalpel
- Less need for suturing
- Bactericidal

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