Checklist of Considerations Before Purchasing a Dental Laser

Gail S. Siminovsky, CAE, Executive Director of the Academy of Laser Dentistry

This article discusses considerations before purchasing a laser, common uses, practitioner benefits, patient benefits, regulatory issues, resources, training, certification and continuing education. It is designed as a useful tool for clinicians who are considering the purchase of a dental laser. In general before buying a laser, clinicians should attend national meetings where lasers are being presented and attend an introductory laser course. As long as you assess the variety of devices in the marketplace, participate in manufacturer training, commit to attending Standard Proficiency Dental Laser Certification as recognized by the Academy of Laser Dentistry, and proceed through the learning curve at a comfortable pace for you, the rewards will quickly be noticed by your staff, your patients, and your practice.

FIRST THINGS FIRST
Before you purchase a dental laser device, consider your type of practice and begin to understand the different laser wavelengths and their recommended applications for use. Matching the laser wavelength to your practice needs is important. What this really means is that you begin your laser education PRIOR to making a purchasing decision.

SORTING THROUGH MARKETING HYPE
There are many manufacturer-based training programs and the old adage ‘let the buyer beware’ applies. It is important to understand basic laser physics, laser safety, and clinical applications. It is important to know the different laser wavelengths, power settings, and various tissue interaction effects so that you fully understand the benefits to your patients and your practice. Gather as much company information as possible and attend an introductory course sponsored by the Academy of Laser Dentistry (ALD) conducted at many of the national meetings. Unlike manufacturer-sponsored introductory courses and training, a general introduction to laser technology provided by ALD introduces you to all laser devices currently in the marketplace. This education allows you to evaluate different devices and sort through all the advertising information that is currently in the marketplace. With the assistance of ALD corporate manufacturers who willingly provide devices for ALD Introductory Courses, and the side-by-side evaluation provides access to and understanding of lasers in a non-selling environment. Make your purchasing decision based upon sound scientific evidence and your own particular needs, not upon the misconception that lasers will revolutionize your practice.

QUESTIONS YOU WANT TO ASK AND ANSWER
What features do I want or need? What procedures have been cleared for marketing by the U.S. Food and Drug Administration? What procedures do I currently perform that can be assisted by the use of laser technology? What procedures do I not perform that I would consider providing for my patients if I had a laser? How much training and certification do I need? What are the regulatory issues, if any, in my state dental practice act or other licensing body? How do I successfully incorporate laser technology into my practice? What technical support is available and is it consistent? How long has the device been on the market and what is the company’s track record for efficiency, reliability, and serviceability?

LASER DEVICE CHECKLIST
Range of applications, speed of performance, precision and controllability
Most lasers are designed for a specific application or range of indications for use. Currently there are 24 indications for laser use in dentistry cleared for marketing by the FDA.¹ No single laser can perform all applications equally well under all conditions. Lasers should be a part of the conventional armamentarium. In some cases it can be the primary instrument of choice; in others it can be an adjunctive instrument. No laser should be viewed as a complete replacement for conventional instrumentation.

Delivery systems, ease of use, disposable components
The laser’s delivery system is one of the most important considerations. Does the delivery system provide intraoral accessibility to your satisfaction? How easily are components changed in the middle of a procedure if that may be necessary to achieve optimal results for the desired tissue interaction?

Controllability – Factory presets, power, pulse duration and frequency, timer for exposure duration
Does the laser provide the control needed to perform the procedures you are most likely to do? Are power settings preset? Can you easily adjust those settings?

Design, limitations, safety, sterilization and infection control
Is the laser designed specifically for dental use? What are the power requirements, external cooling system requirements (if any)? What are the built-in safety features? Laser safety for the patient, the dentist, and anyone in the hazard zone should be a primary concern. How easy is it to sterilize and disinfect the laser, the individual components and accessories? Do they meet established sterilization mandates?

Cost – Initial, continuing education, maintenance, and replacements
The range of laser purchase prices varies depending upon numerous features, delivery systems, and wavelengths. Cost can be the initial concern for the uninformed, but other considerations (as indicated in this brief overview) should take precedence. As with any well-managed investment, consider the cost over the expected lifetime of the device, not just the initial purchase. As with any well-managed practice implementation, consider the learning curve for you as a practitioner and for your staff.

Ease of setup and use, control panel displays, foot pedals
Is the laser easy to set up in your operatory? What is the square footage of your operatory and can you easily transport the laser from chair to chair? Is the control panel easily viewable? Are power settings preset and how easy is it to change those settings as needed? Is the activation of the foot pedal easily accessed? Is the pedal adequately protected from inadvertent activation?

Portability – Size, weight, maneuverability, and accessory storage
Consider the laser in relation to your operatory and staff needs. Does it fit well? Is it convenient?

Quality of construction, beam alignment and calibration, upgradeability
Is calibration of the device easily achieved? How often, if ever, is calibration necessary? Is the quality of the construction satisfactory to your needs? If necessary, can the device travel from operatory to operatory? Does the design of the laser lend itself to upgrade capability, if appropriate? Does the manufacturer support such a program?

Features and accessories
Are the features useful for the kinds of procedures you will be doing? Create a prioritization list of ‘must haves,’ ‘nice to have,’ and ‘not necessary’ categories. Learn about the accessories which may require separate purchases. Consider cost and ease of replacement. Assess the features and accessories relative to your clinical setting.

Manuals, training, troubleshooting
Are the training manuals complete? Do they include indications for use, suggested power settings for particular procedures, and methods to adjust any factory presets? Is there sufficient documentation provided with the manufacturer training for you and your staff to work efficiently? Is manufacturer training provided and how is it provided – in your office, in a seminar setting?

Training, track record, warranty, and service
Ask hard questions about customer satisfaction and talk with actual dentist customers. Which manufacturers support the importance of dental laser education in the purchasing decision? What sort of training is offered? Is it included in the purchase price? What is the track record of the manufacturer or distributor? Where are they located? How responsive and readily available are they? How is the device serviced – in your office or at the factory? If factory-serviced, consider how the device is to be repackaged for shipment and whether the manufacturer provides shipping support. Compare warranties. Determine how often to reasonably expect to utilize the warranty provisions and how quickly issues are resolved.

A note about proper training and clinical technique
Does the manufacturer support continuing education? Does the manufacturer support the Academy of Laser Dentistry? Some manufacturers provide the first year of ALD membership. There is a learning curve for dental laser use during which the clinician develops his or her own proper technique and confidence with performing laser procedures. Stay with simple procedures for the first few weeks and gradually expand to more complex procedures as your confidence increases. Dentists have been using lasers for many years and early adopters worked with various companies to develop the present techniques found in procedural guidelines. Read and follow the manufacturer’s suggestions.

Regulatory agencies and standards organizations
The U.S. Food and Drug Administration (www.fda.gov) controls what manufacturers can claim about their products but does not control the practice of dentistry. The agency’s Center for Devices and Radiological Health (CDRH) (www.fda.gov/cdrh) standardizes the manufacture of all laser products. The American National Standards Institute (ANSI) is a private nonprofit organization that coordinates standardization and
conformity assessments. Specifically, the ANSI Z136.3 document relates to laser safety in healthcare. The Laser Institute of America (LIA) is the secretariat organization for the ANSI Z136.3 (www.laserinstitute.org).

The Occupational Safety and Health Administration (OSHA) is primarily involved in ensuring safe and healthful workplaces in the United States (www.osha.gov).

In summary, before purchasing:
- Examine your practice needs, wants, and goals.
- Attend a dental laser introductory course and ask questions.
- Compare devices and arrange for in-office demonstrations.
- Talk with other laser users.
- Understand the role of regulatory agencies and critically evaluate the available information.

After purchasing:
- Obtain training for the device from the manufacturer.
- Attend a Standard Proficiency Dental Laser Certification Course recognized by organized dentistry that includes lecture, hands-on exercises, written examination, and clinical simulation examinations.
- Start slowly and realize there is a learning curve. Keep it simple and increase your confidence over time.
- Realize that dental laser education is continual.
- Do not use new technology on new patients initially. Start with your existing patients with whom you have an established rapport then, as your confidence and experience increases, gradually move on to utilizing technology that is new to you to new patients.

HELFUL LINKS
Academy of Laser Dentistry (www.laserdentistry.org)
The Institute for Advanced Dental Technologies, Bloomfield Hills, MI

Laser manufacturers
*BioLase Technology (www.biolase.com)
*DEKA Laser Technology (www.dekalasers.com)
*Elexxion (www.elexxion.com)
*Great Plains Technologies (http://gptdental.com)
*HOYA ConBio (www.conbio.com)
*Incisive (www.incisivelaser.com)
*Ivoclar Vivadent (www.ivoclarvivdent.us.com)
*KaVo America (www.kavousa.com)
*Lares Research (www.laredsidental.com)
*Lasers4Dentistry (www.t4med.com)
*Light Canada (www.laserlightcanada.com)
*Millenium Dental Technologies (www.milleniumdental.com)
*OroScience (www.oroscientific.com)
*Professional Growth Technologies (www.pgtconsultants.com)
*Sirona Dental Systems (www.sirona.com)
*USA Laser Biotech (www.usaerb.com)
*Zap Lasers (www.zaplasers.com)

* indicates current ALD corporate member status

Dental Laser Related Manufacturers, including safety eyewear (www.laserdentistry.org/about/corpmembers.cfm)
U.S. Food and Drug Administration for devices cleared for marketing (www.fda.gov)
Certification in Laser Dentistry (http://www.laserdentistry.org/certification/index.cfm)
Standard Proficiency Recognized Course Providers (http://www.laserdentistry.org/certification/providers.cfm)
Suggested Reference Materials (http://www.laserdentistry.org/certification/studymaterials.cfm)
Curriculum Guidelines and Standards for Dental Laser Education (www.laserdentistry.org/prof/edu_curriculumguidelines.cfm)

REFERENCES

AUTHOR BIOGRAPHY
Gail Siminovsky, CAE is the executive director of the Academy of Laser Dentistry. She is a member of the American Society of Association Executives, Florida Society of Association Executives, American Association of Dental Editors, National Coalition of General Dental Organizations, and National Council of Dental Credentialing Organizations. She may be reached by e-mail at Siminovsky@laserdentistry.org.