

The background of the slide is a composite image. It shows two hands, one in the foreground and one in the background, holding a glowing white sphere. The sphere is surrounded by a network of white lines and dots, suggesting a digital or data environment. Several white shopping cart icons are scattered throughout the scene, indicating a focus on purchasing or commerce. The overall color palette is light and professional, with a focus on white and light blue tones.

A Comprehensive Buying Guide to  
**DENTAL LASERS**

Making Sense of How and What to Buy for Your Practice

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# Introduction

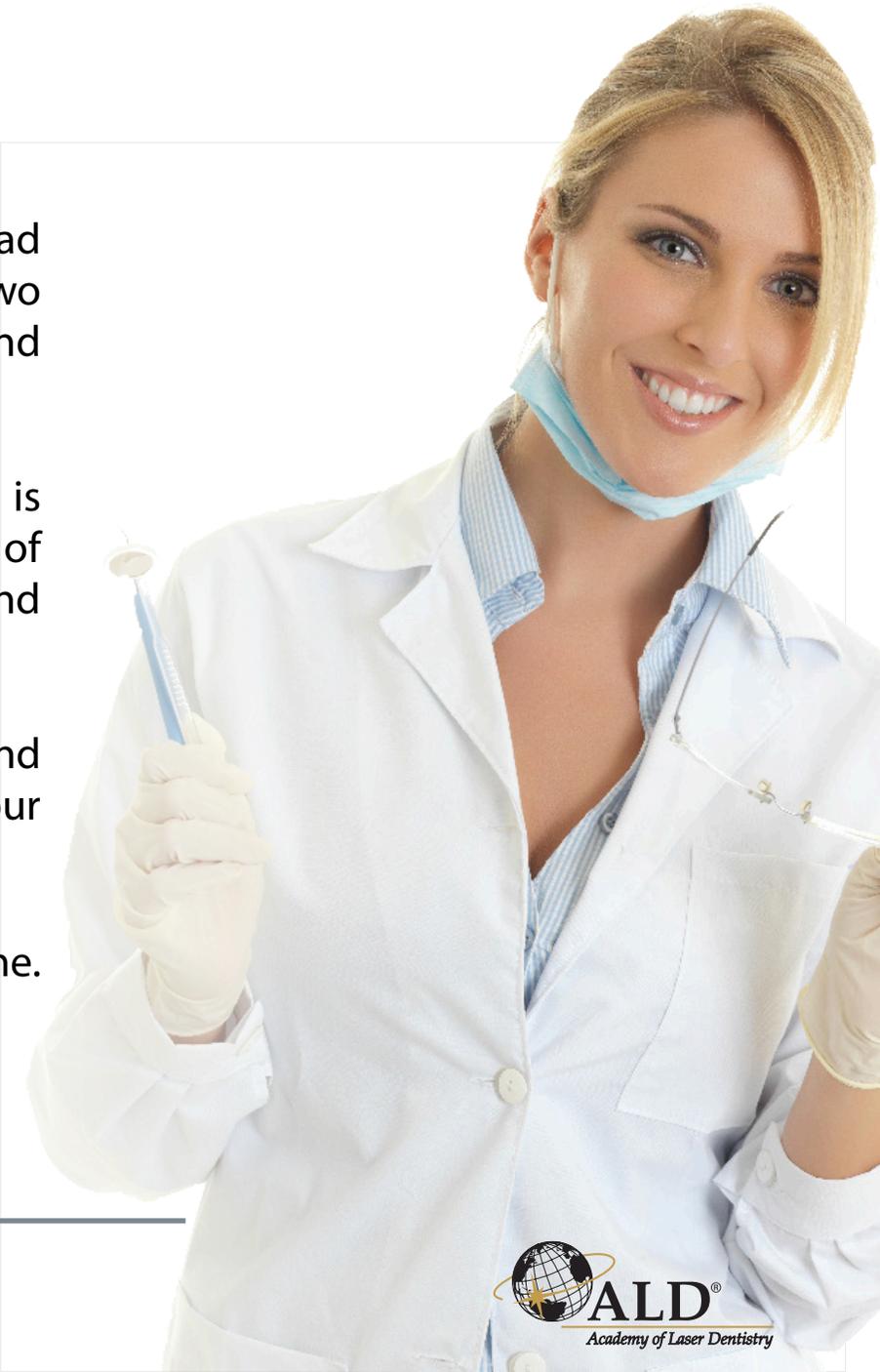
You've been thinking about adding a dental laser to your practice. You have read some articles in the dental publications and maybe attended a laser lecture or two at a dental convention. What you have learned so far has made an impression, and you are beginning to get serious about acquiring a laser device for your office.

Yet, you recognize that you need more information to ensure your decision is adequately informed and the right one for your patients and practice. The quality of care you provide depends on it. The types of procedures you can perform depend on it. To a degree, the profitability of your practice depends on it.

Need to learn more? Here are some guidelines to help you identify your needs and provide a systematic process for finding the appropriate laser for you and your patients.

Begin by reflecting on what your practice is and what you would like it to become.

*A laser can be an incredibly useful tool to help you realize your vision.*



1

# PLAN

Start with the “End” in Mind

# Identify Your Practice Goals

The start of any discussion involving “things to know” should initially focus on your practice goals. Your new laser can provide many benefits – to the quality of the care you provide, to your enthusiasm and skill on the job, and to your financial bottom line. Your laser device will also impact the perceptions and expectations of your patients and staff. It will be important to decide how to optimally integrate your new device into your practice to meet their wants and needs as well, for the benefit of your practice.

Identifying which laser will serve your needs begins with the decision of how you will use it. Do you want to:

- Focus on maintaining a general dental practice and concentrate on restorative dentistry for a broad client base?
- Enhance diagnostic capabilities?
- Expand services to include early intervention of periodontal disease or perform a myriad of intra-oral soft tissue surgical procedures?
- Offer prosthodontic, endodontic, or implantology services?
- Treat moderate-to-severe periodontal disease?
- Focus on pediatric dentistry, oral surgery, or other specialties?
- Expand your aesthetic offerings?

Answers to these questions will help determine which devices to consider since no single laser – despite its versatility – can perform all procedures optimally well.

Once you have developed a prioritized list of clinical needs, investigate which of the various laser types best fit your requirements.

# Ask Yourself...

In indentifying your practice goals, here are some questions you need to answer. Write your answers down and keep them handy. Everything from this point on will build upon the needs and desires you identify here.

## You need to know:

- What procedures do I currently perform that can be assisted with laser technology?
- What procedures do I not perform that I would consider providing for my patients if I had a laser?
- Do I have a basic understanding of laser physics, laser safety, clinical uses, different laser wavelengths, power settings, and various tissue interaction effects?
- What procedures have been cleared for marketing by the U.S. Food and Drug Administration for the devices I am considering?
- How much training does my staff need? How will staff feel about training?
- What are the regulatory issues, if any, in my state dental practice act?
- How will I successfully incorporate laser technology into my practice?



2

# DO YOUR HOMEWORK

What to Know Before You Purchase



# Attend Courses



Ideally, before committing to a particular instrument, you should compare the clinical capabilities of a number of laser instruments from different manufacturers – side-by-side – in an unbiased setting. Perhaps this can be done as part of a laser course. Often such venues enable

clinicians to use the lasers in an *in vitro* laboratory setup under the watchful eyes of experienced and trained workstation peers. Sometimes such programs are supplemented by recorded or live patient demonstrations conducted by qualified practitioners. Take advantage of these opportunities. Ask the instructing clinicians about the learning curve, limitations of use, nuances of clinical technique, and what specifics to look for and expect both during the procedure and postoperatively.

The Academy of Laser Dentistry is a long-established and objective source of reliable information. You can also ask your colleagues where they receive their training. Do your homework on the quality of the available training and the scientific evidence behind any claims.

One of the most valuable sources of information and education is meetings dedicated to laser dentistry. These include the annual conference of the Academy of Laser Dentistry, as well as dedicated laser educational sessions at national and regional dental meetings. Participation in these sessions will greatly accelerate learning and provide nearly limitless opportunities for networking. Fortunately, much valuable information is also available online, which can be pursued at one's leisure and according to one's own schedule. Always consider the validity of your educational sources, especially when researching online as there is quite a bit of misinformation readily available.

# Set Up In-Office Demonstrations

You wouldn't buy a car before test driving it, and you shouldn't consider adding a new technology to your practice until you've had a chance to try it out for yourself, if at all possible.

What looks like a good fit on paper or in theory may not be the best solution when put in clinical use in the setting you will actually be using. The opportunity to feel how comfortable the device feels in your hand, how easily it is set up, broken down, moved, and maintained is invaluable. You will be able to gauge space requirements, access to power sources when needed, and how and where you will stage any necessary accessories. You will also find that having a chance to test the device will uncover questions you need answered that you had not previously considered.



Finally, everyone in your office will play an important role in how successfully your new device will integrate into your practice. Now is a great time to begin getting your staff involved – they'll have questions and concerns of their own as well!

# Reach Out to Other Laser Users

The vast majority of laser dentists are happy to share the patient benefits, clinical advantages, economic gains, and practice-rejuvenating qualities they have experienced. Most would be quick to tell you they could not practice dentistry without a laser. Take advantage of their experience and reach out for guidance.

## Here are a few suggestions for finding laser practitioners that can be of help:

- Dental networking groups, whether online or local, can be an excellent place to start. By their very nature, these groups are set up to facilitate the sharing of information and best practices. ALD's Laser Information Network is one helpful resource.
- Online networks like LinkedIn and Facebook are full of dental laser practitioners. Yes, Facebook! Just log on to one of these sites and type 'dental lasers' or 'laser dentist' into the search bar and see what shows up. Then it's just a matter of sending a private message (not a public post), explaining that you're about to add a new laser to your practice and were wondering if they would be willing to help by answering a few questions. Always verify resources for scientific validity when searching online.
- The Academy of Laser Dentistry and several other international dental associations dedicated to laser practices, will always be tremendously helpful. Each and every member can provide you with a wealth of experience and information.  
E-mail us at [memberservices@laserdentistry.org](mailto:memberservices@laserdentistry.org)



3

# FINDING YOUR LASER

What Defines a Good Laser?

# The Perfect Laser for Your Practice

In simple terms, dental lasers are named after the source of their specific wavelength. This source may be an enclosed tube of gas (such as carbon dioxide), a solid rod of specific chemical elements (such as Nd:YAG or erbium), or an array of semiconductors (a diode).

Each laser device has its own characteristics, features, and clinical indications for use. Investigate them, then select the proper laser for the procedures you want to perform.

After identifying your practice's needs and matching the type of laser(s) that addresses those needs – we begin the process of developing questions, establishing purchasing criteria, and identifying the companies that best fulfill the requirements.

In this section, you will find a broad range of questions to ask and information to gather regarding the device's ergonomics and usability, what constitutes a high-quality laser, laser accessories and features, training and service, manufacturer reputation and reliability, and cost considerations.



# Ergonomics and Usability

The device you choose needs to feel comfortable when you use it, it needs to be easily set up and transported, and it needs to be intuitive in use.

- Where will I put the laser?
- Is it easy to set up in your operatory?
- Is it easy to maneuver in your operatory?
- Can you easily transport the laser between operatories?
- How comfortable does the handpiece feel in your hand?
- How easily are accessories (such as tips) added and removed?
- Is the handpiece easily adjusted during a procedure?
- Is the delivery system properly balanced to minimize hand fatigue for lengthy procedures?
- How flexible is movement in the oral cavity?
- Can you easily reach all areas of the oral cavity with the handpiece?
- Is the control panel easy to use?
- Are the displays easy to see and differentiate?
- Is the range of control panel settings sufficient and appropriate for your primary dental procedures?
- Are time-efficient “presets” easily accessible for the more common procedures?
- Are power settings pre-set? How easy is it to change those settings?
- Can you adjust factory pre-sets to meet your individual protocols that work in your hands?
- How much control does the practitioner have over such variables as power and pulse rate?
- Is the foot pedal easily activated?
- Is the pedal adequately protected from inadvertent activation?
- Does the device provide the range of clinical applications you desire?
- Is its clinical performance precise and easily controllable?

# Quality of the Device

It's safe to say that the level of quality in the laser device you purchase will have a direct effect on the satisfaction and results both you and your patient will experience. Dental lasers, like other dental equipment, are sometimes selected based heavily on purchase price. Price, among other important factors, should be considered in your purchasing decision, but it is only one factor. Since a laser practice can not operate without one, it makes sense to find the best quality solution for your specific set of needs.

- What is the quality of construction?
- How accurate is the beam alignment?
- Is calibration of the device easily achieved?
- How often (if ever) is calibration necessary?
- Does the design of the laser hardware and software lend itself to upgrade capability, if appropriate?
- Does the manufacturer support such a program?
- Is the laser designed specifically for dental use?
- What are the power requirements and external cooling system requirements (if any)?
- What are the built-in safety features?
- How easy is it to disinfect and sterilize the laser, the individual components, and accessories?
- How long has the device been on the market?
- How susceptible is the delivery system to damage or misalignment?
- Are power cords and other cables securely attached to minimize inadvertent disconnection?
- What is the manufacturers' customer support policies?



# Features and Accessories



Your device's features and accessories are integral parts of your device and often expand its capabilities. Prioritize a list in these categories: "must have," "nice to have," and "not necessary." Learn about the accessories that may require separate purchases. Consider cost and ease of replacement. Assess the features and accessories relative to your clinical setting.

## Accessories

- What accessories are required to perform your desired procedures?
- What accessories are provided as standard equipment, and which are optional?
- Does this device require separate handpiece tips?
- What is the useful life of a given delivery system and tip?
- How easily and quickly can the tips be replaced in the operatory?
- Which parts are autoclavable, and which are disposable?
- Where are the accessories stored? Are they easily accessible?
- How does the safety eyewear fit? How comfortable?
- How easily are accessories available to order?

## Features

- Is the brightness of the aiming beam adjustable?
- Is a laser safety sign provided with the laser?
- Does the laser have a built-in power meter to check power level emission from the handpiece?
- What is the expected operational life of any battery-operated components?
- How easy is it to replace the batteries?

# Level of Training

Finding the right laser for your practice is only part of the solution to realizing its benefits. Becoming proficient in its use through training and support is the other part. Many manufacturers and distributors offer extensive training on the use of your new device.

## Training

- Is manufacturer training provided, and how is it provided - in your office or in a seminar setting?
- Can you get a copy of the manuals for the devices you're considering?
- Does the operator manual include a troubleshooting section?
- Are the procedural guidelines detailed and easy to follow?
- Do training manuals include indications for use, suggested power settings for particular procedures, and methods to adjust any factory presets?
- Does the company offer in-office product demonstrations?
- Does it provide training for clinicians and staff?
- How extensive is training beyond just referring to the operator's manual?
- Is training included in the purchase price?
- Are refresher courses available? If yes, how often, and at what cost?
- Does the company sponsor educational user group meetings?
- Does the company provide access to the vast resources of clinically relevant, scientifically sound laser dentistry information?

# Level of Service

## Service

- What sort of customer support does the manufacturer offer after the sale?
- When you call for customer service, do you speak to a live representative?
- Is live customer service available 24 hours a day?
- How quickly does the company address service inquiries, fulfill orders for parts and accessories, and answer clinical questions?
- How is service and calibration handled when needed?
- How frequently does the company recommend preventative maintenance?
- Is a loaner laser available during periods of factory service?



# Manufacturer

Besides becoming familiar with the owner's manual and clinical indications for use, you should spend time assessing the manufacturer's qualifications relative to laser dentistry. Investigate the maker's track record, including years of experience in the dental marketplace. Ensure that the laser instrument is designed specifically for dentistry.

- How many installations has the company performed?
- How long has the laser been available?
- Has the company ever filed any adverse events reports with the US FDA?
- Has the laser ever been recalled for any reason?
- What sort of "return forgiveness policy," if any, does the manufacturer offer during the first weeks after a sale?
- Does the company have a money-back guarantee?
- Can you speak with a few of the company's customers regarding their experiences?
- How satisfied are they?
- Do the customers have any complaints?
- Does the company have any published device-specific research?
- Are the published reports peer-reviewed?
- How active is the company's involvement in the established academic world?
- How much of its annual budget is allotted to laser research and development?
- What is the company's track record for efficiency, reliability, and serviceability?

# “Real” Cost Considerations

Your concern for the quality of the care you provide is paramount, but you’re also a business person, and business purchases need to be evaluated for their profitability as well. The cost of the device itself is only responsible for part of your total investment cost. You need to also consider the cost of accessories, maintenance, upgrades, and continued training and education.

- What is the estimated annual cost of any consumables, such as disposable tips and fibers?
- Does the manufacturer provide upgrades for its instruments as advancements in technology become available?
- What are the benefits of purchase vs. lease? Your accountant can help here.
- If the manufacturer offers financing, can a third-party provider offer more attractive terms?
- What will be the annual cost of accessories you may want to add?
- What is the cost/benefit analysis (how much can you expect to make with a new laser vs. the cost)?
- What is the cost if you will be joining new associations and/or attending workshops for continuing education?
- What is the range of costs for repairs?
- What is the replacement cost for the laser, should it ever be necessary?
- What does the warranty cover, and for how long?
- Are extended warranties available, and at what cost?
- Will substitution of factory-authorized accessories with after-market offerings (often at lower cost) nullify the original warranty?

Value

Cost

# Who Offers the Best Training and Support?

**The bottom line:** manufacturer training is an excellence source for device-specific training. However, broader unbiased courses on clinical applications, techniques, laser-tissue interaction and protocols is highly recommended and offered by the Academy of Laser Dentistry.

Buying a world-class race car won't help you win the Indy 500, and the best set of golf clubs that money can buy won't even help you make the cut at the Masters...

## ***However, Training & Education can.***

There are manufacturer-based training courses that vary in complexity and format. It's important to understand basic laser physics, laser safety, clinical uses, different laser wavelengths, power settings, and various tissue interaction effects. Spend extra effort in comparing the expertise and training offered by each company– it will be time well spent! The old adage “let the buyer beware” applies, so do your homework and assess the levels of customer training and education that best fit your learning styles and needs.

And, of course, consider attending an introductory course offered by a reputable source. A general introduction to laser technology provided by the Academy of Laser Dentistry, for instance, describes most laser devices currently available in the marketplace and provides sound scientific rationale for the many clinical indications for laser use.



# Putting It All Together

The purchase of your dental laser will directly influence the quality of the care you provide, the satisfaction you receive from your practice, and the profitability of your office – it pays to do this right.

Keep a notebook with your findings. Print out a list of questions for each company and write your findings down for each. This will provide a handy reference that will make the job of comparison shopping that much easier.

Request any available and relevant sales literature from all the manufacturers and distributors before you speak to them. This will help you prepare and improve the quality of your findings when you do finally speak with them.

Join a reputable association dedicated to laser dentistry like the Academy of Laser Dentistry before you make your purchase. The information and guidance you'll receive from the group and its members will more than pay for itself in the long run.

Lastly, remember to begin by planning for your practice's specific needs, match those needs to the optimal laser solution, generate your purchase decision criteria, and speak with the relevant manufacturers and distributors to ascertain which can deliver on your needs.

If you have any questions, or need help, please e-mail us at [memberservices@laserdentistry.org](mailto:memberservices@laserdentistry.org)



# RESOURCES



# Organizations

Academy of Laser Dentistry (ALD) and the Journal of Laser Dentistry [www.laserdentistry.org](http://www.laserdentistry.org)

American Society for Laser Medicine and Surgery, Inc. (ASLMS) [www.aslms.org](http://www.aslms.org)

Laser Institute of America (LIA) [www.lia.org](http://www.lia.org)

SPIE - The International Society for Optical Engineering [www.spie.org](http://www.spie.org)

World Federation for Laser Dentistry (WFLD) [www.wfld-ed.com](http://www.wfld-ed.com)

World Association for Laser Therapy (WALT) [waltza.co.za](http://waltza.co.za)

North American Association for Light Therapy (NAALT) [www.naalt.org](http://www.naalt.org)

The Institute for Advanced Laser Dentistry (IALD) by Millennium [www.theiald.com](http://www.theiald.com)

World Clinical Laser Institute (WCLI) by Biolase [www.learnlasers.com](http://www.learnlasers.com)

Deutsche Gesellschaft für Laserzahnheilkunde [www.dgl-online.de](http://www.dgl-online.de)

International Society for Oral Laser Applications [www.sola-laser.com](http://www.sola-laser.com)

# Regulatory Agencies and Standards Organizations

Understand the role of regulatory agencies and standards organizations, and critically evaluate the available information.

The U.S. Food and Drug Administration controls what manufacturers can claim about their products, but it does not control the practice of dentistry. The agency's Center for Devices and Radiological Health enforces manufacturing performance standards of laser products. [www.fda.gov](http://www.fda.gov)

The American National Standards Institute (ANSI) Z136.3 standard relates to laser safety in health care. The Laser Institute of America is the secretariat organization for the ANSI Z136.3. [www.lia.org](http://www.lia.org)

The Academy of Laser Dentistry (ALD) is an international professional association of dental practitioners and supporting organizations dedicated to improving the health and well-being of patients through the proper use of laser technology. [www.laserdentistry.org](http://www.laserdentistry.org)

# Laser Manufacturers & Distributors

- AMD Lasers [www.amdlasers.com](http://www.amdlasers.com)
- Benco Dental [www.bencodental.com](http://www.bencodental.com)
- BIOLASE Technology\* [www.biolase.com](http://www.biolase.com)
- Burkhart Dental Supply [www.burkhartdental.com](http://www.burkhartdental.com)
- CAO Group\* [www.caogroup.com](http://www.caogroup.com)
- Convergent Dental\* [www.convergentdental.com](http://www.convergentdental.com)
- Denmat [www.denmat.com](http://www.denmat.com)
- Dentsply Sirona\* [www.denstsplysirona.com](http://www.denstsplysirona.com)
- Fotona\* [www.fotona.com](http://www.fotona.com)
- GPT Dental\* [www.gptdental.com](http://www.gptdental.com)
- Henry Schein Dental\* [www.henryschein.com](http://www.henryschein.com)
- Integrated Dental Systems [www.idsimplants.com](http://www.idsimplants.com)
- J.Morita [www.morita.com/usa](http://www.morita.com/usa)
- KaVo [www.kavo.com](http://www.kavo.com)
- King Dental [www.kingdentalcompany.com](http://www.kingdentalcompany.com)
- Kings Two Dental Supply [www.kings2.com](http://www.kings2.com)
- Lazon Medical Laser\* [www.lazonlaser.com](http://www.lazonlaser.com)
- LightScalpel [www.lightscalpel.com](http://www.lightscalpel.com)
- Millennium Dental Technologies [www.millenniumdental.com](http://www.millenniumdental.com)
- Patterson Dental [www.pattersondental.com](http://www.pattersondental.com)
- Pioneer Lasers [www.pioneerlasers.com](http://www.pioneerlasers.com)
- Quantum Dental Technologies <https://thecanarysystem.com>
- Spectrum Lasers Inc. [www.spectralasedental.com](http://www.spectralasedental.com)
- Sventech\* [www.sventechlasers.com](http://www.sventechlasers.com)
- Ultradent\* [www.ultradent.com](http://www.ultradent.com)
- Viax Dental Technologies [www.viaxdental.com](http://www.viaxdental.com)
- Zolar Technology\* [www.zolartek.com](http://www.zolartek.com)

## Photobiomodulation Devices

- MedX Health [www.medxhealth.com](http://www.medxhealth.com)
- Multi Radiance Medical\* [www.multiradiance.com](http://www.multiradiance.com)
- THOR Photomedicine\* [www.thorlaser.com](http://www.thorlaser.com)
- USA Laser Biotech [www.laserbiotech.com](http://www.laserbiotech.com)

This is a partial list of commercially available laser manufacturers and distributors in the United States at the time of publishing. Several additional sources in different regions of the world are readily available. As newcomers to the marketplace occur, buyers are encouraged to check as your purchasing decision nears.

\* Indicates current ALD corporate member status at time of publication

# A Partial List of Procedures that can be Performed with a Laser on Soft Tissue

- Gingivectomy
- Gingivoplasty
- Gingival Troughing
- Periodontal Pocket Debridement
- Biopsies
- Fibroma Removal
- Implant Uncovering
- Flap Preparation
- Soft Tissue Incisions
- Soft Tissue Excisions
- Removal of Pathological Soft Tissues
- Distal / Proximal Wedge
- Operculectomies
- Soft Tissue Crown Lengthening
- Removal of Hyperplastic Tissue
- Exposure of Unerupted Teeth
- Vestibuloplasty
- Frenectomy / Frenotomy
- Incision and Drainage of Abscesses
- Hemostasis and Hemostatic Assistance
- Pulpotomy
- Treatment of Aphthous Ulcers and Canker Sores

# A Partial List of Procedures that can be Performed with a Laser on Hard Tissue

- Caries Removal
- Cavity Preparation
- Excavation of Pits and Fissures
- Enamel Roughening
- Dentin Roughening
- Apicoectomy
- Osseous Recontouring and Osteoplasty
- Aid in Caries Detection
- Endodontic Access
- Aid in Detection of Subgingival Dental Calculus
- Removal of Subgingival Calculi
- Tooth Whitening
- Composite Curing



# Providing the tools to help your practice grow!

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The Academy of Laser Dentistry (ALD) is an international professional association of dental practitioners and supporting organizations dedicated to improving the health and well-being of patients through the proper use of laser technology.

**[www.LaserDentistry.org](http://www.LaserDentistry.org)**