

Lasers in Dentistry and Oral Surgery: A Selected Bibliography and Reference List

EDITOR'S NOTE

Surgical medicine was among the potential uses for lasers cited by American physicist Theodore H. Maiman during the July 7, 1960 press conference¹ in which he announced his development of the world's first laser, initially demonstrated on May 16, 1960. Some 16 months after the press conference, some of the first journal articles appeared in the peer-reviewed literature that reported on the use of laser beams as biological and clinical tools,² and alerted users to their hazards.³ Thus began intensive research and subsequent publication of investigations of laser use in medicine over the years, now numbering in the tens of thousands of journal citations, thousands of books and theses, and untold quantities of meeting abstracts.

Regarding their 1961 account of laser hazards, from a historical standpoint it is instructive to note how Zaret and colleagues characterized the retinal lesions experimentally produced in a rabbit by a pulsed optical maser (laser): "Ophthalmoscopically, the retinal lesions resembled flash burns from an atomic fireball."³

That they should compare the ocular effects of laser light to flash burns "after exposure to atomic bomb explosions" not only underscores their recognition of the high energy density of laser beams, but also provides insight into the socio-political perspective of researchers at the time. This was an era of palpable and growing concerns over the threat of global thermonuclear war. Atmospheric testing of nuclear weapons was the norm. Zaret's observations were published in 1961, the same year the Berlin Wall was erected and President Kennedy advised Americans to build fallout shelters as part of a campaign to reduce vulnerability to nuclear attack (see *Life* magazine, September 15, 1961). The Cuban Missile Crisis occurred one year later, and it was not until 1963 that the United States and the Soviet Union signed the Limited Test Ban Treaty, which prohibited atmospheric, underwater, and outer space nuclear tests; other countries continued atmospheric testing into the 1970s and 1980s.

Meanwhile, in spite of Cold War distractions, investigations into possible medical uses of lasers continued. Published accounts of the use of lasers in dentistry and oral surgery specifically began to appear in 1964.⁴⁻¹⁰ Ever since, researchers and clinicians have been able to avail themselves of an ever-expanding reservoir of laser-related resources that focuses on the oral cavity.

INTRODUCTION

The resource material provided below concentrates mostly on texts, organizations, meeting proceedings, and periodicals that may be of interest to those pursuing surgical and therapeutic laser applications in dentistry and oral surgery. For practical reasons, relevant journal articles (thousands) and theses (hundreds) in these disciplines are intentionally omitted, as are many government publications and individual chapters within books.

While the list of reference material is extensive, there is no claim of comprehensiveness. Readers are encouraged to explore these citations and use them to expand their knowledge of the rich history and expanding reach of historical, experimental, and clinical applications of lasers in dentistry and oral surgery. Any omissions from this list are unintentional, and suggestions for updates and additions are always welcomed by the editors of the *Journal of Laser Dentistry*.

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ORGANIZATIONS, MEETING PROCEEDINGS, AND PERIODICALS

Table 1 on the next page provides a partial listing of professional societies, conferences, and journals pertinent to the use of lasers in dentistry and oral surgery. Many of the named organizations have component societies or country representatives. Contact the individual organizations for information regarding conference schedules, abstracts, and meeting proceedings. All Web citations were accessed September 19, 2012.

Table 1: Professional Laser Dentistry and Medicine Organizations

Organization / URL / Year Formed	Key Activities	Publications and Journal Affiliations
Academy of Laser Dentistry www.laserdentistry.org 1993	<ul style="list-style-type: none"> Organizes annual conferences Administers student scholarship program Endorses the Curriculum Guidelines and Standards for Dental Laser Education 	<ul style="list-style-type: none"> <i>Journal of Laser Dentistry</i> (www.laserdentistry.org) <i>Lightwaves</i> e-newsletter
American Society for Laser Medicine and Surgery www.aslms.org 1980	<ul style="list-style-type: none"> Organizes annual conferences Administers research grants and student research grants Establishes practice guidelines and safety standards 	<ul style="list-style-type: none"> <i>Lasers in Surgery and Medicine</i> (http://onlinelibrary.wiley.com/journal/10.1002/(ISSN)1096-9101) <i>The Light Reader</i> newsletter
Deutsche Gesellschaft für Laserzahnheilkunde E.V. www.dgl-online.de 1991	<ul style="list-style-type: none"> Organizes annual conferences 	<ul style="list-style-type: none"> <i>Laser Journal</i> (www.zwp-online.info/de/publikationen/laser-journal) <i>Laser</i> (www.dental-tribune.com/epaper) <i>Zeitschrift für Laser Zahnheilkunde</i> (2004-2008) (http://lzhk.quintessenz.de/)
International Society for Oral Laser Applications www.sola-int.org ca. 2000	<ul style="list-style-type: none"> Organizes laser congresses 	<ul style="list-style-type: none"> <i>Journal of Oral Laser Applications</i> (2004-2010) (http://jola.quintessenz.de/)
Japanese Society for Laser Dentistry http://jsld.jp/ http://jsld.jp/Laser_English/index.shtml 1989	<ul style="list-style-type: none"> Organizes annual meetings 	<ul style="list-style-type: none"> <i>Journal of Japanese Society for Laser Dentistry</i> (www.jstage.jst.go.jp/browse/jjpsoclaserdent/)
Laser Institute of America www.lia.org 1968	<ul style="list-style-type: none"> Organizes annual conferences Publishes laser safety standards Conducts laser safety programs 	<ul style="list-style-type: none"> <i>Journal of Laser Applications</i> (http://jla.aip.org/) <i>LIA Today</i> newsletter <i>LIA Connection</i> e-newsletter
North American Association for Laser Therapy www.naalt.org	<ul style="list-style-type: none"> Organizes annual conferences 	<ul style="list-style-type: none"> <i>Photomedicine and Laser Surgery</i> (www.liebertpub.com/pho)
SPIE www.spie.org 1955	<ul style="list-style-type: none"> Organizes annual technical forums and education programs. For meeting proceedings of Lasers in Dentistry and SPIE's other conferences of interest to the dental profession, search the SPIE database (http://spie.org/x1848.xml) Administers scholarships and educational outreach grants 	<ul style="list-style-type: none"> <i>Journal of Biomedical Optics</i> (http://spie.org/x1848.xml) <i>Optical Engineering</i> (http://spie.org/x867.xml) Numerous other journals <i>SPIE Professional</i> magazine
World Association for Laser Therapy www.walt.nu 1994	<ul style="list-style-type: none"> Organizes congresses every two years 	<ul style="list-style-type: none"> <i>Photomedicine and Laser Surgery</i> (www.liebertpub.com/pho) <i>Laser Therapy</i> (1988-2001) <i>WALT Review</i> e-newsletter
World Federation for Laser Dentistry www.wflt-org.info 1988	<ul style="list-style-type: none"> Organizes conferences every two years 	<ul style="list-style-type: none"> <i>Photomedicine and Laser Surgery</i> (www.liebertpub.com/pho)

Besides the periodicals cited above, another journal that frequently publishes articles on laser dentistry is *Lasers in Medical Science* (<http://www.springer.com/medicine/journal/10103>). 