

today

Pacific
Dental
Conference



C.E. in 3-D (arrive early to get your glasses)

Friday: Dr. Samson Ng has new 3-D imagery that will greatly enhance your knowledge of oral lesions.

»page 4



RCDC celebrates centennial

The Royal Canadian Dental Corps is here at the PDC with educational sessions and an Exhibit Hall booth.

»page 6



Use PDC discount to 'FlyOver Canada'

Show your badge next door, then soar across Canada feeling grandeur of the landscape and exhilaration of flight.

»page 22

A Shore Thing



• The white sails of Canada Place and the turf-roofed Vancouver Convention Centre next door, home of the Pacific Dental Conference. (Photo/Robert Selleck, *today* managing editor)

Guaranteed return:
Next three days on
Vancouver Harbour
promise high-value
dividends for all

■ With more than 150 presenters delivering 141 open sessions and hands-on courses on a wide variety of topics, the days ahead here at the Pacific Dental Conference are packed with big pay-off opportunities for every member of the dental team.

But the value doesn't end with the continuing education. There's also plenty to be gained exploring what meeting organizers describe as "the largest two-day dental trade show in Canada." The Vancouver Convention Centre Exhibit Hall provides the first opportunity of the year for many

»see RETURN, page 2

Five 'Live Dentistry' sessions scheduled

Two full days of sessions on the 'Live Dentistry Stage' in the Exhibit Hall

■ The Live Dentistry Stage is back on the Exhibit Hall floor, with demonstrations using real patients throughout the day on Thursday and Friday, March 5 and 6.

Today

At 11 a.m. today, Mark Kwon, DMD, FICOI, and Bernard Jin, DMD, will present "Immediate Anterior Implant Solution Using Total Digital Technology," cosponsored by Hiossen Implant Canada Inc. At 2:30 p.m., Shannon Pace Brinker, CDA, CDD, will present "Whitening Techniques."

Friday, March 6

At 8:30 a.m. on Friday, Peter Walford, DDS, will present "Multisurface Composite Restorations — A New Matrix and Other Key Success Determinants." At 11:30 a.m., Elliott Mechanic, DDS, will present "The Single Crown Simplified," cosponsored by the Canadian Academy for Esthetic Dentistry. At 2:30 p.m., Glenn van As, DMD, will present "Lasers and Dental Implants," cosponsored by Hiossen Implant Canada Inc.

Check for schedule updates

Pacific Dental Conference organizers

ask attendees to take note that demonstration times on the Live Dentistry Stage may be subject to change. Consult the PDC app or "Conference at a Glance" for the most up-to-date scheduling.

The Live Dentistry Stage is sponsored by A-dec and Sinclair Dental.

Two-day Exhibit Hall

The Exhibit Hall is at capacity, with more than 600 booths occupied by more than 300 companies. Hours are 8:30 a.m. to 5:30 p.m. both today and Friday.

»see EXHIBITORS, page 2



PDC mobile app

Scan the QR code to access the app, or search your app store for 'Pacific Dental Conference.'



RETURN *“from page 1”*

dental professionals in Canada to see the profession's latest equipment and advancements.

Perhaps nowhere is that better illustrated than on the Exhibit Hall's "Live Dentistry Stage," which features innovative tools, products and techniques demonstrated on real patients in real time, with expert clinicians narrating every step as they work.

Just as engaging, you will be able to examine countless products and services from more than 300 exhibiting companies who are represented here by their key principals and top experts — each ready to visit with attendees to discuss how their offerings might help you achieve your specific, individual goals for this year and beyond.

Exhibit Hall hours are from 8:30 a.m. – 5:30 p.m. today and tomorrow.

‘So you think you can speak?’

The 'So You Think You Can Speak?' series is back for its sixth year. It features 14 50-minute presentations on Saturday by speakers who responded to the call for presentations and were accepted by the PDC scientific committee. A number of compelling dentistry topics will be covered.

Dental Specialists Society of British Columbia

The Dental Specialists Society of British Columbia (DSSBC) was founded in 1987 with a mandate to: improve public awareness of dental specialists and the services they provide; enhance oral health care for the public; promote high standards of excellence for specialists in the province; and provide fellow health professionals and the public with a directory of certified dental specialists.

PDC organizers welcome the following six specialists, who will be presenting at the PDC on behalf of



• The hands-on experience isn't limited to the classroom, as shown by these 'try-it-before-you-buy-it' attendees in the Exhibit Hall at the 2014 Pacific Dental Conference. (Photo/Provided by Pacific Dental Conference)

the DSSBC on Friday, March 6: Joel Fransen, "Modern Endodontics Saving More Teeth More Often"; Alec Cheng, "Prosthodontic Management of Implant Complications"; Richard Chau, "Growing Bone with rhBMP-2"; Todd Moore, "Removable Orthodontic Appliance Treatment in the Early Mixed Dentition"; Michelle Lee, "Periodontal Regeneration: Why Not Save Teeth?" and Reza Nouri, "Clinical Pearls in Pediatric Dentistry." Moderating the program will be Ray Grewal.

Wine, comedy and a gala affair

The fun side of the meeting begins tonight with the popular "Life is Too Short to Drink Bad Wine" tasting event. Attendees will feel like they're on a European journey with a "Tribute to France," which will provide a whirlwind introduction to the many styles and types of wine the viniferous country has to offer.

New for the 2015 conference is the "Friday Comedy Night," featuring Dave

Hemstad. The evening features pizza and a beverage followed by an hour of comedy presented by one of Canada's finest stand-up comedians.

On Saturday, the conference wraps up with the "15th Annual Toothfairy Gala and BC Dental Association Awards," which is described by meeting organizers as "the dental event of the year." During the night of fun and whimsy, ticket-holders can hobnob with the Toothfairy herself, while supporting the BCDA's distinguished list of award recipients and the region's "Save a Smile" program.

Explore Vancouver

After the conference, be sure to enjoy a day or two to relax and revitalize by exploring some of Vancouver's tourist attractions. The ocean is just steps from the Vancouver Convention Centre, providing the opportunity to take a brisk walk or cycle of the seawall around Stanley Park, which has great views of the majestic mountains.

EXHIBITORS *“from page 1”***Lunch, receptions in Exhibit Hall**

A complimentary lunch is served in the Exhibit Hall. Just follow the directions from convention center staff and find the lunch-area signs leading to one of the three lounge areas. The complimentary lunch, from 11 a.m. to 12:30 p.m., is not available to those with an "exhibits-only" registration.

Exhibit Hall receptions on both days that the Exhibit Hall is open (today and Friday) will feature beer and wine refreshments at stations located throughout the exhibit floor. Your badge entitles you to two free drinks.

The receptions will be from 4 to 5:15 p.m. Like the lunch, the late-afternoon receptions' complimentary components are not available to those with an "exhibits-only" registration.

Conference centre and beyond

This year, the conference venues include Vancouver Convention Centre — West Building and East Building and the Fairmont Pacific Rim Hotel.

(Source: Pacific Dental Conference)



• The Live Dentistry Stage is back on the Exhibit Hall floor's west side, with demonstrations using real patients at 11 a.m. and 2 p.m. today and at 8:30 a.m., 11 a.m. and 2:30 p.m. Friday. (Photo/Provided by the Pacific Dental Conference)

today

About
the Publisher

Tribune America, LLC
Phone: (212) 244-7181
Fax: (212) 244-7185
E-mail: info@dental-tribune.com
www.dental-tribune.com

Publisher & Chairman
Torsten Oemus
t.oemus@dental-tribune.com

President/Chief Operating Officer
Eric Seid
e.seid@dental-tribune.com

Group Editor
Kristine Colker
k.colker@dental-tribune.com

Managing Editor/Designer
Robert Selleck
r.selleck@dental-tribune.com

Editor/Designer
Sierra Rendon
s.rendon@dental-tribune.com

Online Editor
Fred Michmershuizen
f.michmershuizen@dental-tribune.com

Product/Account Manager Canada
Will Kenyon
w.kenyon@dental-tribune.com

Product/Account Manager
Humberto Estrada
h.estrada@dental-tribune.com

Product/Account Manager
Maria Kaiser
m.kaiser@dental-tribune.com

Marketing Director
Anna Kataoka
a.kataoka@dental-tribune.com

Accounting Assistant
Nirmala Singh
n.singh@dental-tribune.com

Education Director
Christiane Ferret
c.ferret@dtstudyclub.com

Published by Tribune America
© 2015 Tribune America, LLC
All rights reserved.

today Pacific Dental Conference appears during the Pacific Dental Conference in Vancouver, British Columbia, Canada, March 5 and 6, 2015.

dti Dental
Tribune
International

Tribune America makes every effort to report clinical information and manufacturers' product news accurately, but cannot assume responsibility for the validity of product claims, or for typographical errors.

The publishers also do not assume responsibility for product names or claims, or statements made by advertisers. Opinions expressed by authors are their own and may not reflect those of Tribune America or Tribune Group International.

EyeSpecial C-II

Visit us
Booth #1304

HIPAA
COMPLIANT*



Clinician monitors oral lesions in 3-D

By Robert Selleck **today** staff

■ Samson Ng, DMD, brings his stunning 3-D photography back to the Pacific Dental Conference this year after sharing some of the images from his extensive collection for the first time at last year's conference.

Dental Tribune Canada checked in with Ng for an update on his use of 3-D photography to monitor patients' oral lesions and help fellow practitioners become more skilled at recognizing lesions that need immediate attention or close monitoring.

Last year's sessions filled quickly, and this year's sessions are expected to generate even more interest. The presentation is divided into two parts: Dr. Charles Shuler, dean and professor at the UBC Faculty of Dentistry, will open with an overview on how to approach clinical differential diagnosis of oral lesions. Then, in part two, Ng will project large-screen 3-D images of some of his clinical cases to demonstrate the application of differential diagnosis.

The 3-D portion of the session can run only so long — just like 3-D Hollywood films — to ensure attendees don't experience motion sickness.

Should people who attended last year step aside and let others attend, or are there good reasons to return?

Eighty percent of the 3-D slides are brand new. They capture the cases that I came across over the past year. I've also added cases using 3-D imaging with cone-beam CT scans to enhance radiographic interpretation skills. It was quite amazing that even the CBCT company didn't realize we could do 3-D projection of CBCT images. I also have included 3-D images from intraoral scanning.

Has your photography technique continued to evolve?

The core concept remains the same, as the principles behind 3-D image capturing haven't really changed. Because the digital cone-beam CT scan is becoming more utilized in dentistry, I expand on this topic in the presentation.

Have you been able to make 3-D presentations at other meetings or incorporate 3-D presentations into the university classroom settings?

So far, PDC remains the only venue where I use 3-D. But in May this year,

I will use this learning style when I present at the California Dental Association meeting in Anaheim (but not at a 3-D venue in Disneyland!). 3-D presentations are quite challenging in a

university classroom setting because of the steep equipment costs. Additionally, preparing 3-D presentation is

*see 3-D, page 6

Here at the PDC

"How Much Do I Know About Lumps and Bumps in the Mouth?" is Friday from 8:30 to 11 a.m., repeating from 1:30–4 p.m., both in Ballroom B in the Vancouver Convention Centre East Building (not West). Seating is limited. You get 3-D glasses at the door.



• Dr. Samson Ng

Samson Ng, BSc, DMD, MSc, FRCD(C), FDSRCSEd, Dip. ABOM, Dip. ABOMP, is a certified specialist in oral medicine and pathology. He is a clinical assistant professor at the University of British Columbia Faculty of Dentistry and the regional practice leader in the program of oral oncology/dentistry at the British Columbia Cancer Agency. He has private practices in Vancouver and Abbotsford.



• Dr. Charles Shuler

Charles Shuler, DMD, PhD, is dean and professor at the UBC Faculty of Dentistry. His BS is from the University of Wisconsin, DMD from Harvard School of Dental Medicine, PhD from the University of Chicago, and his Oral Pathology is from the University of Minnesota and Royal Dental College Copenhagen. His research interests include craniofacial development, oral carcinogenesis, oral medicine and gene therapy.

AD

for better dentistry

DENTSPLY
CANADA

Combine Forces for a Complete Solution.

Every one of DENTSPLY Class II restorative products is designed by dentists for dentists to give you the perfect instrument for predictable results. Use them together and you'll discover the only complete Class II restorative solution available that puts complete control of every Class II step in your hands.

PalodentPlus
Sectant Matrix System

elect
Universal Dental Adhesive

SureFit
SDR
Incremental Building Composite Resin

TPH SPECTRA
Universal Composites Restorations

SmartLite
PROOF

enhance
Finishing System

Use them together and discover an elite level of dental care

The complete CLASS II TOTAL PRACTICE SOLUTION

DENTSPLY BOOTH #643
LOOK FOR YOUR DIAC
COUPON BALLOT
(IN YOUR DELEGATE BAG) FOR A
CHANCE TO WIN
A 50" 60 HZ 1080P
LED SMART TV!

MIDWEST E
Electric Handpiece System

NEW!

Introducing the Midwest E Electric Handpiece System, for dentists who want power and flexibility to match their skill and finesse.

- Lightweight, autoclavable motor weighs only 59 g
- Intuitive, LED touch-screen user interface
- Well-balanced attachments available in high-speed, low-speed endodontic and straight configuration
- Three torque-stop options available in endo mode
- Detachable faceplate to fit all delivery units

TRY IT FOR YOURSELF AT OUR BOOTH #643

Actual prices may not be exactly as shown. DENTSPLY Canada reserves the right to change, cancel or alter these promotions at any time. Orders must be placed at the PDC2015 DENTSPLY Canada booth during show hours. © 2015 DENTSPLY Canada. Limit one ballot entry per customer.

DENTSPLY Canada Ltd. | 161 Vinyl Court | Woodbridge, ON | L4L 4A3 | 1.800.263.1437 | www.dentsply.ca

WE MAKE DENTAL ISOLATION **EASY!**TM



Learn it. Live it. Love **it**

WHAT IS IT? **IT** is Isolite Systems' state-of-the-art and clinically proven **Isolation Technique** for consistent, predictable results every time. **IT** controls moisture and oral humidity by keeping the working field as dry as a rubber dam, but without any of the hassle. **IT** improves visibility and minimizes contamination. **IT** retracts the tongue and cheek and obturates the throat. **IT** protects your patients from accidental injury and foreign-body aspiration. **IT** gives you total control of the oral environment so you can do your best dentistry.

isolite[®]SYSTEMS

Better Isolation = Better Dentistry[®]

CALL US: **800-560-6066**
WWW.**isolitesystems**.com

BRING THIS AD TO BOOTH

#1309

AT THE PACIFIC DENTAL CONFERENCE FOR A
SPECIAL OFFER



NOW EXPANDED TO SIX PATIENT FRIENDLY SIZES

Royal Canadian Dental Corps celebrates centennial

RCDC represented at PDC with educational sessions, Exhibit Hall booth

■ In recognition of this year's 100th anniversary of the Royal Canadian Dental Corps (RCDC), the 2015 Pacific Dental Conference includes two presentations by military dental personnel. Both topics should be of interest to a diverse civilian audience of dental professionals.

Lt. Col. Genevieve Bussière will speak on "Military Forensic Identification Operations," and Maj. Sandeep Dhesi will speak on "Operational Oral and Maxillofacial Trauma Care."

Additionally, the RCDC will have a booth (No. 1351) in the Exhibit Hall, where visitors can view a multimedia presentation highlighting various aspects of the RCDC's 100 years of service.



WWI Canadian dentist and patients. (Photo/Provided by the George Metcalf Archival Collection, © Canadian War Museum)

Canada's military dental services have served in both world wars and peace-keeping, humanitarian and forensic operations while looking after the oral health needs of all of Canada's troops.

Here at the PDC

Learn about the Royal Canadian Dental Corps in booth No. 1351 in the Exhibit Hall.

Attend today's session

Lt. Col. Genevieve Bussière presents "Military Forensic Identification Operations" today from 1:30-2:45 p.m. in VCC West, Room 212-214. The session repeats on Friday from 1:30-2:45 p.m. in VCC West, Room 205-207.

Maj. Sandeep Dhesi presents "Operational Oral and Maxillofacial Trauma Care" today from 2:45-4 p.m. in VCC West, Room 212-214. The session repeats on Friday from 2:45-4 p.m. in VCC West, Room 205-207.

AD

Enjoy your experience at the... Pacific Dental Conference



PDC365
Pacific Dental Conference
Hands-On Courses of the BCDA Learning Centre

Visit PDC website to register

Jeff Coil, DMD, MS, PhD, FRCD(C), FADI, FACD,
Diplomate, American Board of Endodontics



Course #1501
Efficient and Effective Endodontics
Saturday, May 30, 2015
8:00am to 4:30pm

James Kohner, DDS



Course #1502
Hands-On Gingival and Connective Tissue Grafting
Friday, July 17, 2015
8:00am to 4:30pm

Course #1503
Crown Lengthening Hands-On Surgical Workshop
Saturday, July 18, 2015
8:00am to 4:30pm

Watch for other summer Hands-On courses

Join us next year March 17-19, 2016

Online registration opens
October 15th, 2015

Pacific Dental Conference



In conjunction with
the Canadian Dental Association

www.pdconf.com

3-D "from page 4

time consuming. Each 3-D slide takes on average of 10 minutes to create in the "dark-room" digital processing and rendering. I actually spend much of the winter holidays preparing the slides.

Will you be using the same projection system as you used at PDC last year?

The system should be the same. We choose to use movie-theatre grade equipment, which means we essentially bring the "Cineplex" to the conference center. The projection is high resolution (but not 4K yet). I hope the size of room is such that we can enable even more people to attend.

Have you had the opportunity to view your images through virtual reality glasses, such as the Zeiss Cinemizer OLED 3D glasses?

As a matter of fact, this is my next projection project. I am already using VR (virtual reality) glasses to test out the images. I think such glasses would be a good alternative for small-group learning.

Are you still experimenting with 3-D photography with tissue-fluorescence technology? Any advancements there in clinical-setting technique?

No success yet for 3-D. But I have been working closely with tissue-fluorescence group to work on a picture capture device and workflow so that any clinician should be able to take pictures with one hand. I suspect once I twist such a system even more, I will be able to take 3-D tissue-fluorescence images with one hand as well (so patients do not have to experience any sort of extra set-up time).

Are you being approached by fellow clinicians interested in duplicating your use of 3-D photography to monitor patients' lesions?

There are indeed a few clinicians out there who are interested, but once they find out how much time and effort is needed — as well as how much equipment, computer hardware and software is needed — they tend to bail out.

ZOOM IN. ZOOM OUT

It's time to zoom in and take a closer look at **EyeZoom®** – the first and only loupe to offer multiple magnification powers. Co-engineered by Orasoptic® and Konica Minolta®, this revolutionary optical design boasts a 3-step variable magnification technology and edge-to-edge high definition resolution.



Take a Closer Look Today!
Orasoptic.com/TodayPOC

HYGIENE INSPIRED HYGIENIST APPROVED

Designed by an elite team of practicing hygienists and recognized ergonomic and infection control experts, the loupe works to improve ergonomics, productivity and career longevity. Encompassing an optimal field width and depth recommended for dental hygiene professionals, the optics deliver a crisp image with edge-to-edge clarity.



ORASOPTIC™
SUPERIOR VISUALIZATION



800.369.3698 | Orasoptic.com

Konica Minolta® is a registered trademark of Konica Minolta, Inc. Used with permission. 700-1940-0142

Meet EyeZoom™ & RDH Elite™ at **BOOTH 464**

PIPS with laser-activated irrigation

Photoacoustic shockwave with irrigant debrides areas of root canal files can't reach

By Enrico Divito, DDS

■ Successful endodontic treatment depends upon maximal debridement and disinfection of the entire root canal system. The root canal system must be shaped to a convenience form that permits adequate cleaning and disinfection by elimination of microbes.¹

The literature is clear that as much as 35 percent or more of the root canal system remains untouched by any instrumentation technique. Essentially no filing technique allows instruments to sculpt all canal walls and remove infected dentin.² To decrease the bacterial load and achieve better debridement, irrigation protocols are used prior to obturation.

The efficacy of the irrigants to decontaminate canal walls has seen significant improvements recently. Both negative and positive apical pressure irrigation techniques have been surpassed by ultrasonically activated irrigants, photo-activated disinfection and laser-activated irrigants in their ability to improve cleanliness of the canal system.^{3,4}

In particular, the Er:YAG (Lightwalker Er:YAG& Nd:YAG dental laser, National Dental Inc., Barrie, Ontario) has shown to be effective at removing debris and the smear layer from canal walls.^{3,4} A final application of the Er:YAG laser to the sodium hypochlorite already present within the canal, after standardized instrumentation, can result in improved cleaning of the canal walls with a higher quantity of open tubules (Fig. 1) in comparison to results without the use of the laser.^{3,4}

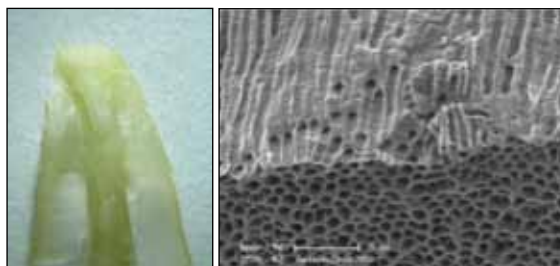
A new application of Laser-Activated Irrigation (LAI) has been recently introduced. Photon Induced Photoacoustic Streaming (PIPS™) uses an Erbium 2,940 laser to pulse extremely low energy levels of laser light to generate a photoacoustic shockwave, which streams irrigants throughout the entire root canal system.⁵

Using extremely short bursts of peak power, laser energy is directed down into the canal and the action actively pumps the tissue debris out of the canals while cleaning, disinfecting and sterilizing each main canal, lateral canals, dentinal tubules and canal anastomoses to the apex. This movement of irrigant is achieved without the need to place the radial and stripped laser tip (PIPS tip, Fig. 2) into the canal itself, as with other conventional hand and ultrasonic systems.

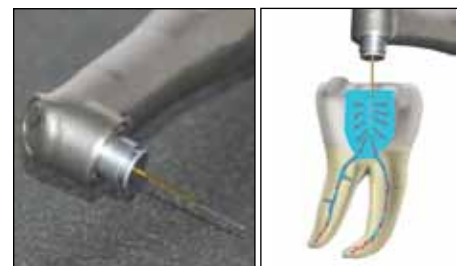
The tip is held stationary in the coronal aspect of the access preparation only. With the irrigant occupying the entire root canal system, the shock wave created by PIPS travels in all directions during activation and effectively debrides and removes organic tissue remnants. Through this laser-activated turbulent flow phenomenon, clinicians following the PIPS protocol are not required to place the tip into each canal, thus eliminating the need to enlarge and remove

Here at the PDC

Learn more about the Lightwalker Er:YAG & Nd:YAG dental laser in the National Dental Inc. (SharperPractice) booth, No. 1229.



• Fig. 1: Left, apical third of root treated with PIPS. Note clean surfaces without any thermal damage. Right, SEM of apical third showing extremely clean dentin tubules post PIPS with no sign of thermal damage. (Photos/Provided by By Enrico Divito, DDS)



• Fig. 2: Left, close-up of tapered and stripped PIPS tip used for laser-activated irrigation. Right, position of the laser tip in the PIPS technique: steady in the pulp chamber and does not enter canal.

more tooth structure to deliver standard needle irrigation to the smaller and more delicate apical anatomy, commonly seen in the apical one third. The results are canal convenience forms that are more conservative, minimally invasive and biomimetic (Fig. 3), preventing the unnecessary removal of tooth structure.

Unlike other laser-activated irrigant techniques, PIPS is not a thermal event, rather subablative. Properly executed, PIPS creates turbulent photoacoustic agitation of irrigants that move fluids three dimensionally throughout the root canal system even as far as the apical terminus, distant from the radial stripped tip location. By activating the tip in the access cavity and outside the root canal system, the extremely low energy needed to activate the unique PIPS tip (20 mJ/s or less) is below the threshold of ablation for dentin. Ledgering and thermal effects that have plagued the widespread use of other laser systems is completely avoided at the energy levels used by the PIPS technique.^{5,6}

Recent testing, performed at the University of Tennessee by Dr. Adam Lloyd, chairman of the department for endodontics, objectively confirmed the improved cleaning and debridement of organic and inorganic tissue left by instrumentation. Microcomputed tomography scans were used to assess before and after volumetric change in the internal intaglio of lower first molars treated with PIPS protocol (Fig. 4). Sequential slicing beginning at 6 mm from the apex and moving down to the last 2 mm demonstrated that all slice images showed significant improvements after PIPS.

The importance of these findings is far reaching. PIPS now offers the dentist a less technique-sensitive, minimally invasive and time-reducing method for irrigating and preparing endodontic root canal systems. Because PIPS has demonstrated its ability to decontaminate and debride areas that files and instrumentation cannot reach, success rates rise and retreatment for past failures is possible.⁷

PIPS is also helpful in locating and helping negotiate calcified canals. PIPS is a valuable additional tool in the treatment of endodontics regardless of the shaping and obturation system used.

Laser technology used in endodontics during the past 20 years has undergone an important evolution. Research in recent years has been directed toward producing laser technologies (such as impulses of reduced length, radial-firing and stripped tips) and techniques (such as LAI and PIPS) that are able to simplify laser use in endodontics and minimize the undesir-

able thermal effects on the dentinal walls, using lower energies in the presence of chemical irrigants. EDTA has proved to be the best solution for the LAI technique that activates the liquid and enhances its cleaning of the smear layer. The use of a laser (PIPS) to activate sodium hypochlorite increases its antimicrobial activity.

Finally, using the correct protocol, the PIPS technique reduces the thermal effects and exerts both a stronger cleaning and bactericidal action, because of its streaming of fluids initiated by the photonic energy of the laser. Further studies are currently underway to validate LAI and PIPS technique as innovative technologies in modern endodontics.

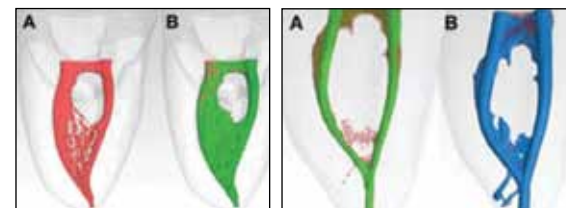
References

1. Clark D, Khademi JA. "Case studies in modern molar endodontic access and directed dentin conservation" *DentClin NorthAm.* 2010;54:275-289.
2. Peters OA, Schonenberger K, Laib A. Effects of four Ni-Ti preparation techniques on root canal geometry assessed by micro-computed tomography. *International Endodontic Journal*
3. George R, Meyers IW, Walsh LJ (2008) Laser activation of endodontic irrigants with improved conical laser fiber tips for removing smear layer in the apical third of the root canal. *J Endod* 34:1524-1527
4. de Groot SD, Verhaagen B, Versluis M, Wu MK, Wesselink PR, van der Sluis LW (2009) Laser-activated irrigation within root canals: cleaning efficacy and flow visualization. *Int Endod J* 42:1077-1083.
5. Li Z, Code JE, Van De Merwe WP. Er:YAG Laser ablation of enamel and dentin of human teeth: determination of the ablation rates at various fluences and pulse repetition rates. *Lasers in Surgery and Medicine.* 1992;12:625-630.
6. Majaron B, Lukac M, Sustercic D, et al. Threshold and efficiency analysis in Er:YAG laser ablation of hard dental tissue. *Proc SPIE.* 1996;2922:233-242.
7. DiVito, E., O.A. Peters, and G. Olivi. Effectiveness of the erbium:YAG laser and new design radial and stripped tips in removing the smear layer after root canal instrumentation. *Lasers Med Sci.* 2012. 27(2): p. 273-280.

Editor's note: See related case study on page 10



• Fig. 3: Left, pre-treatment. Right, post-treatment obturation after PIPS. Tooth instrumented to a #25/06 taper. Note the conservative convenience form maintaining more original anatomy of root canal system and reducing the need to use larger file sizes conserving more dentin tooth structure.



• Fig. 4: Left, mandibular molar canal system showing isthmus before (A, red canal) PIPS laser-activated irrigation. Areas of organic tissue and debris from instrumentation have been completely eliminated, as highlighted by post-PIPS image (B, green canal). Right, mandibular molar with canal preparation to a size 30/.04 (A, green canal) obturated with nano-particle BC Sealer (Brasseler USA, Savannah, Ga.) and single cone obturation (B, blue).

About the author



Dr. Enrico DiVito formed his dental practice in 1980 in Scottsdale, Ariz. In 2004, he formed the Arizona Center for Laser Dentistry. He is the founder and director of the state-accredited Arizona School of Dental Assisting (ASDA). In addition to teaching at ASDA, DiVito is also a clinical professor at the Arizona School of Dentistry and Oral Health and is helping to create its department of laser dentistry. He earned his undergraduate degree from Arizona State University in 1980 and is a graduate of the University of the Pacific, Arthur A. Dugoni School of Dentistry with honors, receiving several clinical excellence awards. He can be reached at edivito@azcld.com.

THE NEXT GENERATION LASER IS HERE

"HAVING USED LASERS SINCE 1999, I HAVE FINALLY FOUND THE GAME-CHANGER IN THE *LIGHTWALKER ATS*"—CHUCK LOGIUDICE, DDS

Ultra-fast hard and soft tissue preps

- ▶ Patented QSP & VSP technology = faster, more precise and comfortable preps
- ▶ 50 micro second pulse duration = fewer shots and less anesthesia

Discover PIPS®

*Perhaps the most significant endodontic advancement in decades.
Available only with the LightWalker ErYAG laser.*

A clarified human tooth
cleaned using PIPS



PIPS® is a revolutionary method for cleaning and debriding the root canal system with Photon Induced Photoacoustic Shock Waves within the cleaning and debriding solutions. The canals AND subcanals are left clean and the dentinal tubules are free of smear layer.

Expand your practice with WPT Wavelength-Optimized Periodontal Therapy

Utilizing the Nd:YAG Gold Standard laser for Perio, in tandem with the advanced LightWalker Er:YAG, and PIPS, dentists can confidently treat their patients' moderate to severe periodontal disease the LightWalker Way...without scalpels or sutures. The LightWalker is the only dental laser capable of delivering both Nd:YAG and Er:YAG laser energy for the efficient performance of advanced, minimally invasive laser periodontal procedures.

Learn more

- ▶ Visit us at the Pacific Dental Conference
- ▶ Booth 1229

1.800.392.1171

INFO@NATIONALDENTAL.COM | WWW.NATIONALDENTAL.COM



CELEBRATING 20 YEARS OF INNOVATION



LightWalker®

