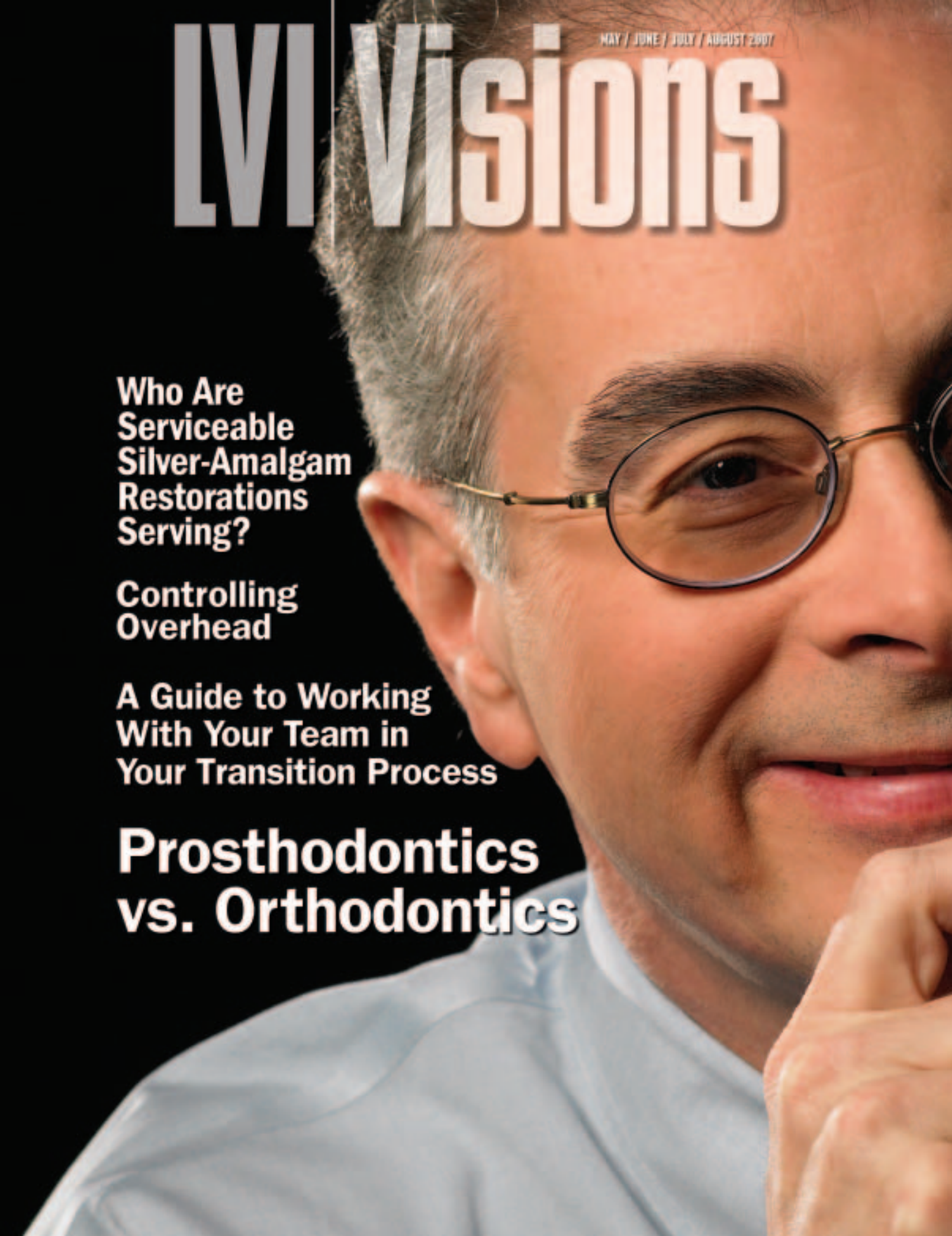
MAY / JUNE / JULY / AUGUST 2007

# LVI Visions



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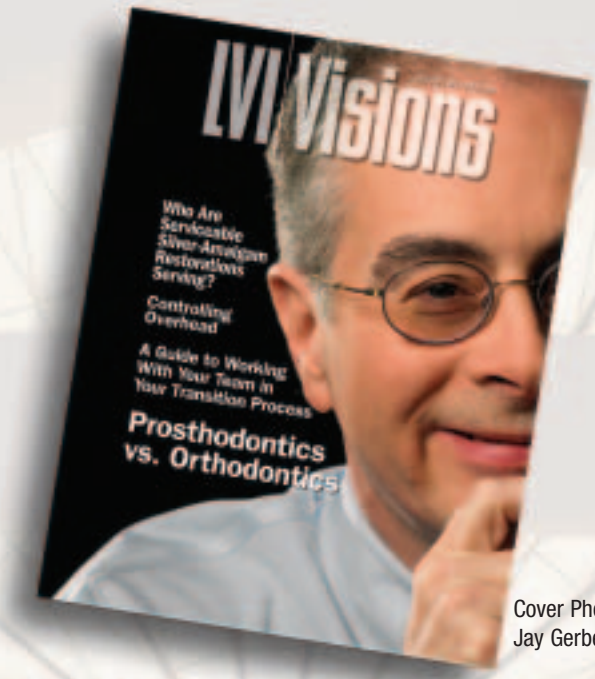


Cover Photo:
Jay Gerber, DDS, FICCMO, ABPM

MAY • JUNE • JULY • AUGUST 2007

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CHANGING DENTISTRY. CHANGING LIVES

EDITORIAL

BY WILLIAM G. DICKERSON, DDS, LVIM

# *Why Are So Many People So Screwed Up?*


***Of course I am talking about dentally screwed up.*** *The general consensus opinion amongst comprehensive dentists is that a majority of the population is not in their proper biting position.*

How could this be? Why would such a large part of the population be so screwed up? Truth is it is only the Western population. If someone examines the primitive cultures out there, they do not have much malocclusion. Those of you familiar with Dr. Weston Price's work are aware of that.

However, modern society has created the situation that causes so many people to have a biting position that is not their muscularly comfortable position. The big question is why? What is it that causes so many developmental problems?

This has been thoroughly explained in the lifetime of work by the late Dr. Jim Garry. Jim helped so many people in his life, either directly or indirectly, by teaching dentists to recognize the signs and symptoms of airway obstruction. What I know in this area came from this great man and one of my greatest honors was when Jim willed me his lifetime of work and presentations.

Yes, the causative factor in malocclusion is airway obstruction during the developmental stages of a child. If we as physicians of the mouth can determine those signs and symptoms and then correct the problems, we can prevent these children from growing up to be occlusally compromised adults.

So many children in Western Society have snotty, runny noses due to allergies. The most common food allergen is cow's milk, followed by chocolate and cola. Wheat

*The less you know the more everything seems normal.*

is not far behind. The point is that the environmental situation causes many children to have allergies. This causes the mucous buildup to prevent the cilia in the nose to do their job. The cilia beat at 10 to 20 times a second, and their job is to transfer the bacteria down into the throat to be swallowed and then eliminated out of the body in our waste. If the cilia can not do its job, the bacteria sits in the back of the throat and cultures, causing the tonsils and adenoids to work overtime to fight the bacterial buildup. This causes hypertrophy of the tonsils and adenoids which lead to the patient's difficulty to breath through the nose. The patient then becomes a mouth breather.

So you are thinking, so what? Why would being a mouth breather cause malocclusion? This is really quite simple. There is a constant battle in arch development between the sphincter action of the buccinator muscles and the outward forces of the tongue. When a patient breathes through their mouth, the tongue is placed in an abnormal position and does not support the maxillary arch form. Because the tongue has been taken out of the picture, the buccinator muscles win the war and the buccinator constricts the arch. The constriction of the arch creates less room for the teeth, causing malocclusion. Also, in a mouth breather, the tongue may rest on the mandibular posterior teeth and prevent them from erupting, causing a bicuspid drop off. This requires the patient to retrude their mandible in order to get the back teeth together, causing a deep overbite.

***These people become chronic mouth breathers for the rest of their life.***

With the bite now over closed and the mandible retruded, there is even less room for the tongue when the mouth is closed. It forces the tongue back, shutting off the airway. So, in order to breath, they have to open their mouths so the tongue can move forward. These people become chronic mouth breathers for the rest of their life.

Of course there are many other symptoms that can be created by airway obstruction, anterior open bite, cross bite, class III, class II, and too many others to talk about in this article, but hopefully the reader understands the stomatognathic imbalance that can occur when there is a disharmony between the forces acting upon

*Commit to becoming the best you can be and change your life and the life of your patients.*

the dental arch. It is when the arch reaches a neutral position between the forces of the buccinator muscles and tongue that the arch stabilizes.

With the constriction of the arch comes a high palate. The high palate creates a reduction in turbinate space. With the reduction of the turbinate space, any inflammation of the sinus will cause enough swelling of the tissue to restrict or block the airway and the ability of the patient to breath through their nose. Children with airway obstruction problems that result in malocclusion and high palates become adults with chronic airway problems due to the reduction in turbinate space.

So why do these children grow up to be adults with TMD problems? When the arch is not formed properly, the mandible is not positioned properly either. If the mandible is not in its comfortable position, then they are forced into a chronic contraction state. That chronic contraction causes muscle pain. Dr. Janet Travell (JFK and Lyndon Johnson's physician) years ago stated that 90% of pain comes from muscles. For every muscle that is in chronic contraction, there are antagonist muscles that are forced to contract as well. It is why neck and shoulder pain are often associated with a bad bite.

The key for the modern practicing dentist is to be able to recognize the signs and symptoms in children to prevent them from becoming chronic pain patients as adults and require complex restorative or orthodontic treatment. One place you can learn this is LVI's CORE I program. Regardless of where, it is up to the dentist to learn the fundamentals on how to diagnose the problems and treat them accordingly.

**STEP ONE:**
Realize that we as dentists can have a dramatic affect on the patient's health and happiness.

**STEP TWO:**
Learn the early signs in children to prevent a lifetime of problems.

**STEP THREE:**
Learn the techniques to treat children and adults with pain causing malocclusion problems.

***The less you know the more everything seems normal. Remember that you cannot diagnose what you cannot see. Commit to becoming the best you can be and change your life and the life of your patients. Be a mouth doctor, not a tooth doctor.***


LVI GLOBAL
OPENS DOORS
IN INTERNATIONAL
MARKETS
Michael Miyasaki DDS, LVIM

*Bill Dickerson, the founder and CEO of the Las Vegas Institute of Advanced Dental Studies (LVI), dreamed that some day the education that is offered at LVI would be available to doctors of every continent.*

*It is now common to have doctors representing five or six countries attending each of our courses in Las Vegas.*

In 2005, the Las Vegas Institute for Advanced Dental Studies took a significant step in accomplishing that goal when the Institute was placed under the umbrella of LVI Global.

LVI Global is the organizational name, which better reflects LVI's international efforts to enhance the dental profession and provide dentists around the globe with a life-changing experience. After all, who better to train the dentists of the world then LVI? Dental care is universal. Technological advances combined with improvements in travel offer LVI the opportunity to increase its international presence. Equally as important is the exceptional reputation that the LVI Faculty and Curriculum have earned by doctors from around the globe. Dental professionals seek the passion provided by LVI as a way to revisit and rekindle why they originally became health care professionals - to enjoy the practice of dentistry and provide their trusting clients with the very best in care and artistry.

Globally, our experience has been positive over the past few years. LVI's past travels to Australia have spawned an explosion of interest in aesthetics and occlusion. It has been rewarding to witness our Australian colleagues learn and apply their knowledge to improve their patients' lives and their practices, ultimately leading to an increase in personal and professional satisfaction. Also, we have watched LVI Canadian dentists prove themselves to be very astute and open to learning. The value they put on their education at LVI, especially when the currency exchange rate is very unfavorable, demonstrates their dedication to bring the very best back to their patients.

It is now common to have doctors representing five or six countries at each of our courses in Las Vegas; doctors who seek the very best dental education regardless of distance or expense. Oftentimes, these dedicated doctors bring patients half-way around the globe to participate in the live-patient treatment programs. It always surprises us to hear doctors who have their practices in the U.S. say they cannot get their patients to come with them to LVI because of the time involved, and yet we often have doctors bring their patients from Asia and Europe. It is the commitment of these dedicated dentists to change and improve the lives of their patients that is so impressive.

Doctors from Singapore, Saudi Arabia, Kuwait, Mexico, Canada, England, Switzerland, Japan, Poland, Australia and other countries have found a home at LVI where they increase their knowledge, learn exceptional dental skills and escape those who say dentistry has to be a job. They come and leave with a sense of intense resolve to enjoy the dentistry they can now provide their clients and many have changed the practice of dentistry in their respective countries. We are proud of so many of them for being the lamplighters in their part of the world and the encouragement for their colleagues to attend LVI.

In North America at the end of


2005, LVI launched the LVI Regional Center events program. During these events a select group of our instructors present dynamic, two-day lecture programs in locations throughout the United States and Canada.

This success has led to the next logical progression in our global expansion. In 2006, LVI launched international teaching programs in Canada and Australia. Unlike the Regional Center Events these programs are in-depth and replicate our three-day Core I: Advanced Functional Restorative Dentistry course, and the six-day Core III: Advanced Functional Aesthetics live-patient treatment course. These courses have been designed by LVI to ensure that the content mirrors the same high-quality, information-packed lectures provided in the identical courses conducted at the LVI campus in Las Vegas, NV. Each director has highly qualified, LVI-trained instructors to support the programs and offer the same personal instruction provided at LVI.

## International Launch: Canada

*Leading Edge Technology • All In French*
*In Canada's Most Historic Setting*

Montreal, Quebec, Canada is the largest French-speaking city in North America and the second largest French-speaking city in the world! Montreal is a blend of North America and Europe, high-tech and high-style, a city full of music, art and joie de vivre ("joy of life"). Graceful historic structures are lovingly preserved and merged with the cool, precise lines of the architecture of the 21st century. What better venue for the launch of LVI Global Canada – with its completely French-language versions of the courses and philosophies taught at the Las Vegas Institute for Advanced Dental Studies!

LVI Global Canada debuted November 23-25, 2006 with its inaugural Core I: Advanced Functional Restorative Dentistry course (covering functional occlusion, correct "physiologic" neuromuscular position, establishing the bite and the six dimensions of occlusion), to outstanding reviews from its more than 40 participants. This was quickly followed by an equally successful second Core I: Advanced Functional Restorative session January 18-20, 2007 and the first Core III: Advanced Functional Aesthetics course (Prep April 12-14 and Seat May 3-5). This intense, hands-on, real-patient program involves 8-10 units of all-ceramic veneers/crowns or combination of both.

*Participants of the first CORE III: Advanced Functional Aesthetics course conducted at LVI Global Montreal*

***Each director has highly qualified instructors to support the programs and offer the same personal instruction provided at LVI.***

Under the leadership of Dr. Michel Jahjah, Director, the LVI Global Canada Team features an outstanding array of local and international dental talent including Drs. Mike Miyasaki (Vice President of International Operations for LVI Global) and Tony Tomaro (Clinical Director of the Las Vegas Institute for Advanced Dental Studies). Drs. Danielle D'Aoust, Sahag Mahseredjian, Antony Carbery and Daniel Gallagher complete the team – all are Clinical Instructors at both the Las Vegas Institute for Advanced Dental Studies in Las Vegas and LVI Global Canada in Montreal. As practicing dentists in the Montreal area, they bring a true understanding of the local dental market and patients to the discussions on dental technique and technology. All have spent an incredible amount of time and effort in translating the LVI curriculum into the French language, increasing international understanding of the new concepts presented.

If you are interested in a "French Immersion" version of LVI, we'd like to invite you to join in on this unique, French language Advanced Esthetic Educational opportunity! For more information, please contact LVI Global Canada at (514) 738-6074.

## Future LVI Global Canada Courses

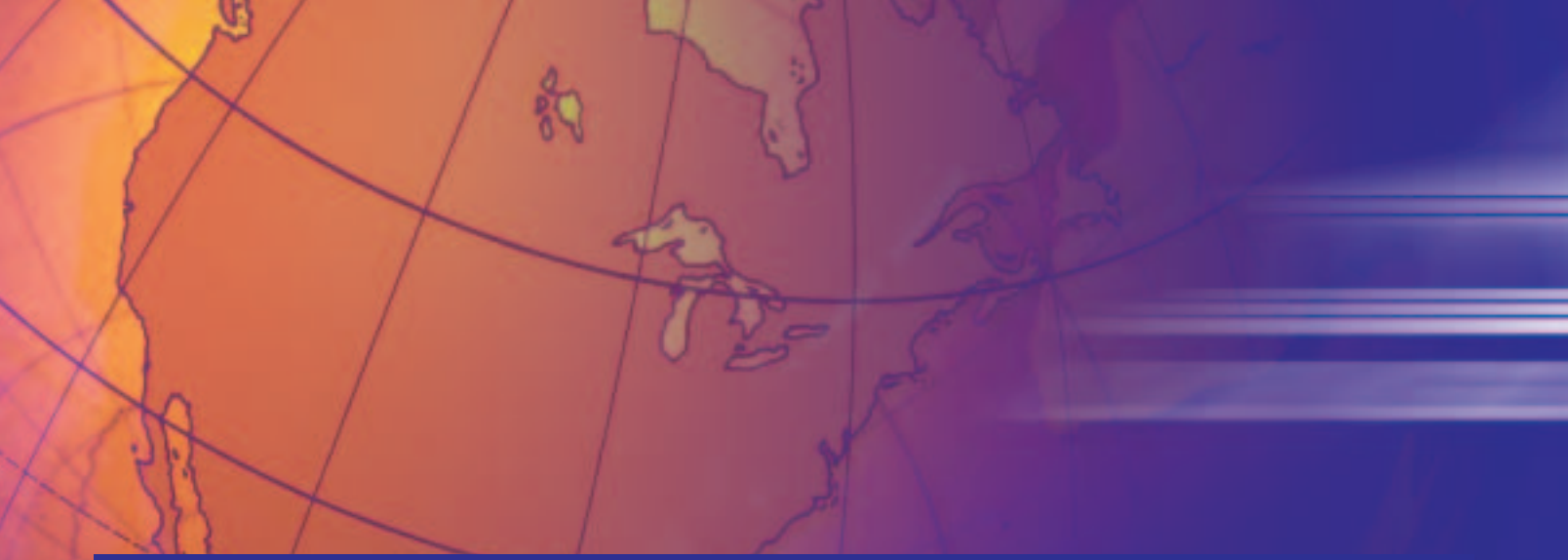
**Core I: Advanced Functional Restorative Dentistry**

*June 14-16, 2007*

*September 6-8, 2007*

**Core III: Advanced Functional Aesthetics**

*October 18-20, 2007 (prep) and November 8-10, 2007 (seat)*



# International Launch: Australia

It was with much anticipation that the date of February 22 finally arrived and the LVI Australia team was about to launch the inaugural program: Core I: Advanced Functional Restorative Dentistry. In the days leading up to the launch, everything had fallen into place like clockwork and it was with a calm assurance yet excited anticipation that we welcomed the Core I participants.

Where had the previous six and a half years gone when the four of us had unsuspectingly rocked up to LVI in Las Vegas as part of the Australian and New Zealand contingent of dentists about to be thrown head first into the LVI curriculum - completing Cores I, II and III over the next two very intensive weeks of continuing education? It only seemed like yesterday that we were either strangers or little known to one another yet now, Brett Taylor, Fred Calavassy, Sam Guirguis and myself, Anne-Maree Cole are professional colleagues and the greatest of friends sharing a common bond that unites all LVI Alumni. What is it about LVI that draws people together and builds friendships and supportive professional relationships sans frontières?

Certainly it is passion and purpose, excellence in continuing education and a sense of enveloping support that goes beyond the walls of LVI. Yet more important than that, it is the vision and leadership that has enabled this truly remarkable institute to take hold and change the face of dentistry for the better, forever; that is the tie that bonds us. The profession of dentistry will forever be indebted to the visionary, dentist, teacher and facilitator of learning that Bill Dickerson is. I cannot speak highly enough of the calibre of man and the calibre of teaching and the facility that he has produced at LVI all for the purpose of improving the profession and lives of the dentists who attend and their patients. Dentists come to LVI of their own free will. They choose to learn from the best. The standard of care taught at LVI is second to none. They teach attention to detail. They teach very specific treatment protocols with checks and balances all the way throughout treatment. No short-cuts.

It was with great honour and humility that we accepted the challenge to bring LVI to Australia and what a fantastic reception we received from our inaugural class. Everyone was there to learn. There were questions and discussions that went on throughout the day and into the evening. They were introduced to the science and physiology behind neuromuscular dentistry, taught to develop a critical eye for aesthetic dentistry and inspired to reach deep within themselves to find a better way to practice dentistry. There is a lot of misinformation out there about neuromuscular dentistry. Perhaps it stems from a fear of something new or perhaps that old paradigms are being challenged, but the reality is that when you hear it for yourself, it just makes sense. Our patients get it in a heartbeat! Dr Vicky Ho wrote the following testimonial:

"You guys have shed more light on the topic of occlusion that makes more

sense than any other course I have done or my University degree had taught. You have given us the tools to be better clinicians and diagnosticians that we can begin to be better "mouth doctors" starting Monday morning. Thank you all. You guys really know your stuff and will be great mentors for us to follow." … Vicky Ho

The next program being held in Sydney and Brisbane is the Core III: Advanced Functional Aesthetics course which is a live-patient treatment course involving an aesthetic makeover of the upper 8-10 anterior units with porcelain restorations at the habitual occlusion. To be eligible to attend this course, you must have completed Core I: Advanced Functional Restorative Dentistry or Occlusion I from the previous LVI Curriculum. The upcoming courses are almost full and are being conducted at the following dates and locations:

## Future LVI Global Australia Courses

**Core I: Advanced Functional Restorative Dentistry**

*August 23-25, 2007 (Brisbane)*

**Core III: Advanced Functional Aesthetics**

For Brisbane Attendees:

*May 4-5, 2007 (Prep) and*

*May 25-26, 2007 (Seat)*

For Sydney Attendees:

*June 1-2, 2007 (Prep) and*

*June 22-23, 2007 (Seat)*

*As many other postgraduate dental education programs come-and-go, LVI continues to progress and evolve. The worldwide acceptance of our program offerings is a great indicator of dentistry's bright future. This also means that LVI attendees have world-renowned name recognition through their LVI associations. We thank our alumni for the continued success, and we ultimately strive to bring the passion they experience to more of our colleagues on a global basis.*

*If you are interested in an educational experience that could improve your future please contact us. www.lviglobal.com 888.584.3237*

# A TECHNICIAN'S DREAM, AN INSTRUCTOR'S JOURNEY

*Michael Milne, CDT*



## THE DREAM

*Two years before the Las Vegas Institute training facility was built, when Bill was teaching out of his office, word had filtered my way that he would include a laboratory training program. I had no knowledge of the exact format he would use or details of the techniques to be taught, but something inside me stirred and I felt a strong desire to be involved in any way I could. This excitement was ignited after just one visit to LVI.*

The year was 1996; I had reached a plateau in my career and felt like I was swimming upstream. I signed up for every lab program LVI offered and was in the first group of technicians to graduate from each course. I couldn't get enough (still can't). Becoming the first lab technician clinical instructor fulfilled my greatest dream and began a journey I hope never ends.

After the new training facility was completed, I was appointed Director of Laboratory Courses. My first assignment was to help LVI recruit Juergen Seger as our Laboratory Instructor in the ceramic aesthetic area. This talented Master Technician, residing in Liechtenstein, was highly respected in the laboratory arena throughout Europe, South America and Asia. Now his name is also revered in North America. Juergen and I share a deep passion for leading the development of qualified technicians who will provide the best possible results to doctor and patient, thus raising the level of dentistry to higher peaks. LVI`s direction has opened the door for successfully fulfilling this goal.

Like all good programs and continuing education classes that are developed, there is a constant need for monitoring and updating. In the LVI Lab Courses we are striving to do this. Juergen Seger is an extremely competent instructor and researcher. His work in Europe allows him to develop and test materials used in the courses (mainly pressable ceramics and the innovations with Cad-Cam technology). With this research, the LVI Lab Courses excel above others that are currently offered.

I have to admit to being a little selfish as I contemplated the design of the programs at LVI. I wanted programs that would build my skills and place me in an elite group of knowledgeable and proficient technicians.

## THE JOURNEY

The LVI Smile Design Course, a hands-on program, was created to enable technicians to develop the confidence and skills required to communicate with the dentist and thereby achieve optimal aesthetic results. The pre-operative work and effort to design an LVI Smile for the aesthetic-conscious patient is the goal of the course. Establishing correct form, contour and function with a pre-operative wax-up and successfully transferring it to a working model is the primary goal. This program came about as we discovered a need for a greater emphasis on designing the smile.

To continue the flow of our aesthetic courses in anterior ceramics, I changed the title of the Advanced Anterior Ceramics Course to The LVI Enhanced Smile Design. This highly advanced training program focuses on creating superior aesthetic restorations. The Smile Design Course navigates the attendee through the pre-op techniques, allowing more time to develop correct tooth form and contour. Technicians learn how to change a case from good to outstanding through the hands-on portion of the program. Each technician fabricates an 8-10 unit case, using advanced cut-back techniques taught during the class. Upon completion, they have the opportunity to see all the cases presented in the mouth of an actual patient.

The Master Technician course has been offered at LVI since its beginning and is probably one of my favorites. As I muse over my experience as a Master Technician attendee in 1996, I realize what a huge turning point this experience was in my career. Attending the lectures with dentists and learning what they were taught was particularly helpful.

In this highly advanced course, technicians have the opportunity to refine their knowledge to a new and more sophisticated level. Technicians who complete this level of training develop the ability to deliver excellence in the most challenging cases. Technicians are teamed with dentists to work on live patients and are compensated for their work. They are exposed to many of the same concepts as the dentists. This course represents an extremely valuable experience with a heavy emphasis on lab/dentist communication and features a mix of lectures and hands-on training.

This new age of metal-less dentistry has brought about the era of zirconium in the fabrication of bridges, implant abutments and full-coverage restorations. The development of this state-of-the-art substructure material has aesthetic results in difficult cases. But, with all new materials and techniques, there comes a huge learning curve and most dentists I know do not want to be the victim of this experiment.

As I discussed this with Juergen Seger, we developed a course that would involve these multiple scenarios: bridges, implants, veneers, and

crowns, and would teach technicians how to combine these different situations for a pleasing aesthetic result. The new course is titled "The Ultimate Solution in Metal-Free Aesthetics". To my knowledge, this is a one-of-a kind course and a great opportunity to learn the do's and don'ts of working with zirconium.

## A NEED TO MEASURE

In today's complex arena of dentistry, a technician has to have a broad understanding of occlusion. The Neuromuscular Technician Course covers the relationship between the teeth, temporomandibular joint and masticatory muscles.

For the first twenty-five years of my career, I had many unanswered questions about the occlusal concepts I had learned. I like what Dr. Bernard Jankelson (the father of NM dentistry) said:

*"If you can measure it, it is a fact; if you can't, it is an opinion."*

I still remember the day when Bill Dickerson approached me and said, "We need to teach our technicians the laws of Neuromuscular Occlusion." That was how this course began.

The programs we have developed in the Neuromuscular Occlusion and the Full-Mouth Waxing Course are also staffed with extremely talented and competent instructors, Bill Wade and Taylor Milne. Bill Wade's name is synonymous with Neuromuscular Dentistry. Bill's diversity and intellect have been essential tools, tying together the vital information for dentist and technician. As a parent, you can imagine the great honor it is to work with a son or daughter who chooses to follow your profession. My son, Taylor, is an instructor in the Full-Mouth Waxing Course. His young age only magnifies his incredible talent and knowledge of the Occlusion and Morphology of teeth.

Neuromuscular Occlusion is definitely here to stay. There are a growing number of technicians wanting to be trained in the principles of Neuromuscular Occlusion. The shift in occlusal thinking from traditional to neuromuscular is spreading. And, with the vast number of LVI dentists trained in NM occlusion, every lab tech should have an understanding of the NM principles. I remember being taught that "the Dentist is the architect and the Technician is the builder." Today the role of the technician is changing and, with that change, comes the responsibility of being involved in designing the case. Teaching these principles has become my passion; and LVI, with its marvelous campus and team, is the perfect facilitator.

One of the first things I observed while teaching the first Full-Mouth Waxing Course, was that technicians did not really know the correct shape, size and morphology of teeth. My son, Taylor, who is the lead instructor of the course and a natural artist decided to take the attendees back to the fundamentals. By introducing the simple basic shapes in art we apply these essential designs to each and every tooth in the mouth. Each tooth is examined from all sides and angles with function, use and occlusion heavily emphasized. This is an extremely valuable course and will give any participants a renewed appreciation for the marvels of the mouth.

## SOMETHING NEW

I have had a number of requests for a course that will aid the Dentist and Technician in working together on a highly complex case. We have created a course for the Dentist which will give him/her a better understanding of Laboratory procedures, techniques and materials. As we move into this area of high tech materials and occlusal awareness, it becomes vital to equip ourselves with ultimate precision and knowledge.

During the Core V prep session, I teach the hands-on customization workshop. The dentists attending the class will be provided with information on shade selection, ingot selection, understanding of materials and help with the design of the more complex cases.

The perfect triad of Patient, Dentist and Technician is the goal for this new course. For you the Dentist, I believe you will love it.

When it comes to the world of dental health care, LVI training facilities are second to none anywhere in the world. The Laboratory Courses are committed to excellence in dentistry and will continue to keep LVI number one in continuing education.

*"The future belongs to those who prepare for it."*

RALPH WALDO EMERSON

**Michael L Milne, CDT**
***Director of Laboratory Programs, LVI Global***

Mike manages Sunrise Dental Ceramics (a division of Micro Dental) in Las Vegas. He has been a bench technician for 35 years, has been involved with LVI since 1996, and was appointed Director of Laboratory Programs in 1998. He is a featured instructor at LVI Global. As a Master Dental Technician, his passion is to create the perfect triad between dentist, patient, and technician by improving skill level, communication, and aesthetic results.

## 2007 Course Schedule

**The Dentist Connection (for the dentist)**
June 18-20

**Full Mouth Waxing**
June 14-16
November 8-10

**LVI Smile Design**
May 3-5

**LVI Enhanced Smile Design**
October 28-31

**The Master Aesthetic Technician**
September 26-28 & October 23-26

**The Neuromuscular Technician**
December 6-8

**The Ultimate Solution in Metal-Free Aesthetics**
May 9-11

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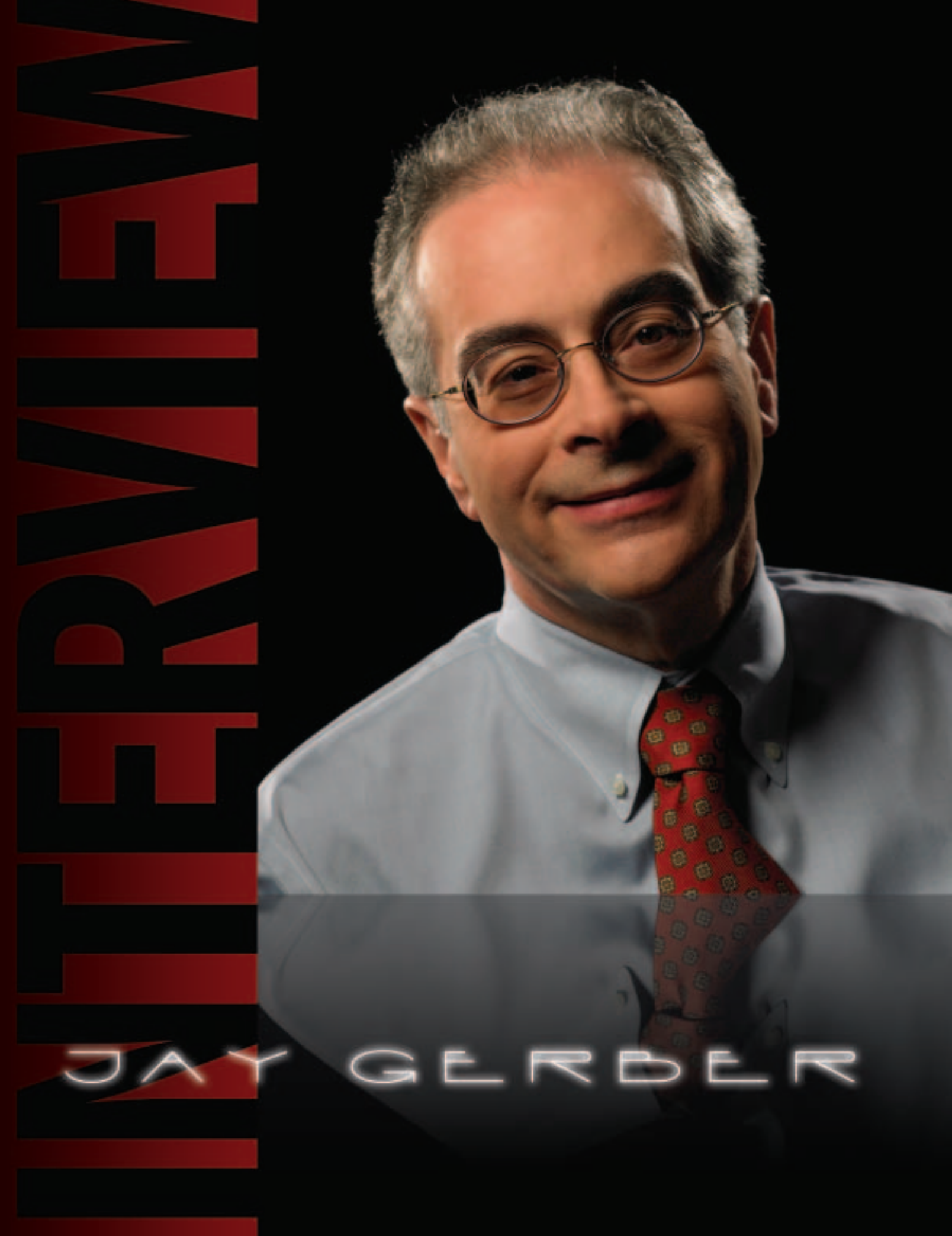
# INTERVIEW



## JAY GERBER

# Jay Gerber VISION INTERVIEW

## Welcome!

*LVI Global is proud to announce that Jay Gerber, DDS has joined the LVI faculty. He is instructing a series of clinical courses in Neuromuscular Functional Orthodontics. For more information, visit www.lviglobal.com or call 888-584-3237.*

***You've had a long and successful career that has not only taught dentists how to incorporate Orthodontics into their offices, but how to do it using the principles of muscular harmony. Can you explain how you fell into teaching this aspect of dentistry?***

During the early 1980's my brother was exposed to Dr. Jankelson. He suggested that we purchase a TENS unit. This was the first step leading me to realize the importance of finding a definitive and stable position to finish all dentistry. While I was learning to finish fixed and removable prosthetic cases, unknowingly I was developing the basis for Neuromuscular Functional Orthodontics.

In 1984 I first began by teaching Straight Wire and Functional Orthodontics. The neuromuscular aspect was gradually integrated as I developed unique and exclusive techniques that have continued to evolve for over 20 years. During that time the mechanics and cephalometric system have evolved into the standards for Neuromuscular Functional Orthodontics Gerber Technique.

***Can you explain to everyone why you decided to join the distinguished LVI faculty?***

Quite simply; no where in the world can one find a more exclusive group of teachers and dentists that strive to share their knowledge about Neuromuscular Dentistry on the highest of levels. Dr. Bill Dickerson has organized and put into motion a teaching facility that represents the pinnacle for those wanting to learn the principles of Neuromuscular Occlusion. I wanted to join this esteemed group and help to develop the finest Orthodontic Program available for Neuromuscular Dentists.

***You've had such a fulfilling life, what would you consider the greatest aspect of your life?***

My family is very special to me. Carolyn and I have two super children who are now grown and they have always been the joy in our lives. Our daughter, Amy Gerber Smith, is an orthodontist and shares my office in Parkersburg and our son Jay Jr., a lawyer, also lives in Parkersburg.

***Which professional accomplishment(s) do you value most?***

That's a difficult question for I have many. First was the opportunity to practice with my father and later my brother. About two years ago Amy opened her practice in my building, so I guess it comes around to family again.

As far as the teaching is concerned; I would have to say the organizations that have recognized me for my work in Orthodontics and in Neuromuscular Dentistry. Clinically; my ability to take the steps necessary that lead me to integrate Orthodontics, Functional Jaw Orthopedics and TMD concepts with the principles of Neuromuscular Occlusion.

***Many dentists are afraid to incorporate orthodontics into their practices, mainly I think because they do not understand it. Do you think it is something most dentists will find rewarding?***

I have lectured and individually instructed thousands of dentists and health care providers. A couple of weeks ago my class included one dentist that attended my second ever course 22 years ago. At 76 years of age he is still learning. In that same course another dentist in his early 50's who first saw me 20 years ago. This test of time answers a lot of these questions.

Over the last few years I have seen daughters and sons of my previous attendees, attend my courses at the direction of their fathers.
The big deal with orthodontics is in your question: they just do not take time to understand orthodontics and many courses that are offered simply do not instruct the participants how to properly develop an orthodontic program in the general dental office.

When developing an orthodontic model into one's office it is something that requires some time, not just a one week course. The results of the treatment take time to see and in today's world we want everything now. Orthodontic learning takes time and of course a commitment by each participant. The good side is; the concepts remain basically the same over time and it is easy, once learned, to continue to provide state-of-the-art treatment.

***Why is it important that dentist at least understand orthodontics more than they currently do?***

Occlusion – Occlusion – Occlusion. Without establishing the ideal neuromuscular occlusion the clinician will not be able to properly develop the arch and vertical. All aesthetic practices need to develop this aspect to better provide for their patient's long-term stability.

***Who do you admire and why? Who are your mentors?***

I have been blessed by many too numerous to mention. However, I would like to point out that the opportunity to work with Dr. Norman Thomas at LVI Global gives me a great deal of satisfaction since he has always been one of my mentors and a true leader in Neuromuscular Dentistry.

Just to name a few in the neuromuscular field, I would have to include Robert Jankelson and my classmate who first taught me about NM, David Hickman. I have studied many hours with Ed Duncan and shared great times with Jim Garry. Another clinician who I admire and have learned from is Barry Cooper. I remain inspired by the many student dentists we now have.

In Orthodontics, I learned from and later taught with both Dr. Walt Brehm and Dr. Merle Bean. My TMD paths lead me to Dr. Harold Gelb, John Witzig, then Brendan Stack and others. Again I have learned from the best.

***Why is it that there seems to be some resistance to what you KNOW is the truth about occlusion and the benefits Neuromuscular Dentistry offers to our profession?***

Dentistry is a very conservative profession and change is almost impossible to achieve especially when the leaders are mostly general practitioners. I believe specialists control the politics and most certainly the dental school curriculums. I have seen this in Functional Orthodontics just like in Neuromuscular Occlusion. Most specialists have not yet bought into NM. I do see changes in Orthodontics as many are now using functional jaw orthopedic appliances and rapid vertical gaining appliances.

***Why do you believe it is that some are afraid to find out about the truth of NM dentistry?***

I do not think it is because of fear, but it is from not wanting to "rock-the-boat". Let's not change what we already know. They continue to build upon what was presented in dental school – C.O.

***What is the biggest problem in dentistry today? What bothers you the most?***

I believe it to be the resistance to change. I feel that we as health care providers need to expand into new areas of dentistry or further develop current techniques to the max. I always want my patients to receive the best treatment available and I take this philosophy into the classroom. Those doctors that participate in my classes need to know what is out there and how they can best incorporate these new methods into everyday practice. Even if they elect not to provide orthodontics they will now know what the real standard of care is and now they will be able to find someone.

***How can an average dentist, who is nowhere near as smart as you, apply the principles that you teach in their practices?***

Well first of all, I am no smarter than the next guy. That is why I have seen in over 22 years of teaching the ability of my students to rapidly integrate what I teach. Even without a basic understanding of NM Occlusion, I find it easy for any dentist to learn our system. I am a GP and I teach to GP's. I understand their everyday problems and I give them solutions that are positive and fun to incorporative into their practice very efficiently.

***If you could give a piece of advice to all the dentists out there what would it be?***

Enjoy your practice by knowing that the treatment you provide is what you would want for yourself and your family. And learn to understand your patients and by this I mean teach them what real good dentistry actually is for most do not know. Only by educating your patients will they become aware of the treatment that is available.

***What do you think the future of dentistry is and why?***

Technology represents the future for all of us, in every way we live and how we will continue to practice. I saw the rural practice of my great uncle, then my father and now how can we compare the changes.

What changes will my daughter experience, first of all orthodontic appliances recently had the greatest advance since the early 70's with the introduction of the newest SLB (self Ligation Brackets). Sorry but the invisible appliances rarely treat to a NM position. I see more advances in diagnostics including imaging and the ability to use the Myotronics instrumentation. What else? I guess we will have to see. That is were the fun is going to be.

***Do you have any final thoughts you would like to share with the readers?***

I encourage doctors to come and study with me at LVI. I know we have the best program available for NM dentists. I am so excited by the advances in Aesthetic Dentistry, and Orthodontics is an essential part of this new upheaval as dentistry. Our patients want to look great and we now have the tools. These techniques are far more advanced than our predecessors.

I also want to thank Bill Dickerson for the opportunity to work with LVI to develop the finest Orthodontic program available anywhere. This is what he and I both want for every student. Interestingly our first registration for Ortho I was from a doctor in Australia. I guess he was real thrilled about the new program and wanted to be the first to register. How exciting!

Thank you for the opportunity to talk about NM Orthodontics.

**2007 Course Dates**

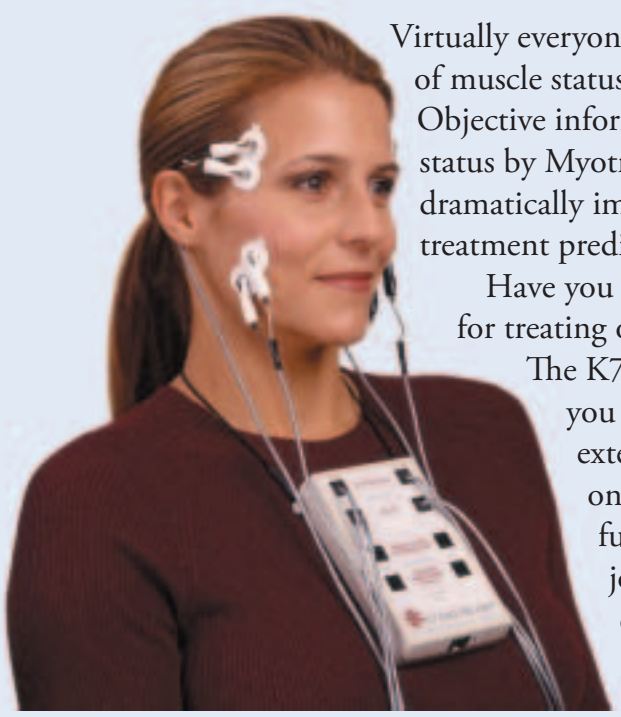
**Session I:**
June 4-6
June 21-23 (West Virginia)
September 13-15 (West Virginia)
October 1-3

**Session II:**
August 15-17
November 28-30 (West Virginia)

**Session III:**
November 12-14

# OBJECTIVE: *(ob jek 'tiv)*

## Based on facts. Unbiased.



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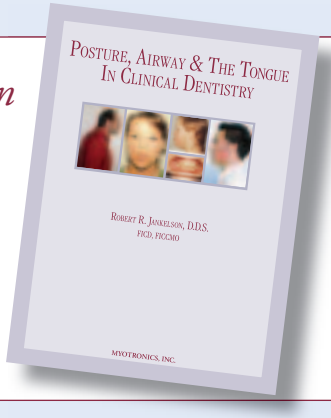


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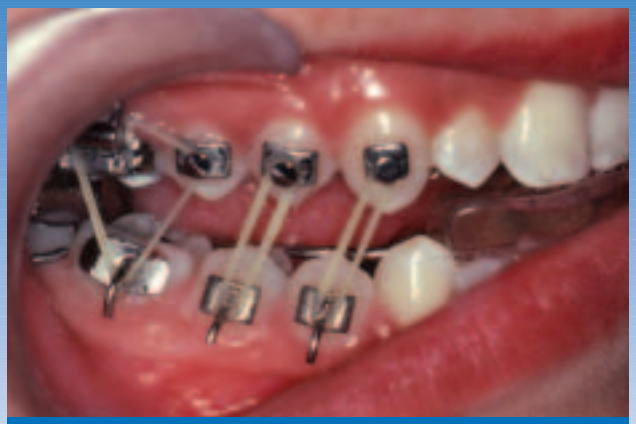
# Prosthodontics vs. Orthodontics

*Jay W. Gerber, DDS, FICCMO, ABPM*

A changing but expanding economy presents each of us with new challenges in our personal lives and in our pursuit of financial freedom. Dentistry is a great profession, it is rewarding in many ways but I am quickly reminded that it is certainly not the job my father entered into in the 1940's, nor is it like my chosen profession of the 1970's.



In order to conform to new patient demands including cosmetics, and in a era of reduced caries we have began to look into more recently introduced restorative techniques and areas considered specialties. The choice remains the question: what direction? What and how do we adapt our professional position or practice to our future in dentistry.

I am continuing to hear about the importance of expanding into these new areas particularly that of fixed prosthodontic techniques. Many occlusion courses are no more than restoration courses that are designed to make the participant think that he or she will greatly expand ones practice and that new income is easy to obtain. However we all know that many patients resist the 'extreme make-over' and the high cost treatment plan. These patients need to be educated first and sometimes start with a few cosmetic improvements, but rarely the full nine yards.

For practitioners wishing to quickly expand into a new area, orthodontics could be the answer. With a shortage of specialists and a population that provides only the best for their children, orthodontics is an easy sell and with fees of $4,500 – $5,500 the treatment plans are readily accepted and not over priced.

Additional reasons and comparisons for incorporating orthodontics:

• Typical overhead for orthodontic procedures is 45-50%

• Collections average near 100% and some practitioners have developed ingenious methods that insure immediate collection or a large prepayment.

• Average personal chair time for the experienced clinician, per patient, is 1 1/2 to 2 hours. This is for the doctor's actual chair-side treatment over the full length of time.

• Dental Assistants can perform expanded functions in most states and where allowed can be specially trained for expanded duties.

• Comprehensive courses allow the practitioner to quickly select simple cases to start and as they continue through comprehensive educational programs they develop the skills necessary to treat most cases. Also they will recognize and refer difficult cases in a timely fashion that will allow for proper treatment.

• Interceptive treatment does not allow your patient to suffer through a childhood of abnormal growth. Waiting on permanent dentition to develop only allows compromise treatment that may include multiple extractions, TMJ treatment and facial jaw surgery.

• It is not uncommon for GP's to start 35-50 cases per year while more aggressive practices start 100 or more. Multi practitioner groups often generate many more starts every year. This all translates into 100's of thousands of additional revenue that otherwise would be referred out of your office.

• Several years ago Universal Dynamics Orthodontics in Minneapolis commissioned a study of AAFO members.

Members were surveyed to determine various orthodontic tendencies including income. Most interesting was that; general practitioners who incorporated orthodontics into their practices for five or more years indicated that as much as 50% of their income was from orthodontics.

• With increasing emphasis on practice growth orthodontics appears to be an area that fits the bill. Also it is an established discipline of dentistry and therefore publicly accepted.

• Orthodontic education also is quite inexpensive and the time out of the office is very limited especially when most classes are on weekends.

Orthodontic programs for general and pediatric dentists are quite numerous. This competition has kept the educational cost affordable for even young dentists. The average tuition cost for a session is around $3,000 - $4,000 plus another $1,500 for clinical supplies. A special x-ray Cephalogram attachment is required for existing equipment. This adds another $2,000. Additionally, one year of monitoring of the aforementioned program and expanding into advanced level courses is relatively inexpensive. This small expense outweighs the time expended and allows today's dentists to expand into another area of aesthetics.

A team effort: successful practices also encourage dental assistants to attend special training sessions for some additional expense. By involving assistants the practice will grow through providing additional services and by the motivation of staff members. Many dental assistants participating in the auxiliary sessions tell us that they really love orthodontics and have a new outlook on dentistry.

Numerous study groups are available for your ongoing case reviews. These groups are usually regional with some local. The International Association for Orthodontics for instance has over 30 study clubs.

When you consider expanding into new areas of dentistry it behooves you to explore orthodontics. First you should do some research by asking friends or request our references from doctors that have attended these programs. Don't forget to consult your patients, they like a one stop office.

*Orthodontic education is not going to overwhelm you. But it will require some effort to learn and it begins with Dr. Gerber's introductory class which is offered at LVI. The course is only three days and it allows you to discover a world that will catch your interest to the point that you will decide to continue and take two additional sessions to complete the full three-session learning program.*

## *A Recent Testimonial by one of Dr. Gerber's course participants.*

*I have taken orthodontic courses from Dr. Gerber since 1987. I find his teaching methods very clean, concise, extremely well organized and always up to date. He is very thorough in his teaching, well spoken and always easily approachable for questions. And since Dr. Gerber still actively treats patients, you will be taught by someone experiencing the same clinical problems we all come across. I have always left his courses feeling positive and have always learned at least one new idea that I could immediately apply into my own practice.*

*I strongly recommend Jay Gerber's courses to anyone who has an interest beginning orthodontics or someone wishing to continue their orthodontic education.*

Dr. Jay Schuster, Erie, PA

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*Dr. Gerber offers a three-session neuromuscular orthodontics program in Las Vegas, Nevada and Parkersburg, West Virginia.*

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Dr. Jay Gerber,
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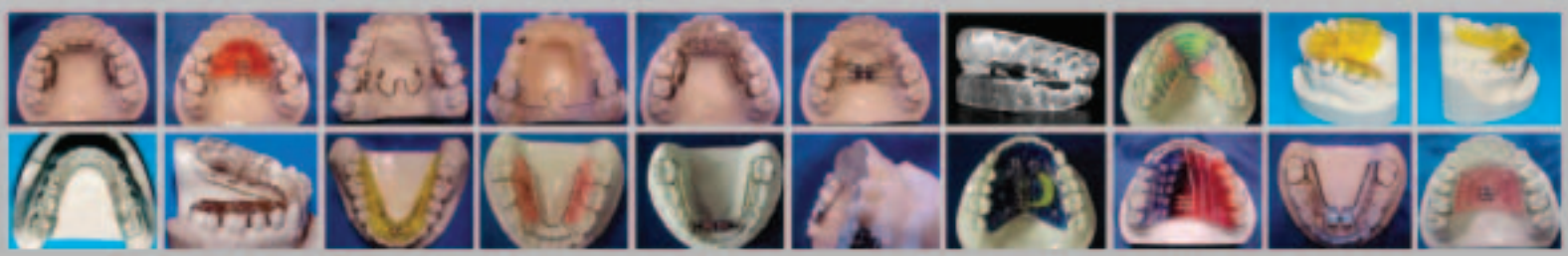

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*A Guide to*

# Working With Your Team in Your Transition Process

*Paul Sletten*

## Welcome!

*LVI Global is proud to announce that Paul Sletten has joined the LVI faculty. He is instructing a Business Management course entitled The Business of Dentistry: Designing Your Future. Additionally, Paul is offering in-office consulting services. For more information, visit www.lviglobal.com or call 888-584-3237.*

When you are planning a practice transition such as adding another dentist to the practice or selling your practice as you prepare to move into retirement or to relocate, the question always comes up about when to tell your team about your plans. Ninety percent of the dental practice brokers in America advise their clients not to tell the team anything about it until the entire deal is done. ***In almost all cases, this is horrible advice.***

My philosophy is that team members should become involved in the transition process once the dentist is clear about the transition plans and is ready to take action and implement those plans in the near future. This is especially true when the transition plan calls for the practice to be sold, a new owner to take over and the previous owner to retire.

At the point of sale, the new owner must rely heavily on the clout of the prior owner's introduction and endorsement because retention of the patient base (or the referral base in the case of an endodontist or oral surgeon) is extremely important as the seller attempts to fully transfer the goodwill to the buyer. While the seller's endorsement is crucial to the buyer's success, the subsequent endorsement of the team members, individually and collectively, is of equal importance and those authentic endorsements cannot be there for the new owner unless the team has been involved in the process and is excited about future prospects with the new owner.

I have been through a few more than 2,100 practice transitions with my clients. Very early in my career, at the request of my client, I participated in a transition process and sale of his dental practice where the team was not informed of what was happening until the entire sale had been completed. As a naïve young consultant, I will never forget sitting in a meeting at the end of the work day on a Thursday where the announcement was made to the team and the new owner was introduced. Many of the team members had been there more than 10 years. The looks of shock and betrayal on their faces was branded into my psyche at that moment and I have never participated in a transition since that time where the team was not fully informed early in the process.

When team members have not been informed and included, they know something is going on but are not sure how it will affect them. With a last minute revelation approach, they are left to consider the following questions:

1. *How will I be personally impacted by this transition?*
2. *Will I still be considered a valued and respected team member?*
3. *What does the new owner know about me? Will s/he appreciate me and understand my relationship with the patients?*
4. *How will the new owner treat our patients?*
5. *Will the new owner have the same value system and core philosophies as my current employer?*
6. *Will the quality of clinical services be offered at the same high standards that we are used to?*
7. *Will we continue to offer our patients the same behavioral experience they are accustomed to receiving?*
8. *Will there continue to be a strong emphasis on periodontal health for our patients?*
9. *Will the team members continue to be able to attend and participate in exceptional continuing education experiences at LVI?*
10. *Will my salary and benefits remain the same?*
11. *Will we produce at the same levels or better?*
12. *Why didn't my long-time employer trust me enough to let me know what was happening and ask me to maintain confi dentiality until the time came to announce the new plans to our patients and the community?*
13. *How will I respond when my patients ask me what I think about the new owner? What can I say if I don't know the person? They are really asking me if they will "be OK" being in the care of the dentist. How do I know?*
14. *Who convinced my employer to do it this way?*
15. *Should I start seeking other employment?*

***They are not required to follow a script, but simply to speak from their heart with conviction.***

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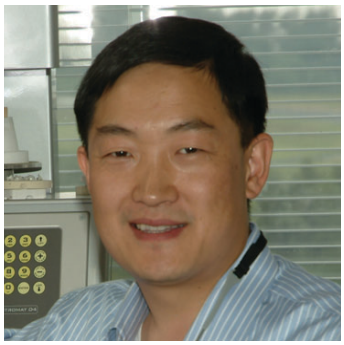

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You can imagine the chaos and turmoil this creates with the team – the very team members who are being called upon to support the transition plan and support the incoming dentist. The chances of success for a transition conducted in this manner are greatly reduced.

When team members have been empowered and fully engaged in the transition process, they are able to easily and naturally share anecdotes about the new dentist, both personally and professionally. They can relate their own experiences in getting to know that person and are in a strong position to ease the anxiety of any patient who asks them about the new person through their personal contact and the personal relationship they have begun to develop. They are not required to follow a script, but simply to speak from their heart with conviction.

During our onsite visit to the practice, we typically conduct a team meeting where the plans are disclosed to the team. They are then asked to describe the qualities they would like to see in a new dentist candidate. Patients relate to hygienists and assistants on a personal basis and often share feelings with them that they do not share with the owner dentist. The team members have insights that are unavailable to the dentist unless the team has been included in the planning process. I also include the team in the recruiting and screening of candidates. We ask for their help in structuring new schedules. We ask for their input on the mentoring time that will be required for the host dentist to spend with the new dentist.

*We want each team member to commit to the success of the transition in every way.*

We discuss creating more opportunities for new patient growth. We want each team member to commit to the success of the transition in every way.

We also advise the clients who are buying practices to gain access to interviewing the team members and learning more about the practice prior to making a final offer. If the seller is unwilling to grant this important access, we feel strongly that the prospective buyer should move on and look at other opportunities.

The outcome of this approach is greater patient retention, full transfer of the goodwill, post-transition, and, most importantly, greater team member retention as well. The concerns about losing your team members if they find out too early or about whether they will tell patients about your pending plans (especially if the plans include retirement) are unfounded provided you have based your relationship with your team members on trust and integrity.

*For over 30 years, Paul Sletten has worked with dentists and their spouses who are doing long-range planning for retirement, selling a practice, buying a practice, adding an associate or partner, growing by acquisition, doing crisis coverage planning, merging practices, or simply growing and refining their practices. He has been involved in over 2,100 dental practice transitions in 47 states in the U.S., four Provinces in Canada and two states in Australia. Paul helps his clients update their personal and practice plans, making sure they are inalignment.*

Paul Sletten is also a visiting faculity member at LVI Global

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**Michael Miyasaki DDS, LVIM**

*Dr. Michael Miyasaki is LVI's Vice President of International Operations. A 1987 graduate of USC School of Dentistry, he developed a highly successful reconstruction practice in Sacramento, CA. Following his passion to teach and mentor other dentists, he became associated with LVI in 1996 where he now works full time. Michael practices in the LVI faculty practice, lectures and publishes articles on the latest aesthetic, occlusion and materials available.*

***LVI Courses featuring Michael Miyasaki include:***

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**CORE V: Comprehensive Aesthetic Reconstruction**
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**CORE VII: Full Mouth Reconstruction**

PRODUCT REVIEWS

# Back to BASIC and Critical Function

Figure 1
Simple surgical kit

Figure 2
Bone tomography


Figure 3
The Omni Tight Strip

It was about six years ago that I attended an implant training seminar in Albuquerque, New Mexico, given by a company called BASIC. I was impressed by both the integrity of the BASIC team and their implantology concepts. The BASIC team has been cautiously building a company based on customer service and a great product. Do not let the name BASIC mislead you; although it is a great system for those basic cases it can do much more. BASIC stands for BioAnatomical Systems Implant Company and it quickly becomes apparent why an acronym was needed. The basic placement technique is simple, instead of long incisions and sutures, the implants are placed through areas where the tissue is punched, drills are used to prepare the bone, and the implant is placed. This means that in most cases there is no need for a second-stage surgery - good for the doctor and the patient.

This system was designed with the general dentist in mind. It is a reliable system, it is easy to learn, and the abutments and restorations are cemented. Figure 1 illustrates the simple surgical kit.

They use a system of model tomography (figure 2) where the clinician takes tissue thickness measurements with a periodontal probe at various locations of the implant site. A stone model is saw cut where the implant(s) will be placed and the tissue thickness is transferred onto the model to indicate the underlying osseous contours. From this "three-dimensional hard-tomographic model" the proper implant size, location and angulation can be determined and locked in by way of a surgical guide. The guide can be fabricated either by a lab, such as Aurum, or by the clinician quite easily.

The other thing that impressed me was the ease of organizing the implant parts. With most other systems you need to determine not only the width and length of the implant, but also everything you are going to attach to it. If you are placing a lot of implants or stocking parts this is not such a big deal, but if you are not doing a ton of implants this can become a problem. BASIC has all the parts in "strips" (figure 3). The following items are included in the Fixed Restorative Package: the implant, healing cap, emergence profiler, transfer component, drill guide, analog, adjustable post and core and waxing sleeve. You cut off from the strip and sterilize the implant and healing cap while all the other components are left individually sealed. This made my life so much easier. If you need to get fancy they do have about any abutment (including non-metal) you need, but for most basic implant placement and restoration you just work you way down the strip.

When it comes to cementation of the post core and final restoration most general dentists are familiar on how to cement things together and this is how the BASIC system is designed. For cementation the post and core is cemented to the implant body, it actually snaps into place creating a tight seal and shears off the excess cement, and the final restoration is cemented over the top of it, and you are done. In case you need to retrieve the abutment in most cases that can still be done.

**Figure 4**
**Illustration of typical procedure**

BASIC has been quietly developing a winning system, but as with all implant systems determining whether the patient should receive implants is a decision made after a thorough and complete clinical examination and psychologic determination have been made.

I feel implants should be offered to your patients missing a tooth or teeth, when a viable option along with bridges and partial dentures, and the BASIC system will fit right into your practice if you choose to place the implant(s). But, and this is a big BUT, it is well known that implants will fail if not properly loaded with occlusal forces. Lateral impact can pound the implant right out of the bone. This is one of the things that led me to want to learn more about occlusion.

**For more information about this system please visit www.basicimplants.com**

## Myotronics

Along my implant journey I learned I also had to undertake an occlusion journey to learn how to avoid those dreaded working interferences, balancing interferences and to determine the proper joint position. Much of my understanding about working with the patient's central nervous system, muscle engrams, joints, muscles and teeth is based on the premise that properly aligning the disc and condyle and allowing the muscles to relax will help create a stable and comfortable bite - a good thing for my patients' teeth. Keeping in line with the idea of comfortable muscles that compliment the teeth and joints, I've now adopted the use of TENS, Sonography, and Electromyographic equipment along with Computerized Mandibular Scanning. Okay, these are a bunch of big words, but hang in there as it will all make sense.

Let me just say that I cannot do this amazing equipment justice in a short review, but let me briefly explain how it works and what it could do for you. First there is a TENS (Transcutaneous Electrical Neural Stimulation) unit, figure 5, also called the J5 Myomonitor which is used to relax the muscles. Some will say the TENS tires or fatigues the muscles, but this is incorrect. With an ultra-low frequency TENS unit the muscles are restored to their correct physiologic state. How can you find the proper bite position if the muscles are fatigued or in spasm? So with the muscles relaxed (remember this is one of the goals) we are ready to locate the corresponding correct jaw position. There are two ways to find the correct bite. One only uses J5 relaxation and then the clinician allows the patient to close up to the proper bite position. This is somewhat subjective, but you can still get great results. The other method uses the K7 Evaluation System to objectively measure the jaw position. Although there is great success with both techniques it is powerful to show both to the dental teams as they are learning to take TENS bites and to your patients', the objective measurements that quantify their beginning condition as well as the final treatment position. From this before and after treatment data we are able to document overall improvement.


**Figure 5**
**Ultra-low frequency TENS unit**

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Figure 6
Electrosonography (ESG)

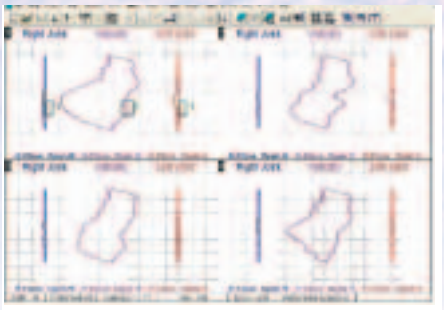

Figure 7
Sample ESG tracing

Figure 8
K7 EMG Electromyography (EMG)

Allow me to digress from the equipment for a moment and explain how this fits into the LVI treatment philosophy. Once the proper bite position is located the patient is typically put into an orthotic which some of you would call a splint. While in this orthotic the muscles and joints heal and the stomatognathic system is allowed to heal until a stable, comfortable bite position has been established. Then a final conservative treatment plan is developed. The end result that many of our doctors see is they have patients whose TMD issues and headaches improve with improved case predictability.

So how does this equipment work? There are three parts. The first is the K7 Electrosonography (ESG) pictured in figure 6. It consists of transducers that are placed over the joints, as you would put stereo head phones over your ears, and you have the patient open and close. The ESG unit quantifies the three properties of sound; frequency, duration and amplitude. This information is correlated to the vertical position of the mandible and aids in the assessment of the articular disk and joint. You and your patient can visually see the crepitus, clicks and pops (figure 7).

The second part is the K7 EMG Electromyograph (EMG) unit (figure 8 and 9). The EMG uses surface electrodes from eight different muscles as the jaw is in different positions. The positions most important for evaluation are the habitual bite position, rest position and any proposed corrective bite position. The patients find this very informative and are quickly able to understand the graphs indicating the correlation of the muscle strain and their symptoms. I've treated kids who see it as a video game and yet they understand how the readings tie into their symptoms.

The third part is the K7 Computerized Mandibular Scanning (CMS) unit (figure 10). The CMS unit consists of a headset that tracks the position of a magnet attached in the lower anterior mandible area. The clinician is able to derive information of mandibular travel while opening and closing in three dimensions and even the velocity of the travel (figure 11).

In my experience with this equipment I have learned that it has not only allowed me to visualize that which often Iassumed was occurring, but it helped my patients see what was contributing to their ailment. When the TENS, ESG, EMG and CMS units are used together it allows us to locate the correct mandibular position, confirm it, quantify it and then illustrate it to our patients.

For those of you worried about the joints do not fear as this important portion of the stomatognathic system has not been ignored. With the bite registration in hand the correct position can be verified with joint films. The details of this topic may be addressed in a future article.

**Doctors throughout the world have used this equipment with amazing success and if you are interested I encourage you to visit *www.myotronics.com.***

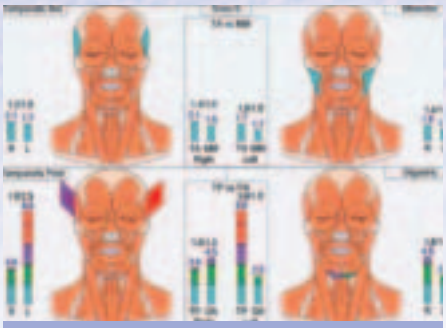

**Figure 9**
**Sample EMG tracing**

**Figure 10**
**Computerized Mandibular Scanning (CMS) unit**

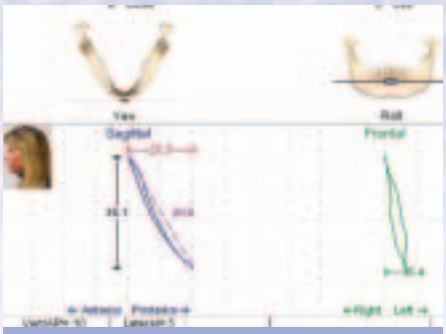

**Figure 11**
**Sample CMS tracing**

*In conclusion, BASIC Implants and Myotronics could bring about positive changes to your practice and new excitement to your career. I encourage you to explore both.*

*Take at look at these products.*
*After you do I'd love to hear your comments.*
*Your suggestions always are welcome –*
*please send them to me at:*
***mmiyasaki@lviglobal.com***

Dr. Arthur A. Tomaro

Tomaro's Clinical Tips Today:

# The Core Block-Out Technique

*At times, clinicians are presented with obstacles when attempting to achieve the high quality aesthetic results we strive to provide our patients. One such hurdle arises when the patient presents with a metal post and core (Figure 1), note soft tissue contour performed with diode laser. For years, the clinician had only a limited selection of materials they could use to fabricate a post and core, cast post and cores, or direct metal posts with a material such as amalgam for the core. Today, we have a wide variety of options and a technique to achieve the esthetic results that both the clinician and the patient are seeking.*

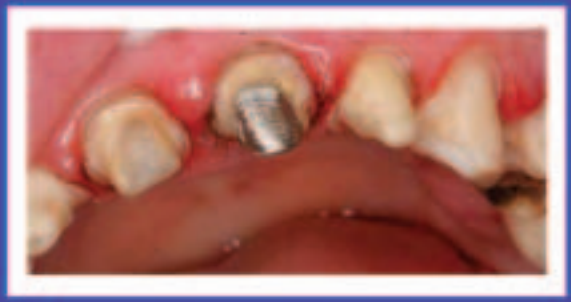

**Figure 1**

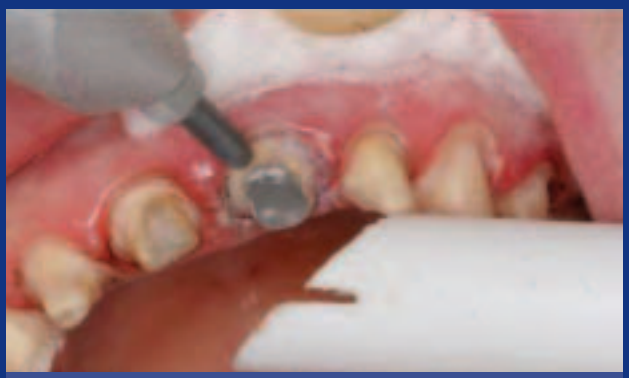

Figure 2


Figure 3

Figure 4

Figure 5

If the clinician is presented with a situation such as this, and is restoring the anterior teeth with one of the higher quality non-metal esthetic materials, such as a press ceramic (i.e. Empress), what are the necessary steps in order to achieve the proper esthetic look?

Provided you can be certain the root will not fracture, you will want to remove the metal post and core, and replace with one of the fiber posts. You can either do a direct placement or have the dental lab fabricate an indirect post. One of the indirect materials often used is a Vectris post with Belle Glass core, with the esthetic crown fabricated over the core.

However, there are many times that removing the post and core will cause the root to fracture, thus it cannot be removed. In these instances, an extraction would be necessary. The good news is that with the availability of high quality dental materials and skilled dental technicians, dentists can achieve the esthetic results that patients are seeking. This procedure is referred to as the "Core Block-Out Technique."

When the metal or dark core is not blocked out, the non-metal porcelain restoration shows through. The outlined steps below show how to block out the dark or metal core. The final preparation must give the dental technician 1-1.5mm on the buccal aspect so they can fabricate the porcelain to give us the final esthetic results. In most cases, the clinician will perform a "cut back" on all surfaces of the core and the buccal surface will be prepared back an extra .5 mm.-1mm. The remaining surfaces may not require as much cut back, as the buccal surface. This will allow us to "Block-Out" the restoration in most cases. After the buccal surface is prepared, the following steps are performed:

1. Core is microetched with Co Jet (Figure 2)
2. S.R. Link or Multilink metal primer is applied to the core and air-dried (Figure 3)
3. Adhesive is applied and cured (Figure 4)
4. Thin layer of flowable composite is applied and cured (Figure 5)
5. Opaque dentin shade composite is applied on the flowable and cured (Figure 6). The dentin shade composite should match the dentin shade of the adjacent teeth. This will allow the dental technician to use the same shade of porcelain ingot on the adjacent teeth.

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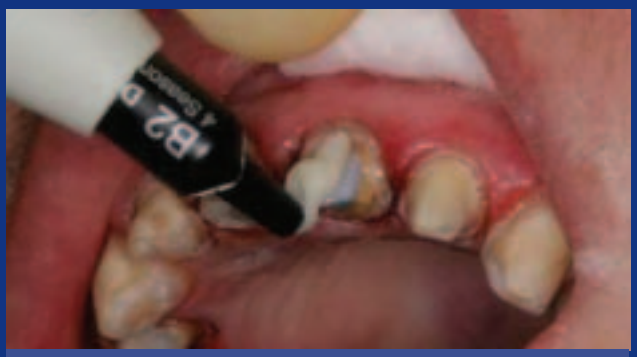

Figure 6

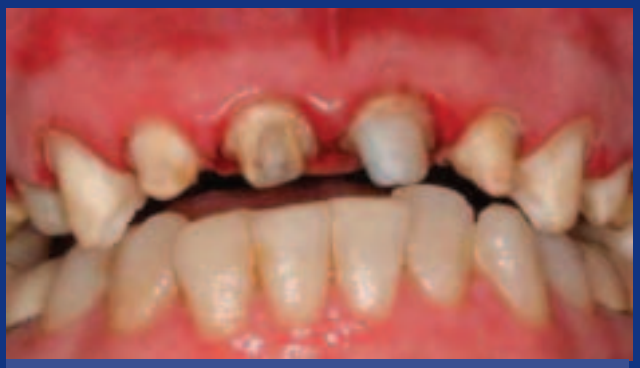

Figure 7

Figure 8

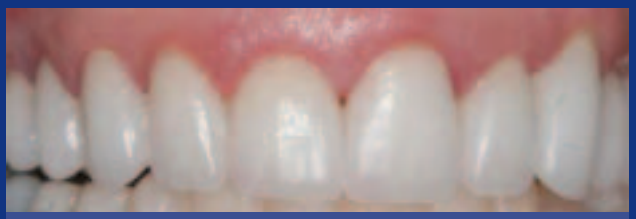

Figure 9

**LVI Courses featuring Dr. Tony Tomaro include:**

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*Advanced Adhesive Aesthetic Dentistry: CORE II*
*Advanced Functional Aesthetics: CORE III*
*Advanced Occlusal and Restorative Principles: CORE IV*
*Comprehensive Aesthetic Reconstruction: CORE V*
*Full Mouth Reconstruction: CORE VI*
*Rehabilitation of the Endentulous Patient*
*LVI Endo Root Camp*

6. With the proper composite thickness, an ideal prep is presented to the dental technician (Figure 7). The technician will now have what they need to give you the esthetic restoration you desire.

Figure 8 demonstrates the success of the "Block-Out Technique". The metal core has been masked out, as can be seen with the patient wearing temporaries. Prior to placing the temporaries, apply a layer of separating material, such as glycerin (i.e. DeOx), on the composite block-out. The temporary material will not adhere to composite when you remove the temporaries to place the final restoration. Upon removal of the temporary, try-in is completed, microetch the composite core with aluminum oxide, place an adhesive, and bond the final restoration with final luting cement. The final results meet the esthetic desire of both the patient and the clinician (Figure 9).

**M A T E R I A L S :**

**Co Jet: 3M ESPE**
**S.R. Link and Multilink: order direct from Ivoclar**
**DeOx; Ultradentigure 1**

DR. ARTHUR A. TOMARO is a 1980 graduate of the University of Michigan, School of Dentistry. His post graduate training includes I.V. sedation, F.A.C.E. Institute, Implantology, and Las Vegas Institute for Advanced Dental Studies. Dr. Tomaro is a published author and consults dental manufactures and dental laboratories. Dr. Tomaro is an international lecturer on adhesive dentistry, aesthetic dentistry, occlusion, and office management. He is a member of the American Dental Association, Michigan Dental Association, and International Association for Comprehensive Aesthetics. Dr. Tomaro is the Clinical Director of the Las Vegas Institute for Advanced Dental Studies.

With his passion and positive attitude in life and dentistry, Dr. Tomaro teaches other dentists how to have a GREAT day, every day. Doctors will learn how to have the quality of life they have always desired through the quality dental practice they have always dreamed of.

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Optima MX combines Swiss precision and quality in a compact "All in one" system.

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- High Speed Mode ideal for all restorative procedures.
- Low Speed Mode provides auto-reverse and torque control capabilities critical for rotary endodontic procedures.

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- Handpiece ratio.
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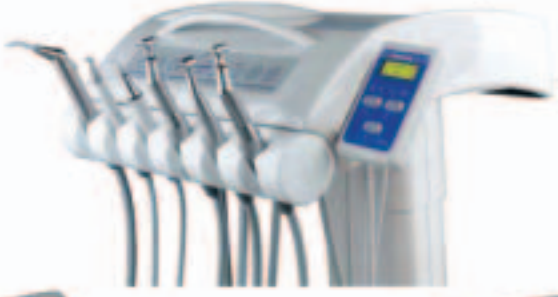

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Lori Kemmet, DDS, LVIM

# Controlling Overhead

*In a recent Full Mouth Reconstruction course at LVI, 26 dentists were polled with an interactive computerized response system. Because this system is confidential, the dentists were comfortable with giving a candid response. These dentist have been through the Occlusion/Restorative Curriculum at LVI and are highly trained aesthetic dentists. Most of these dentists have fee-for-service practices. Surprisingly 48% had overheads of 70% or higher (28% of the polled dentists were at 70% and 20% of the polled dentists were at 80%).* ***CONTROLLING OVERHEAD IS A PROBLEM!*** *At this point some of you are thinking that reading this article will surely put you to sleep. Well, I hope the statistics above just gave you a wake-up call. You need to learn how to control this aspect of your practice or it will control you.*

*When overhead is reasonable to low, the net income is usually good to high. Assuming collection stays the same, look at the impact overhead (OH) has on Net income!*

| Collection | OH | Net income |
|---|---|---|
| 2 million | 50% | 1.0 million |
| 2 million | 55% | $900,000 |
| 2 million | 60% | $800,000 |
| 2 million | 65% | $700,000 |
| 2 million | 70% | $600,000 |
| 2 million | 80% | $500,000 |
| 1.5 million | 50% | $750,000 |
| 1.5 million | 55% | $675,000 |
| 1.5 million | 60% | $600,000 |
| 1.5 million | 65% | $525,000 |
| 1.5 million | 70% | $450,000 |
| 1.5 million | 80% | $375,000 |
| 1 million | 50% | $500,000 |
| 1 million | 55% | $450,000 |
| 1 million | 60% | $400,000 |
| 1 million | 65% | $350,000 |
| 1 million | 70% | $300,000 |
| 1 million | 80% | $250,000 |
| $700,000 | 50% | $350,000 |
| $700,000 | 55% | $315,000 |
| $700,000 | 60% | $280,000 |
| $700,000 | 65% | $245,000 |
| $700,000 | 70% | $210,000 |
| $700,000 | 80% | $185,000 |

Let's look at the possibility of functioning at 55% overhead. I have functioned at a very healthy overhead because I analyze my overhead expense percentage in each category at the end of every month. Of course analyzing is not enough, you must also implement changes in spending to create a better bottom line. It is easy to do, and does not take up a lot of your time.

If a category expense percentage is high, look more closely to determine why. An expense could have been incorrectly coded. It is important to determine the source of the higher than normal overhead early so as to work toward correcting it and inevitably achieving a greater net income sooner rather than later.

***Your largest expense categories to monitor are:***

| Expense Category | Recommended OH % Range |
|---|---|
| Staff | 15-20% |
| Lab | 10-14% |
| Marketing | 10-12% |
| Supply | 3-6% |
| Rent | 3-5% |

Even 1% on a 1 million dollar collection is $10,000. That's a lot of money. I get concerned when my supply expense goes over 5% in any given month because I expect it to be 3.5%. When you look at the numbers, even 0.5 % increases can mean big dollars: Take a look at the examples below:

**2 million x 0.5% = $10,000**
**1 million x 0.5% =$5,000**

You could think of a lot of great things to do with an extra $5,000 couldn't you? So why do dentists so easily throw it away? Here's why. We are notoriously poor business people. We think that if we provide good dentistry and take care of our team the rest will fall into place. That could not be farther from the truth. We do understand the "business of dentistry" when we finish dental school. We come out of school and are concentrating so hard on all of our restorations, production, keeping our team and patients happy…etc. But, what do we really run? We each run a small business. Our dental practices are dental businesses.

The average dental practice functions at 68% OH. Look at the difference paying attention to overhead makes in your net income. You do not have to micromanage to achieve an overhead of 56% or lower.

*You could think of a lot of great things to do with an extra $5,000 couldn't you?*

| Collection | OH% | Net Income |
|---|---|---|
| 2 million | 68% | $640,000 |
| 2 million | 56% | $1,200,000 |
| 1.5 million | 68% | $480,000 |
| 1.5 million | 56% | $840,000 |
| 1.0 million | 68% | $320,000 |
| 1.0 million | 56% | $440,000 |
| $700,000 | 68% | $224,000 |
| $700,000 | 56% | $308,000 |

Let's do an exercise: take your current collection (you could use last year's collection or your projected collection for the current year) and multiply this figure by varying overhead percentages. Remember, to obtain your net income you multiply by the difference of 100%. For example, to equate the net income of a one million dollar practice with a 68% OH, you multiply by .32 (100 – 68 = 32). Figure yours out now.

**$1,000,000 x .32 = $320,000**

Were you surprised by your current overhead? How would you like to change your office financials for the better? If you start looking at your month end financial statements and at your overhead categories and implementing change you will see the financial rewards. I really don't understand why dentists would not do this.

In the meantime here is your homework: IDENTIFY YOUR EXPENSES. Write them down. In the next LVI Visions I will show you several ways to whittle down that overhead and INCREASE YOUR NET INCOME! Stay tuned…


***Lori Kemmet*** *graduated from The University of MN Dental School in 1989. She maintains a private practice with her husband Jeff in Boulder Colorado. Lori has been instructing at LVI since 1998 and attributes much of her success and passion for dentistry to her relationship with the dentists she has met at LVI and her Incredible Smiles team. She was the recipient of the LVIM award in 2004. Lori has a fee for service practice devoted to neuromuscular and cosmetic dentistry. She loves our profession and inspiring other dentist to feel great about their future.*

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# Who Are Serviceable Silver-Amalgam Restorations Serving?

## *An In-Vivo Descriptive Study*

*Shamshudin (Sam) Kherani, DDS, FAGD, LVIM*

## PURPOSE

To document certain aspects of the silver-amalgam restorations and the respective tooth tissues upon replacement of these restorations. MATERIALS AND METHODS: Five hundred and four serviceable silver-amalgam restorations on permanent teeth were replaced upon patient election. Prior to removal of the restorative, interproximal contacts were subjectively classified as tight or loose. Margins were also checked and subjectively classified as rough or catchy. Upon removal of the restorative, a caries-detecting dye was placed for 2 minutes and rinsed off. Any stained dentin was then excavated followed by another application of the dye. The second application was rinsed off and if the dentin stained again, it was excavated. If the dentin stained only after the first application, it was classified as Level 1 decay. If it stained both times, it was classified as Level 2 decay. If upon removal of the restorative, the decay was obvious (soft and/or discolored dentin), the decay was classified as Level 3. Using 2.5X magnification, cracks/fracture lines were documented. Fracture lines that started from one cavosurface margin but stopped abruptly were classified as Level 1. Those that went to another cavosurface margin were classified as Level 2. Where, we were able to break a piece of the tooth with moderate but firm pressure, it was classified as Level 3. A scientific analysis was not possible since we could not make such observations on virgin teeth. RESULTS: Fractures/Cracks in percentages: Level 1 - 32.7%, Level 2 - 5.4%, Level 3 – 2.2%; Decay in percentages: Level 1 – 35.7%, Level 2 – 12.1%, Level 3 – 16.7%; Contacts in percentages: Tight 19.1%, Loose 1.4%; Margins in percentages: Rough or catchy 15.5%.

## CLINICAL SIGNIFICANCE

Since humans are living longer, keeping their teeth longer and the teeth are firmer in their oral cavities, the efficacy of amalgam as a restorative material and its effect on the tooth tissue over the long term should be re-evaluated. This study shows that amalgams do change dimensionally leading to tight contacts and poor margins. It also shows that amalgam does not seal the tooth leading a recurrent caries incidence of 64.5%. Over 16% of the time, decay was found without caries-indicator solution. Finally, a 40.3% incidence of fractures/cracks is very high. Of immediate significance is that 2.2% of the time, the fracture was extensive enough for us to break a portion of the tooth. Further research is needed to explain these findings or else we will continue to relegate our patients to more and more endodontic treatments and full coverage crowns as we all live longer.

## INTRODUCTION

The first use of amalgam in teeth was recorded in the Chinese literature in the year 659AD. It was reported to have been used first in the western world in 1826 in France in the form of a silver-mercury paste. There were many within the profession that believed that the use of amalgam would cause mercury poisoning. According to present standards for amalgam, this early material probably had few qualities that were acceptable, but because of the convenience in manipulation, it was demonstrated that such a restorative material held possibilities if it were improved. Much improvement in the uniformity of various amalgam alloy products has resulted from the adoption of ADA Specification No. 1, bringing about more uniform amalgam restorations and better service to the patient.

Many references in the literature describe research on aspects of amalgam, most or all of which have appeared recently. These studies have served to demonstrate that not only are the alloy composition and the mechanism of amalgamation important but also that the manner of manipulation and the clinical conditions that prevail at the time of insertion are equally significant in the formation of a successful amalgam restoration.[1]

Dental amalgam has a characteristic quality of tending to creep or flow. Under continued mild application of force in compression, an amalgam will show a continued flow deformation even after the mass has completely set. There is lower creep tendency in high copper alloys. ANSI/ADA creep limits are at 3% or less. A typical biting force would be 750N (170 lbs) with a contact area of 2mm2. This leads to a compressive stress of 380 Mpa (55,000 psi).[2]

Clinical reports on amalgam performance are restricted to specific characteristics such as:

- Margin deterioration
- Surface roughening
- Surface discoloration

Most clinical reports in the literature concern marginal fracture. Although these short term phenomena give some indication as to the stability of dental amalgam restorations under oral conditions, it should be realized that they are not genuine parameters related to the ultimate lifetime of tooth tissue.[3]

## IN-VIVO STUDY

It has been the experience of this author over nearly 19 years of dental practice, that specific portions of tooth tissue fracture and are dislodged leading to a patient visit to a dentist. Usually, the patient indicates that the biting force had been minimal, indicating a long-standing fracture in the tooth tissue (enamel and/or dentin). Most often these teeth have had silver-amalgam restorations for a long period of time. Most, but not all of these amalgam restorations are wide bucco-lingually. The subsequent treatment involving a full crown sacrifices too much good tooth tissue. It has been postulated that these fractures are due to the "wedge-effect".[4,5] The main subject of this paper, which is the in-vivo analysis of the effects of silver-amalgam restorations, was the result of this empirical observation.

Most research articles that claim excellent performance by amalgam relate it to its ease of use, low cost and that it lasts in the mouth more than 20 years. There are no studies documenting the eventual outcome for the tooth.12 At the threshold of the new millennium, it is timely to finally orchestrate some research into the long-term structural effects of amalgam restorative material on the organic-inorganic tooth tissue. There is growing opinion that non-adhesive restorations lead to measurable cuspal strain which leads to the progression of medium to large amalgams to full coverage crowns via the wedge effect. This restorative practice gives no opportunity for "tooth banking".[6]

## PROCEDURE

The decision was made to document certain aspects of the amalgam restorations and the respective tooth tissues upon replacement of these restorations. All the restorations were deemed "serviceable" according to generally accepted principles. All patients that requested an alternative to the amalgam restoration gave us an opportunity to document the findings upon replacement. This descriptive study would then give us direction for further research into the effects of silver-amalgam on tooth tissue in the long-term.

The teeth involved did not present decay (clinical or radiographic), visible fractures (tooth or restoration) or obvious open margins. It was impossible to judge the age of the restoration and most of the time patients were unsure as well. Magnification of 2.5X (Designs for Vision d) was used throughout the study. Since this was an in-vivo study, we could not have a control group (similar analysis of teeth without restorations).

1. Before the treatment commenced, a qualitative analysis was made of the interproximal contacts formed by amalgam and the margins of the amalgam restoration. (Plate 1,4)
2. Teeth to be treated were anesthetized and a rubber dam placed and sealed.
3. The amalgam restoration was removed with a #330 bur. Care was taken not to disturb anything else within the cavity except the amalgam restoration.
4. If there was obvious caries in the tooth (leathery dentin – sometimes stained), the decay was classified as Level 3.
5. Caries indicator solution[7] was placed in the cavity and was washed away after 1 minute
6. Any stained dentin was excavated using a #3 round bur – slow speed.
7. Another application of caries indicator was placed and washed away after 1 min.
8. If the dentin was stained again, it was excavated and the decay was classified as Level 2.
9. If the dentin did not stain again, the decay was classified as Level 1. (Plate 5)
10. Subsequent to removal of all the caries, if present, the internal surfaces and line angles were checked for cracks and fractures.
11. A crack/fracture line starting from one cavo-surface margin to another cavo-surface margin was considered Level 2. (Illustration 2)
12. If the crack/fracture line was present but did not end at two cavo-surface margins, it was classified as Level 1. (Illustration 1)
13. If we were able to break a piece of the tooth with a mild, but firm and continuous force, this was classified as Level 3. (Plate 3) (Illustration 3)
14. Following this, a decision was made whether to restore the tooth with a direct bonded resin restorative or an indirect bonded restorative. (Plate 4)
15. The preparation was modified depending on the final restorative material used.
16. Extreme care was taken to follow all the principles that would lead to a strong, gap free restoration with no postoperative sensitivity. This was accomplished as follows:

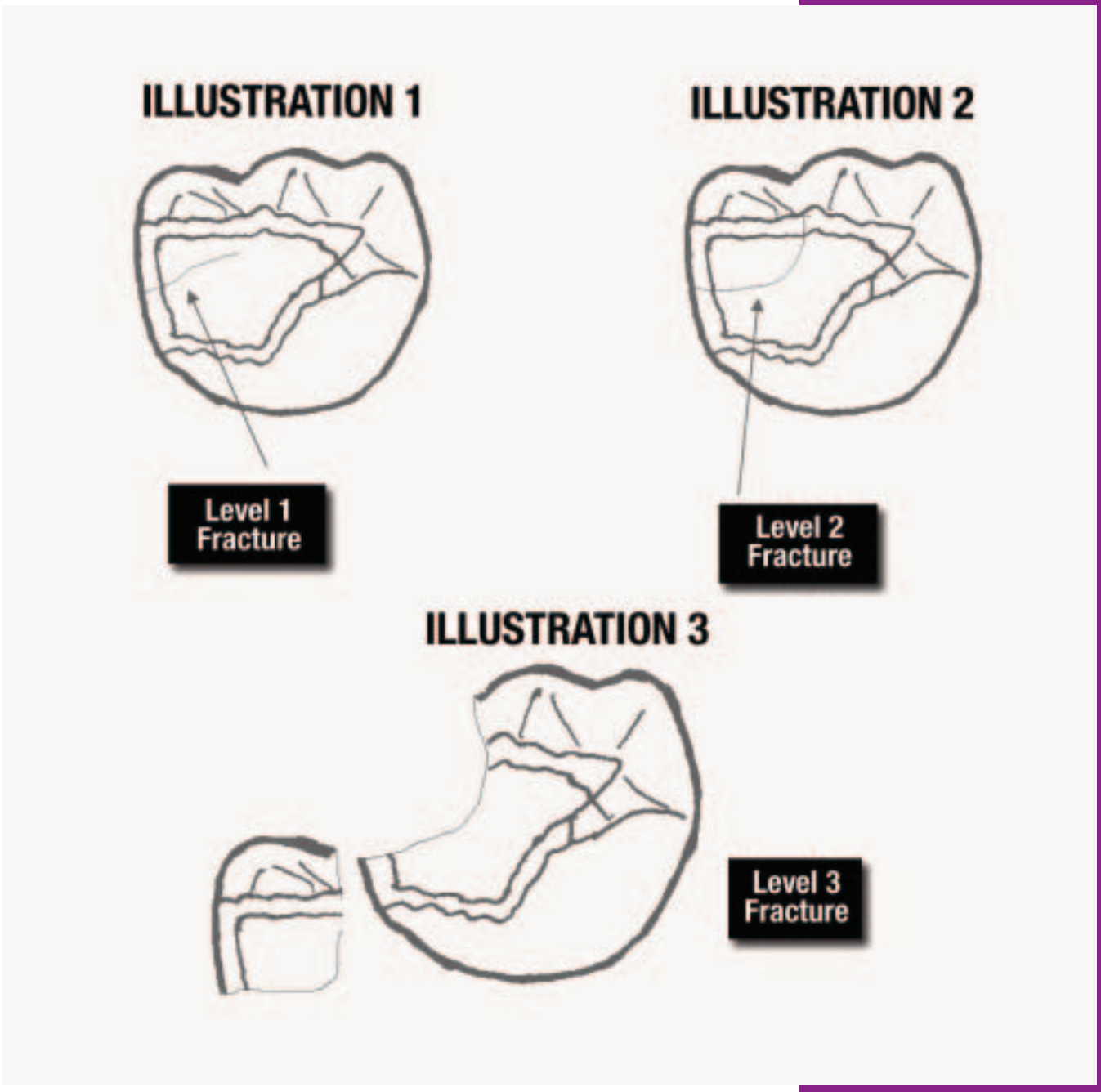
a. No base material is used between the restorative and tooth tissue.

b. “One Step” by Biscoa was used with appropriate moisture control so that we would obtain high shear bond strength even as early as 10 min. from application and a high shear bond strength at 24 hours.[8]

c. A chemical cure resin (BisFil 2 by Bisco) was used as the base layer to control the polymerization shrinkage stress.[9]

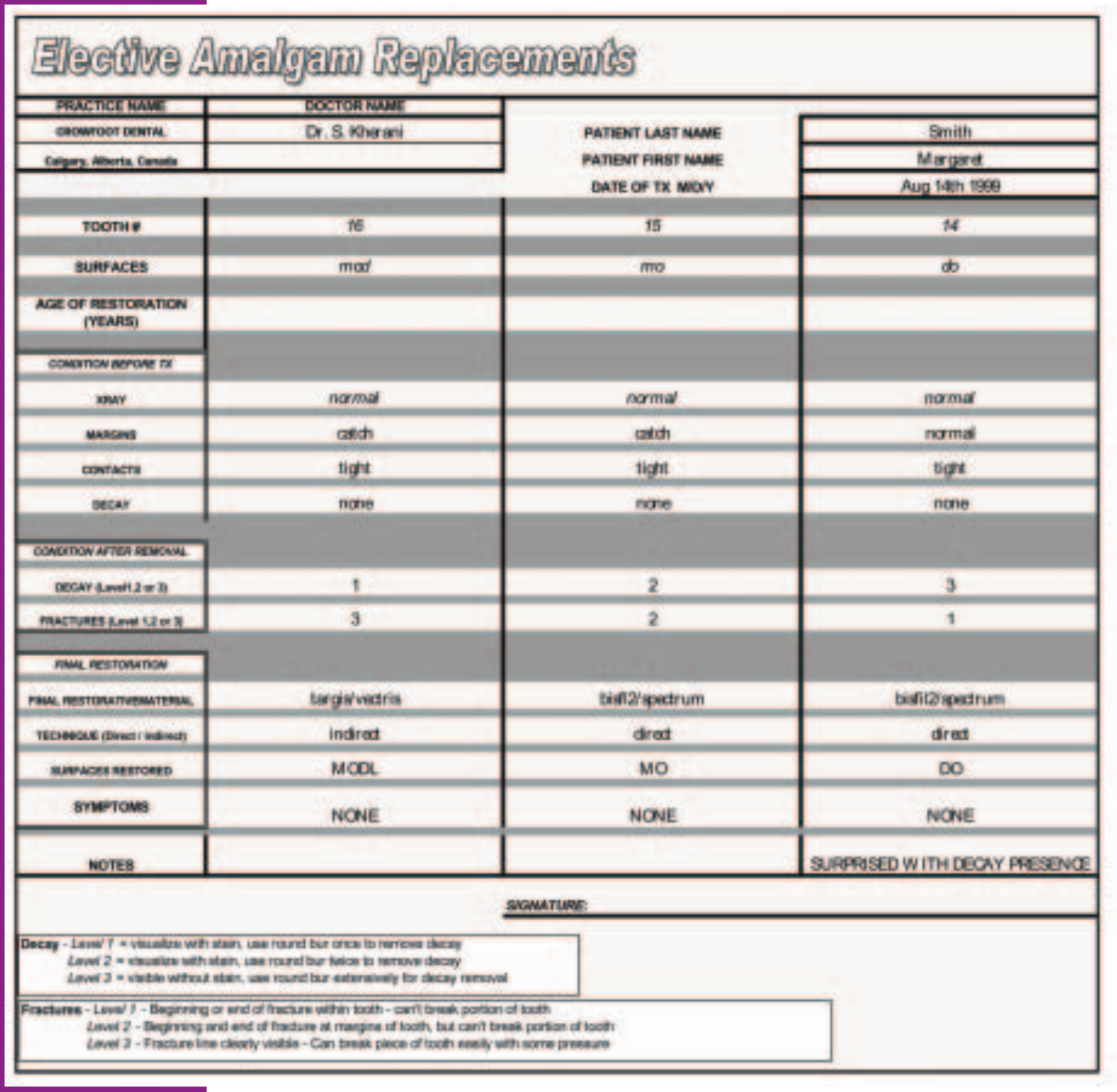
d. A light cure resin (Spectrum by Dentsplyb) was used using the Pulse Cure technique, again to control the polymerization shrinkage stress.[9]

e. The bite was adjusted after rubber dam removal and the restoration was sealed using Fortify by Bisco. It has been shown that using a sealer can increase wear resistance by sealing micro fractures created during curing and finishing.




f. The teeth restored with an indirect restoration received the same bonding technique followed by the placement of a Targis-Vectris (Ivoclarc ) onlay and Duolink (Bisco) luting cement.

17. Patients were checked again between 1 week and 3 weeks after the procedure.



# Elective Amalgam Replacements

| PRACTICE NAME | DOCTOR NAME | | |
|---|---|---|---|
| CROWFOOT DENTAL | Dr. S. Kherani | PATIENT LAST NAME | Smith |
| Calgary, Alberta, Canada | | PATIENT FIRST NAME | Margaret |
| | | DATE OF TX M/D/Y | Aug 14th 1999 |
| TOOTH # | 16 | 15 | 14 |
| SURFACES | mod | mo | db |
| AGE OF RESTORATION (YEARS) | | | |
| CONDITION BEFORE TX | | | |
| XRAY | normal | normal | normal |
| MARGINS | catch | catch | normal |
| CONTACTS | tight | tight | tight |
| DECAY | none | none | none |
| CONDITION AFTER REMOVAL | | | |
| DECAY (Level 1,2 or 3) | 1 | 2 | 3 |
| FRACTURES (Level 1,2 or 3) | 3 | 2 | 1 |
| FINAL RESTORATION | | | |
| FINAL RESTORATIVE MATERIAL | targis/vectris | biofit2/spectrum | biofit2/spectrum |
| TECHNIQUE (Direct / Indirect) | indirect | direct | direct |
| SURFACES RESTORED | MODL | MO | DO |
| SYMPTOMS | NONE | NONE | NONE |
| NOTES | | | SURPRISED WITH DECAY PRESENCE |

SIGNATURE:

**Decay** - *Level 1* = visualize with stain, use round bur once to remove decay
*Level 2* = visualize with stain, use round bur twice to remove decay
*Level 3* = visible without stain, use round bur extensively for decay removal

**Fractures** - *Level 1* - Beginning or end of fracture within tooth - can't break portion of tooth
*Level 2* - Beginning and end of fracture at margins of tooth, but can't break portion of tooth
*Level 3* - Fracture line clearly visible - Can break piece of tooth easily with some pressure

| **TOTAL Number of teeth** | **504** | **% of total** |
|---|---|---|
| **FRACTURES** | 203 | 40.28% |
| LEVEL1 | 165 | 32.74% |
| LEVEL2 | 27 | 5.36% |
| LEVEL3 | 11 | 2.18% |
| **DECAY** | 325 | 64.48% |
| LEVEL1 | 180 | 35.71% |
| LEVEL2 | 61 | 12.10% |
| LEVEL3 | 84 | 16.67% |
| **CONTACTS** | | |
| TIGHT | 96 | 19.05% |
| LOOSE | 7 | 1.39% |

| | | |
|---|---|---|
| **MARGINS CATCH** | 78 | 15.48% |
| **FINAL RESTORATION** | | |
| Direct | 441 | 87.50% |
| Indirect (Onlay/Inlay) | 63 | 12.50% |
| **Post-Op Sensitivity** | 5 | 1% |

**CONCLUSIONS**

**Margins & Contacts •** The evidence presented here indicates that amalgams do change dimensionally over the years leading to tight contacts and poor margins.

**Decay •** 64.5% is a very high incidence and cannot be tolerated. Caries indicator must be used every time during restorative procedures or else decay will be missed.[7] Over 16% of the time obvious decay was found without indicator solution.

**Fractures •** 40.3% was also a very high incidence. We need further research to find out why there are so many cracks and/or fracture lines and why pieces of tooth tissue dislodge. Possibilities include insufficient support from amalgam due to lack of adhesion, or that the amalgam promotes cracks/fractures by pushing on the tooth tissue over a protracted period of time or cuspal strain upon continuous occlusal loading. Of immediate significance was that 2.2% of the time, the fracture was extensive enough for us to break a portion of the tooth.

**Post-op sensitivity •** Suggests that when a clinician becomes proficient in the exacting procedures demanded by this treatment combined with a comprehensive knowledge of the adhesive resin systems, the outcome can be a predictable, successful restoration.

*Mark Twain once said,*

*"When the only tool you have is a hammer, everything looks like nails."*

Mark Twain once said, " When the only tool you have is a hammer, everything looks like nails." We now have an alternative treatment modality for restoring teeth. If this treatment alternative is performed meticulously, it can let us witness the possible shortcomings of amalgam. Every new advancement begins with an open mindset.

People are living longer today (Life expectancy in Canada – females 82, males 77). They are keeping their teeth longer and the remaining teeth are less mobile in the alveolar bone due to better periodontal health.10 Therefore, the need for a restorative material that preserves tooth material even after its service is over is imperative. These demographic and other changes reveal the shortcomings of amalgam.

Are we not articulating the shortcomings of amalgam restorations because we are not sure that the majority of the dentists are able to place these alternative restorative materials satisfactorily? Amalgam served us well when we had no other alternatives. It is time we call a spade a spade. Let us as a profession now get closer to re-creating natural tooth tissue with all its physical properties so that we may "bank' tooth material for the many more years we are all going to live, especially the newer generations.

***Let us think about the following:***

1. Strength derived from adhesion
2. Modulus of elasticity of resin material closer to that of tooth – Restoration plus tooth acts as a monobloc. (Table 1)
3. Fewer chances of fracture and therefore less loss of tooth tissue.
4. No mercury release
5. Beautiful aesthetics as the icing on the cake.

The million-dollar question is: How do we institutionalize the effective and efficient placement of bonded resin, bonded ceramic or bonded resin-ceramic restorations that will serve humanity well through their long lifetimes into the twenty first century?

**TABLE 1**

| Material | Modulus of Elasticity in GPa |
|---|---|
| BisGma filled resin | 16.6 [13] |
| Targis (Laboratory cured ceramic modified resin) | 12.3 [14] |
| Dentin | 18.3 [13] |
| LogiPost Quartz | 44.0 [15] |
| Amalgam | 62.0 [11] , 27.6 [18] |
| Titanium | 110 [16] |
| Stainless Steel | 179 [17] |

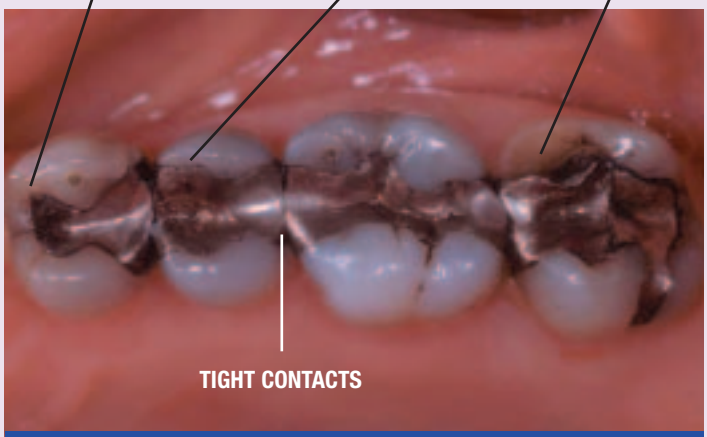



PLATE 1

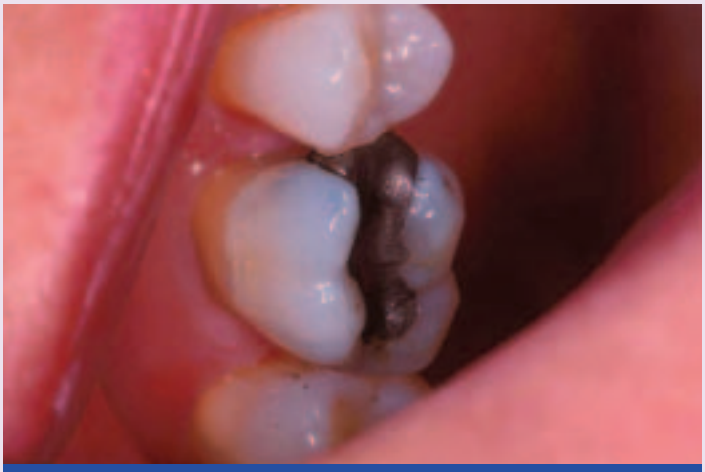


PLATE 2

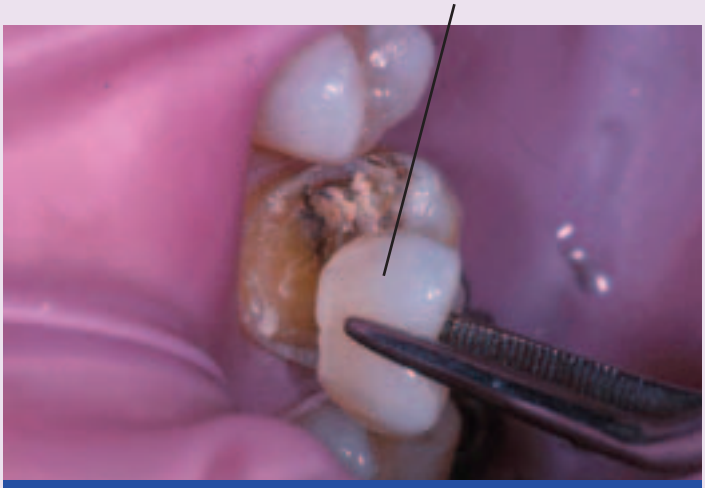



PLATE 3

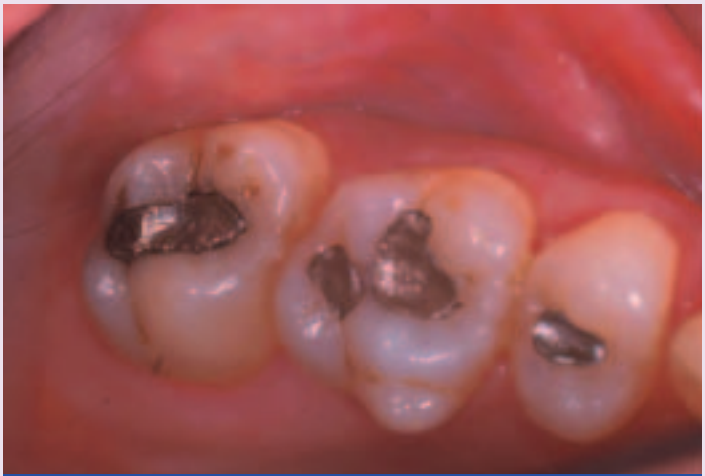


PLATE 4

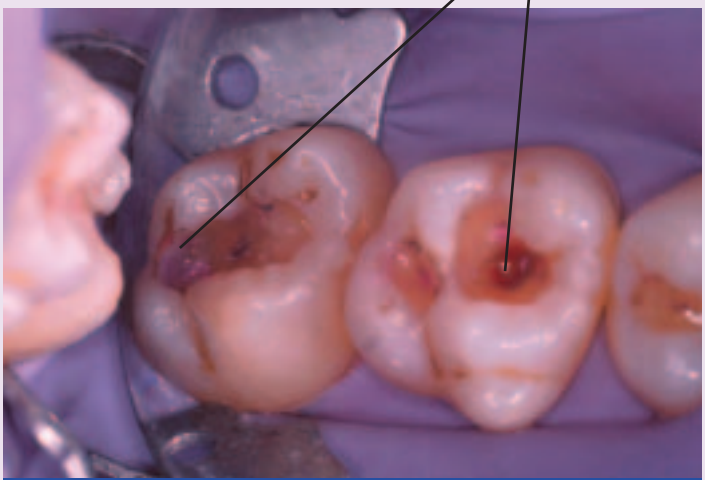



PLATE 5

*Shamshudin (Sam) Kherani*
*DDS, FAGD, LVIM*

*Dr. Sam Kherani is a senior clinical instructor at the Las Vegas Institute for Advanced Dental Studies and a member of the Board of Directors of the International Association of Comprehensive Aesthetics (IACA). As a life long student, he has been exposed to many different philosophies in dental occlusion throughout his 25 year dental career. He teaches dentists from all over the world in the latest treatments for cosmetic dentistry, full mouth reconstruction, and neuromuscular occlusion. He is one of seven dentist recipients of the coveted Mastership designation from the Las Vegas Institute.*

*Dr. Kherani is a Graduate of the University of Western Ontario, has been in general practice since 1981 with a special interest in adhesive dentistry. He emphasizes comprehensive restorative and aesthetic dentistry in his two highly successful group practices in Calgary, Canada where he has two junior partners and two associates.*

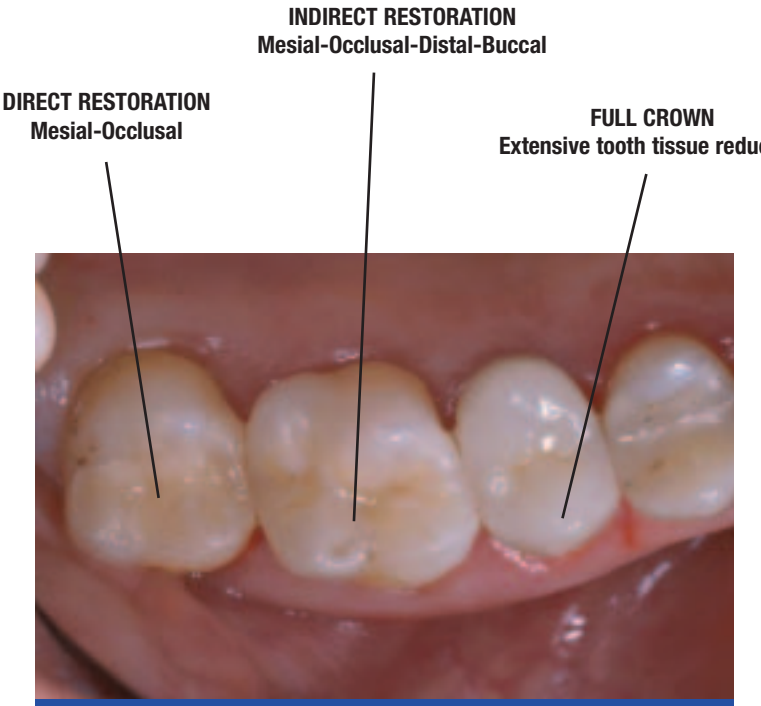



PLATE 6

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# THE WEATHERS' REPORT

## ARE IMPLANTS REPLACING ROOT CANALS?

**Arthur "Kit" Weathers, Jr. DDS**

*Recently, I heard a doctor say that he was no longer doing root canals because "placing implants is easier, faster and more profitable." He also claimed the success rate for implants is higher than endodontically treated teeth, especially when doing re-treatment cases. His comments started me wondering how many other doctors felt the same way, so I decided to do a little research.*

First, I went to Google and typed in "Root Canal Failure Rate" and got 971,000 responses and then another 772,000 responses for "Dental Implant Failure Rate." Obviously, I did not click on all 1,743,000 responses, but none of the sites I did review could agree on success rates, or even the definition of success.

It turns out there's a great deal of confusion concerning the indications for performing endodontics versus extracting teeth and placing implants. Unfortunately, the choices are not always black or white, so let's explore some of the criteria to consider when deciding whether a root canal or an implant is the best treatment for a given patient.

By the way, I'm always suspicious when I hear someone dogmatically recommend only one treatment approach for all cases. Be careful of the endodontist who recommends root canal therapy for every infected root (regardless of the prognosis or restorability of the remaining tooth structure), or the implantologist who recommends removing all non-vital teeth and replacing them with implants, or the oral surgeon whose motto is, "When in doubt, take it out."

So, how do we decide which course of treatment to recommend? It all begins by acquiring a working knowledge of the various treatment options. With that in mind, consider AbrahamMaslow's famous quote:

*"If the only tool you have is a hammer, you tend to see every problem as a nail."*

The first thing to consider is whether or not you want to include implants in your toolbox. Sadly, most general practitioners receive little or no dental school training in implantology, so we should begin by learning as much as we can about the latest advances in implants and how they compare to saving natural roots. Although implant education is steadily improving, there is still a long way to go. Because of the rapid advancements in the field of implantology, post-graduate continuing education is more important than ever before. The use of CT scanning technology such as the iCat coupled with diagnostic software such as coDiagnostiX© treatment planning software allows the dentist to utilize a fully guided surgical stent to make implant placement faster and more accurate than ever before.

Knowledge presents possibilities, whereas lack of knowledge prevents progress. The more you learn about any subject, the more likely you will use your increased knowledge to provide better treatment for your patients. If you choose not to treat a given case, you will at least be aware of the best referral options.

Next, you must educate your patients so they understand the available options. Most patients come to you with preconceived ideas concerning various treatment modalities, and their bias influences their choice of treatment. Some patients dread the thought of root canals; others fear "foreign body" implants, while still others hate all forms of dental treatment. Still others have no preconceived fears and look to you for advice on selecting the best course of treatment. Unfortunately, many dentists are just as biased as their patients, and may recommend certain options based entirely on emotion, lack of information or even profitability.

## Determining Success

Success rates for endodontic treatment and/or implant therapy are very difficult to measure. We have much more long-data for endo than we do for implants, but most sources agree that the long-term success rate for root canals and implants is roughly the same. Sources disagree on the percentages, however, and I have seen success rates listed anywhere from 60-99%. Both modalities are related to operator skill, quality and quantity of bone available at the site, as well as the patient's oral hygiene. Many additional factors come into play, but there is really no definitive data for successful endo or implants.

Causes of failure in endodontically treated teeth include missed canals, inadequately cleaned canals, poor obturation, improper occlusion, trauma, caries, periodontal problems, and inadequate final restorations. This may seem overly simplified, but I believe that most implant failures are directly related to improper placement, while most endodontic failures are related to the restoration.

I have been unable to find a standard definition of a failing implant, but even when an implant is not deemed a failure there can still be major complications. For example, the following conditions are not necessarily considered implant failures; pain, paraesthesia, hematoma, loose or fractured screws, as well as compromised function, esthetics, and phonetics. According to one source, a dental implant is considered to be a failure if it is lost, mobile or shows peri-implant bone loss of greater than 1 mm in the first year after implanting and greater than 0.2mm a year after that. Another source is quoted as saying that "any bone loss could be considered a failure."

In endodontics, it's almost impossible to determine success or failure based solely on radiographic findings, but the following list, first introduced by Bender and Seltzer, to me represents the most realistic criteria of success:

Bender and Seltzer's success factors are (1) absence of pain or swelling, (2) disappearance of fistula, (3) no loss of function, (4) no evidence of tissue destruction, and (5) radiographic evidence of an eliminated or arrested area of rarefaction after a post treatment interval of 6 months to 2 years.

*"Remember that you can usually place an implant if the root canal fails, but the reverse is not true."*

## Restorability

Restorability of the remaining natural root is a very important consideration when it comes to deciding between endo and implants. We must consider the crown/root ratio, root mobility, and the risk of recurrent periodontal infection. Loss of tooth structure from crown preparation, decay, large endo access, etc. can make teeth more prone to fracture. If the long-term prognosis for the tooth is poor, an implant may be the better choice.

## Financial Considerations

There is no point in doing a root canal or implant if the patient cannot or will not pay to have it restored. Implants cost significantly more than root canals and in most cases are not covered by the patient's dental insurance. On the other hand, a single tooth implant plus crown can cost about the same or even less than a three-unit bridge, and has the added advantage of not destroying adjacent tooth structure and being easier to floss and clean. The most appropriate treatment for a patient should be the most cost effective for the patient and offer the best long-term prognosis, but sometimes, it's impossible to meet both criteria.

## Occlusal Considerations

Placing an implant in a patient with compromised occlusion or creating occlusal stresses during implant restoration is the kiss of death. Because there is no periodontal ligament around an implant, you must be extra careful to avoid occlusal interferences. Ideally, the implant should not be fully loaded for at least six months. Nowhere is proper occlusal harmony more important than restoring an implant.

*Nowhere is proper occlusal harmony more important than restoring an implant.*

## Aesthetic Considerations

Sometimes it can be very difficult to obtain ideal aesthetics, especially with anterior implants, which are more prone to vertical bone loss than natural roots. One of the biggest appeals of implant dentistry is the promise that the aesthetic form and function of a single-unit implant is as close to that of a natural tooth as is possible, but because of bone contours in this most important aesthetic region, ideal implant placement in the pre-maxilla can be difficult.

Unfortunately, esthetic failures in implant dentistry are fairly common; much more so than mechanical failures; especially in the anterior region. A high smile line, poor gingival health, inadequate papillary morphology, and reduced bone height can very often lead to poor aesthetics and patient dissatisfaction. Without properly managing these factors, an ideal aesthetic result is impossible.

## Function

One important difference between a natural tooth and a well placed implant is the lack of a periodontal ligament (PDL) surrounding the implant. The absence of the PDL's cushioning effect and proprioceptive ability can compromise the survival of the implant. To address the loss of a natural cushion and the ability to sense overloading, many treatment protocols recommend restoring posterior single-unit implants slightly out of occlusion. Not all implantologists agree with this approach, however, and even though occlusal hyper function is often cited as a major cause of loss of implant integration, a total lack of function places extra stress on the remaining teeth and the opposing tooth may super-erupt causing increased occlusal disharmony.

A third deficiency caused by the absence of a PDL around an implant is its lack of regenerative potential, which limits the ability for repair disruptions of any of osseointegration. There is evidence that it is possible to achieve steady-state alveolar bone levels around an implant; however, unlike the PDL, implants do not play an active role in the dynamic maintenance of that bone. Thus, incremental losses in osseointegration throughout the life of an implant are cumulative and irreversible.

## Health of Patient

Patients in poor health, smokers, type II diabetics, cancer patients, HIV positive patients, hemophiliacs, etc. may lack the regenerative powers necessary to maintain the supporting structures for a healthy implant. A complete health history is a must prior to implant placement.

## Patient Expectations

A low dental I.Q. and/or unrealistic expectations concerning the reliability of implants (or root canals for that matter) may compromise the patient's ultimate success and satisfaction. It's very important to educate the patient in order to provide treatment that is consistent with the individual patient's finances, Dental I.Q. and hygiene. If the patient is unhappy, everyone is unhappy.

## Soft Tissue Management

Soft tissue management is a key aspect of esthetic management in implant dentistry. The placement of a foreign body in bone has implications for marginal bone height, which in turn has a direct effect on soft tissue contours. Even though implants don't decay, poor oral hygiene can cause peri-implant tissues to suffer infection similar to periodontal disease. Implant sites can be more difficult to keep clean and healthy than natural tooth sites making implants more susceptible to eventual loss than natural teeth, especially in patients already prone to periodontal disease.

## Endodontic Case Selection Criteria

According to the most recent American Association of Endodontists Guide to Clinical Endodontics, nonsurgical root canal re-treatment is indicated if any of the following clinical conditions exist:

- Continued periradicular pathosis.
- Radiographic evidence of a deficiency in the quality of the root canal obturations, when periradicular pathosis or symptoms continue after endodontic therapy.
- Persistent symptoms.
- Anticipated restorative or prosthetic procedures will compromise any preexisting root canal obturations.
- Anticipated restorative or prosthetic procedures on a tooth where the previous treatment quality is questionable.
- Salivary contamination when bacterial leakage into the root canal system is suspected.

*Modern dental implants represent an extraordinary service and provide options that were not available even a few years ago.*

When the diagnosis of endodontic failure has been made, the patient has three choices; conservative retreatment, apical surgery, or extraction. Therefore, it would seem that debridement of the entire canal system through proper cleaning and shaping would be of paramount importance in successful re-treatment

There are no panaceas in dentistry. Modern dental implants represent an extraordinary service and provide options that were not available even a few years ago. Most agree, however, that a healthy natural dentition is still the best implant. This is why re-treatment of an endodontically treated tooth is usually the best alternative, assuming the residual root structure is sound and restorable.

Implant dentistry holds a great deal of promise, but we are still learning about the long-term implications of many forms of implant treatment, including single-tooth replacements, and a healthy, natural root is still better than a titanium implant in most cases.

## Other Advances and Considerations

Dental implants have by no means constituted the only significant recent advance in dentistry. In endodontics, for example, rotary nickel titanium files, computerized apex locators, ultrasonic instruments, digital radiography and the use of microscopes are but a few of the developments that have enabled practitioners to perform endodontic treatment with greater precision and efficiency. Success in endodontic treatment is

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not solely dependent on instruments and technique. It is also affected by such factors as level of disease progression (i.e., presence of periapical pathosis), case selection, iatrogenic errors, and, most importantly, post-endodontic treatment control of coronal micro leakage.

Although implant-supported restorations have been effectively used for managing existing edentulous spaces, much of the evidence supporting the use of single-unit implants for replacing natural teeth is based on short-term data collected under optimal conditions that may not be replicable in most private practices. More importantly, the lack of standardized outcome evaluations makes it difficult to compare these reports.

An often overlooked source of implant failure is leakage of the interface between the implant and the attached abutment. This interface, also known as the micro-gap, traps bacteria, which results in significantly more crestal bone loss compared with one-piece, welded implants. The main problem with one-piece implants is they must be placed in the correct orientation and there is very little margin for error. Positioning software utilizing CT technology and a surgical guide stent has greatly simplified the necessary precise implant placement.

At a recent Implant Seminar at the Las Vegas Institute, Dr. Leo Malin compared bacterial bone loss caused by the micro-gap on a two-piece implant to bone loss commonly seen in cracked roots. Bacterial invasion in a vertically cracked root can cause the loss of a natural root in a relatively short time, while bacteria in an horizontal micro-gap will average 1 to 2 mm of crestal bone loss. Two millimeters of crestal bone loss might not cause the implant to be lost, but it certainly will affect the aesthetics of the case.

*Who knows what the future will bring, but you can bet it will be interesting and exciting.*

There is no doubt implant dentistry has great potential, and it is certain that the broad interest of numerous advocates will ensure the continuous advancement of ways in which implants can be used in dentistry. However, until there are sufficiently convincing data available to make truly informed choices about implant use, practitioners should be cautious of the wholesale adoption of this technology.

When considering restoration of a very carious, fractured or broken down tooth, the multiple requirements of endodontic treatment, periodontal crown lengthening and/or osseous re-contouring followed by post and core crown restoration can cost almost the same amount as an implant/crown. In some cases, (especially in the case of disassembly or surgical endodontic re-treatment) the predictability of retreatment may be less than optimal. It can be very frustrating for patients to undergo multiple treatment modalities only to lose the tooth due to factors beyond the control of the clinician. Good patient communication is essential, especially where retreatment is involved.

## Contraindications

There are no absolute contraindications to implant dentistry; however there are some systemic, behavioral and anatomic considerations that should be considered.

Uncontrolled type II diabetes causes delayed healing following any type of surgical procedure due to poor peripheral blood circulation. Anatomic limitations such as inadequate height or width of bone can be a contraindication. Often an ancillary procedure known as a block graft or sinus augmentation are needed to provide enough bone for successful implant placement.

Bisphosphonates (taken for osteoporosis and certain forms of breast cancer) put patients at a higher risk for developing osteonecrosis. Implants are contraindicated in patients who have taken this class of drug. The forces generated during bruxism are particularly detrimental to implants. Micro movements of the implant are associated with increased rates of failure.

The periodontal ligament around natural teeth allows slight movement and absorbs shock from vertical and horizontal forces. With the insertion of dental implants, this ligament is

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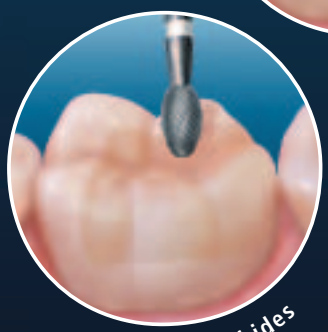

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lost and the replacement prosthesis is immovably anchored into the jaw bone. In some cases, wearing a custom made mouthguard at night may help reduce these stresses.

## The Bottom Line

So, the question of whether implants will replace root canals depends on many factors, and these criteria may change as technology evolves. At the present time, the best advice I can give is to become proficient in both endo and implant technology so you don't "see everything as a nail."

Even if you have no intention of ever placing an implant, it's the responsibility of every dentist to at least be aware of which options are available to your patients. You can start by learning more about bone grafting, "banking the bone" in extraction sites, and how to successfully place single tooth implants. Once you find out how easy and predictable placing implants can be you may decide to add this valuable service to your toolbox.

In any case, I doubt we will completely replace endodontic therapy with implants anytime soon, but what if we could use stem cells to grow new tooth buds to replace natural teeth, or perhaps we could create implant materials that are so much like natural dentin the body grows a new periodontal ligament? Who knows what the future will bring, but you can bet it will be interesting and exciting.

***Dr. Kit Weathers is featured in LVI's Endo Root Camp***

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*For more than thirty years, Dr. Arthur "Kit" Weathers has lectured worldwide on technologies, products and processes designed to simplify the practice of endodontics by the general dentist. The developer of a range of dental products, Dr. Weathers pioneered the EndoMagic! Nickel-titanium file system for general dentists seeking to improve both the quality of care and the economics of the endodontic services they offer. As the clinical technique developer of the X-tip Intraosseous Anesthesia System, he has assisted practitioners in need of patient-friendly anesthetic application methods.*

*Dr. Weathers is the author of numerous articles on innovations in endodontic treatment products and processes as well as intraosseous anesthesia delivery systems. His most recent four part series of articles entitled, "Endodontics, From Access to Success," appeared in Dentistry Today. Dr. Weathers has also introduced the well-reviewed C.E.Magic "edutainment" interactive learning system, entitled "Antibiotics in Dentistry" to the field of dental continuing education.*

*Dr. Weathers serves as the Director of Endodontics at the Las Vegas Institute for Advanced Dental Studies (LVI). Lecturing extensively to dental organizations, Dr. Weathers integrates an academically grounded approach to his subject with humor, magic, and mnemonics to enable his audience to recall his well-accepted techniques. As the founder of the Practical Endodontics "Root Camp," Dr. Weathers offers numerous two-day, hands-on training sessions at the Las Vegas Institute and his facility in Griffin, GA.*

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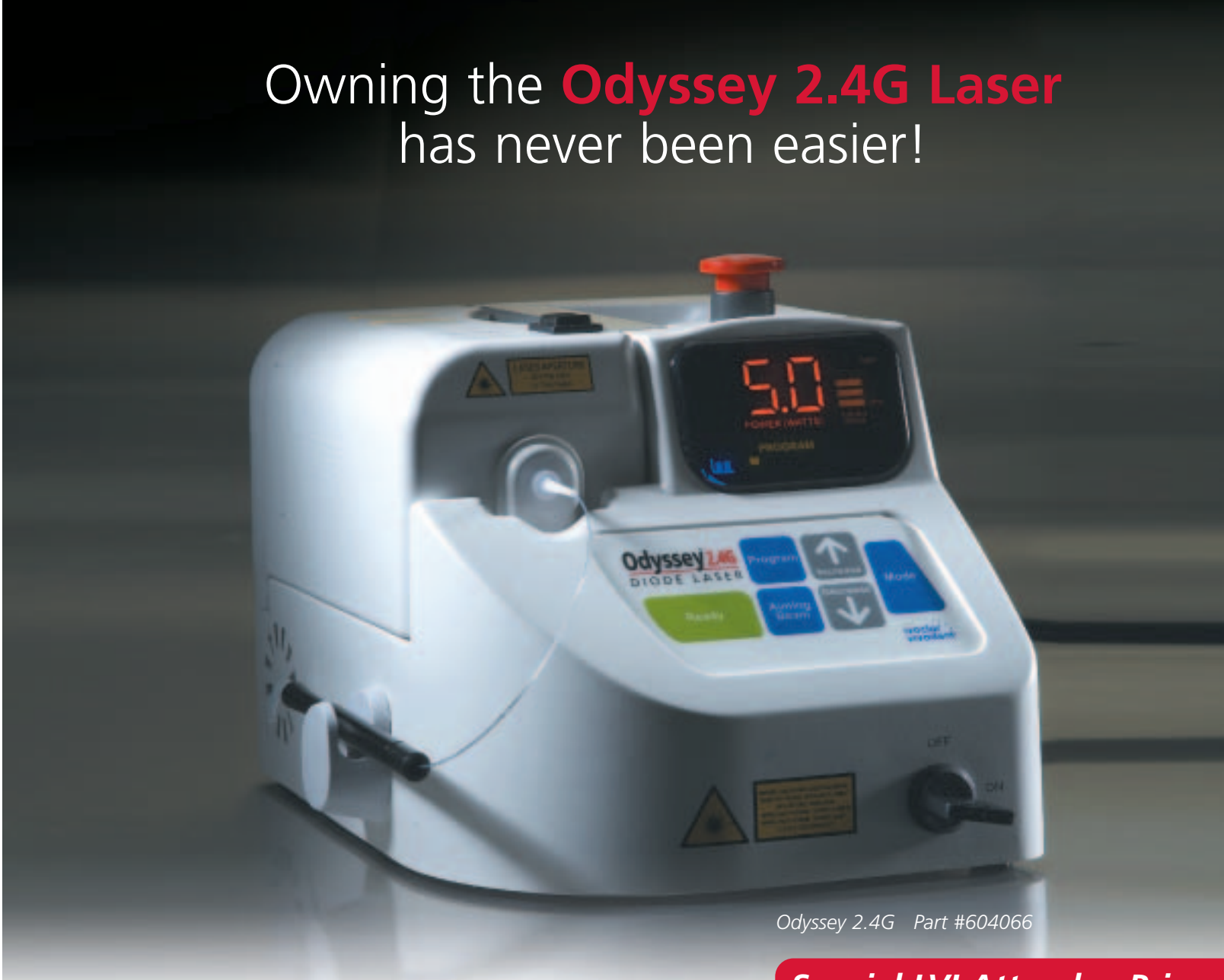


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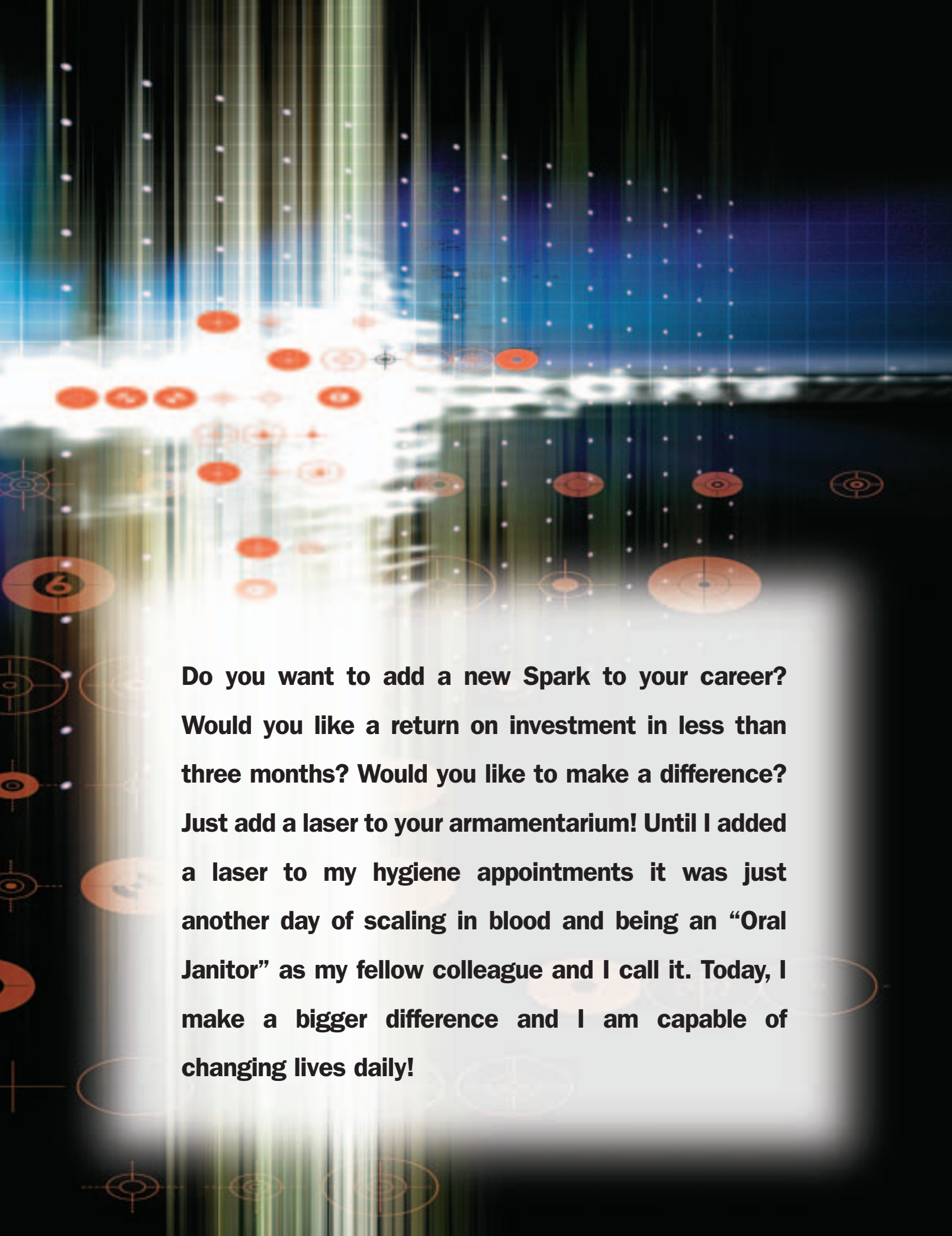
*Jeanne M. Godett, RDHEF*



**Do you want to add a new Spark to your career? Would you like a return on investment in less than three months? Would you like to make a difference? Just add a laser to your armamentarium! Until I added a laser to my hygiene appointments it was just another day of scaling in blood and being an "Oral Janitor" as my fellow colleague and I call it. Today, I make a bigger difference and I am capable of changing lives daily!**

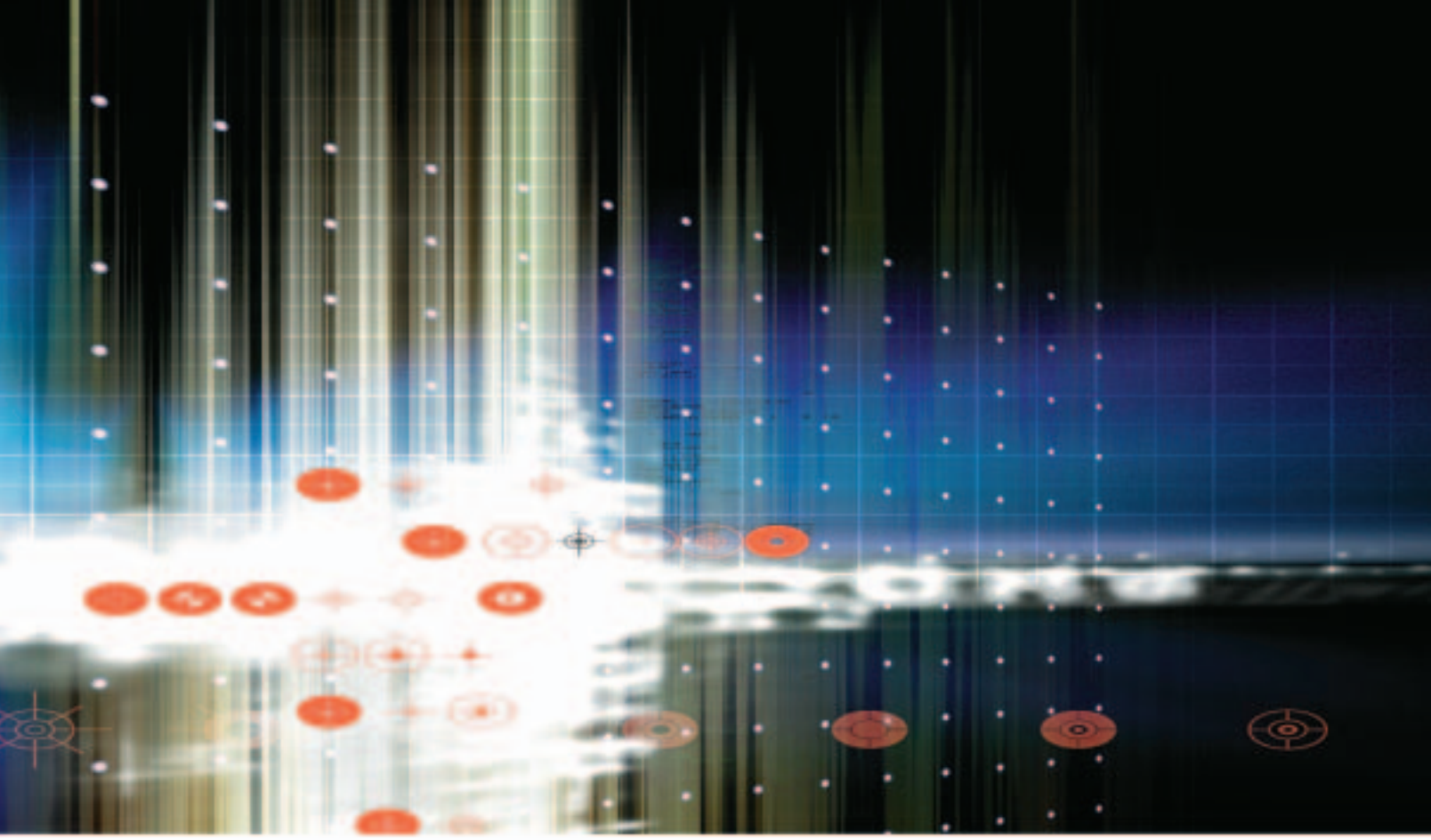

Now the Doctors are not the only ones with the new toy. I love my laser! The ability to offer my patients the best has had a direct impact on me and those I treat. Professionally, the use of the laser has allowed me to quickly and positively affect the health of my patients and provide comprehensive treatment plans. The latest research shows that with the proper use of a laser, the trained professional can achieve bacteria control in the sulcus for as many as 56 days--this is exciting news![1]

Hygienists, you now have the opportunity to integrate this state-of-the-art technology! You can become whole mouth healers. You can be trained by means of hands-on, over-the-shoulder, live-client clinical sessions, including the practical application of the skills necessary to confidently elicit your client's wants and desires. Discover how to incorporate these skills into a comprehensive treatment plan in the comfort of your own office.

What will the use of a laser do for you, your career, and your future? The use of the laser has given me the ability to stay on the cutting edge of technology, to offer my patients comprehensive ideal treatment and watch healthy tissues appear before my eyes!

When I originally started using the laser, I was afraid I was going to take off my client's papilla never to be seen again, something like a Darth Vader light wand! Although there is somewhat of a learning curve, the ease of use is effortlessly accomplished and the results amazing. Finally, I have a tool to possibly save lives, establish health, maintain perfect tissues for my Doctor's beautiful aesthetic restorations, without pain, and for the most part without anesthetic. And, if that wasn't enough, increase my daily production. Doctors love us for the return on investment, along with the comprehensive treatment plans we are able to establish.

The average hygienist, using the laser four hours a day, at an average fee of $60.00 per hour, increases the hygienist yearly production by nearly $100,000. Doctor, you could receive your return on investment



within three months, and that does not include the additional procedures you do in the restorative chair, not to mention never packing retraction cord again!

Six years ago, I personally added the laser to my armamentarium. My wonderful brother-in-law agreed to be my first guinea pig. Wow, what a brave sole, and believe it or not, he still talks to me. He presented with #15 partially impacted and occlusally angled against the distal of #14, 7mm pockets were present both, mesial lingual and mesial buccal, with heavy granulation tissue and heavy calculus.

With anesthetic (I want him to keep liking me) and a Tony Riso, P-50, right and left ultrasonic insert, I removed the sub and supra calculus. However, the tissues were severely infected and bleeding heavily. I then initiated the fiber of my diode laser and started lasing away. The granulation tissues went up in a plume and the bleeding became a healthy red. Upon completing the first laser treatment, the tissue became a healthy pink right before my eyes. I was sold! After repetitive periodontal therapy and repetitive laser therapy, disease remission was achieved! We have maintained his impacted #15 in health for the past 5 years. A result not possible following the old method of scaling and root planning alone!

***The use of the laser has given me the ability to stay on the cutting edge of technology, offer my patients comprehensive ideal treatment, and watch healthy tissue appear before my eyes!***

I encourage you, to get fired up, put a spark into your career, become cutting edge, break out of the old mold, offer your clients unsurpassed health, increase your production, and laser your way into the new frontier!

## Jeanne M. Godett, RDHEF

***Director of Laser Programs • LVI Global***

Jeanne Godett has been making a professional difference in people's lives for over 25 years. She has honed her skills as an RDA practicing in California and in an effort to continuously improve her professional skills; Jeanne attended the UCLA School of Dentistry increasing her professional proficiency with the attainment of an RDAEF certification. She then achieved her RDH Degree from San Joaquin Valley College in Visalia becoming the 17th RDHEF within the state. Jeanne focuses on providing the best care for her patients at the highest level of value added services for the practice.

Jeanne has used this insatiable desire for continuous improvement as she expanded into the area of consulting services. She has consulted with Hygienists throughout the United States and Canada providing instruction, guidance, and productivity guidelines related to hygiene and the use of lasers. Today as the Director of LVI Global's Laser program, Jeanne is able to share the knowledge she has gained over the years to many new and revitalized members of the dental profession. Her ability to communicate proficiently and professionally to all levels of the dental team has proven to be a valuable asset to the teaching of her students.

**References**

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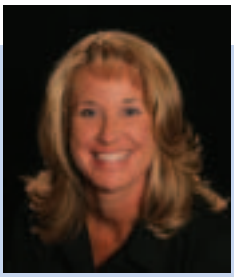

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William G. Dickerson, DDS, LVIM

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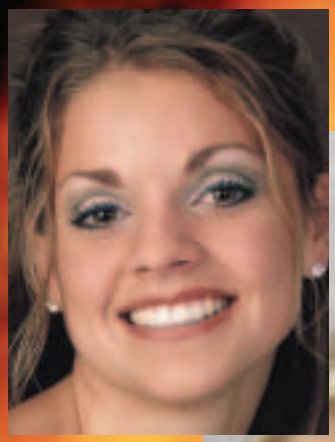

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