

Aesthetic Dentistry

TECHNOLOGY AND TRENDS IN PRACTICE DEVELOPMENT

ISSUE 2 • SUMMER 2018

No-Sweat Implants

How surgical guides make it EZ.

Form & Function

Use tissue contouring for optimal aesthetics.

HIPAA Compliance

What your team members should know.

COVER STORY: INNOVATIVE TEMPS IMPROVE THE CONFIDENCE OF A TEEN WITH ANODONTIA



Hope Gordon, Elite Full Arch Reconstruction by Dr. Jim Downs, 2013.

ELITE

CRAFTED WITHOUT COMPROMISE

Turn your waiting room into a powerful case presentation tool! Get your free copy of the Elite before-and-after DVD. This looping DVD features cases from *Aesthetic Dentistry* magazine and will show your patients the transformational possibilities of dentistry. Your patients will ask how they can get an Elite smile!

To receive your FREE Elite DVD, call 1-877-502-2443.

ARROWHEAD

www.ArrowheadDental.com



The Power of Introspection

Discovering Why We Do Things the Way We Do.

One of the biggest obstacles to becoming a truly productive dentist is failing to ever question the way you do your work. As a dentist, it's critical to analyze how and why you perform your dentistry in a certain way—from the way you run your offices and the techniques you use chairside, to how you present treatment to your patients.

Having an introspective mindset should be a daily habit. Make it a goal to choose at least one procedure from your day and ask yourself why you did it the way you did. It might seem like a simple exercise, but there is power in reflecting on that question and perhaps challenging how and why you do things.

An alternative—and more common—approach is to blindly keep repeating the same processes simply because that is how you learned to do it, or because of tradition, or because it is more comfortable for you to do it that way.

I attribute much of my success as a dentist to having an introspective mindset. Here are a few questions I asked myself about the way I approached dentistry that were helpful throughout my career.



1. "Why do I prep the way I do?" Early on, like most dentists, I prepped teeth the way that I learned in dental school. Taking an hour or more to prep a tooth seemed natural because that was considered fast in dental school. In a dental practice, however, if you take an hour to prep a single tooth, you are limited to a maximum of a eight units for an entire day. And that is easily an overstatement because no one works a full day without breaks.

Make it a goal to choose at least one procedure from your day and ask yourself why you did it the way you did.

After dental school, I knew I had to change my approach to prepping. I forced myself to examine where I was having difficulty, and what my obstacles were. I then set a goal that I would be able to effectively prep a single tooth—any tooth—in about five minutes.

Having a goal and understanding the obstacles allowed me to aggressively make improvements. In a remarkably short time I was able to reach that goal. My production increased because I could prep several teeth in the time it used to take to do one. In addition, my patients were happy because they didn't have to spend so much time in the chair.

No longer satisfied with the status quo, I then imagined myself doing more complicated types of cases with my enhanced prepping skills. Pretty soon I was able to complete a full arch reconstruction in an afternoon appointment, rather than in a series of separate visits. Everything changed simply by asking why I was prepping the way I was.

2. "Why am I doing the types of cases that I'm doing?" In the early days of my practice, I was busy doing "everyday dentistry," or what I came to realize was patchwork dentistry—attending only to the patient's immediate needs and complaints (i.e. cleanings, checkups, cavities, and relief from pain). Once I had the ability to prep more effectively I was able to look at the kinds of cases I was doing and decide if this was the kind of dentistry I wanted to keep doing.

When dentists are not critically looking at the types of cases they are doing on a daily basis, they can get lost in an unproductive schedule. *(continued on page 30)*

Over the Shoulder™: Full Arch Reconstruction

Only 30 percent of dentists offer this innovative procedure in their practices—it's time you became one of them.

14 CE Credit Hours | \$1,995

Sep. 14–15, 2018

Salt Lake City, UT

Nov. 9–10, 2018

Clinical Hands-On

Prep and seat one of your full arch patients while under the supervision of leading experts.

30 CE Credit Hours | \$4,995

Oct. 19–20, 2018

Denver, CO

Nov. 16–17, 2018

Everyday Occlusion

Help your patients improve their dental health by applying these specialized techniques.

14 CE Credit Hours | \$1,995

Nov. 2–3, 2018 (sold out)

Salt Lake City, UT

April 5–6, 2019

Total Team Training

Give your entire team the tools they need to help build a more profitable practice.

14 CE Credit Hours | \$550

Sep. 14–15, 2018

Bridgewater, NJ

Nov. 9–10, 2018

Kansas City, MO

Know Your Numbers

Master business principles that will give you the competitive edge in dentistry.

14 CE Credit Hours | \$2,695

Feb. 1–2, 2019

Salt Lake City, UT

Implant EZ I

Reduce the number of patients you refer out and keep valuable revenue in your practice.

14 CE Credit Hours | \$1,995

Mar. 8–9, 2019

Salt Lake City, UT

Implant EZ II

Greatly accelerate your level of confidence to implement implants as part of your practice.

14 CE Credit Hours | \$1,995

May 17–18, 2019

Boston, MA

Airway Management and Dentistry

Learn how to integrate sleep dentistry and the treatment of sleep-disordered breathing for your patients.

14 CE Credit Hours | \$1,995

Jan. 11–12, 2019

Salt Lake City, UT

Removables Simplified

Discover the approaches to removables that will enhance your treatment options.

14 CE Credit Hours | \$2,270

Jan. 25–26, 2019

Salt Lake City, UT

CBCT Directed Oral Surgery

Mastering implementation of CBCT scans.

14 CE Credit Hours | \$1,995

May 3–4, 2019

Salt Lake City, UT

TO REGISTER, CALL 1-877-502-2443

Full schedule at www.DrDickBarnesGroup.com

Aesthetic Dentistry

TECHNOLOGY AND TRENDS IN PRACTICE DEVELOPMENT & AESTHETICS • VOLUME 17 ISSUE 2 • SUMMER 2018

DR Dick
Barnes
GROUP

NEW SEMINAR!



Presented by
DR. BILL BLACK and DR. BRAD POTTER

CBCT Directed Oral Surgery

TOPICS INCLUDE:

- A–Z of 3D CBCT techniques (basics to diagnosis)
- Mastering interpretation of CBCT scans
- Planning guided implant cases
- Lab fabrication and process/team approach of surgical guides
- Troubleshooting for oral surgery
- Quick tips for oral surgery techniques from the experts

May 3–4, 2019

Salt Lake City, UT | 14 CE Credit Hours | \$1,995

TO REGISTER, CALL 1-877-502-2443

LIMITED SEATING AVAILABLE

www.DrDickBarnesGroup.com

CONTENTS

- 3 EDITOR'S COMMENTARY
The Power of Introspection
Dr. Dick Barnes, D.D.S.
- 6 COVER STORY
Temps to the Rescue: Innovative Temps Improve the Confidence of a Teen with Anodontia
Aesthetic Dentistry editors, with Holly and Taya Deitlaf
- 10 SECRETS OF SUCCESS
Surviving the Storms of Dentistry: Disaster-Proof Your Dental Practice
Duane P. Delaune, D.D.S.
- 14 A CLOSER LOOK
Framing the Picture: Tips for Tissue Contouring and More
Jim Downs, D.M.D.
- 20 STRATEGIES
Precision Placement: Guided Surgery for Single-Tooth Implants
Jason R. Lewis, D.D.S.
- 26 CASE ANALYSIS
Step-by-Step Restoration: A Segmented Approach to Full Arch Reconstruction
Thomas M. Major, D.M.D.
- 32 INDUSTRY INSIGHTS
Cybersecurity for Dental Practices: How to Protect Your Data from Ransomware
Matthew Cook
- 36 BEST PRACTICES
Getting Hip with HIPAA: Four Areas for Front Office Team Members to Know
Glennine Varga



Use code to subscribe or read this issue online. Go to AdentMag.com

Temps to the Rescue

Innovative Temps Improve the Confidence of a Teen with Anodontia.

When patients undergo cosmetic dentistry, it's often an emotional transformation. Even after just the temporaries are seated, patients usually see a dramatic change. The old dentistry is gone and is replaced with a stunning approximation of the final results. Many patients break down and tear up when they see their new smiles. Fifteen-year-old Taya Deitlaf's case was no exception. After Taya's temps were seated, there wasn't a dry eye in the operatory.

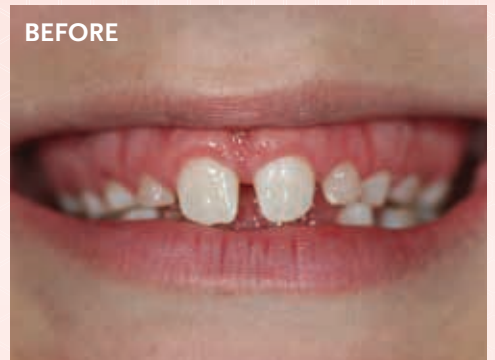
"The X-rays only showed two permanent teeth—her two front teeth. The rest of the X-ray [where the permanent teeth would normally appear] was dark. There was nothing there."

Taya's case, however, was anything but typical. When Taya was about three years old, her mom, Holly, took her to a dentist for her first exam. The results from the X-rays surprised everyone—even the dentist. Holly remembered, "The dentist was so shocked and he told me that this was one for the record books. He said that the X-rays only showed two permanent teeth—her two front teeth. The rest of the X-ray [where the permanent teeth would normally appear] was dark. There was nothing there."

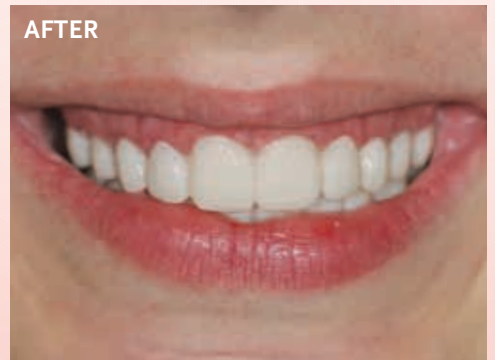
A RARE DISORDER

Taya was born with anodontia, which is a rare condition. Taya has only two permanent teeth (tooth numbers 8 and 9) that came in when

BEFORE



AFTER





she was in kindergarten. After learning about her daughter's condition, Holly remarked, "He [the dentist] was just so shocked and didn't have a solution. He told me, 'We're not quite sure what to do from here.'"

After a few years, Taya's family moved and she visited a different pediatric dentist. But that dentist hadn't encountered Taya's condition either, and he was also unsure how to help her. That dentist worked hard to protect Taya's primary teeth and told her to wait until she was older before doing anything in terms of a permanent solution.

Holly learned that once Taya was 18 or 19 years old and had stopped growing, she could get full mouth implants (also known as All-On-Four® implants). In the future, the implants would function as a permanent replacement for her missing teeth. In the meantime, 15-year-old Taya was suffering with primary teeth that were too small for her mouth. >



Aesthetic Dentistry

EDITORIAL DIRECTOR: **Dr. Dick Barnes, D.D.S.**

EXECUTIVE ADVISOR: **John Bauer, D.D.S.**

MANAGING EDITOR: **Michelle Billeter-Maxfield**

ACQUISITIONS EDITOR: **Matthew Cook**

ASSISTANT ACQUISITIONS EDITORS: **Debi Evans
& Peggy Nelson**

COPYWRITERS/EDITORS:

Diana M. Thompson

Gavin Glover

Michelle Billeter-Maxfield

LAYOUT & DESIGN: **mGraphicDesign**

CUSTOM PUBLISHING: **Arrowhead Dental Laboratory,
Salt Lake City, UT**

PRINTING: **Hudson Printing, Salt Lake City, UT**

THESE COMPANIES HELPED MAKE THIS ISSUE
POSSIBLE:

Arrowhead Dental Lab, Ivoclar Vivadent Co.

ADVERTISING SPONSORSHIP OPPORTUNITIES:

Send email to info@AdentMag.com

ISSN 2379-9188 (Print) ISSN 2379-9196 (Digital)

© 2018 Arrowhead Dental Laboratory. All rights reserved. No part of this publication may be reproduced in any form without written permission from the publisher. The views and opinions expressed in the articles in this publication are those of the author(s) and do not necessarily reflect the views or opinions of the editors or the publisher.

Warning: Reading about techniques, procedures, and materials in this publication does not necessarily qualify you to integrate the new techniques and/or procedures into your practice. Exercise caution as you are solely responsible for specific treatments and options for your patients.



(Above) Taya and Dr. Britton smile for the camera after seating her Snowcaps™ (long-term provisional temporaries).

Being self-conscious about her small primary teeth, Taya refused to smile with her teeth showing in photographs. She explained, "It was kind of embarrassing to smile. I didn't like the way my teeth looked. I probably would have smiled with my teeth if someone really pushed it, but given the choice, I wouldn't ever show my teeth."

Holly said, "To us, it wasn't that big of a deal. Of course, Taya is beautiful no matter what. But for Taya, it affected her confidence, and that was really concerning."

"Of course, Taya is beautiful no matter what. But for Taya, it affected her confidence, and that was really concerning."

To make matters worse, Taya would grind her teeth at night. Holly remembered, "She had to wear a bite guard [orthotic] at night because she was cracking her teeth from grinding so hard." Holly worried that Taya could lose some teeth despite the orthotic.

SEARCHING FOR ANSWERS

Both Holly and Taya hoped something could be done to help Taya's dental health concerns before she reached adulthood. Holly said, "Her situation is so extreme, no one had actually seen it. They may have read about it in school, but none of the dentists we visited with had actually seen a case like Taya's. We were frustrated that there wasn't a clear solution for Taya until she was much older."

A MAVERICK SOLUTION

Holly and Taya were in a state of limbo until Taya's aunt approached Peggy Nelson, the Director of Business Development at Arrowhead Dental Laboratory in Salt Lake City, UT, about the case. When Peggy learned about the situation, she immediately contacted Dr. Britton from Arlington, TX.

Dr. Britton is the instructor for the Removables Course and the Sleep Course for the Dr. Dick Barnes Group seminars. After hearing about Taya, Dr. Britton flew from Texas to Utah to meet her.

During their first visit, Dr. Britton thought about his own daughter and he empathized with the young patient. Taya explained that she was nervous at the prospect of entering high school with just her "baby" teeth. Dr. Britton said, "I'm not sure exactly what we're going to do, but we're going to come up with a solution so you don't have to go into high school with the same smile."

Dr. Britton reached out to Arrowhead's Technical Consultant LaMont Carpenter and Cosmetic Reconstruction Specialist Erik McKinnie—both of whom he had worked with for several years. He also contacted an oral surgeon for his suggestions and input, and took a cone beam X-ray. Dr. Britton was confident that with the help of these expert minds, they could come up with a viable option for Taya while she was still growing.

As they brainstormed about potential treatments, the team had to contend with Taya's sleep issues and bruxism. In addition, they needed to make something that would last until she was old enough to receive permanent implants. They needed to open

her bite and move the mandible forward. They also planned for minor tissue contouring to get more tooth structure for retention, and to make her smile more even throughout the buccal corridor.

Contouring the tissue was somewhat problematic because of the crown-to-root ratio with the primary teeth. Dr. Britton would have to laser back the tissue as much as possible without compromising the root. Ultimately, he wasn't able to do much crown lengthening on most of Taya's posterior teeth.

During their first visit, Dr. Britton thought about his own daughter and he empathized with the young patient.

The team decided to try a set of acrylic removable temporaries on Taya to make sure that she could tolerate the new vertical and mandible position, and to confirm that the temps were aesthetically pleasing. Taya wore the acrylic temps for approximately two weeks.

While wearing them, Taya had a bit of a lisp when speaking, so she practiced reading out loud and wore them as much as possible to familiarize herself with the function and feel of her new smile. The patient reported that the quality of her sleep improved. She said, "I immediately noticed that I didn't wake up as much in the middle of the night when I was wearing them."

After a series of additional appointments, Dr. Britton decided they would put Snowcaps™ (long-term provisional temporaries made from Radica®) on Taya's primary teeth. The restorations would completely cover the primary teeth and would be bonded on so they wouldn't come off. Taya could wear the Snowcaps™ for two to three years, at which time she would be old enough for full mouth implants.

Erik built Taya's restorations in segments—three for the upper arch and three for the lower arch. The segmented Snowcaps™ could be removed and replaced if Taya's dentition shifted or moved while she was still growing, or if there were any other issues (such as cracking or pain) with the temporary restorations.

"When I opened my eyes, it was crazy! I was super happy. It looked amazing. And everyone in the room was crying."

Seating the actual Snowcaps™ was a relatively quick procedure—it only took about two hours. Taya said, "I really didn't feel much of anything. My gums were a little sore the next day, but that was it!"

For the big reveal, Dr. Britton asked Taya to close her eyes. He then helped Taya walk towards the mirror in the operatory. Taya's mom and dad, Dr. Britton's team members, Peggy Nelson, and a few other Arrowhead employees were watching closely. Taya said, "When I opened my eyes, it was crazy! I was super happy. It looked amazing. (continued on page 43)



(Above) For years, Taya and her mom Holly searched for a dentist who could help with Taya's dental concerns.

Surviving the Storms of Dentistry

Disaster-Proof Your Dental Practice.

I have been practicing dentistry in New Orleans, LA, for nearly 30 years, and I still enjoy the work. Initially, I was drawn to dentistry because it is a profession that combines art and science. The goal is to help patients achieve and maintain their dental health, and in the process they look and feel better about themselves.

Throughout the years, the dental field has given me opportunities for personal growth and development. I have learned how to build relationships and have come to see the importance of connecting and interacting with patients in a positive way.

and patients look to the dentist to be a leader and to provide guidance and direction.

A CATASTROPHIC STORM

In August 2005, Hurricane Katrina struck the Gulf Coast of the United States, arriving as a category 3 storm with sustained winds exceeding 125 miles per hour. On August 29, Katrina hit New Orleans. When pressure on the city's levees caused them to fail, 80 percent of the city was flooded, and the flood waters lingered for weeks after the storm.

The mayor ordered a mandatory evacuation the day before the storm hit, and those of us who had access to a car left the city. Fortunately, my family and my dental team were able to retreat to safety.

At the time, I was practicing dentistry in a retail space. After the storm subsided, the building was deemed a total loss due to flooding and roof damage. Like many others, the building owner decided to collect on the insurance and sell the property, leaving me without a place to practice dentistry.

A number of dentists decided to leave the city of New Orleans because of devastation caused by Hurricane Katrina, and I considered leaving too. I knew that if I decided to stay, I

Like any other business, dentistry has its ups and downs. Uncontrollable external factors can cause upturns or downturns in a dental practice.

Like any other business, dentistry has its ups and downs. Uncontrollable external factors can cause upturns or downturns in a dental practice. I have learned to develop emotional intelligence with regards to those fluctuations, because team members



wanted to rebuild in a certain area of town, but that would take some time.

After three weeks of worrying about my options, I discovered that I had “practice interruption insurance,” an insurance rider that pays your salary, overhead, and team members’ salaries for up to a year (based on the previous year’s numbers).

When I found out about the insurance, it took a lot of stress off my shoulders. My first thought was, “I guess I can just sit around for a year and collect my salary. That’s not too bad!” It only took a couple of weeks for me to realize that I *needed* and *wanted* to go back to work.

Since I couldn’t reopen my practice in our previous location, I reviewed my options and ultimately decided to purchase an existing practice from a dentist who was leaving New Orleans. It gave me a place to start practicing immediately, and I also inherited new patients from that practice, which helped offset the ones I was losing because so many people were leaving the area. Although I didn’t know it at the time, by buying his dental practice, I ultimately ended up doubling my own.

The practice wasn’t exactly where I wanted to be in terms of location, but I stayed there for two and a half years while we procured a new location and built it out. Today, my new practice location is only about three miles away from the original one that was destroyed by Katrina.

STARTING OVER

After four and a half months, my practice was back in business on January 15, 2006. During the interim, I did some

work out of different dental offices—maintaining things and seeing emergency cases—but I wasn’t really doing significant dentistry. After I returned to an office regularly, things started moving forward.

One of the main motivations for me to get back to work was that I realized how much I value work, and I wanted to be productive again. I also soon realized that my patients would find another dentist if I didn’t make myself available.

For about five years after Katrina, I remember saying, “life will get back to normal, but it will never be the same.” In New Orleans, we always refer to things as pre- or post-Katrina. It was a defining moment for everyone. I would never want to go through it again, but with hindsight, I ended up better off for it.

I realized how much I value work, and I wanted to be productive again. I also soon realized that my patients would find another dentist if I didn’t make myself available.

Most dentists don’t have to go through such a dramatic upheaval. But everyone experiences highs and lows. Because my work was taken away from me, I learned to never take it for granted. I value going to work every day. I learned that my profession is a big part of who I am as a person. >



Katrina changed my perspective on work and dentistry in general. A lot of people work their whole careers looking forward to retirement. They take very little time off, and they think that retirement is the ultimate goal. But sometimes they retire and realize that there is an inherent value to work that they miss. I definitely look forward to retirement, but I try to enjoy the present and my ability to work and be productive every day.

STAY THE COURSE

Life can be unpredictable and it can take you by surprise. I've learned several key principles that have helped me survive the ups and downs of the past 30 years—and even thrive after something as dramatic as Katrina.

I've learned to not be too proud or braggadocious when times are good. I try to stay even-keeled throughout good times and bad. It's important for the leader of the team to have emotional intelligence and stay steady no matter what circumstances arise.

Debt and overhead can make life especially difficult during slow times. In my practice, when things have been slow, we have been much more cautious with our purchases. If I'm going to make a purchase or add a piece of equipment to the practice, I make sure it has a strong return on investment (ROI). A lot of technology available has no ROI but can add significantly to the debt and overhead of a practice. Such purchases can make the downturns very stressful.

Keep in mind that it's not always necessary or even prudent to be the first kid on the block with a new toy.

Don't allow yourself to get overwhelmed by debt and overhead. Keep in mind that it's not always necessary or even

prudent to be the first kid on the block with a new toy. I like to think of it in terms of *cutting-edge* technology and *bleeding-edge* technology.

Cutting-edge technology refers to the latest advancements that contribute to productivity and higher levels of care. Bleeding-edge technology includes advancements that come at an extremely high cost—technologies that are new and expensive, but quickly become irrelevant.

The challenge is to know what technology is worth investing in and what technology is not. We've learned to evaluate each purchase by calculating ROI.

One of my mentors is a great dentist who is known all over the country, and he's a low-tech guy. He provides high-quality dentistry without a lot of the available technologies. I think it's wise to set up a practice and

utilize low technology first and start adding technology after you know that it's something that's here to stay, and you can get a valuable return with it.

The bottom line is that you don't need to be a high-tech dentist to do high-quality aesthetic work. You only need good training and good lab support.

PREPARE TO PROSPER

Years ago, during a downturn in the economy, I heard the motto "Prepare to prosper." It struck me as something of value in all aspects of life. As a dentist, a number of actions can help you prepare to prosper.

***Cutting-edge* technology refers to the latest advancements that contribute to productivity and higher levels of care. *Bleeding-edge* technology includes advancements that come at an extremely high cost—technologies that are new and very expensive, but quickly become irrelevant.**

One thing is to start adding services for your patients. Identify and evaluate services that your practice has referred out in the past and determine whether or not you can implement them in your own practice.

For example, if you're not placing implants, consider getting trained to place implants. If you're not doing minor orthodontic

PREPARE TO PROSPER

1. Add services for your patients.
2. Cross-train your team members.
3. Work on re-care and chart audits on open treatments.
4. Take time to build relationships with patients.
5. Develop a network of support.

work, you can get trained in something like Invisalign®. If you have been referring out root canals, take some continuing education (CE) and start doing root canals.

Another step in preparing to prosper is evaluating your team. Set aside time for team training, role playing, and cross-training. Make sure that it stays focused on positive things and doesn't turn into a complaining session. If you have more team members than you need, learn to work with a smaller team.

As I've gotten older and more mature as a dentist, I have learned how important it is to have the right team in place. It all starts with the dentist as the leader. I tell my team that we're like a basketball team. We all have our assigned positions, but any one of us can take a rebound, and any one of us can take a shot. We need to be cross-trained and learn to do everything that we are legally able to do in a dental office. My team is very effective and we help each other out.

Dental teams that are not cross-trained tend to be inefficient. Having a team that is well trained and cross-trained is very important when it comes to surviving the downturns in a dental practice.

Another way to prepare for success during slower times is to work on re-care, and chart audits on open treatments. Also, take the opportunity to spend more time with patients—especially new patients. If you've got extra time, go ahead and spend it with the patients who need it. Build better relationships with your patients, and this in turn will help generate more referrals.

SHARE THE LOAD

It can be very stressful when work slows down, so develop a network of support. Actively seek to develop relationships with colleagues who are friends and who have similar practice styles.

If you don't have anyone to reach out to, get involved in dental organizations to help find such colleagues. I know one

particular colleague I can share anything with, and he can share anything with me. We talk candidly with each other, and that's a great support. We met 20 years ago at a dental seminar and became fast friends.

SURVIVING BURNOUT

Burnout—a condition of low energy, a lack of motivation, and low productivity—affects some dentists more than others, and can cause stress and low productivity. One way to combat burnout is through CE and constant learning. Many dentists who get burnt out are often stuck in a rut—just doing the same things over and over. When I reflect on my practice over the last 30 years, I can see that I was always rejuvenated when I learned something new.

Today, I am still learning. For example, our office recently started offering Invisalign®. Learning that skill has rejuvenated me. Years ago, when I learned how to do implants, that knowledge rejuvenated me. Learning new skills is a great way to stay motivated and avoid burnout.

As I've gotten older and more mature as a dentist, I have learned how important it is to have the right team in place. It all starts with the dentist as the leader.

The second way that I avoid burnout is to take time off. I now take eight weeks off a year (and am making more money than ever before). After taking time off, I'm always motivated to get back to the office and be productive. If you work continuously with no breaks, it's easy to fall into the burnout phase. To avoid that phase and stay motivated, I take a week off every six to eight weeks.

In my office, we schedule our calendar 12 to 18 months out. Every year, there are set weeks for *(continued on page 42)*



(Above) The team at Delaune Dental, including Dr. Delaune (center) at their Metairie, LA, practice.

Framing the Picture

Tips for Tissue Contouring and More.

Aesthetic dentistry combines the best of art and science to give patients beautiful and functional smiles. When working on large cases, dentists painstakingly detail the specifics of smile design to create the highest aesthetics. They combine this effort with materials and techniques that result in long-lasting smiles.

Elements of smile design include considerations of incisal length, tooth proportions, zenith points, axial inclinations, occlusion, and more. But to achieve the highest aesthetics, dentists should always include gingival considerations as well.

I like to think of smile design in terms of a beautifully framed piece of art. The dental restorations and smile are the artwork, and the gingival contouring provides the best-looking framework for the picture. Everyone notices the teeth—but they are framed by the gingival tissues. Even if a case involves making minor changes to the teeth, gingival contouring should always be considered.

To achieve the highest aesthetics, dentists should always include gingival considerations. I like to think of smile design in terms of a beautifully framed piece of art.

Many doctors aren't sure what to do when they encounter "gummy" smiles. But that's no excuse for ignoring this important area. When the porcelain work looks beautiful but the gingival heights are not the same, the result is teeth that look uneven.

Properly contouring the gingiva can take a case from "good" to "WOW!"

INSTRUMENTS FOR CONTOURING

A number of instruments and technologies are used for gingival contouring. Years ago, the standard instrument for contouring was simply a scalpel. Of course, that can result in bloody, painful treatment that takes a long time to heal. With a scalpel, dentists have to do contouring weeks in advance of the restoration process—often eight weeks of healing is required. Using a scalpel also means that the patient has to undergo multiple procedures, and the results are not predictable.

GINGIVAL CONTOURING INSTRUMENTS

1. Scalpel
2. Electrosurge
3. Diode Laser
4. Erbium-YAG Laser
5. CO2 Laser
(my laser of choice)

Another instrument that dentists used in the past for this purpose was an electrosurge. An electrosurge is an electrified wire that can cut through and cauterize tissue. Electrosurgery has been around a long time. A drawback of this method is that the thermal kill associated with the burn results in unpredictable tissue heights. It's also somewhat painful for patients and must be done weeks in advance.

More recently, advancements in technology have offered lasers for tissue contouring. These generally have a better wound response and are available with different wavelengths. Diode lasers were the first lasers introduced into the field and are probably the most common.

Diodes lasers are fairly compact instruments. They're solid-state units, and they require the dentist to touch the tissue with a fiber tip. They also have a thermal kill—their purpose is to seek out pigmentation and burn it. The energy from the diode is absorbed into pigmented structures, including blood cells.

The CO2 laser is a more expensive investment, but the return on investment (ROI) is great because there are so many applications for it.

Diode lasers should be used prior to the anterior teeth preparations that require additional gingival height changes. Remember, it takes anywhere from six to eight weeks for the gingival tissues to heal and mature before preparation of the teeth.

Another laser available for dentists is the Erbium-YAG laser. It's a multi-purpose laser unit with a lot of flexibility. Gingival tissue is 90 to 97 percent water content, so the Erbium-YAG laser uses a very specific wavelength. Dentists use a certain setting for hard tissue and a certain setting for soft tissue.

In inexperienced hands, the Erbium-YAG laser is not very clean-cutting on soft tissue. A patient may experience significant bleeding, and there may be irregular margins when it heals. When a dentist does gingival contouring, he or she needs great visualization, and bleeding can interfere with that.

CO2 LASERS

My laser of choice is the carbon dioxide laser (CO2 laser). Through a process known as ablation, this laser vaporizes tissue by reaching a temperature of about 100 degrees Celsius. For the patient, tissue healing is instantaneous because the gingival tissue,



*(Above)
Ashley Monteer had
a full arch reconstruction in 2013. Tissue
contouring was an important part of her smile design.*

blood vessels, nerve endings, and lymphatics are all sealed on contact. That means the tissue dries immediately, and dentists can ablate with precision. Wherever the dentist ablates, the tissue will stay and even regenerate.

This laser can be used on the same day of prepping for a major procedure. This is a big advantage for most patients because it means they only have to be anesthetized once. The CO2 laser is a more expensive investment, but the return on investment (ROI) is great because there are so many >

SMILE DESIGN

When designing a smile for cosmetic dentistry, dentists should focus on three main things:

1. **Symmetry from the midline left and right, with tissue heights**
2. **Gingival zeniths**
3. **Serration (the serrated gingival tissue in between the patient's teeth)**

applications for it. Once a doctor becomes proficient with this instrument, he or she will never give it up.

ADVANTAGES OF CO2 LASERS

One benefit of a CO2 laser is that it is less painful for patients. It also offers precision for symmetry. When patients smile, from the midline of their two front teeth going left and right, it should be symmetrical. With this laser, dentists can quickly achieve symmetry.

Remember the golden proportions, the height and width ratio of the front teeth, and the midline. Such things should dovetail nicely into the tissue design.

If a doctor knows where he or she is going to be prepping, and then preps the tooth and finishes the margin line where the tissue has been removed, the tissue will return about half a millimeter and cover the margin when it rehydrates.

Some doctors think they need to prep below the gingival

margin to hide the margin of the restoration, but that isn't the case with this laser.

Using a CO2 laser also means that dentists don't have to put packing cord around every tooth, which can hurt or injure the gingival attachment. With a CO2 laser, dentists can skip the packing cord step. Plus, there is no need for reordering tips, fiber wands, or additional supplies for this laser like there is with the diode and Erbium-YAG lasers. Dentists and patients alike get beautiful results.

SMILE DESIGN

When designing a smile, dentists should focus on three main areas. One is symmetry from the midline left and right, with tissue heights. The second is the gingival zeniths. The last is the serration, or the serrated gingival tissue in between the patient's teeth. Some people have bigger triangular serrations than others, so dentists need to understand how to slenderize them, and how to create more pleasing emergence profiles.

A typical periodontal sulcus around a tooth is anywhere from one to three millimeters. A general rule of thumb is that dentists can remove tissue up to one millimeter shy of the gingival attachment, also known as the junctional epithelium. A patient might have as much as four millimeters of gingival tissue in some areas.

One of my patients, Ashley Monteer (see photos, below), had hypertrophy, meaning she had an extra growth of gingival tissue. In some places, there were three millimeters of tissue, other areas had four millimeters, and a couple of areas had two millimeters. That's why dentists should understand and measure a patient's periodontal pockets. For Ashley, we had to do soft tissue removal. Crown lengthening, which requires bone recontouring, was not needed.

Some doctors would look at a case like Ashley's and send her to a periodontist. A periodontist would have to perform a crown-lengthening procedure. With this process, the potential for black triangles at the gingival level between the teeth is increased. Black triangles are not aesthetically pleasing and are very hard for the dentist to fix.

When looking at golden proportions for aesthetics, remember that aesthetics are not just about adding to the length of the tooth. Often, the process includes a combination of lifting the gingival tissue and adding length to the end of the tooth.





(Above) Retracted view of Ashley biting, before tissue contouring.



(Above) Retracted view of Ashley biting, after tissue contouring.

Some patients have medical conditions that promote gingival growth, in which case gingival contouring can reduce the overgrowth and provide a nice, aesthetic look for the patient.

Good photography is important because it allows the doctor to look at the case when the patient is not there. By looking closely at photos, full mouth models, and facial types, dentists can determine what they need to do to start developing the smile.

Always look at the whole mouth, not just at the teeth. Remember the golden proportions, the height and width ratio of the front teeth, and the midline. Such things should dovetail nicely into the tissue design.

If a patient has recession, discuss it with him or her prior to beginning a cosmetic case. In our practice, we use the Pinhole Surgical Technique™. With this procedure, the gingival tissue is released from above the teeth that have the recession, and is moved down over the recessed area to re-adhere. With this procedure, the patient does not need flap or gingival grafting, and he or she feels less post-op pain.

The only disadvantage to this method is the relatively long amount of healing time. The gingival tissue needs to re-establish itself and mature, so it can take as long as six months before the tissue is ready for the restorative phase of treatment.

With Ashley, five millimeters of her gingival tissue were initially showing. We got it down to three millimeters. Some doctors adhere to a standard of having only two millimeters of gingival tissue showing, but it's really up to the patient. Ashley's smile shows some gingival tissue, but it looks fine because everything looks proportional.

TECHNIQUES FOR CO2 LASERS

When a dentist buys a laser, some dental boards require him or her to take a laser proficiency course. In that course, dentists practice using the laser on different substrates. The dentist needs to know what applications to use it on. It's a must.

A great way to practice using a CO2 laser is to use it on something like a piece of raw chicken. Dentists can also learn how to hold and position the laser by using it on a tomato or a hot dog. With practice, dentists get a sense of how the laser cuts.

I recommend using a two-handed technique, which gives dentists much more precision. When ablating tissue, dentists should slow down and use the proper wattage for that particular

procedure. The tissue will ablate better and it actually will take less time than rushing through it.

I sometimes notice doctors using a laser like a windshield wiper, going back and forth. That usually doesn't work because the laser has to stay on the tissue long enough to ablate.

Another pitfall to avoid is trying to create a serrated papilla point between the teeth. Dentists should never take the laser from the contact point down through the fine point of the papilla apically. Sweep from the midline of the tooth to the contact point on both sides. With this technique, you will avoid the formation of black triangles.

With a CO2 laser, even if the decay goes below the gingival line, it is possible to save a patient's tooth. Patients appreciate it when a dentist can do this.

Tissue contouring is great when doing a bridge if the dentist knows how to create ovate pontics. The underbelly of the pontic has to rest on gingival tissue so dentists can create an ovate that looks like a tooth growing right out of the gingiva instead of a ridge lap appearance. CO2 lasers are a great way to create that ovate, which is egg-shaped or oval in appearance.

OTHER USES FOR CO2 LASERS

CO2 lasers have uses beyond tissue contouring. They can be used for many dental applications in everyday dentistry, particularly in hygiene and on the periodontal side of dentistry. CO2 lasers are exceptional in dealing with problems related to periodontal disease.

On the restorative side, dentists can utilize this laser for troughing below the gingival margin to expose decay, and for extending tooth structure for a final restoration. This can be useful in situations where a dentist takes out a big filling on a back molar, and discovers that the decay has gone below the level of the gingiva. At that point, it will usually start bleeding and can become an issue for the final restoration.

Instead of packing cord around the tooth to try to keep the gingival tissue off the margin of the prepared tooth, the dentist >

can use the CO2 laser to remove the inflamed tissue and dry it up. Dentists don't have to waste time making a second impression because it started bleeding when they pulled that cord out and they couldn't see the margin—which is likely the number one issue for margin identification at the dental lab.

Today, the art of saving teeth is becoming somewhat rare because doctors often just take out a decayed tooth and place an implant. With a CO2 laser, even if the decay goes below the gingival line, it is possible to save a patient's tooth. Patients appreciate it when a dentist can do this.

In areas where the gingival tissue has been damaged, dentists can simply remove the tissue and allow healing to happen rapidly, all with minimal downtime and minimal post-op trauma or discomfort. That's a win-win for patients and dentists!

Another great use for a CO2 laser is in performing frenectomies. Frenectomies involve removing a small piece of tissue underneath the lip or under the tongue. Sometimes the tissue tendons are situated in such a way that they prevent the tongue from operating in its full range of motion.

Today, the art of saving teeth is becoming somewhat rare because doctors often just take out a decayed tooth and place an implant.

Doctors with CO2 lasers can perform frenectomies on infants who can't breastfeed or bottle-feed because they can't latch on and suckle. The CO2 laser is the best laser for this procedure due to no anesthetic being needed on infants. On older children, those areas will need to be anesthetized afterwards. The youngest patient I've ever performed a frenectomy on was just two days old.

CO2 lasers also have applications in socket-grafting. Occasionally, when a dentist removes a tooth, the socket is full of bacteria. After debriding the socket completely, the dentist can use the laser and pepper the inside of that socket. This will kill off a substantial amount of bacteria, so that when the dentist puts the bone graft material in, it will heal and adhere better.

In cases of peri-implantitis (inflammation and infection around an implant) the CO2 laser can be used to clean the surface of the implant. If needed, the dentist can graft bone around it and close the site, and the patient can keep using the implant.

SAFETY AND PREPARATION

When using a laser, everyone in the room should be wearing protective eyewear. There are no real contraindications and no special precautions for bleeders or patients who have pacemakers.

Hygienists can use the laser in their everyday work, as long as they have their proficiency certification for it.

When using a laser, always probe the gingival pocket



(Above) A CO2 laser handpiece.
Photo courtesy of Diamond Dental Supply.



(Above) A CO2 DEKA laser.
Photo courtesy of Diamond Dental Supply.

before lasering tissue. For anterior or cosmetic cases, ask the dental lab to make models. Dentists can dictate to the lab technicians who make the wax-up how far they should take the tissue up.

I typically take a red pencil and outline where to take it up, so that when I send the model to the lab, the tech knows not to go beyond that red line. The White Wax-Up generates the finish line of the preparation. A reduction guide can be a perfect tissue guide as well, because it's based off the wax-up and can therefore provide precise guidance.

CONCLUSION

Using a CO2 laser improves and expands a dentist's skill set. CO2 lasers are great for tissue contouring—which should be a part of everyday dentistry—and have several other uses as well. When working on highly aesthetic cosmetic cases, it can be tempting to focus on the restorations. But don't neglect the beautiful framework when doing aesthetic work. Make tissue contouring a part of every aesthetic case, and the artwork and frame will be perfectly complementary. ■



Dr. Jim Downs received a D.M.D. degree at Tufts University School of Dental Medicine in Boston, MA. He is an expert in comprehensive restorative treatment and has completed numerous full mouth reconstruction cases. He maintains an aesthetic, family-oriented practice in Denver, CO. Dr. Downs is an instructor for several continuing education courses with the Dr. Dick Barnes Group seminars, including Implant EZ, Full Arch Reconstruction, and more.

White Wax-Up

The Key to Predictable Outcomes

Arrowhead White Wax-Ups can help by providing a stunning 3D physical model that you can use to show patients exactly what their new smile will look like.

A White Wax-Up kit includes:

- a Sil-Tech® temporary matrix
- a clear reduction guide for prepping
- a prep model

Arrowhead White Wax-Ups are the key to patient acceptance and predictable outcomes.

With Arrowhead's dedicated support, doing full arch cases has never been easier.

FOR MORE INFORMATION CALL
1-877-502-2443

www.arrowheaddental.com/whitewax



ARROWHEAD

Precision Placement

Guided Surgery for Single-Tooth Implants.

When patients ask about the success rate of dental implants, I usually respond, “97 percent.” I know the numbers vary somewhat, but nearly all the data falls somewhere in the 90-plus percentile. From personal experience, I know that if I follow proper protocol and use good surgical procedures in a healthy patient, all implants will integrate. I’ve seen it thousands of times.

But just because we get osseointegration, is the implant successful? What does success mean? I recently witnessed a patient return to my office after having gone to a “less-expensive dentist” who used a “less-expensive lab” (see *Figure 1, at right*). Was this a success? The implant integrated and the crown was placed. However, it is easy to see why the patient was unhappy with the result.

From personal experience, I know that if I follow proper protocol and use good surgical procedures in a healthy patient, all implants will integrate. I’ve seen it thousands of times.

The dentist placed the implant at the wrong angle and too far to the mesial, thus creating a cantilever on the distal. As a result, food was constantly trapped in the distal and there was bone loss around the implant. Was this a success? Absolutely not.

DEFINING IMPLANT SUCCESS

As dentists, we need to think beyond integration. Many factors contribute to success with implants, including tissue quality, emergence profile, abutment selection, contacts, ease of hygiene, occlusion, and many more. In the following paragraphs, we will focus on just one factor—implant placement.

With easier access to cone beam computed tomography (CBCT), implant placement is now much more predictable, and lasers now have applications in socket grafting. Sometimes when a dentist takes a tooth out, the socket is full of pus. Today, the

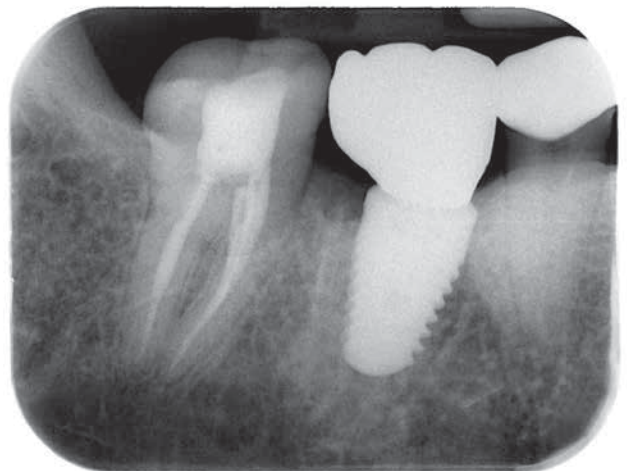


Figure 1



Figure 2



(Above) A surgical guide that was fabricated for single-tooth placement.

dentist can clean it all out with a laser and pepper the inside of that socket. Doing so kills off any other bacteria so that when the dentist places the bone graft material, it will heal and adhere better. There are many other applications for lasers too.

The role of a surgical guide is to help dentists do their work better and with greater accuracy, safety, and predictability.

It's also helpful to use guided surgical templates. I've been placing implants for almost 20 years, and when I first started I had to use a guide with only a pilot hole and tomogram. Hopefully most dentists have invested in CBCT by now and understand the benefits of such images. Originally, I only had access to a mobile CBCT that would come to my office. When they became more affordable several years ago, I purchased one.

HOW TO BEGIN

Surgical guides are customized guides that doctors can use for implant placement and implant surgeries in order to refine angulation and placement. The role of a surgical guide is to help

dentists do their work better and with greater accuracy, safety, and predictability. With the guides, implant placement is precise. Surgical guides are not currently used as a baseline of care, but maybe someday they will be.

Many dentists think of using surgical guides only when doing complex cases. However, guided surgery is here to stay and can be useful for single-tooth implants. Think about how the implant in Figure 1 (see page 20) would have been a success if a surgical guide and proper treatment-planning from the crown on down had been used.

I've made mistakes like that too, and I'm very experienced at free handing implants. However, surgical guides make the implant position, angle, and depth more accurate and safe. Overall, they contribute to better success with the implant and with the restoration that follows.

I recommend having an implant representative at the first few guided surgeries for the particular type of implant that you are using.

I especially like to use a guide in cases where there is little room for error—for example, in the aesthetic zone or where bone dimensions are less than ideal. I like to see a minimum of two millimeters in the buccal. If there is anything less than that, I use a guide and osteotomes, and augment with tissue and bone. It's very rare that I *don't* augment bone and tissue in the aesthetic zone.

I recommend having an implant representative at the first few guided surgeries for the particular type of implant that you are using. All guided surgical kits have differences, and if a dentist is unfamiliar with a kit, it is important to have help throughout the process.

Another thing to keep in mind when starting to use surgical guides is to go slow and easy. Try it out on a case where you're not worried about sinus issues, or maybe on an upper bicuspid area where there are no nerves, or where the sinus is out of the way and there is a little more allowance for error.

A CASE STUDY

Consider a recent case in which I used a surgical guide: "Lindsay" is a 37-year-old female who is missing tooth number 6 (see Figure 2). She has a bridge with recurrent caries under the lingual retainer on tooth number 7. She is unhappy with the appearance of her teeth, and in the future plans to do more comprehensive work to improve >



Figure 3

her smile and replace the retained deciduous tooth in position number 4. However, the current plan is to remove the restoration, place an implant in position number 6, and remove caries on tooth number 7.

Tooth number 7 was prepared for full coverage and used to retain a Radica™ provisional while tooth number 6 was healing. On the initial PA radiograph of tooth number 6, mesial distal dimension looked adequate (see Figure 3, page 21). However, after CBCT, we noticed four millimeters in the buccal lingual dimension (see Figure 4, below). I like an implant 3.5 millimeters or smaller for aesthetic restorative areas, if possible. Neodent and others make a small diameter implant, but restorative options are somewhat limited.



Figure 5



Figure 6

There was little room for error buccal lingually as well as mesial distally. A surgical guide was used to help ensure accurate placement.

In this case, we chose to augment the area with resorbable membrane and particulate graft, and also used an osteotome to expand the osteotomy. There was little room for error buccal lingually as well as mesial distally. A surgical guide was used to help ensure accurate placement. Accurate models and a copy of the CBCT were sent to Arrowhead Dental Laboratory.

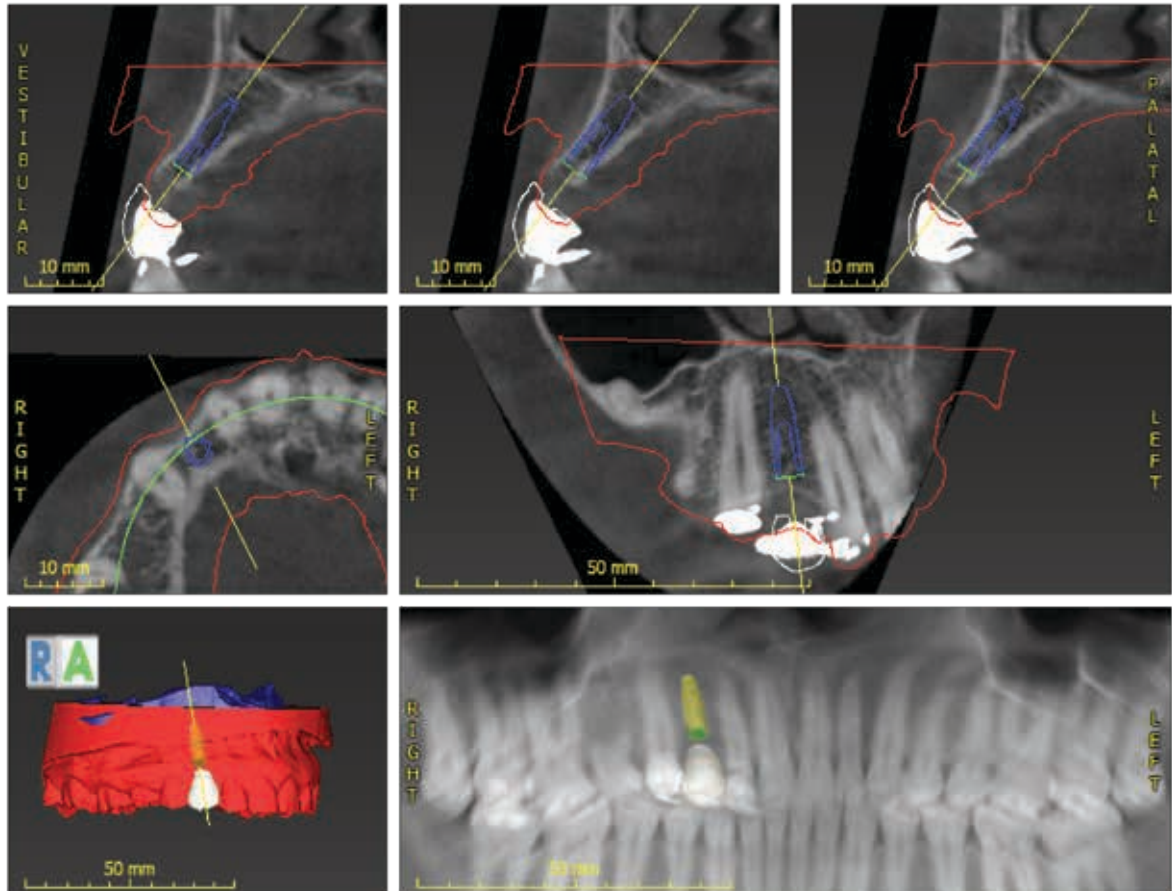


Figure 4



Figure 7



Figure 8



Figure 9

They were instructed to fabricate a surgical guide for a Neodent 3.5 by 11.5 implant to be placed two millimeters subcrestal. We also instructed them to fabricate a Radica™ provisional for tooth numbers 5 to 7, with pontic just at tissue level. The pontic can be adjusted as needed but it helps develop papillae as the implant heals. The pontic should have light pressure in the tissue.

Photos and shade tabs were also sent to the lab. The lab sent an email with Dental Wings software showing the implant as requested, and I checked off on the virtual implant placement. Dentists should always specify if an implant is crestal or subcrestal and by how much (see Figure 4).

Verify and feel inside the osteotomy. Dentists must develop the skills necessary to correct the placement if for some unusual reason the surgical guide is off.

When the case was delivered, I checked the fit of the guide on models, and then again in the patient's mouth (see Figures 5 and 6). The surgical guide must fit precisely. There are windows in the guide to see that it is seated properly. Check the provisional bridge to make sure it is fabricated correctly. I often ask the lab to provide a wax-up of the tooth that is in the implant site position. They will make a Sil-Tech® stint that can be used over a temporary abutment.

In this case, after anesthetizing the patient, tooth numbers 5 and 7 were prepared for the provisional bridge. After adequate implant healing, the margins were modified and final impressions were taken. The provisional was lined with Luxatemp® and the pontic was modified with closure of the flap. I checked the occlusion and the operatory was prepared for surgery.

THE PROCEDURE

First, I made an incision using a DEKA CO2 laser (see Figure 7). The full thickness envelope flap was reflected to allow easy visualization and access for augmentation (see Figure 8). The surgical guide and key showed me where to place the implant, using firm pressure and checking the windows (see Figure 9). The pilot drill was started to half final length. A radiograph was taken to verify angle and accuracy (see Figure 10, page 24). ▶

SURGICAL GUIDE CHECKLIST

- ☑ Are you going to be close to the sinus or the nerve?
- ☑ Do you want the implant placement crestal or subcrestal?
- ☑ Check the fit of the surgical guide before you start—check it against your directions when it arrives from the lab, and then check it again on the patient.
- ☑ Make sure your models are accurate and then check the guide.

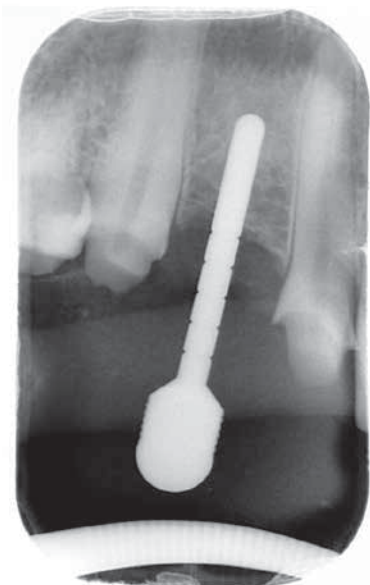


Figure 10

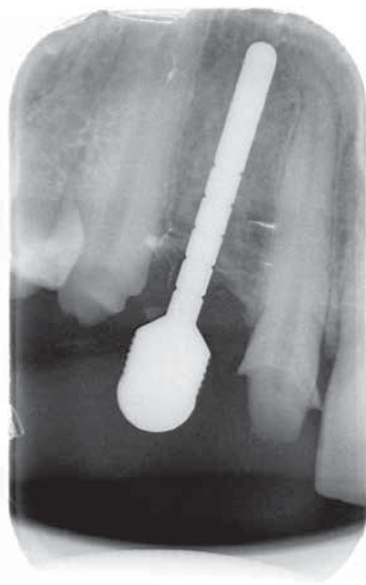


Figure 11

It is very important to verify the guide as you work. Though rare, the guide occasionally may be incorrect. Dentists should not immediately drill to full length if there is little room for error.

Verify and feel inside the osteotomy. Dentists must develop the skills necessary to correct the placement if for some unusual reason the surgical guide is off. After verification, I took the pilot drill to full length (see Figure 11). The Neodent implant that was used was designed to be placed subcrestally. Because of the stress on a canine, the decision was made to place the implant three millimeters below the bone, but that was a personal preference.



Figure 12



Figure 13



Figure 14

What is success in implant dentistry? It starts with great treatment planning and accurate, safe placement.

Once the final length was confirmed, I began expansion of the osteotomy site with multiple diameter osteotomes (see Figure 12). After progressive expansion was achieved, the guide and key were placed and the final 3.5 millimeters was drilled to a depth of five millimeters (see Figure 13).

Remember, the goal was to maintain and maximize the buccal plate thickness. In other types of bone, I might have omitted this step or drilled to length. Also, in anterior areas, the lingual plate can be very hard and I find it helpful to use a side-cutting (Lindemann) drill to relieve this area. If not, the implant deflects off the lingual and will cut through the buccal plate. Again, verify that the buccal plate has not been perforated.

A Neodent 3.5 by 10 millimeter implant was then put to bone level. I reserved the last few millimeters to be placed by hand so that I could check for tightness and for slowly expanded final bone (see Figure 14). I checked to see if any threads or a shadow buccal plate were showing.

I prepared the site for augmentation and began the process with hydrated Kontour™ Sustain Collagen Membrane and

**GUIDED SURGERY CAN MEAN
A HAPPY PATIENT — WHERE
THE IMPLANT AND THE
RESTORATION SEEM TO BE
A SEAMLESS PART OF THE
NATURAL DENTITION.**



Figure 15



Figure 16

DirectGen™ Allograft (cortical-cancellous blend) (see Figure 15, above). In this instance, I chose to close the flap with no sulcus former or temporary abutment because of the provisional we had available. Sometimes, as in this case, I close using a temporary

Dentists should look at single-tooth implant cases—particularly in cases where tenths of a millimeter can make or break the restorative outcome.

abutment and crown (see Figure 16). A small three millimeter healing screw was then placed so that bone would not cover the implant. I then took a final radiograph with the provisional in place (see Figure 17).

CONCLUSION

Again, it's important to ask, "What is success in implant dentistry?" It starts with great treatment planning and accurate, safe placement. Guided implant surgery should be a part of every dentist's armament for single-tooth implants.

All dentists have seen great systems using guides for multiple implants with same-day loading. Dentists can take a complex multi-implant case from start to finish with a CBCT, great models, and fabulous software.

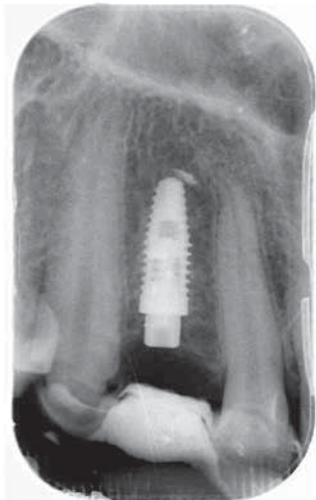


Figure 17

However, dentists should also look at everyday, single-tooth implant cases—particularly in cases where tenths of a millimeter can make or break the outcome of a restorative case. With a surgical guide, the results can be much more precise.

Guided surgery can mean a happy patient—where the implant and restoration seem to be a seamless part of the natural dentition. Without guided surgery, an implant tooth may never seem to be a natural component of the dentition—or worse, may constantly catch

food in a trap and expose sore, red tissue.

Costs have been reduced on surgical guides, and the turn-around time to fabricate the guides has improved dramatically. In addition, most implant companies offer guided surgery kits. The kits remove some of the stress and can improve productivity during the implant placement.

The next time you place an implant for a somewhat straightforward single tooth, consider partnering with a lab like Arrowhead Dental and use a surgical guide for precise placement. You may be surprised by the results. ■



Dr. Jason R. Lewis grew up in Salt Lake City, UT. In 1999, he graduated cum laude from Creighton University School of Dentistry in Omaha, NE. Afterward, he attended the world-renowned Las Vegas Institute of Advanced Dental Studies in Nevada where he received an unparalleled level of training and completed the full curriculum in three years.

Dr. Lewis began his career with an ambitious goal: to build a practice from the ground up after learning from the best cosmetic and aesthetic dentists in the country.

Dr. Lewis has studied under the tutelage of Dr. Clayton Chan in the areas of complex occlusal and reconstructive cases, and is one of only 59 dentists to complete the training at Occlusion Connections™.

Currently, Dr. Lewis is an active educator and public speaker—particularly in the areas of laser procedures, implants, and cosmetics. Dr. Lewis maintains an aesthetic practice in Draper, UT, where he treats all his patients as guests, and he constantly strives to provide the highest level of care possible.

Step-by-Step Restoration

A Segmented Approach to Full Arch Reconstruction.

Val has been my neighbor for about 18 years, and our families have a close relationship. Our kids have grown up together, and she's been my patient as well as a friend. I knew that Val thought about her smile often. Many times, she would ask me about bleaching and express her frustration with

Many times, she would ask me about bleaching and express her frustration with over-the-counter products.

over-the-counter products. Although Val didn't express dissatisfaction with her smile, I knew she was not aware of how it could be improved with techniques in today's dentistry.

Whenever Val inquired about whitening, I used the opportunity to discuss different aspects of her smile. When Val came

in for recall appointments, I showed her photographs of other cases that I had restored.

I answered all of her questions and planted seeds of knowledge so that she would realize something could be done if she wanted. I never put any pressure on her for treatment. Ultimately, comprehensive treatment had to be her decision.

Val eventually chose to seriously examine her smile and investigate what could be done to improve it. At that point, I treated Val as a new patient and scheduled her for a full comprehensive exam. It had been several years since her initial exam and I wanted to make sure that everything was up to date.

INITIAL WORK-UPS

In mid-2017, we performed a comprehensive exam that included an oral cancer screening, a periodontal and temporal mandibular joint screening, a series of full mouth X-rays, digital

(At right) Before and after biting images.



photographs, study models, a facebow transfer, and a centric relation bite record. I took notes about the aspects of Val's smile that she wanted to improve.

Val had several diastemas on her upper arch. Her teeth were of various widths and were asymmetrical in relation to the gingival levels (see photo, at right).

I answered all of her questions and planted seeds of knowledge so that she would realize something could be done if she wanted.

Val also had a history of fractured enamel, fractured restorations, and fractured porcelain-fused-to-metal (PFM) crowns. She obviously experienced problems with clenching, grinding, and malocclusion. I knew such issues had to be addressed prior to the placement of new crowns, otherwise the new crowns would succumb to the same fate as her natural teeth.

After showing Val the results from some of my other patients, I turned my attention to her smile. I showed Val the digital images we had taken and explained the similarities she had to some previous patients.

In particular, I wanted her to see the issues she had with clinical crown length and gingival asymmetry. Val did not need much convincing—the proof was in the photographs. Val understood the problems in her own smile from the pre-operative photographs and models. She was very eager to move forward.

A SEGMENTED APPROACH

Although dental technology and techniques have advanced to allow dentists to do incredible same-day comprehensive treatment, the multi-appointment approach continues to be an option. Ultimately, this was the best approach for Val's case because it provided more predictability, and it allowed me to achieve the desired aesthetics and occlusion.

Arrowhead's White Wax-Up was a blueprint for how Val's final full arch restorations were planned. I recommend using one in every comprehensive case.

I referred Val to William B. Farrar, D.D.S., at Columbia Periodontal Associates in Columbia, SC. Dr. Farrar completed crown lengthening on tooth numbers 4, 5, 6, 11, 12, and 13, and gingivectomies on tooth numbers 7, 8, 9, and 10. Val noticed a dramatic difference in the aesthetics of the gingival tissue created by Dr. Farrar. After this treatment, and prior to the first prepping appointment, we had a final consultation. >



(Above) Full face photo after upper arch reconstruction.

During the final consultation, we revisited the models, X-rays, and digital photographs. I also reviewed the diagnostic wax-up. Arrowhead Dental Laboratory's White Wax-Up was a blueprint for how Val's final full arch restorations were planned. I recommend using one in every comprehensive case. The wax-up allowed me to see the final result and work backward from there. It also allowed Val to see the goal and provide feedback on any changes she might want to make to the plan before the actual procedure.

At this appointment, I answered all of Val's questions so that she would feel comfortable with the procedure. We discussed everything, from the type of preparations I would do to the type of material that would be used. (Her crowns would be fabricated using Arrowhead's Elite ZirMax restorations.) She also allowed me to do an initial pre-prep equilibration.

Although somewhat inconvenient for the patient, I was glad we followed a multi-appointment approach to treatment.

Although Val's vertical dimension was not compromised, an important and challenging part of the case was to maintain the occlusion and transfer that relationship to the lab.

APPOINTMENT 1

During this visit, we addressed Val's posterior teeth.

1. I sectioned and removed the old PFM crowns on tooth numbers 3, 4, 12, and 14.
2. The old restorations were removed on tooth numbers 5 and 13.
3. Composite resin was used where needed for core buildups and fillers.
4. Tooth numbers 3, 4, 5, 12, 13, and 14 were prepped.
5. To fabricate temporaries, I used a Sil-Tech® matrix from the diagnostic wax-up. This allowed me to have the exact shape and size of teeth as presented in the wax-up.
6. I cemented the temporaries and adjusted the occlusion.
7. Val scheduled her next appointment for a few days later.

APPOINTMENT 2

When Val returned for this appointment, I evaluated her occlusion and equilibrated as needed.

1. I leveled and aligned the lower incisors and eliminated any sharp enamel edges and discrepancies.
2. A pre-prep bite registration was taken.
3. The previous restorations were removed on tooth numbers 8 and 9.
4. Crown preparations were accomplished on tooth numbers 6, 7, 8, 9, 10, and 11 using the stent sent by Arrowhead Dental Lab as a reduction guide.



(Above) Before close-up, smiling.



(Above) After close-up, smiling.



(Above) After close-up, retracted.



(Above) After close-up, occlusal.



(Above) Profile biting views, close-up.

5. After prepping, I relined the previous bite registration and obtained a facebow registration.
6. A final impression using a custom tray was taken of anterior tooth numbers 6, 7, 8, 9, 10, and 11.

If Val felt like a tooth was too long or prominent, or if her speech was interrupted or she had any other issues, I could adjust the temporaries as needed.

7. The temporaries were fabricated using Sil-Tech® from the diagnostic wax-up, just as was done for the posterior teeth.
8. I made Val a soft brux guard (orthotic) to wear at night to protect her temporaries.

48-HOUR FOLLOW-UP

Two days later, Val returned for a follow-up appointment. I wanted to check the occlusion and the temporaries to see how they held up during the previous 48 hours of function.

If Val felt like a tooth was too long or too prominent, or if her speech was interrupted or she had any other issues, I could adjust the temporaries as needed. Fortunately, all aspects of the temporaries were satisfactory, including the aesthetics, phonetics, and function.

An alginate impression was made of the temporaries. This allowed Arrowhead to make an index of the temporaries using the corresponding model. At this point, the lab had everything they needed.

APPOINTMENT 3

When the anterior crowns arrived from Arrowhead, we scheduled Val's delivery appointment. At that visit, Val had been wearing the temporary restorations for about three weeks.

1. I removed the temporary restorations on tooth numbers 6, 7, 8, 9, 10, and 11.

2. I tried each permanent crown on individually and then all together to check the margins and contacts.
3. I verified proper occlusion. The shape, size, and symmetry looked great and Val approved of everything.
4. I cemented the crowns in the following order: tooth numbers 8 and 9, followed by tooth numbers 6 and 7, and finally tooth numbers 10 and 11.

24-HOUR FOLLOW-UP

Val returned to the office for a short visit a day after seating so that I could confirm proper anterior guidance, verify that all cement was removed, and evaluate her overall comfort.

At that appointment, Val expressed that she was extremely pleased with the anterior crowns. She remarked that they looked and felt great.

APPOINTMENT 4

1. The temporary restorations were removed on tooth numbers 3, 4, 5, 12, 13, and 14.
2. The tooth preparations were refined as needed.
3. We took a final impression, a bite registration of the posterior teeth, and another facebow transfer.
4. All temporaries were re-cemented and the case was sent to the lab for fabrication of the posterior crowns.

APPOINTMENT 5

After we received the posterior crowns from the lab, Val presented for delivery.

1. Again, the temporary restorations were removed.
2. I tried in the crowns on tooth numbers 3, 4, 5, 12, 13, and 14.
3. As with the anterior crowns, I tried them in individually and then together to confirm contacts, marginal integrity, and proper occlusion.
4. I cemented the crowns for tooth numbers 3, 4, and 5, followed by tooth numbers 12, 13, and 14.
5. Only minimal occlusal adjustment was required.
6. Finally, all 12 crowns were seated and the maxillary arch reconstruction was complete. >

7. I made Val an occlusal guard (orthotic) to protect the new crowns and instructed her to wear it nightly.

RESULTS

Val returned for a follow-up appointment after one week, and then again after a month. I checked the occlusion to make sure it was still on target. Overall, I was very pleased with Val's case. I was happy to resolve her issues with occlusion, crown length, gingival symmetry, and the gaps between her teeth.

Most importantly, Val was pleased with the results. Every time I see her, she has a big smile on her face.

Although somewhat inconvenient for the patient, I was glad we followed a multi-appointment approach to treatment. It was important to address the occlusion issues using a slow, methodical process prior to seating her permanent crowns. This process helped us create and ensure long-term success for the patient.

Most importantly, Val was pleased with the results. Every time I see her, she has a big smile on her face. She loves the look of her new smile and is already making plans for work on her lower arch. I'm glad that I was able to work on a case that has had such a positive impact. ■



Dr. Thomas Major received his Bachelor of Science degree from the University of South Carolina in Columbia, and his Doctor of Dental Medicine (D.M.D.) degree from the Medical University of South Carolina in Charleston.

Dr. Major completed a General Practice Residency (GPR) program at East Carolina University School of Dental Medicine (Pitt County Memorial Hospital) in Greenville, NC.

After his residency, Dr. Major returned to Columbia, where he has been providing family and comprehensive dental care since 1989.

Dr. Major is a member of the American Dental Association, South Carolina Dental Association, Academy of General Dentistry, The Columbia Implant Association, and The L.D. Pankey Alumni Association in Key Biscayne, FL.

Dr. Major has a great working relationship with several dental specialists. He incorporates a multi-disciplined approach to treatment whenever necessary. He encourages an open dialogue with all his patients, and treatment recommendations are always discussed in detail, with consideration given to acceptable options.

The Power of Introspection (continued from page 3)

I decided to do larger cases than the one- and two-unit cases that I had been doing. I set a goal for how many of the types of cases I wanted to do on a weekly and monthly basis. I

This is a wonderful time to be a dentist. The technologies and materials have never been better.

started to look beyond the patchwork dentistry and saw comprehensive issues. It turns out the cases I wanted to be doing had always been there, I just hadn't seen them because I was too busy looking at the minutiae.

3. "Why don't my patients seem to want the comprehensive dentistry that I can offer?" Once I could prep effectively and had identified the cases I wanted to do, I was now in a position to ask a truly breakthrough question—why don't my patients seem to want the comprehensive treatments that I could provide? In truth, my own assumptions were the biggest problem. I was only presenting the kind of dentistry that I thought my patients would accept or had the ability to afford.

Once I realized the error, I made a dramatic change in how I presented dentistry. I presented all patients with the best options for their overall care (focusing on patients

keeping their teeth for a lifetime), instead of just presenting dentistry that would address immediate and pressing concerns. I stopped thinking about the likelihood of a patient accepting treatment, or whether or not he or she could afford treatment.

After having presented the ideal option to the patient, we would have a frank discussion, during which we would find a way to get the treatment done. Many of them agreed to the treatment, and their lives were improved—and I got to do the cases I wanted to do.

Introspection is a powerful tool. If you wonder how to increase case acceptance or you want to start doing comprehensive dentistry, ask "why" questions. If your front office schedules an hour and a half for a single crown, think about why they do that and commit to looking beyond superficial answers that offer little insight or potential for meaningful change.

There will never be a time in your career when you can just rest on your laurels. If you do, you will settle for becoming less than your potential.

This is a wonderful time to be a dentist. The technologies and materials have never been better. Patients are better prepared to understand and see the value that dentistry has to improve their lives. Discover what is holding you back and commit to moving forward each and every day. Why not start today? ■

FAST TRACK PROGRAM

Jump start your production potential



FOR MORE
INFORMATION
1-877-502-2443

ARROWHEAD & THE DR. DICK BARNES GROUP are pleased to offer a program designed to get your dental skills on the production fast track. The program is specifically designed to help take any dentist, regardless of experience, through a specific sequence of instructions that will dramatically increase your production potential, starting with the first course. For a fixed price of **\$7,980** you will get access to four of the Dr. Dick Barnes Group's most sought-after courses. This program includes:

- **EVERYDAY OCCLUSION**
- **FULL ARCH RECONSTRUCTION**
- **CLINICAL HANDS-ON**
- **OPTIMIZED TECHNIQUES TO ENHANCE PRODUCTION**

Call Arrowhead Dental Lab for details.

WWW.ARROWHEADDENTAL.COM

ARROWHEAD

Cybersecurity for Dental Practices

How to Protect Your Data from Ransomware.

Imagine if all your patient files, accounting information, and other data critical to your dental practice was not accessible because someone was holding it hostage. In order to get your information back, you would have to pay that person (or persons) thousands of dollars for the possibility of getting it back, with no guarantees. Sound ludicrous?

With ever-increasing requirements to protect patient data, any security breach of your information system can expose you to regulatory fines and litigation risks.

Unfortunately for more and more business owners, that scenario is not an imagined threat. The threat is real and such events have implications far beyond interrupting your daily business practices.

With ever-increasing laws and requirements to protect patient data (see the article “Getting Hip with HIPAA” on page 36) any security breach of your information system can expose you to regulatory fines and litigation risks. In short, the very survival of

your business increasingly depends upon your ability to safeguard your data resources.

With the advent of cryptocurrencies like bitcoin, would-be hackers now have the ability to hold your data for ransom, forcing you to pay thousands of dollars in a currency that, for the most part, cannot be traced. This type of attack is often done via malicious software called ransomware.

In May 2017, the WannaCry ransomware attack encrypted the files of hundreds of thousands of computers worldwide and presented each victim with a simple proposition—pay up or never get access to your data (see image on page 34).

In another example, in January 2018, the *Greenfield Daily Reporter*, reported that a hospital based in Greenfield, IN, paid hackers a ransom of \$55,000 after electronic health records and other internal information was encrypted by ransomware.

Last year, *Newsweek* reported that the number of ransomware attacks had risen by more than 250 percent during the first few months of 2017. Unfortunately, the trend continues to accelerate as more and more individuals and companies pay hackers to get their data back.

Why do businesses pay to retrieve their own information? Simply because digital information is essential to run a business.



If you doubt this, just try to convince a patient or an insurance company to pay for a procedure that you can't prove was completed.

With a looming threat on the internet (and understand that everything is now on the internet in one form or another), what can the average dental practice do to protect itself?

TAKE ACTION

While there is no such thing as absolute security, there are steps you can take to mitigate the possibility that your business will be targeted. In the unfortunate event of an attack, it's entirely possible to recover your data without paying a dime of ransom.

Just as dental offices must practice sterilization techniques in the operator to prevent infection and exposure to biohazards, they should implement safeguards for preventing computer viruses and possible loss of business and patient data. Here are a few essential safeguards:

LIMIT TEAM MEMBER ACCESS

In the past, I worked as an IT consultant for dental practices and one of the most common problems I saw was the use of shared passwords. It was not unusual for all the operator computers to be accessible using a single password that everyone knew. Often, this password was the same one used for the front office computers.

Worse yet, the accounts were configured with high levels of access, meaning that users could access virtually all of the network shares on the dental practice's server. When I pointed out this practice to clients, they usually responded that it was a matter of convenience for the staff, and not something they wanted to complicate.

However, the very thing that makes access easy for your staff also makes it easy for ransomware to find and encrypt your data.

If a workstation on your network gets hit with ransomware, and that workstation has access to all the data on your server (as well as all the other computers via a shared, common password), that ransomware can potentially encrypt everything.

A better approach is to make sure your information is separated and shared with only those people and/or workstations that require access to such information. For example, the accounting data on your server should be located in its own folder and not lumped in with other data.

The very thing that makes it easy for your staff also makes it easy for ransomware to find and encrypt your data.

Make sure that the folder is only shared with team members who require access, and use a unique username and password for each individual. Approach the segregation of your data like you segregate the general office duties among your team members. Failure to do so puts your data at risk and opens you up to problems beyond data loss.

FORTIFY YOUR PASSWORDS

From now on, stop using weak passwords! For the past few years, the top two passwords were "123456" and "Password." Using common dental terms as passwords is only marginally better. A surprising number of dental offices use an administrative password on the server or workstation such as "Bicuspid123," "K9," or "Smile123."

Easily predictable passwords can be broken using existing tools with little to no effort on the part of the attacker. If you are using simple passwords, change them immediately (see *box on page 34 for strategies on choosing strong passwords*). >

GOOD PASSWORDS INCLUDE:

- a minimum of 10 characters
- both upper- and lower-case letters
- numbers (but don't just add a simple series of numbers to the end of a predictable word like smile123)
- special characters (i.e. #, \$, @)
- complicated patterns (don't use patterns like QWERTY)

PATCH YOUR SYSTEMS

Most dentists only schedule a visit from an IT professional when something isn't working. This kind of reactive approach to IT makes small businesses an easy target for ransomware. Instead, be proactive and schedule regular visits from IT professionals for your dental practice, and patch your systems before you are attacked.

A common mistake in dental practices is failing to differentiate the importance level of different types of data.

Virtually all software providers release patches to fix security vulnerabilities or other problems in their software. Microsoft releases patch updates on the second Tuesday of every month. Ask your IT professional to apply patches on a regular basis, as most ransomware and other malicious software use known vulnerabilities to attack computer systems. The WannaCry ransom attack impacted only the individuals and businesses who had failed to apply a security patch that was released two months prior to the actual attack.

TRAIN YOUR TEAM

Make sure that members of your team know how to identify suspicious emails and are aware that clicking on unknown links



(Above) In the event of a breach, your computer display may show a similar screen, with demands for a ransom.

in emails can be potentially dangerous. I always recommend that team members read emails with a certain degree of disbelief and if something doesn't look right, ask someone else to look at it or call the assumed source for clarification.

Also, clearly identify the types of requests that should not be carried out via email. For example, never authorize the wiring of funds from an email. This may sound ridiculous, but on more than one occasion I witnessed emails instructing the bookkeeper to wire money to a fraudulent account from the dentist's email address. Without guidelines for your team members, ambiguity puts you at risk.

HAVE A PLAN

To protect dental practices from data loss, every dental practice should back up their data on a regular basis. If data is encrypted by ransomware, one of the only reliable ways to recover that data is to restore it from a backup location. In order to retrieve reliable data from a backup location, it must be a recent backup and it must be accessible. A thumb drive with a copy of a Quickbooks database from last quarter isn't going to be sufficient, and in most cases any backups that are not part of a broader strategy are generally worthless during an emergency.

A backup strategy doesn't have to be complicated or expensive, but it requires dentists to look at their dental practices and make business decisions about the value and recoverability of their data. This is not a monolithic determination—dentists should not treat all the data equally when it comes to determining their backup needs.

A starting point is to consider the following three questions:

1. What are your operational data sources? A common mistake is failing to differentiate the importance level of different types of data. For example, accounting and patient data is much more important to operations than an employee manual or other internal documents.

Every dental practice should identify their primary data sources and rank their importance on a scale from 1 to 5, with 5 being the most important.

Sample Ranking:

- **Accounting Data: 5**
- **Practice Management System Data: 5**
- **Internal HR Documents: 3**
- **Patient Images: 4**
- **Marketing Collateral: 2**
- **Administrative Documentation: 3**
- **Patient Testimonials: 1**

2. How long could you operate without access to each of these data sources? A recovery window is the amount of time you can maintain operations without access to data. For example, if you can't function without access to accounting data for more than two days, then your backup strategy must be able to restore the accounting data within two days. If you can run general operations for 20 days without access to your internal HR documents, then your backup strategy must be able to restore them within 20 days.

In general, the quicker you need to restore the data, the more expensive the backup strategy will be. That is why identifying your data sources and ranking their importance is critical

and can lead to substantial cost savings. The ranking system is important because it allows the most critical systems to be restored first.

3. How much data loss is acceptable? It's tempting to answer none at all, but unless you are willing to invest in a high-cost backup infrastructure, consider this question from an operations standpoint. If you are backing up your accounting data only once a day, you are basically saying that you are able to lose an entire day's worth of data. If that's the case, be prepared to re-enter or re-create a day's worth of accounting transactions in the event of a problem.

You might respond that you don't ever want to lose more than two hour's worth of accounting data, because it is being updated throughout the day, but internal HR documents rarely change, so you can potentially stand to lose up to five day's worth of such data without a problem.

Analyzing your practice's operational needs and the frequency of the data changing against such losses enables you to determine which data should have priority backup, and where to allocate your expenses for the most important information.

Once you have answered those three questions, you will understand how much data you need to back up, what the relative importance is of each class of data, and how soon you would need to recover the information. Such knowledge saves time and money as you work with an IT professional to implement a backup system.

3-2-1 BACKUP STRATEGY

A new threat in some versions of ransomware is the ability to detect and destroy backups prior to attacking the primary data on a system. Since backups are some of the only recovery options when faced with ransomware (aside from paying the ransom), this evolution is no surprise. The ability of ransomware to detect and neutralize online backups will become increasingly more common and sophisticated.

All businesses should employ the **3-2-1 backup strategy**, which is as follows:

- **Have at least 3 copies of your data (including the production data)**
- **Use 2 different media formats to back up data**
- **Have 1 copy offsite and offline**

In a dental practice, always use backup software that makes a backup copy of your production data based on the schedule and frequency that you identified in the three questions. Many great software backup applications are currently available. Some of my favorites include Veeam®, Unitrends®, Acronis®, and CloudBerry®.

These software programs can run backups on a schedule and push the backup copies to a host of different storage media and cloud storage providers. In the event of a ransomware attack or accidental data loss, commercial backup software can also make the restoration process easy and efficient.

Having the backup of your production data on a different device gives you a second copy of your data. Commercial backup software often has a feature that allows you to write your data to another media format such as tape or removable disks. Increasingly more software packages also allow users to duplicate their



data to the cloud so that they have a copy of the data offsite, and in some cases offline as well.

I recommend implementing fully-automated backup systems that can copy production data to a secured and inexpensive storage device located within the practice. Then a copy of the backup should be uploaded to Amazon Web Services or another cloud provider so that the data is stored offsite. Dental practices that follow this protocol are not only protected against ransomware attacks, but in the event of a flood or a fire their data is safe and recoverable.

I recommend implementing fully-automated backup systems that can copy production data to a secured and inexpensive storage device located within the practice.

Backup options are available for every budget and need. The key to protection from a ransomware attack, or even a natural disaster, is to ensure that you have a plan to recover your business's critical data. Dentists and team members should consult with a local IT professional to create a backup and recovery strategy that protects their important information assets. Remember, it should be a proactive effort. Trying to recover data without having a backup strategy in place is very expensive and often results in the permanent loss of data. ■



Matthew Cook has been a dental technology consultant for more than 18 years, specializing in the creation of technology-enhanced business processes. In 2004, he joined Arrowhead Dental Laboratory in Salt Lake City, UT, as the head of their IT Department.

Getting Hip with HIPAA

Four Areas for Front Office Team Members to Know.

HIPAA, formally known as the Health Insurance Portability and Accountability Act, was signed into law in 1996. According to the California Department of Health Care Services, HIPAA's main function is the following: Provide the ability to transfer and continue health insurance coverage for

and confidential handling of protected health information. Since its inception, many provisions have been added to HIPAA, including the currency rule, the security rule, the enforcement rule, the omnibus rule, and the breach notification rule.

All medical practices have the responsibility to protect health information. Although HIPAA involves a lot of details and can get quite complicated, every dental practice needs to adhere to it.

For any dental practice in violation of HIPAA, there are high-stakes ramifications. The U.S. Department of Health and Human Services (HHS) is the enforcement agency for HIPAA. HHS can levy criminal and civil penalties on dental practices that don't follow the rules. According to the online *HIPAA Journal*, a minimum fine is \$100 per violation, but the penalties can soar up to \$50,000 *per violation*, with a maximum penalty of \$1.5 million per year, depending on the level of negligence. In 2009, after

Although HIPAA can get quite complicated, every dental practice needs to adhere to it.

millions of American workers and their families when they change or lose their jobs; reduce health care fraud and abuse; mandate industry-wide standards for health care information on electronic billing and other processes; and require the protection

HIPAA-RELATED ACRONYMS

| | |
|---------------|--|
| HIPAA | Health Insurance Portability and Accountability Act of 1996 |
| HITECH | Health Information Technology for Economic and Clinical Health Act |
| PII | Personally Identifiable Information |
| PHI | Patient Health Information |
| TPO | Treatment, Payment, and Health Care Operations |
| CE | Covered Entity |



dental and medical practices began using electronic methods to store patient information, the HITECH Act (a.k.a. the Health Information Technology for Economic and Clinical Health Act) was passed, which mandated protection of electronically-stored patient information.

Understanding HIPAA and HITECH can be confusing. A lot of acronyms are often invoked when discussing HIPAA-related concerns. In an effort to simplify matters, I've included a chart to keep handy as you're brushing up on privacy laws (see box on page 36).

HIPAA TRAINING

HIPAA training and awareness should be an ongoing activity. Many dental offices struggle to comply with HIPAA regulations, and some are not aware of all of them or do not have a dedicated team member responsible for maintaining compliance. HIPAA requires that dental offices have both a Privacy Officer and a Security Officer (see sidebar, page 41). The American Dental Association (ADA) suggests that every dental practice appoint one or two team members to fill these roles.

Privacy and security designees are responsible for helping all team members maintain HIPAA Privacy, Security, Omnibus Rule, and Breach Notification compliance. In addition to training new team members within a reasonable amount of time, periodic re-training helps ensure compliance and reduces the likelihood of a breach. According to the ADA, all members of a covered entity's (CE) workforce are required to receive training in policies and procedures.

As technology continues to evolve, so do the requirements of HIPAA and the HITECH Act. As a result, dental practices must review their compliance programs regularly. Linda Harvey, president and founder of the Institute for Dental Compliance and Risk Management in Jacksonville, FL, explains, "This an exciting time in dentistry with all the technological and scientific advancements. Yet when coupled with an ever-changing regulatory landscape, it creates unknown risks and new responsibilities."

The American Dental Association suggests that each dental practice appoint one or two team members to specialize in HIPAA compliance.

Fortunately, several resources are available to help, including continuing education classes, dental industry specialists, and online information. For example, the ADA offers a "Complete HIPAA Compliance Kit," which includes a manual, training resources, and updates.

How can dental offices protect themselves and their patients' health information (PHI)? Here are four areas for front office team members to be aware of, and suggestions for compliance.

1. NEW PATIENTS

Nearly every dental office in the United States gives patients a privacy statement with new patient paperwork on their first ▶



visit. But does every dental office understand what is required to keep that information safe?

When new patients call the practice, front office team members have the goal of getting them through the door. To do so, team members gather personal information from the patient, including his or her name, phone number, and mailing address—all of which is considered personally identifiable information (PII).

Dr. Barnes has always said that dental team members should communicate with patients “eye-to-eye and knee-to-knee.” Information disclosed in that interaction must be protected.

Consider how PII is received and stored in your dental practice. Is this information entered into a dental management software system, or are notes handwritten on an old-fashioned piece of paper?

Both methods must be protected. If you are using a software system, access to the computer where personal data is stored should be password-protected. When the computer is not in use, team members should immediately log off. Team members must not only back up data but also use encryption for the data

in case of a breach by hackers (see story, “Cybersecurity for Dental Practices” on page 32). Under the HIPAA security rule, encryption of patient data is required.

Every dental office should have a shredder nearby so that any handwritten notes can be safely discarded. If a team member absentmindedly crumples a note with PII written on it and tosses it into a trash can, it is a HIPAA violation.

In a 2015 press release after prosecuting a dentist for a HIPAA violation, former Indiana Attorney General Greg Zoeller said, “In an era when online data breaches are top of mind, we may forget that hard-copy paper files, especially in a medical context, can contain highly sensitive information that is ripe for identity theft or other crimes.”

In my Total Team Training (TTT) courses with the Dr. Dick Barnes Group, we teach dental offices to build relationships with new patients by conducting new patient interviews—brief, 10-minute, one-on-one interactions to discuss the patient’s medical history and learn about his or her dental goals and concerns. Dr. Barnes has always said that dental team members should communicate with patients “eye-to-eye and knee-to-knee.” Information disclosed in that interaction must be protected.

Such conversations should take place in an area where other people can’t overhear any PII. If your dental office has open operatories with no closed doors, the person conducting the interview must lower his or her voice so that others cannot overhear—or better yet, find a place where the conversation can be conducted in private.

During the interview, the team member asking questions usually takes notes on a piece of paper. Once the conversation has ended, he or she should scan the paper into a secure electronic chart and shred the original document.

A designated private area in a dental office can fulfill multiple functions besides just providing a setting for the new patient interview. A private area is also great for discussions regarding financial arrangements, or for patients asking questions about treatments.

2. ELECTRONIC COMMUNICATION

There are some hip ways to communicate these days like text, social media, and apps. Of course, there are still more traditional ways like voicemail, email, and fax. All of these methods have an electronic component to them, but it’s possible to use them with patients and still comply with the requirements of HIPAA. It all depends on the content that is being communicated, to whom it is being sent, and how it is being stored and transferred.

Communication is an important part of everyday tasks, and it can be easy to slip into a non-HIPAA-friendly exchange. To prevent this from happening, email and fax communication must be encrypted for transmitting PHI or PII.

The concern with sending information via text message is that someone besides the intended recipient may have access to the phone receiving the message. Because texting is not encrypted, having a conversation via text that includes PHI or PII is a violation of HIPAA. It's okay for a dental team member to send a text to a patient, but the text message must comply with the "minimum necessary standard" laid out in the Privacy and Security Rules.

A private area is great for discussions regarding financial arrangements, or for patients asking questions about treatments.

Since team members ultimately have no control over the final destination of the message, "Short Message Service" (SMS) and "Instant Messaging" (IM) often fail to meet the standards of the technical safeguards of the HIPAA Security Rule. In addition, using messaging apps on mobile devices that have no log-in or log-off requirements are discouraged because if a mobile device is lost or stolen and PHI or PII have been exchanged, this information could be compromised.

When it comes to social media, every post is considered part of the public domain. Therefore, a photo release and proper consents are necessary when posting any images of a case. And even then, it is recommended to avoid releasing any information that might be personal. It may be easy to identify patients from specific details about treatment even without posting any PHI or PII information directly.

If your team members plan to leave detailed voicemail messages like test or lab results, your practice must obtain prior consent. Generally, it's best to just avoid leaving such detailed information on voicemail.

Team members can leave details about an upcoming appointment (confirmation calls) without including any specific patient, diagnosis, or treatment information. Call reminders should only include the day and time—they should not include any information about the patient or what kind of appointment or treatment will be done. This policy protects patients in the event that someone else overhears the voicemail message, and it also protects dental offices, whose front office team members may be making calls within earshot of other patients.

So does this mean that all patients need to sign a release specifying those to whom you can communicate PHI or PII? Not necessarily. According to the Uses and Disclosures for Treatment, Payment, and Health Care Operations (TPO), there are exceptions like communicating with other physicians, insurance companies, and collection agencies.

3. GIFTS OF APPRECIATION

After a patient has undergone a long or complicated dental procedure, it's a great idea for the doctor or a team member to call the patient to make sure that he or she is feeling okay.

In the Colorado dental practice where I previously worked, we would sometimes take it a step further and send them a



congratulations or thank-you gift after completion of comprehensive treatment. Occasionally, we would send a bouquet of flowers or a gift card for a favorite restaurant. Often, we sent those gifts to the patient at their place of employment.

During a recent TTT seminar, the question was asked that specifically addressed whether it was a HIPAA violation to send patients something at their workplace, knowing that co-workers would likely discover it's from a dentist.

As with all other forms of communication, keep it short and leave out specific details about the medical procedure or any other health-related information.

After researching the issue, I discovered that when sending tokens of appreciation to patients, dental team members should make sure that gifts are addressed directly to the patient in a sealed envelope.

After the patient opens the envelope, it becomes the patient's choice whether he or she wants to share who it's from. However, to be extra cautious, it is recommended to send gifts directly to a patient's home, where it's less likely that an unknown person will see any private information. And of course, as with all other forms of communication, keep it short and leave out ►



According to the HHS, "the HIPAA Privacy Rule specifically permits a CE to share information that is directly relevant to the involvement of a spouse, family members, friends, or other persons identified by a patient, in the patient's care or payment for health/dental care. If the patient is present and has the capacity to make healthcare decisions, the CE may discuss this information with the family and these other persons if the patient agrees or, when given the opportunity, does not object. The CE may also share relevant information with the family and the designated persons if it can reasonably infer, based on professional judgment, that the patient does not object."

TAKE ACTION

There's no time like the present to make sure you and your dental team are up to date on HIPAA compliance. Consider getting a risk assessment done on your practice to learn and understand where your team may need to improve.

Once you understand your risk for HIPAA violations, you can take steps to protect your patients and your practice. Specific areas like communicating with new patients, sending text messages and other forms of electronic communication, giving gifts after treatment, and consider-

specific details about the medical procedure or any other health-related information.

4. FAMILY MEMBERS

Sometimes, family members may be involved with a patient's treatment. Perhaps they are participating in the decision-making process or acting as a legal guardian. It's important to know which situations require disclosures and which ones do not.

ing the circumstances of elderly patients are all areas where HIPAA compliance is necessary and important. But there are many more areas and circumstances to consider and protect. Don't become complacent about HIPAA. Many resources are available to help. ■

Consider getting a risk assessment done on your practice to see where your team may need to improve. Once you understand your risk for HIPAA violations, you can take steps to protect your patients and your practice.

If a patient needs care and cannot make his or her own medical or dental decisions, it's in the best interest of the patient to give that information to a family member or legal guardian. Dental practices must obtain and keep documentation specifying that the patient has given them permission to share information with the designated individual (see 45 CFR 164.510 of the Privacy Rule).



Glennine Varga is a Business Development Coach for Arrowhead Dental Laboratory. She has been a TMD/OA trainer and speaker with an emphasis on medical billing and documentation for over 15 years, and has trained doctors and dental teams in the use of electro-diagnostic equipment.

Glennine is an expanded duties dental assistant certified in TMD with the American Academy of Craniofacial Pain. She is a visiting faculty member of The Pankey Institute, the American Dental Association, the Academy of General Dentistry, and Spear Education's Dental Sleep Medicine courses. Glennine currently teaches Total Team Training and co-teaches Airway Management and Dentistry for the Dr. Dick Barnes Group seminars.

HIPAA COMPLIANCE OFFICERS: ROLES AND RESPONSIBILITIES

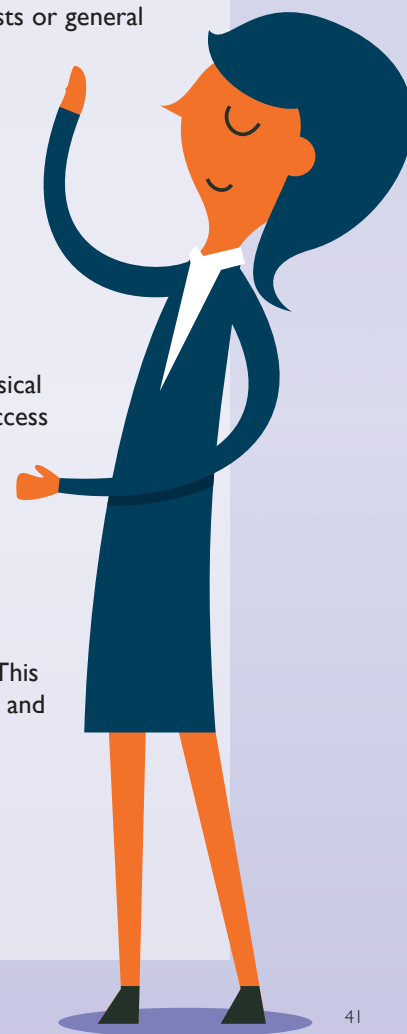
Linda Harvey, president and founder of the Institute for Dental Compliance and Risk-Management in Jacksonville, FL, explains some of the important responsibilities of a HIPAA Compliance Officer. Regardless of whether the Privacy and Security roles are combined or separate, the Compliance Officer should keep up to date with relevant state privacy laws and any applicable dental board requirements.

PRIVACY OFFICER:

- Develop policies and procedures surrounding the Privacy Rule that include topics such as the office Notice of Privacy Practices (NPP), release of information, and use of patient information (X-rays, before-and-after pictures, etc.) for marketing.
- Develop a sanction policy for staff who violate office policy. This is required under the law.
- Ensure all new patients receive a copy of the office NPP and sign an acknowledgement of receipt.
- Develop a business associate agreement (BAA) for all individuals or companies that create, maintain, transmit, or receive your patient data. Examples of business associates include IT vendors, practice management software, practice management consultants, collection agencies, and shredding companies. This does *not* apply to referrals between medical specialists or general dentists who may co-treat a patient.
- Ensure that all BAAs are documented and up to date.
- Train employees about HIPAA compliance upon hire and annually thereafter.
- Save all HIPAA-related documents for six years, per the regulations.
- Conduct an annual review of policies to ensure they are current.

SECURITY OFFICER:

- Develop policies and procedures surrounding the administrative, technical, and physical safeguards required under the Security Rule. These should include topics such as access controls, passwords, breach notifications, workforce security, and encryption.
- Develop a sanction policy for staff who violate office policy. This is required under the law.
- Develop an incident-response plan, contingency plan, and security-risk analysis.
- Conduct breach investigations.
- Collaborate with the IT vendor to ensure the office network is HIPAA-compliant. This should include ensuring that the antivirus and malware subscriptions are up to date and backups are completed, and that data has not been corrupted.
- Train employees about HIPAA compliance upon hire and annually thereafter.
- Save all HIPAA-related documents for six years, per the regulations.
- Conduct an annual review of policies to ensure they are current.



vacation—the weeks of Thanksgiving, Christmas, the Fourth of July, and Mardi Gras. Once we get those weeks blocked off on the calendar, we fill in the blanks with dental work and additional time off.

It takes strength and determination to stay the course and not let the winds of dental technology or other trends blow you off your course.

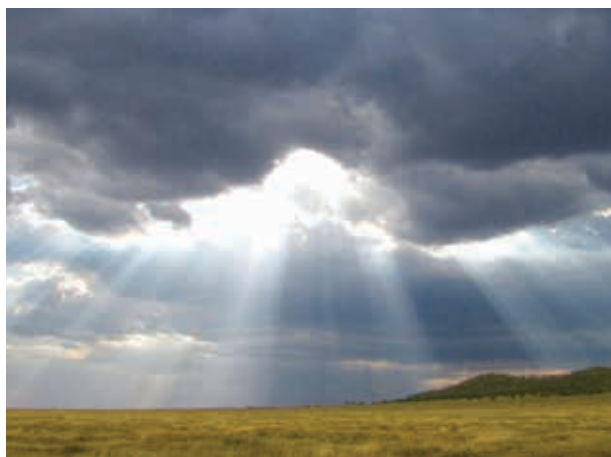
It's kind of like retiring a little bit at a time. It helps me understand that work is a good thing and should be enjoyed. By taking that much time off, I sometimes get to a point where I'm not ready to take another week off! But I know it helps rejuvenate my practice to step away from it every once in a while.

DEFINE YOUR GOALS

A few years ago, I wrote a personal vision statement for my dental practice. It's a compilation of things that I have learned after 30 years of dentistry. I need my team members to align with that vision statement, and I keep it framed in my office. I'll periodically read it to make sure I'm staying centered. Occasionally, I'll read it to the team so that they understand my vision. Everything we do in the practice has to align with my personal vision statement, which starts by saying:

I've learned that enjoying life is about relationships and experiences, and that happiness is best achieved by maintaining a healthy balance between love, work, worship, and play. I want my life to be filled with meaningful relationships and unforgettable experiences in each of these areas of life.

It goes on from there, but every dentist should determine for themselves what is most important and what their goals are. In order to get the kind of dental practice that you want, you need to have a vision or clear direction of how to get there. A vision



statement can help keep you on the right path.

When I was a young dentist, one of my mentors, Dr. Mike Robichaux, told me to decide what type of practice I wanted five years from then and start practicing that way immediately. "If you don't," he said, "five years will pass and you still won't have the practice that you want."

It helps rejuvenate my practice to step away from it every once in a while.

Dentistry is a wonderful profession, and I'm truly happy that I've been fortunate enough to survive and thrive during the storms of the past 30 years. It takes strength and determination to stay the course and not let the winds of dental technology or other trends blow you off your course.

As the dentist, you are the leader of the practice, and you alone determine the course of your future. Whether good or bad, that choice is up to you. Make the decision today to not let the storms deter you, so that when you look back on your career 30 years from now, you will have developed the skills to keep going and to enjoy the ride. ■

3 WAYS TO COMBAT BURNOUT

- **Continuing education and constant learning can be rejuvenating.**
- **Take time off! You'll be motivated to return to the office.**
- **Determine what your vision and goals are—and move in that direction.**



Duane Delaune D.D.S., M.A.G.D. has been practicing dentistry since 1989. Dr. Delaune has maintained a private practice, Delaune Dental, in Metairie, LA, for nearly 30 years with an emphasis on cosmetics, implants, and complex restorative dentistry. He is a graduate of Louisiana State University School of Dentistry in New Orleans, LA, and has completed a general practice residency at the V.A. Medical Center of New Orleans. He is an Accreditation Candidate in the American Academy of Cosmetic Dentistry.

And everyone in the room was crying." A day later, Dr. Britton checked on Taya's smile and made only minor adjustments. She was still beaming from the day before.

WORTH THE WAIT

Today, Taya says that she couldn't be happier that Dr. Britton and Arrowhead found a temporary solution for her while she is still young. She said, "The best thing is having teeth that look like they fit in my mouth. More than a few people have said, 'You got your braces off!' I have to laugh because it was much more than braces, but I just love my new smile!"

In addition to improving her aesthetics, Holly reports that with the Snowcaps™, Taya doesn't grind her teeth like before, and now wakes up refreshed.

To maintain her restorations, Taya uses a Waterpik® every day because she can't floss the Snowcaps™ like regular teeth, but she doesn't mind. She brushes them every day like regular teeth, and she can eat things that she previously avoided when she just had her primary teeth. Her overall confidence is soaring, and she is willing to smile with her teeth showing in photos now.

Going forward, Dr. Britton plans to check up on Taya every few months to make sure that everything is functioning properly. If any adjustments are needed, he can address them immediately.

The Snowcaps™ will help Taya look and feel her best during her teenage years.

Holly said that she is grateful they found a doctor who has a good relationship with expert professionals, because their combined expertise solved a unique dilemma—one that had stymied other doctors. She said, "It is such a relief to have a solution after years of wondering if anything could be done. Having Taya feel healthy, happy, and confident made it all worth it. We're so grateful to Dr. Britton and his team members, and to Arrowhead Dental Lab for the hours of problem-solving they put into her case." ■

COVER STORY CREATIVE TEAM

AESTHETIC DENTISTRY: *Dr. Brian Britton*, Arlington, TX

SNOWCAPS™ RADICA® RESTORATIONS: *Erik McKinnie*,

Arrowhead Dental Laboratory, Salt Lake City, UT

PHOTOGRAPHY (cover and page 7): *Justin Grant*,

Salt Lake City, UT, JustinGrantPhotography.com

HAIR AND MAKE-UP (cover and page 7): *Anya Zeitlin*,

Salt Lake City, UT, www.anyazmakeup.com

ENHANCE *the* BEAUTY *of your next Arrowhead case*

Gold-hued abutments have a reflective property that creates warmth and beauty, and results in a superior aesthetic outcome for your patient. This is especially important in cases where gingival recession is possible.

Make your next implant case the most beautiful and predictable yet. Try Arrowhead's gold-hue service and our dedicated implant support team. **For more information and a free case consultation, call:**



1-877-502-2443

ARROWHEAD

IPS **e.max**[®] Lithium Disilicate

Esthetics & Reliability

IPS e.max lithium disilicate is the most prescribed brand of all-ceramic in the world.*



With over 100,000,000 restorations placed, it is also the most proven all ceramic in the world. More dental professionals are choosing the combined beauty and strength of IPS e.max lithium disilicate over all other restorative materials for crowns, inlays, onlays, thin veneers, abutments and bridges.

***For Esthetics, Performance and Reliability, Make it e.max.
Visit makeitemax.com to learn more.***

ivoclarvivadent.com
EXPLORE SHOP LEARN

For more information, call us at 1-800-533-6825 in the U.S., 1-800-263-8182 in Canada.
© 2018 Ivoclar Vivadent, Inc. Ivoclar Vivadent and IPS e.max are registered trademarks of Ivoclar Vivadent, Inc.
Dentistry by Dr. James Fondriest and Matt Roberts CDT.
*Based on global data.

ivoclar
vivadent[®]
passion vision innovation