

Howard Speaks Podcast #1

Featuring Mike DiTolla

Howard Farran: Ladies and gentlemen, it's our first podcast, audio and video, on Dentaltown, and it is of no surprise that my first guest is my idol/rockstar in dentistry, Mike "The Man" DiTolla. I've been listening to DiTolla lecture for 20 years and I have to tell you that every single time I've ever lectured and a dental society either says we're never having you back or they loved it, and if they loved, says man, is there anybody out there that's as exciting as you, and I've only referred Mike "The Man" DiTolla. And everyone that I've ever referred to you to speak at their meeting has just absolutely loved you. Mike is second generation dentist, his dad is a rockin' hot dentist and Mike's...it's in his blood. He came from University of Mississippi – there's four D's that came from University of Mississippi. There's DiTolla, Dorfman, Dickerson...who's the fourth one?

Mike DiTolla: Uh...

Howard Farran: Dorfman, Dickerson, Bill Dickerson, Dorfman, DiTolla, oh, we'll say three. I always remember to use the four great ones, but um, he's now the Clinical Director of Glidewell, which is the largest dental lab in the world, I think 5% of all the crowns in all of America are made at Glidewell, and Jim Glidewell is another one of my idols. He reminds me of the Herb Kelleher/Southwest Airlines, I mean, he was the first guy that said, hey, let's do this, let's bring down our cost and lower our prices so that everyone can afford to save their teeth, at a time when everybody else was, oh, you know, always going to high-end classes and, you know, trying to make a mountain out of a molehill and everybody was just taught in the most expensive, slowest process in the world was the best while basically one in four people over 65 didn't have a tooth in their head, and I've always been a huge fan of Jim Glidewell, and Jim Glidewell, with the largest lab in the world could have hired anybody on the planet to be his clinical director, and he absolutely wanted Mike "The Man" DiTolla, and it was also no surprise to me when Gordon Christensen was looking for someone to continue his legacy, and he started bringing in dentists to start helping him on his lecture schedules since he turned 80 year old. He, too, picked Mike "The Man" DiTolla. So, Mike, it is an absolute honor that you decided, you agreed to be my first audio/video podcast interview. How are you doing, buddy?

Mike DiTolla: I'm doing great. I feel honored to be here on your very first podcast, and I actually, you know, I tell people all the time that I went to the Howard Farran School of Lecturing. Um, when I first wanted to get started with this, I, you were nice enough to let me tag along with you, and I probably went to, I don't know, 15 or 20 different cities and just watched how it all worked, and I found it so inspirational because I didn't know that you could be entertaining and educational at the same time, because certainly in dental school, there weren't many entertaining instructors. And even afterwards at CE courses, there weren't a lot. And the first time I walked into your course, I was just stunned, I was like, I can't believe this is, you know, that you can do this, and so you were initially my inspiration to start doing that, and I always loved the fact that you simply don't have a filter, um, and you know, it's a great thing because you'll get up and say anything, and I've seen you say things that, you know, got people to get up and walk out of the room, and I always thought that was fantastic that you were willing to state your opinions regardless of the results, so thanks, it's an honor to be here. And you know, it's funny you mentioned about Jim Glidewell. The way kind of the lab all started was, and it started in Jim's kitchen. He was just working for a single dentist, and then he moved inside of that dentist's office, and

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he learned very early that the best way to be able to do quality restorative dentistry or the easiest way to do it, the easiest and the best way was to be right in the doctor's office. But, then he went out and started to do some work for some other doctors as well, and that's how the laboratory started, just with local doctors, and he was on vacation in Pennsylvania years and years ago, and he noticed that some of the dentists in rural Pennsylvania, any time he saw a dental office, he would go in and talk to them and tell him that he was a technician from California, and they were having to send their lab work all the way over to, you know, Philadelphia or Pittsburg. There were no local labs where they were, and so he got an idea, you know, there's a lot of dentists who don't live in a major metropolitan area, and if they were, you know, willing to send it across the other side of the state, maybe they were willing to send it to the other side of the country, because he noticed his lab fees were lower than that, so he was kind of the first mail-order laboratory, and it all kind of started from noticing that there was this need, this void, that could be filled.

Howard Farran: Well, you know, we joke in dentistry, I mean, it's like you go to a study club and, you know, every lecture in the study club is the same thing, you know, my series is called Uncomplicate Dentistry, and it's like, from '87 to 2014, you go to study club and dentistry is like, uh, well you know, some dentist will stand up and say I just want to let everybody know that I trim my own dyes, and the next dentist can't be outdone, so he's got to stand up and say, well, I pour out my models, trim my own dyes, but I quarry my own stone. And then the next dentist has to out beat...he says, not only do I quarry my own stone, pour out my own dyes, trim my own dyes, I have my own beehive, I grow my own wax, and I wax my own crowns, and it just seems like dentistry is just a cult of the longest distance between two points is high quality, and then if you ever raise your hand and say, oh, I know a short cut, I know how we can do this faster, easier, lower cost, I mean, people are just looking at you like you're a freak. And I just love the fact that, you know, Jim, Jim's...how long has Jim been in Glidewell? Thirty-five years?

Mike DiTolla: Yeah, a little over that. Closer to 40.

Howard Farran: Yeah, almost 40 years, and he works every day trying to just take out little bit steps, little bitty minuscule steps, and he also rewards the patients where, you know, if you send in a scan of your prep and he says, I don't have to pour up the impression, I don't have to do this, he even gives you a lower price, and he's just like Southwest Airlines, like Wal-Mart, like Ikea, like all the great companies, like Costco, he actually loves to drive down costs so that humans can afford to save their teeth and have dignity. I think...he's like antigravity in dentistry. So, what I want to ask you, the whole theme of my podcast here is Uncomplicate Dentistry. You have the most amazing mind in dentistry, um, crown and bridge is probably, you know, behind labor, crown and bridges, you know, the highest cost, and then half of that cost would be supplies...so, Mike, why don't, you know, we got an hour today – tell dentists how they can Uncomplicate their dental life.

Mike DiTolla: Well, certainly, in terms...first of all, don't trim your own dyes, just to get back to that for a second. We've seen that that doesn't really work very well because a lot of time we'll send something back, we'll look, pour it up, and we'll look at it...we can't tell exactly where the margin is, and so we'll call the dentist and say, would you like to trim it yourself. You know, what a lot of dentists don't know is

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that here at the lab, we actually have a no-fault remake policy, so whether the patient didn't like the crown or it didn't fit or whatever happens, we actually have a no-fault remake policy where we'll remake the restoration for free, but if we pour out the model and we just can't see the margins, we're going to call the doctor and say, hey, we can't do the no-fault remake here, would you like to try trimming the dye? And he says sure, we send it back to him, and when you look at it before, it's kind of a jagged margin with a couple of holes where it doesn't quite match, and then when you get the dye back, it just looks absolutely perfect, and it's complete revisionist history is the dentist prepping the dye the way he meant to prep it, too. And so it's actually very dangerous because you get emotionally attached, you know, to how the margins are going to look, and so to have our people who do nothing but trim dyes all day, every day, having done it for the last 20 years, they will unemotionally trim the dye and actually try to nail the real margin and not try to make it look as good as the dentists wanted to make it in the mouth. So, certainly trimming your own dyes is never going to be a good idea, but there should really never be all that many times where that has to happen. You know, there's certain ways to go about prepping teeth to treating tissue where 90-95% of the time you can avoid those types of pitfalls where you don't get into a situation where somebody's having to decide, you know, where you meant to put the margin and where it connects or doesn't connect, and as you look at, you know, we get, last month, we probably did about 113,000 crowns, so we probably got about 95,000 impressions coming through the lab just last month, and when you look at a lot of these impressions and a lot of these preparations, you begin to see a common theme because most of us tend to make the same types of mistakes in the same areas on a tooth, and so you can kind of start to narrow it down to this is what happens, and you know, I'm just another one of those dentists because the mistakes that a lot of our dentists make are exactly the same ones that I make. And the fact...

Howard Farran: Okay, Mike, back to the Uncomplicate Dentistry. You said you did 113,000 crowns, you got 95,000 impressions...I'm assuming that means 18,000 came in optically scanned? And if you were...you know, in Dentaltown, we always say we don't, we won't, no dentists ever have to practice level again...what do you say to these individual dentists who are looking at scanning systems from 3M or, there are all kinds of different scanning systems...um, you've been talking about trimming dyes, should a dentist be thinking about getting rid of rubber and polyvinyl and polyether impressions and start optically scanning, and is that going to uncomplicate their life, and is that a return on investment, or is that bleeding edge technology, not leading edge technology? What's your rant on that?

Mike DiTolla: Uh, well, first of all, no, when I said 95,000 impressions, I meant some of those have multiple units on them, but if you...but if you look at the 95,000 impressions that come here in an average month, right around 5,000-6,000 are going to be digital impressions, so it's growing steadily, but it's still a very small percent of the impressions that we get in here – about 5% of the impressions that we get in here. Um, it's interesting to see the difference in quality if you will, between the digital impressions and the traditional impressions. We actually own all the commercially-available digital impression systems here and I've had an opportunity to use them all, and they all have one thing in common, and that is you have to treat the tissue better than you do with a conventional polyvinyl siloxane impression, and so with polyvinyl siloxane, you can do things that you probably shouldn't do, but you can do them, like you can use the polyvinyl material to push blood out of the sulcus, you know,

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if you haven't treated the tissue well. It's kind of a hacky thing to do, but you can do it. You can use it to push tissue out of the way, um, because it's got a physical body to it. When you move to a digital impression system, you're using, as of today, a laser to scan the preparation from the top down, and any moisture, or any blood around the margin or connecting the soft tissue to the margin, it's going to ruin the impression, and so you actually have to take better care of the gingiva than you do with polyvinyl, so in that respect, it's actually a more difficult and, I guess a more complicated way to take an impression because you have to treat the tissue better. Now, dentists who take great polyvinyl impressions today, they're able to do that, for the most part, because they treat the tissue well. And when I see those dentists buy a digital impression system, they're able to take great digital impressions, too, because they were already taking great polyvinyl impressions. So, by in large, my feeling, Howard, is that digital impression systems do a lot of things really well. In fact, when a dentist asks me, what's the one thing I can do to become a better dentist, that's my first answer, is a digital impression unit will absolutely make you a better dentist if you want to become better.

Howard Farran: And what were the top three systems...I mean, let's name products. What would the top three be?

Mike DiTolla: Oh, that...

Howard Farran: This is out there, practicing alone. You see all the systems. What ones have your attention? Who's impressing you?

Mike DiTolla: I like the Omnicam from Sirona, I like the TRIOS unit from 3Shape, I just wish it was more affordable. It's certainly the premium-priced unit out there right now.

Howard Farran: How much?

Mike DiTolla: But...oh, it's priced in Euros and they have a bunch of different distributors here. Some people put bundle lasers with it, but if it's an average one, if an Omnicam costs \$25,000, for example, the TRIOS from 3Shape is going to be closer to \$35,000.

Howard Farran: Okay.

Mike DiTolla: Uh, but they all work really well. The...

Howard Farran: 3M has one.

Mike DiTolla: Yeah, 3M, their new True Definition that they're going to be coming out with soon looks really good. They've made some big improvements. They've always had smallest head, the smallest unit that was available, but there was always this thing where you had to keep the tip of the camera 10 mm away from the tooth, but no more than 20 mm away. The _____ and it always felt like I was playing Microsoft Flight Simulator. It was really difficult to do. You really need to be able to set these units down onto the teeth and still get a good scan for it to be easy to use, but again, when you blow your prep up onto the screen so big, you go to school, you should get a unit of CE for every time that you blow it up, and what you're look at on the screen after you do the impression, is not impression like a

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polyvinyl where you try to read a negative, an impression, you get to see the actual virtual model, which is what we at the lab see, which is why it's so much easier for us to look at this and say, this one's horrible, and the dentist goes, yeah, it does, and we say, that's yours. And you look at the impression, you can't tell it's horrible until you pour it up. So, in my mind, the best way to really become a better dentist is to go with one of these digital impression systems. The problem is, none of them are really all that good at taking a digital, taking an impression. You know, it's a more difficult, slower, more expensive way to take an impression compared to polyvinyl, which is super easy. It's not broken – we all know it works. The last 30 years of dentistry have been done with polyvinyl and there's no big crisis because, you know, crowns and bridges don't fit, but if you want to become better as a dentist and really get better, not by sitting in a lecture room and listening to you or me flap our gums. If you really want to technically get better with your hands, blow up your preps, see all the chips out of the margins, go back in while the patient is still anesthetized and smooth it up. And some of the things we do with our dentists, we're able to actually communicate with them live, Howard, so you could sit there with an Omnicam by Sirona and you can take it and move it along the preps while one of our technicians is watching on the computer screen and says, that looks great, but can you take a little more off the distal of number 6, and you say sure, and you reduce it, and then you do your digital impression and we watch it live and we say, that looks great, but can you roll it onto the labial a little bit more on tooth number 8 captured down by the gingiva, so it also offers the potential to kind of have a virtual lab technician in your office to tell you whether or not you're done prepping, and that's enough reduction for them to give you some great looking crowns.

Howard Farran: So, and Mike, we went through this 25 years ago, I mean, what you're say is, when you see your prep 18 inches wide on a screen, you really become a better dentist, because you get massive feedback. I still cringe when I see dentists practicing without magnification. And I think you could sort the quality from the low quality dentists in half. If you had to pick one thing, it wouldn't be if they had their FAGD or MAGD, it would be if they just use magnification. You can't fix what you can't see. When did you get turned on to magnification? Did your...was that early in your career?

Mike DiTolla: Uh, it was probably about...I actually was...I start off all my lectures talking about how I'm an average dentist, and if you contacted my dental school instructors, they would say, well, that's not quite accurate...he was more of a below average dentist while he was spending his time there at UOP. I did some really crappy dentistry, you know, some really kind of cruddy, average dentistry for the first 13 years of my career, and actually it wasn't until I came here to Glidewell and they started pointing HD cameras to my preps and blowing them up on the screen that I was like, Oh, God, I've got to get better and I've got to get better quick, uh, and so that's when, um, I got loupes. I had been practicing without them. We didn't have to wear them at school. And my loupes are 4X, and you know what's interesting is when you look at the prep and you think it's done, and then I'll hit it with the digital scanner for the impression to blow it up on the screen, and then I can see a chip out of the margin that I couldn't see with my loupes, but now, having seen it on the screen, I go, oh, on the distal lingual, and I look back now with the loupes, and now my brain recognizes it. It still doesn't look like it does on the screen, but it looks like a little white mark, and so my brain begins to know when I see those, I need to take out my fine diode and smooth that off or else the lab is going to look at it and say, does he really want us to put

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a V-shaped wedge of e.max down here on this margin, and so the loupes are great, loupes are fantastic, but digital scanning is like loupes on steroids where all of a sudden now, you're seeing things, and now when you look back at the tooth, you can see what before just passed as normal to your eyes, you see that there's something wrong with that, and that needs to be smoothed off. But, let me finish about, you know, you asked about the ROI, as well. I think without us, without Glidewell and without the other labs offering \$20 off, I don't think there is any ROI, to be honest, on most of these systems if you're not going to save \$20 for using it. The lab's got to reward the dentist for saving them that labor and the materials and, you know, all the time that it takes to do that stuff, and so that really being the only place where the ROI comes in, I really don't think that the average system out there today is easy enough for the average dentist out there who's in a busy practice. I've taped myself so many times doing it with a stop watch. It takes me 29 seconds to squirt polyvinyl siloxane around the prep tooth, my assistant fills the tray and hands to me, put it in the mouth, patient bites down...20 seconds. It's just simple and straight forward and you can't do an impression that quickly today on any of the digital systems. There might be something, you know, coming in other technology, whether it's ultrasound or something else that will make it to the point where we can scan the whole mouth, including the prep, in 20 seconds, and then we're talking ultrasound would also see through tissue, see through blood. In fact, ultrasound holds the potential because it can see bone levels and the tooth and the gingiva. Not only could you scan the mouth and see the prep, but it can do all you periodontal probing for you as well without any hot bias from any hygienists and how hard they're pressing, so the future is bright, but today, the only people that really should get involved, in my opinion, with this digital technology are dentists who are already taking great impressions, who enjoy using, you know, high technology and want to promote to patients that, hey, we're, look what we're doing, we've made this investment in this so we don't have to put that goop in your mouth anymore, where as you and I both know we really could care less about putting goop in people's mouths.

Howard Farran: Well, you said 29 seconds to take a regular impression. How long is it taking you to scan? Optically scan?

Mike DiTolla: Um, about the fastest I go is about 90 seconds.

Howard Farran: Okay.

Mike DiTolla: So, three times.

Howard Farran: Oh, I love _____. I just had a physical because I'm overweight and I asked them, he checked me with _____ and he said no, you're retaining food. And, so, uh, that helped me a lot. Also, going back earlier, you were talking about you've got to take better care of the tissue, um, I want to run these two things by you. Some people, when they have bleeding tissue, they take a LIGMAJECT 1-50 and blanch the tissue around it, stops the bleeding. Are you a big fan of that or do you not like that? Do you ever do that?

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Mike DiTolla: Uh, I don't ever do that, but I'm okay with it. I've certainly done it in the past before. I don't find myself in a lot of situations where I need to do that. If I do need to do that, it's usually only replacing an existing a crown with deep subgingival margins.

Howard Farran: Right.

Mike DiTolla: And usually I'm going to temporize that and let that heal and then make a determination about whether or not I'm going to do crown lengthening on that tooth or not. But yeah, I mean, if you're taking an impression because you've got to take it, patient's leaving for Europe in a week, whatever, that's a fine, a great way to do it. Um, you know, I'd also consider the diode laser, you know, at that point, as well.

Howard Farran: Okay, that diode laser...are you talking about any diode? It seems like a very popular one is the AMD. Do you like that one or...let's talk about diodes for...because you've got to take better care of tissue with optical scanning, so let's talk diodes. Are they all the same? Is there any ones you like more?

Mike DiTolla: Uh, you know, they're all roughly similar, the ones that I have used. I have the Picasso Light from AMD just because they did, uh, they were really amazing. When all these diode lasers cost \$7,000-8,000, they came in with a, you know, \$2,500 price point, kind of like when somebody came in with the first...

Howard Farran: You know who did that?

Mike DiTolla: Alan Miller, I know Al.

Howard Farran: Alan Miller, that guy, Indiana Hoosier boy. Who would have guessed a Hoosier would have made the perfect, lowest cost laser. I love that guy. He is amazing.

Mike DiTolla: Not only that, but then he sold his company to DENTSPLY, and as of August 1st, he's buying it back from them for pennies on the dollar, so just an absolute genius.

Howard Farran: And why, what, tell me more about that story. Why did that happen or how did that happen or...

Mike DiTolla: Um, I'm going to let him tell you about it, but I'm gues...if I had to guess, I would say that DENTSPLY is such a big company with so many different divisions that, you know, maybe they, you know, just kind of didn't have the same laser part of the _____, like focus on this _____ that maybe Alan did because he was near and dear to it and kind of this was, you know, his baby that he created, so...I mean, he feels like it's going to get more attention if he's the owner and running it himself.

Howard Farran: Yeah.

Mike DiTolla: But, that's the one _____ that I happen to use, and I really like it. They're all slow compared to electrosurge units. You know, when you and I got out of school, there weren't diode lasers and we used to use electrosurge units, and those were exciting because you put the metal plate behind

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the patient's back and...you knew you were essentially taking a modified extension cord and sticking it into somebody's sulcus, and you know, if you had a metal bra strap, you know, they'd get shocked or their wig would pop off like in the cartoons, and it really smelled a lot, like a Fourth of July barbeque. There's just a lot of disgusting...

Howard Farran: But, God, it was fast. Yeah, well it was...

Mike DiTolla: It was so fast.

Howard Farran: Lightning fast.

Mike DiTolla: And the down side of being fast was it was really easy to make a little mistake. I have plenty of people walking around who, when I was using the electrosurge, I was a little heavy-handed, like _____ tissue above their central incisors, and I think all...unintentionally, I started like a John Elway fan club because, you know, some of my own patients had these huge 14-mm central incisors like John Elway's, and they didn't necessarily come in for that, so the diode laser is safer because its slower, although it does take a little bit longer, but today, working around implants, uncovering implants, you know, cleaning tissue around from it to get an impression, _____ take an impression, you can't do that with electrosurge. You kind of have to have the diode laser MPL...

Howard Farran: I've got to tell you a couple of old, old electrosurge stories. Um, the greatest thing about the electrosurge is you would temporize, you would take an impression and temporize, and then you would schedule two weeks to get the crown seat, and the agonizing pain would go away just like the day before the crown seats. So, you know, there was perfect timing. And over the years, I was at about 10 different offices who are dentists, you know, does it on everyone...he says, I never get any postops on somebody. In the office, turn to reception, turn to the assistant, give me one name of anybody you used the electrosurge on in the last week, and I'm calling them right now. A hundred percent of the time it's like, oh my God, it's killing me, it's killing me, and I'm looking at this dentist, saying, You just told me you have no postoperative electrosurge, and I called only one person, and they're in agony. I mean, the postop is just brut...if you're calling your patients, you've got to call them within four hours of the electrosurge because if you call them the next day, they're not too happy. So, you'd recommend the diode laser, and what does that Picasso Light running at around these days?

Mike DiTolla: I, I think it's closer to like \$1,995 now maybe at the last show that I was involved in...

Howard Farran: Isn't that amazing?

Mike DiTolla: ...and I'm much more likely to use it to troth around posterior teeth than I am anterior teeth, and the reason why is because of the thickness of the tiss...um, their still just a little bit too thick – they're 400 microns thick, and so when you go around to troth around a tooth, because you're taking a little thicker slice of tissue that I'd like to as you troth around there, and you lose a little vertical height on the tissue as you go past the papilla. So, up close to your teeth I'm not worried about it because if I expose a crown margin there, like on an e.max crown or a Bruxzir crown, It's not a big deal, it's not a PFM, there's no metal collar, but on anterior teeth, during my prep sequence, I go to great lengths to

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make sure that the margin's just slightly under the gingiva, and then if I go around and troth that with a diode laser, I'm going to lose a little vertical tissue height and expose that margin. Now, I need to drop the margin again, and if I come back in again with the diode laser, I might lose a little more tissue height, so until we get some really thin tips, I'm sticking with retraction cords in the anterior, and in the posteriors, still doing retraction cords, but also using the diode laser. And it's interesting because Dennis Blythe, who we just mentioned, has a new product that's out on the market that I have been testing because I'm always looking for ways for our clients – and Andy Clidewell last month worked with just over 46,000 individual dentists, 46,000 dentists offered at least one thing for us. It could have just been a night _____ or a snoring appliance, but a lot of it was for crown and bridge, and I get questions from them about how to take easy impressions and we see a lot of impressions come in where there was no retraction used whatsoever. You know, it might be the H7H technique or just trying to get something to go into the sulcus. Dennis quite recently came out with something called the Aquacel Ultra Cordless, and it's a device that actually has an intraoral syringe tip for the impression material that's about the size of a Perio Probe. I mean, we're talking tiny. But, there's no way you could ever squeeze a gun and get it to come out of there. You'd have to be Herculean and it would probably strip the gears, and so it hooks up to your high speed handpiece hose and when you step on the rheostat, that activates the motor which pushes the impression material out. So, think about this, Howard, think about a Perio Probe that had, you know, a hole at the end, and you could put it right into the sulcus, step on this, and start expressing the material into the sulcus, and then go around the tooth with the tip in the sulcus, and it looks like it might be the first kind of legitimate way, in my mind, of being able to take a cordless impression while still getting some material into the sulcus, and therefore, _____ a tooth and margin of the preparation.

Howard Farran: And are you packing one cord or are you doing the technique where you pack a zero, then a one, then a two, then pull the tooth, then _____...you do one cord or two-two cords?

Mike DiTolla: Um, I'm a long time two cord guy, double-zero on the bottom with the two cord on the top. That still provides more retraction and is more predictable than any other technique out there, but it's also the most time consuming and the most laborious, and so there's kind of that trade-off, and so this Aquacel cordless unit might, you know, kind of bridge that gap between the two while we're still getting some material subgingival – not as much as with two cord, but it's being done with a lot less effort because we're not having to pack the cords and do all that...

Howard Farran: Mike, can I tell you what I do and not many people...everybody thinks it's crazy and I couldn't do without it, is you know you can floss your teeth, you can floss in between your teeth all day long...after I numb up the patient, I have my assistants pack the zero-zero and then the one or two, and they just take the cord, they pop it into the contact packet, because then the tissue's pushed down and out.

Mike DiTolla: Right.

Howard Farran: So, when you...I pack the cord the first, I almost never touch the tissue. But, you leave the tissue against the tooth and up, and then you're probably...you might nick it, now you've got a

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bleeding problem. I still can't understand why everyone in the world doesn't pack the cord while it's numbing up.

Mike DiTolla: Well, I don't pack the cord until I've broken the contact, so you know, I'll break the mesial distal contact and then I put the double-zero cord in. I do floss it just like dental floss on the mesial and distal and then pull it tight on the facial, tuck in the lingual and cut it so that the two ends are flush, and then at the end of...so, that provides apical retraction of the tissue, about 0.5 mm, so this is where we're going to prep to this new gingival level knowing that when that last cord's out, we're going to have a margin that's slightly subgingival, and at the end of the prep sequence, I take the two-cord – it's a 2E cord with epinephrine – ooh, controversy – and I put the 2E cord into the sulcus at the end, or my assistant does actually because here in California, she could pack cord. Here in California would blow your mind what she could do these days, Howard. But, she puts that last cord in, and then part of the magic is one of those impression caps, so we take an anatomical _____ cap, put it on the front and have the patient bite down for eight or ten minutes, I can watch on the anterior teeth, when patients bite on that cotton compression cap, you can see all the blood and the capillaries above the tooth, it just blanches up there because of that pressure that's being put on the tissue around that tooth, and that's part of the magic as well, is being able to use that cotton compression cap to get hemostasis.

Howard Farran: So, you're saying dental assistants in California can do a lot of expanded duty functions?

Mike DiTolla: Well, if they, you know, my RDA also has her EF and EF2, extended functions 1 and 2 license from the courses that she took up at UCLA, so yes, today, she could actually take a final crown and bridge impression without me even being in the room, she can do it all by herself, she can now adjust the contacts on crowns and cement permanent crowns without me in the room, she can do composites and amalgams once I finish the prep, and the most amazing one to me, and one that we haven't really gone down this road yet, is that when I'm done cleaning and shaping a root canal, she can actually obturate it.

Howard Farran: Are you serious?

Mike DiTolla: Yeah, it's amazing, you know? I still suck at that after 25 years, I'm awful at it after 25 years, but I think that might be why the state board did it. They're like, well, DiTolla still sucks after 25 years, let's give an assistant a shot – see if she does any better.

Howard Farran: So, so we're back to uncomplicating dentistry and we've been talking about impressions, we've been talking about optical scanning, um, do you have any data, Mike, on the difference in remake rates between optical scan versus polyvinyl siloxane impressions, old-school impressions?

Mike DiTolla: It is slightly lower for the digital impressions, but you know, I think that says more about the quality of the dentist willing to purchase that technology. Um, you can just see, you know again, it's the same reason why I said that the dentists who tend to take really good polyvinyl impressions do well with this technology and get involved with it because if you're taking clean polyvinyl, it's going to work

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with digital, too, so digital's slightly lower today in terms of remakes, but it looks like it's because of the dentists who are using it, not because it's actually any more accurate. You know, we know that...

Howard Farran: So you're saying it's a tagging _____, I mean, we see it all the time in epidemiology. They'll say, well, yoga will extend your life by four years. Yeah, well people who do yoga every day probably don't smoke, they're probably not drunk, they probably exercise, they probably eat organic and just _____ behavior. So, you're saying the optical...the people who are not in the digital are just into dentistry. Is it still legit to say in the C&B laboratory world, average remake is about 6% on a lab or...is that still the number? You used to be that number ten years ago?

Mike DiTolla: Yeah, my, I practice here within the lab and my remake rate goes anywhere between 6 and 8%. A dentist on the outside who doesn't have the benefit of having in-house laboratory technicians like I do, if their remake rate was 8-10%, I still think that's pretty good. There are two numbers that are kind of shocking surrounding that. Last year, in 2013, we had 4,500 dentists, roughly 4,500 dentists who had remake rates over 50%. So, that means that for every 100 crowns that they tried in somebody's mouth, if he had to go back to the lab, it's literally just the flip of a coin in whether or not this restoration is going to fit. And we also had just over 5,400 dentists who had a 0% remake rate...a 0% remake rate. And that's nuts because when humans are involved, we all know that that can't happen. So, 6-8% is actually pretty good. But, we've got the 0 rebate percent dentists and we've got the 50% remake dentist – I actually respect the 50% remake dentist more, you know, they're not all that good at clinical dentistry and making it work, but at least they have a conscience and a quality control filter so when something doesn't fit, they send it back to the lab. Granted, it would drive me insane if half of the things I tried didn't fit, but it's the people, it's the doctors over at the left with the 0% remake rate where you just go, wow, they'll put anything in the mouth. It's amazing.

Howard Farran: Yeah, and I also, I think it's very obvious, say that so many dentists who are always changing labs and always had a 5 or 10% remake, and then they start getting into CAD/CAM and then basically see them in everything. And it's funny how you're so picky on other people's work, you're so picky when a new patient comes in and says, oh, that margin's not right, we're redoing that crown, and then they replace it with something that's open three times more than the crown they just replaced. So, that's just the complicated nature of human beings. So, what other advice do you have to uncomplicate dentistry?

Mike DiTolla: Uh, well again, you know, just that whole, the whole prep sequence to me is really, is really part of that story. Um, you know, I was taught to do depth cuts in dental school – I was taught joke of kind of a, I don't know, kind of a not really exact way...we were told to take a 3-30 burr and then insert it until you get to the top of the cutting blades, and that would be about 1.5 mm, but it's too easy to underdo it, too easy to overdo it, um, and so I started using these self-limiting depth cutters of different dimensions where you just push it down onto the tooth, and it stops at 1.5 mm – you cannot go too deep, and I've got a 2 mm one that we used to use for crown and bridge, and we've got a 1 mm one that we use now for a Bruxzir, and a 0.6 if we really have to go thin when it comes to a restoration like a Bruxzir, and so being in the lab here, I see that underreduction of preparations is just an absolute chronic problem that happens day in and day out. Doctors having to come to the phone, seeing if it's

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okay to spot the opposing or does the doctor want to prep more. I mean, to me, it's unthinkable to prep teeth without using depth cuts. First, I'm going to pick the material I'm going to use. It could be zirconium, could be Hemax, and that's going to determine, you know, the minimum amount and the ideal about that I want to reduce. And it's so easy to do what I do with depth cuts, and once you put some depth holes in there, literally all you do is connect the dots and you end up with a prep that looks the way it's supposed to look and it's reduced enough for your technician to give you a great looking restoration. It's like having a GPS in your car and you know exactly where you want to get to.

Howard Farran: So Mike, you could easily, I mean, I've known you for 25 years, you could easily have an honorary degree in psychology. What do you think's going on in the dentist's head, I'm not reduction, do you think it's, um, he doesn't want to harm the tooth, he's a dentist, because we all hear nightmare stories that, um, you know, when you prep a 100 MOD amalgam teeth for a crown in five years, how many of those are going to need endo?

Mike DiTolla: Oh, I don't know, you tell me.

Howard Farran: Well, you know, Gordon Gordon would say at least 25% of them. Do you think if they're trying to save tooth structure, they don't want to kill the tooth, um, what do you think is going on in their mind that they don't want to...do you think that they're afraid that they won't have enough retention? I mean, obviously a taller prep is going to have more retention if you, you know, shave it down, too much occlusal is...what do you think is going on in their brain that's making them not reduce enough?

Mike DiTolla: I call it lazy conservatism. Uh, I think it's a combination of being lazy and then on the back end, claiming they want to be conservative. Um, it takes a little extra time to put these depth cuts in the tooth, but you actually pick up that speed on the back end because you're not having to sit there and try to figure out how much you reduce with bite registration material. I think dentists have kind of a Superman fantasy that they have a micrometer sub-kind of telescope in their eye and they can see how much reduction they've actually done, but once you take a burr to enamel and start driving through, you lose all concept of where you are. Hey, I get it, you know, I've been doing this 25 years. I feel like I should be an artist at this point, and I should be able to prep a tooth without these little depth cuts, but I can't. I mean, I might get lucky sometimes and do it, but I can't, so this is my little checklist. The same way that pilots have checklists every time they get on a plane, these two guys with the gray hair up in the front have taken off and landed 25,000 times – why do they still use the checklist? Because they give a crap. You know, they don't want everybody behind them to die, and if you asked a patient, would you like me to use the checklist or do you want me to do it at the seat of my pants? You know, _____

Howard Farran: Did you hear about the two doctors that, um, shared a plane here in Phoenix?

Mike DiTolla: Uh-uh.

Howard Farran: Did you hear about that nightmare story? So, one of the doctors on his, uh, goes and checks the plane, and decides the tail needs fixed, and the company comes and takes off the entire tail to go have it repaired. Doesn't tell his partner, the other doc, asks his wife, hey, you want to fly up to,

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uh, Sedona for lunch, and she says...our pay center is Sedona. She says sure, so they meet down there in their Mercedes Benz, he jumps in the airplane, taxis out, takes off, has no tail, gets off the ground at Sky Harbor and goes over the 24th Street fence, dives into the ground. All dead. They get him to the crash scene, and they kept the street closed like all day because they're like, dude, there's no tail. Everybody's looking for the tail. It takes them like four hours to realize this doctor took off in an airplane – not only did he not have a checklist, he didn't even notice there wasn't a tail on his own plane. So, you're a big fan of checklist.

Mike DiTolla: Yeah, in fact, you know, I got my pilot's license right after I got out of dental school. You're supposed to do a walk-around around the plane, and you should probably notice that. Was there a _____ at the back of the....

Howard Farran: Not if you're a doctor.

Mike DiTolla: ...(Laughs) Yeah, exactly. So, yeah, it's kind of a checklist because it just goes left to right on this burr kit that I use in terms of the depth cutters as you worked your way across this, and so it is kind of a checklist because, as dentists, we have a tendency to underprepare because we think we know what 125 mm are, 2 mm looks like. You know, 2 mm might sound like a lot, but it's what every lab and every ceramic manufacturers been asking for, for PFM for the last 30 years, is 2 mm of reduction. And you know what's interesting, Howard – every time I'm prepping a tooth for a crown that has an MOD amalgam in it, I'll take my 2 mm depth cutter and I put two holes in the central groove. Now, there's 2,000 amalgam, that MOD amalgam, I put two 2-mm depth cuts, and by the time I reduce the occlusal surface, there's still amalgam left. So, dentists have no problems going deeper than 2 mm if it's in the isthmus of an MOD amalgam, but when you ask them to do it on the entire occlusal surface, that's there the disconnect happens. Dentists do not have a problem dropping a proximal box, 6, 7 mm, 8 mm, for a direct restoration, but you ask for 2 mm on the occlusal surface, and then they freak out, and I'm not sure why, so without these depth cuts, I just can't do it. I know I'm a...I used to be a chronic under-reducer because the first time I put 2 mm depth cuts in the occlusal surface of a molar, I prepped and then I told my assistant, okay, I think we're just about done, and she dried off the tooth, and when the water came out of the depth cuts, there was still half of them left, and when I finally reduced 2 mm, it looked to me like I _____ dentistry. I was ready to sue myself on the spot because it looked like an over-reduction, and when proper reduction looks like over-reduction, that's how you know you've been chronically under-preparing teeth for the last 13 years.

Howard Farran: Hey, my toll, these 5,000 dental school graduates that just got out this year, um, we've got to remind them that, you know, 25 years ago when we got out of school, a white, tooth-colored crown was always over metal, and a big change in our 25 years is now, PFMs are plummeting, right? Tell these young kids coming out of school back in our day what percent of porcelain crowns were over metal, and what is that percentage dropped to today?

Mike DiTolla: Uh, well, all of them were...

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Howard Farran: And then I want you to review the top three biggest brand names for depth reduction and, you know, we're always hearing oddly, Bruxzir, e.max, Empress and, um...so tell us, walk us through the PFM to now all porcelain.

Mike DiTolla: Well, when you and I were in school, you're absolutely right. It was 100% PFM, and in school today, that's still what they're doing, Howard. They are not doing then...the number of schools that I walk into that have done any kind of e.max – the one exception is Midwestern University out by you in Phoenix, they actually are doing four e.max crowns pre-clinically and two of them clinically, but most of the schools I walk into it's just all PFMs all the time. So, if you just go back to 2007, 65% of the crowns that we did here at Glidewell were PFMS – that's 2007. Then, you look at last year to 2013 – that's actually crowns and bridges, Howard, so, 2007 - 65%, 2013 – down to 19%...in seven years.

Howard Farran: Wow!

Mike DiTolla: It's almost like, it's almost like the ADA or the CDC or somebody came out and said, hey, PFMs cause cancer or premature baldness or erectile dysfunction, something awful where dentists say, hey, we've got to stop doing this.

Howard Farran: You just named three diseases I have. But, all of my crowns are full gold.

Mike DiTolla: I can see you all on the screen. That's why I decided to, you know, just got with what I could see. And if you look back at 2007, 24% of the restorations we made were all ceramic, and that was up to 77% last year. It's just amazing to see that kind of growth because all ceramics were always these highly esthetic restorations that if a patient bit down on a Pringles potato chip the wrong way might fracture, and so this whole revolution, there's nothing wrong with the PFM – the PFM didn't all of a sudden become contraindicated, in fact, PFMs today are better than they were when you and I were in school because the _____ ceramic's better, it was the rise of the all-ceramics, and more than that, it was the rise of the monolithic restorations. That's really what this is the story about, is the monolithic restorations, and so when e.max was introduced in 2007, it was on its third time of being introduced. The first time, it was called the Empress 2, and that got quietly taken off the market. Oops, they used the good name with that one, but that's okay. And then, the second time it was put back on, it was called IPF Heiress, and just like with Empress 2, this was a ceramic material fused to a lithium disilicate framework, and so that's what it was with Empress 2 and IPS Heiress, and then when it was time to launch e.max, _____ would call and say, hey, we've got a new lithium disilicate product, and we're like, stop, no, we still have a lot of angry dentists from the first two generations, and I said, well, what are you putting on top of the _____, like a marshmallow or Styrofoam, you know, what's the, what durable ceramic is going on top, and they said, no, it's 100% lithium disilicate, and they said it's just a coping, and they said no, you idiot, the whole crown is lithium disilicate, and they said, what does it look like, and they said, it looks great. And I remember the very first e.max crown I did was on one of the manager's wives who was there, she happened to be having a cleaning and needed a crown, and I said, can I try out this new material on your wife, and he said, yeah, sure, I don't care, go ahead. And we did it, and I remember putting that first e.max crown in and I looked at it, and this manager was in the room, and I said, it's beautiful, and he said, the crown? And I said, no, your wife, I've never seen her in this light

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before. She's stunning. And that blouse, it's almost see-through. No, and I said yeah, the crown, and we had been struggling with porcelain to fuse to zirconium crowns with white coping showing through. And all of a sudden, we had this new crown that was insanely esthetic, way more so than porcelain fused to zirconium, and it could be cemented, you know, and it was 360 to 400 megapascals of flexural strength. So, e.max really started the monolithic revolution, then in 2009 when we launched Bruxzir, now we had something that was, you know, three to four times as strong as e.max – not nearly as esthetic, in fact, they were down-right ugly.

Howard Farran: E.max is lithium disilicate and Bruxzir is...

Mike DiTolla: Zirconium oxide.

Howard Farran: And, and...

Mike DiTolla: And...

Howard Farran: Go ahead.

Mike DiTolla: And so the flexural strength to break that, to break zirconium, is up around 1,100 to 1,200 megapascals depending on how thick the crown is. And so, you may be seen this little silly hammer test that we do where we take a PFM, put it on a 2X4 and hit it with a sledgehammer, and the feldspathic porcelain on there doesn't break in to four or five pieces, I mean, it gets turned back into like atomic-sized dust. And then we take a Bruxzir crown, put it on the 2X4, hit it with the same sledgehammer hopefully just as hard, and it just drives it into the wood. You know, there's not a chip, there's not a break, and it's funny because, you know, Gordon and Rellin just released their 3-1/2 year results, and it's still these two things – e.max and Bruxzir are still the only two tooth-colored restorations in 39 years they've tested to have no chips or breaks after 3-1/2 years, so it's really two amazing materials that are so good, dentists are having to ask why PFMs. I haven't put a single unit PFM in since 2009. I'm perfectly happy with zirconium in the posterior, you know, e.max or zirconium in the anterior. The only time I use PFMs now is for bridges because even something as strong as Bruxzir, that is very strong as a single unit crown, if you make a bridge out of it, now we've got a connection between the _____ above it, and you have to have some very specific criteria for that not to break, so I tell Dennis all the time, if you're replacing a low first molar with a bridge, with a fixed bridge, PFM is still your material of choice. So, I haven't thrown away PFMs completely, but I'm just using them for bridges because there are certain bridges where PFM is still the best choice.

Howard Farran: Okay, a couple of clarities. Um, are you using e.max and Bruxzir on anterior, upper teeth on females? I mean, if some woman needed six crowns, 6-11, with a high lip line, would you do e.max or Bruxzir, or would you do something like Empress?

Mike DiTolla: No, absolutely e.max. Absolutely e.max. I've got four patients walking around here at Glidewell, they're all employees, where we did Empress veneers from 4-8, and then e.max veneers from 9-13 – split it right down the middle, and you cannot tell the difference. I mean, maybe if you've got a microscope or some AACD guys and give them a week, they'd be able to kind of tell the difference, but

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e.max is so close in terms of esthetics to Empress that you've got to go with the material that's four times as strong.

Howard Farran: So, you basically don't see an indication for Empress.

Mike DiTolla: Maybe if I was doing a single veneer on a central incisor next to a natural tooth, maybe then I would do Empress, but I still, I'm still really happy with e.max and my e.max veneers. I haven't had an e.max veneer chip on all of the ones I've done. Since 2008, I've never had an e.max veneer chip. In fact, the other day, Jim Glidewell came in and thought he chipped one of his e.max veneers, and he said, this is it, and he holds out this little thing to drop in my hand, and I'm like eh, get that away from me, what am I supposed to do, take that – oh yeah, that's lithium. And I said, well, let's go in the chair and look at it, and so I looked and I looked at all of his veneers and I said, I can't see anything that you chipped, and then I looked down at his lower anterior tooth, and he had chipped that. I was like, yes, my e.max streak is still alive! And that's the kind of material that I want, Howard. You and I both know that we're not that good at adjusting protrusive excursions on these veneer cases, so if I get something wrong, I want a material that's going to break the opposing tooth. I don't want one where the opposing tooth _____...

Howard Farran: Hey Mike, what do you say to...we all know that every woman in the world wants tooth color. We know that. But, when you're a short, fat, bald guy like me, all of mine are full gold crowns, all my buddies that are dentists on molars for themselves personally, they're still going gold...what do you say to Howard, if I broke another molar, should I do an e.max or Bruxzir or do you think full gold is still slightly better in the long run?

Mike DiTolla: Oh yeah, solid gold is the best. There's no two ways about it. Full gold is absolutely the best indirect restorative material that we've ever had in dentistry, and should be the first choice any time we're restoring a molar, it's just not, uh, that many people we find who will let us do it there, but if I'm going to put on a molar on someone, if I'm going to restore a molar who does it on somebody who doesn't want to have gold, I am going to go with Bruxzir. I am going to go...

Howard Farran: And that is a, and that is a weird phenomenon, because I have lectured in 50 countries, I was in four continents last month, and Asia, Africa, Latin America, they, they...Americans decorate their whole body with gold - gold in their nose, their ears, their ankles, their belly button, their whole body, but not their teeth, when the rest of the world does gold full body. I mean, why is the most beautiful metal hanging on your ears, nose, and toes, not good enough for your molars? I still don't get that. Did you ever figure that out? Is that just an American thing?

Mike DiTolla: I never...I think, well, cert...maybe a Canadian thing, as well. I think it's a North America thing.

Howard Farran: I mean, obviously in London, they just go with the extraction if they had the money.

Mike DiTolla: (Laughs) Yeah, it's tough to fight it, and I've had women get upset about not only gold, but I remember a woman years ago get upset because she could see the metal collar on #14 on a PFM –

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this goes back a long ways, and I said, Jan, I've been watching you talk for the last, you know, two minutes to me about it, trying to see it, and I can't even see that little metal collar, and she said, well, you can see it while I'm laying on my back with my mouth open. I'm like, what the hell do you do for a living? You know, why is this coming up?

Howard Farran: They might...I only...and these are 60 minutes and I've only got 9 minutes left to you, and I don't know if you want to do a whole another podcast on this subject, but um, when I got out of school, and you and me were going to all these implant courses with Carl Mish and all, etc., um, placing implants, I mean, you had to be a surgeon. You had a two-dimensional pano and you really didn't even know what you had to work with until you got in there. Now, we have three-dimensional cone-beam technology, um, we have software that can tell you what type of implant, um, you can email that file to you and make a surgically-guided stent – tell me how that is...is that bleeding edge, is that leading edge, is that today, I mean, is Glidewell receiving CBCTs, making guided implants...talk about that. Tell us what's going on in that world.

Mike DiTolla: Well, I actually didn't go to those Carl Mish courses with you, you didn't invite me. I wanted to go, but you didn't invite me, so I stayed at home and cooked your meals while you were away. And, I actually was terrified to place an implant for the first twenty-some years of my career, and I finally placed my first implant about three years ago, and it was with a surgical guide. And this is an argument that Gordon and I have all the time because I'm always making a case for surgical guides, and he's always saying things like, well yes, if you're a spastic dentist, I guess that's what you would need. And I'm like, Gordon, that's not it. It's not the spastic dentist, it's the nervous dentist, the dentist who's afraid to drill into someone's bone for the first time and they have enough crown and bridge to keep them busy, so I finally placed them because it's hard to screw up with a surgical guide. I think surgical guides are going to be what finally brings GPs into surgically-placing dentistry like so many of them do. In Europe, the problem is the surgical guides are still really expensive. And we actually stopped making ours because it was so expensive and so expensive to make, we had to sell it for a high price and Jim hates that kind of stuff. He actually told us _____...

Howard Farran: What price are you talking about? How much was it?

Mike DiTolla: Well, you know, by the time like, the one that I ordered before we were making our own, you know, by the time I got the inserts and the guides, you know, we're talking \$600-700, and so all of a sudden, it's, you know, doubling the cost to the patient, you know, of this procedure so it can be done in a guided fashion, so it needs to be much cheaper than that. If you look at like the new, the CEREC 4.3 release, you know, CEREC users can now actually mill their own surgical guides, and they can mill their own e.max abutments and their own e.max crowns to go on top of it. So, it looks to me, you know, that what CEREC's doing with that technology...

Howard Farran: Is that the Omnicam?

Mike DiTolla: Yeah, it's with the Omnicam, but it's a software upgrade to for the existing system to 4.3.

Howard Farran: When did that come out?

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Mike DiTolla: Uh, 4.3 came out, uh, July 1st.

Howard Farran: 4.3, they can mill their own surgical guide and their own copings?

Mike DiTolla: Yeah, abutments, they have blocks now with a hole in it, if they want to do a screw-retained crown, there's a lot of neat things they can do, but it's really going to take the ability for a general dentist to be able to order a surgical guide that's affordable, and really be able to see that, you know, they can do this. When I did my first implant, we actually taped it and released it, you know, on the Glidewell website, and it's called My First Implant - we spent a lot of time picking that title - and it showed me actually doing this very first one where I've no idea what I'm doing, and it was easier than taking out a third molar. It was easier than a bridge prep and trying to get parallel, you know, preps on the two abutments. I was simple and straightforward, easier than a molar root canal, so surgical guides are the wave of the future, but the cone beams are still expensive and dentists hate sending people out to a lab and then having one made, so it's still just a little early, and it's...

Howard Farran: Armond's in your background, uh, driving there with mobile CBCTs. Have you seen that?

Mike DiTolla: Yeah, he told me about that, but I haven't actually seen one of the units yet, but I think that's great.

Howard Farran: Mike, on that CEREC, um, 4.3 milling unit, is that CEREC only working with Sirona CBCT, their Galileos or is that an open system that would work with, say Carestream or other CBCTs?

Mike DiTolla: No, it's closed and they like to keep it closed the same way that, you know, Apple, you know, for a very long time, kept things closed because they don't want arguing back and forth between, you know, why isn't the Carestream, for example, cone beam talking to the Sirona software, whose fault is that and...you're trying to minimize frustration on the part of the dentist because some of that stuff is technical enough already, so they feel that by keeping the closed system, they are able to quality control all of the software, all of the inputs, all of the information coming in. It's also so that all works seamlessly.

Howard Farran: So, what would you say to a dentist who wants to get into surgically-guided implants right now, and implant system? Would you recommend them going with the Apple closed systems - Sirona, CEREC 4.3, Omnicam, Galileos, and that's a good solution, or do you see other solutions out there? What do you say to the implantologist who wants to use three-dimensional radiography to start really getting into replacing missing teeth?

Mike DiTolla: Well, I would think that a logical first step is, you know, to ask somebody to get, to purchase a CEREC unit for that reason, and to start learning to do implants, all at the same time is kind of a big step. You know, I think the first step - if you like making chair-side crowns, if you like the idea of delivering same-day crowns, obviously you can go down the CEREC path, but the cone beams, something like the Galileos is a great way to start because that's a real game changer in terms of radiographs, where you start to see, you know, ed endo that you did years ago that you thought was

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doing just fine, now you're starting to see why it's failing, seeing between the roots, and seeing all kinds of other things – that's a huge eye-opener when you get into 3D x-rays like that, and that's, I think, a great way to be able to take that first step into it, and order surgical guides from some of the companies in the beginning, and then if you really like it, then you could take the next step and add the chair-side unit to it so you can start producing them yourself.

Howard Farran: You're an amazing mind. So, I've got you for a remaining 2-1/2 minutes. How would you like to wrap up to all the dentist fans out there listening to Mike DiTolla to uncomplicate dentistry?

I want to throw a concept out, Howard. Um, when you and I got out of school and started practicing, there was the tradition that had been in place for about 30 years that still exists today for no apparent reason, and that is we prepare a crown on a certain day, and then two weeks later, the patient comes back and we cement the crown. Um, now I've done this study here at Glidewell because it's so easy when I'm working on technicians that are in this building to get them back in do things, and so what I did was, a little bit two-week dentistry and thought, well, why is this like this? You know, it just seems kind of random that it's two weeks. Why isn't it four? Why isn't it one? Why...and nobody could give me a reason for two-week dentistry, and then when we got our Omnicam CEREC that we started doing same-day dentistry on some of the employees, and what we noticed was, well, when we put crowns in, they hardly ever needed any adjustments. Now, I cheat just a little bit because I'm not very good at the lab side of things, and I, once I prep the tooth and take a digital impression, I have a technician take over who mills and stains and glazes the crown themselves, and so what I started doing was I'd prep a tooth for an e.max crown, take a polyvinyl impression, hand it to Cindy, my technician, and tell her to have a crown for me in two weeks. So, two weeks later, she brought me an e.max crown, then I take the temporary off, now do a digital scan of the temp, a digital scan of the tooth I should say, and then Cindy would go make me in an hour and a half another e.max crown. I have two e.max crowns now, an e.max crown that is two weeks old from the polyvinyl impression with the patient wearing the temporary for two weeks, and now I have one that is an hour and a half old. Well, every time the hour and a half fit better or as good. Never did the two week crown fit better than this one. And I began to realize that the difference between the two, they were made by the same technician out of the same material. The difference is the temporary. The stupid little plastic thing that we stick in somebody's mouth and while our assistants try to get it nice and smooth, accidentally polishes, you know, polishes away an occlusal contact, and now we get super eruption and a bunch of adjustment. I know that when all three of my kids are dentists 20 years from now, even though none of them showed inclination to become one, I know they're going to say to me, dad, did you crack this back in the old days when you put those pieces of plastic in people's mouths for two weeks, and I'll hang my head in shame and say, yes, and they'll go, didn't you know that was responsible for all that endo? No, you didn't know, I'm sorry, you know, your grandfather practiced without gloves – go bug him, that's even grosser. And so, that's a big leap though, to go to in-office crowns from two-week crowns, but think about this, Howard – what we can do with digital impressions, let's say you prep a crown on a Monday at 9:00 am, and you do a digital scan, and now your assistant sends that scan to our lab or whatever lab, but we'll just say our lab, and we have it here three minutes later. We have people sitting at the computers for the digital impressions, so within five minutes, it's logged in and it's at a designer's computer. They design this crown, they're finished

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with that in 15 minutes, it gets sent down to the milling room, and your crown is milled that same day, put on a FedEx truck, sent back to you, and you actually have it the next day – two days later. And I guarantee you if you put that crown in on the third day, there will be less adjustments occlusally, less contact adjustments, less remakes, less everything when you seat these crowns in three days instead of two weeks. So, I know going from two weeks to same day is a huge leap, but digital impressions give us the opportunity to shrink this down to three days, and if you follow Rella Christensen's desensitization protocol, you know, at that appointment when you're doing the prep with the two one-minute coats of the Gluma, you know, and put that on there to kill 99.9% of the bacteria, you don't even need to anesthetize them when you go to seat their, seat crowns, so my legacy is going to be taking the two-week turnaround time with these dumb temporaries on, and shrinking that slowly to three days and then maybe two days, and then one day eventually we're going to get to same-day dentistry when it's really easy to do because today the dentist thinks this objection is, I don't want to be a lab technician. You know, so we need to find a way around that, but I hate this two-week time period of seating these crowns. These temporaries suck.

Howard Farran: I know that. Mike DiTolla, we have hit the 60 minute load and I just want to say, um, the second biggest search engine in the world is YouTube, and Mike, how many, how many YouTube videos – on Chair-Side Magazine, how many YouTube videos you got on your channel? 100?

Mike DiTolla: Yeah, there's no, in fact, a couple hundred probably, more than that.

Howard Farran: Oh, 200? Yeah, I've listened to every single one of them and I just want to say that if you ever watch Mike on YouTube and you ever see a film live, he's actually naked on a barstool on a green screen and all that background stuff is really not there. He's really just, uh, but uh, Mike, you're the most amazing-minded dentistry, you're my idol, you're a rockstar, buddy. Thank you for doing the first one, and now I'm going to tell everybody I lost my podcast virginity with Michael DiTolla. And, see you around on the boards on Dentaltown and you gotta see Mike lecturing for Gordon of CR, and I'm telling you, Mike has more information on crown and bridge than anybody out there because probably one out of every twenty crowns...one out of, five percent of all the crowns in America go through where Mike DiTolla works at Glidewell. Mike, it's been a huge honor, and will you do this again someday?

Mike DiTolla: Absolutely, and I just want to thank you for making it okay to be funny at a lecture and thank you for making it okay for me to be bald.

Howard Farran: Okay, buddy. On that note, love ya, Mike, and we'll see you around.

Mike DiTolla: Thank you, Howard.

Howard Farran: Bye-bye.

Mike DiTolla: Bye