

Abandoning Paternalistic Care

Howard Speaks Podcast 047

Dr. Mo Taheri

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Websites, Emails, Phone Numbers and Products Mentioned:

- Dr. Mo Taheri's website: <http://www.taheridmd.com>
- E.Max - <http://www.ivoclarvivadent.us/emaxchangeseverything/>
- Captek - <http://www.captek.com/>
- BruxZir - <http://www.bruxzir.com/dentist/>
- Katana Zirconia - <http://www.kuraraynoritake.com/products/cad-cam/katana-zirconia/>
 - <http://www.worldlabusa.com/world-lab/zirconia-pfz-fcz/>
- 3M Lava - <http://www.lava-elite.com/>
- Komet - <https://www.kometusa.com/>
- Brasseler - <http://brasselerusa.com/>
- Glidewell Lab - <http://www.glidewelldental.com/>
- BioTemps - <http://www.glidewelldental.com/lab/services/biotemps.aspx>
- Durelon = http://solutions.3m.com/wps/portal/3M/en_US/3M-ESPE-NA/dental-professionals/products/espe-catalog/~/Durelon-Carboxylate-Luting-Cement?N=5145460+3294768919+3294798241&rt=rud
- Coldpac Acrylic - <http://www.yates-motloid.com/collections/coldpac>
- Shofu Hybond / IP Cem - <http://www.shofu.com/en/products/cements/>
- FujiCEM - http://www.gcamerica.com/products/operator/GC_FujiCEM_2/
- Unicem - http://solutions.3m.com/wps/portal/3M/en_US/3M-ESPE-NA/dental-professionals/products/espe-catalog/~/RelyX-Unicem-Self-Adhesive-Universal-Resin-Cement?N=5145460+3294768486+3294798227&rt=rud
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- Multilink - <http://www.ivoclarvivadent.us/en-us/ips-emax-system-new-products/multilink-automix>
- MonoCem - <http://www.dentalcompare.com/4958-Self-Adhesive-Resin-Cements/40532-MonoCem-Self-Adhesive-Resin-Cement/>

Howard Farran: It is an absolute honor today to be speaking to a highly credentialed, board certified prosthodontist who has shared over 1000 posts on Dentaltown. You're the first prosthodontist I've done on my Howard Speaks podcast. This is episode 50 or something and thank you so much to our listeners out there. Who knows when this will be released over the next few weeks but this is Black Friday, the day after Thanksgiving so did you eat enough turkey or are you having a trip to Fancoma right now?

Mo Taheri: I'm still feeling a bit of the turkey sleepiness yeah. It was good.

Howard Farran: So I want to start completely off the record. So prosthodontist, you're a specialist in prosthodontics and a lot of kids, you know the United States graduates about 5000 dentists a year and a lot of times these kids are on Dentaltown, they're third and fourth year at dental school looking at the nine specialties and we have a new one, maxillofacial oral radiology, that was the ninth one, just had it.

So I want to start with Mo, what made you decide after dental school that you wanted to be a prosthodontist and what would you say to a kid who is in his third or fourth year at dental school who is thinking about maybe going on to be a prosthodontist? Talk about that first.

Mo Taheri: Well I'll start with the first part. When I graduated from dental school I actually wanted to be an oral surgeon and did a GPR in New Jersey and they actually, I did so much surgery I got sick of it. So I went into private practice, I wanted to do veneers, cosmetic dentistry, the whole nine yards that everyone kinds of graduates hoping to do. Joined a practice in DC and what happened was they hired a prosthodontist associate alongside with me and she basically took me under her wing, took me to some of her study club meetings and it just blew me out of the water.

I kind of realized that I didn't know anything so at that point I decided to reapply and go back to school. So I moved back to Boston, spent a year in private practice and then joined the prosthodontic department.

The reason was really because as a new grad felt like I didn't know anything and the continuum courses weren't giving me the depth of knowledge that I wanted and then secondary, to boost my ego a little bit.

Howard Farran: I'm telling you, on Dentaltown you can subscribe to someone's posts so you could go to Mo's profile and subscribe, he's posted over 1000 times and I'm telling you dude, you're obviously at an entirely different level. How long have you been a prosthodontist?

Mo Taheri: Just about three years now.

Howard Farran: Three years, and isn't it the smallest number, I mean there's like 10 000 orthodontists, 5000 oral surgeons, 5000-

Mo Taheri: Somewhere between 1000 and 4000 prosthodontist in the country.

Howard Farran: Yeah my data shows it's just about 1500. So why is it so small, and how does the prospects look for prosthodontists? I mean will that be a vibrant specialty 10 years from now or 20 years from now?

Mo Taheri: The honest truth is, as far as prospect it's really what you make of it. The specialty is so broad, there's surgical prosthodontists, there's restorative prosthodontists, there's removable prosthodontists and you can approach it in any way you want. The vast majority of prosthodontists today are restorative prosthodontists with some going onto really specializing and doing implant surgery and implant dentistry.

The college is not really pushing hard to have prosthodontists place implants so all the training schools are pushing in that direction as well. So as far as future prospects, there will always be a need for advanced specialists. Always. There are always going to be cases that just are above and beyond what anyone can really handle without advanced training and actually some of those cases, even most of us prosthodontists can't handle.

The more dentistry is done, the more there is a need for advanced restorative specialists.

Howard Farran: So Mo I want to ask you, I graduated in '87 and when I graduated in 1987 cosmetic dentistry was a PFM then the percentage of white, natural tooth colored crowns being PFM has just plummeted and now you see E.Max's or zirconia or BruxZir, can you talk about that and has that been a good thing? Is that an esthetic health compromise? Why did the entire market go from PFM to basically E.Max's or zirconia or BruxZir ?

Mo Taheri: I mean there's a number of reasons. The first reason really is the cost of gold. The old PFM restorations were gold based and just the cost of gold rising has led to everyone searching for an alternative. Alternatively that led to base metal restorations and the problems associated with base metal, but there was a push, mid to late 80's starting with Dicor and eventually Empress and on to zirconia or E.Max to get away from metal and actually one of the major benefits of doing that has been less work on the technical side. You can mill these restorations, you can CAD/CAM them. Making them computerized means you can mass produce them and bring the overall lab cost quite a bit lower.

So on the whole it's been beneficial. One of the downside to it has been to some extent loss in the art of dental technology. Some of the best restorations I've placed in the last year were actually metal ceramic. Working with guys like Connor Sing or Bernard Cornell, the masters can do anything with any material but at the average level, the all ceramics have really been a boom for esthetics and dentistry in general.

Howard Farran: This made me think of so many things. First of all when the price of gold went up, you initially saw people switching to semi precious and non precious so Mo, there's a lot of times when people talk about dentistry they think of the 150 000

dentists in the United States, or they think of Canada, Australia or New Zealand but we have listeners in Africa and Asia, around the world.

First I want to stop and ask you, if you're a dentist in a less rich country and you're porcelain to base metal, will you talk about semi precious versus base metal? Is that a bad decision because with base metals we have allergies, in fact some people are now saying that the inflamed gum tissue around implants, we have periodontal disease around tooth, but it's a totally different disease around titanium.

You can't say periodontal disease around an implant is the same as periodontal disease around a tooth, even though if you have perio disease you're more likely to get peri-implantitis but a lot of people are saying that a lot of that peri-implantitis could actually be an allergy to the implant metal. Do you agree with that statement or do you find that false?

Mo Taheri: I think maybe there's some validity but the percentage of that is pretty darn low. The reasons for this peri-implantitis and implant failure actually a lot of it can be traced back to the titanium surface on the implant, how rough it is, the position of the implant relative to the bone crest and patient maintenance.

I've seen so many restorations that just all go to plaque traps, that kind of thing and while not every patient is susceptible to losing the implant, a good number are. Now as far as base metals and allergies, it's always been an issue. Nickel allergies have been pretty prevalent but now today a lot of the base metal, with CAD/CAM technology we're doing chrome-cobalt. It's such a hard metal to work with if you have to cast it but milling it, it's been absolutely amazing and with the ceramics available today even, you can layer onto it and have a fairly stable restoration.

Howard Farran: What metal is that?

Mo Taheri: Chrome cobalt.

Howard Farran: Okay chrome cobalt and is that pretty low allergenic?

Mo Taheri: Relatively yeah. I mean if you think of RPD's, today chrome cobalt is the major-

Howard Farran: I want to ask you another question, you're the one who said that a big driver of switching from PFM's to all porcelain was the cost of gold. Mo, do you believe that like a porcelain to Captek we saw a lot of research that came out and said the high base metal gold was kind of bacterial static, it had an anti-bacterial effect as opposed to an inert all porcelain crown. Do you think a Captek crown or a high surface energy gold crown lasts longer than an all porcelain crown because the high energy surface of the gold is kind of bacterial? Because one of my pet peeves in dentistry is that dentists

always talk about dentistry like it's mechanical engineering 101 and they always talk about trying to get the perfect margin around a tooth and I sit back and say you know that tooth was initially destroyed by a bacterial infection without a margin.

Being from Kansas, when I see barns being eaten alive by termites, I didn't see them starting by the hinge door of the barn and say well that door doesn't fit very tight, let's start there, those termites will just go to a broad wall and start eating so I see dentistry as 80% of biological problem, a bacteria eating teeth and 20% of mechanical engineering. Is that too simplistic?

Mo Taheri: I would actually suggest that the whole push in research today is in that direction, especially coming out of the San Francisco with the camera and everything, there's this huge push towards managing the caries as a disease and looking at it from a biological perspective as opposed to how narrow your margin is and whether that's relevant or not.

Obviously if you had a millimeter open margin that's going to be a really nasty situation but does 20 microns do it or 60 microns, it's 100 microns and that level of minutia I think it overlooking the big picture that some patients are just predisposed to having severe caries. Salvia issues, medications, all that will dry a patient out and lead to overall destruction of the dentition, so yeah absolutely.

Howard Farran: They say the two biggest holy grails in dental research today with the most money at stake is to make a tooth colored filling or crown that has some anti-bacterial properties and a cement that's actually reversible that you can hit it with an energy source and it will go back to liquid and you can remove the crown.

You hear anything about that?

Mo Taheri: The second- no. I haven't seen any research or any products in that level. As far as I know everything still being used and being manufactured is resin cement, is the big one.

Howard Farran: When I'm visiting those companies' headquarters and I talk to their Ph.D.'s, they've been told by the higher ups: figure that out.

Mo Taheri: That's a tough scenario because now you have to, it basically ends at the zipper. The organization is zipping up, you've got to unzip it now.

Howard Farran: So some dentists have, you've seen it on Dentaltown too, they say okay if I drill a hole in a tooth and out in an occlusal composite, you're good with that so if that crown is 20, 60, 100 microns open or whatever but I'm cementing it with a resin cement isn't that margin just like a mini composite?

Mo Taheri: On a fundamental level that's true. The differences between an occlusal composite and a crown preparation are actually quite large. An occlusal composite is much easier to isolate, a crown margin you have sulcular leakage and all that stuff so isolating a margin is much harder especially if you're bleeding or gingival inflammation or anything along those lines.

The difference is that at the end if that resin cement doesn't adhere it's still acting as a mechanical barrier. It may not be perfect but it's still going to be on the same level as a resin modified glass ionomer cement and what you're really still at that point relying on is the mechanical retention of the crown so the argument stands. It's still a composite, still a filler material even if the adhesive isn't holding on the way it should.

Howard Farran: Okay and you talk about something that I'd like you to go into because it's kind of an extremely interesting concept where you say treatment planning paradigm shifts from a paternalistic healthcare model to a patient centered team model. What do you mean by that Mo?

Mo Taheri: I actually got this after arguing with Nareg Apelian on Dentaltown and then on Facebook, we chat all the time and we had a good time with it.

Howard Farran: Tell him I want to interview him on a podcast.

Mo Taheri: I'll send him a message but actually he's the one that really is a big proponent and driver of this concept, but the concept, and it's something all the young dentists have noticed, is that the older dentists and especially the guys in their 60's and late 50's-

Howard Farran: Watch it Mo, I'm 52. Watch it buddy you're getting close.

Mo Taheri: These are the guys, and I've worked for some of these guys, these are the guys that basically say this is how you have to do it, this is the only option, this is my way, you do it or you don't, or you go somewhere else, I'm not interested in treating you.

That old school model is you don't answer any questions, you're not expected to be questioned by the patient and we know today that that doesn't exist anymore. Patients have internet access, are much more educated or have much more access to information than anyone has ever had in the last 200 years and because of that we have now partner with our patients and going from a provider centered treatment is- sorry my dogs are going crazy here-

Howard Farran: That's fine we love dogs.

Mo Taheri: I'm going to grab them.

Howard Farran: It's okay Mo. I've got to tell you a funny story. When I did my first audio cassette back in like 1990, my one year old son Eric walked in the room and asked me a question, now it's 27 years later. The only feedback I ever get on that cassette was I remember listening to your tape in 1990 and your son came in and asked you for a drink. So the only thing they might remember about this entire interview is the dogs barking 20 years from now.

Mo Taheri: So going back to what I was saying, this whole patient centered is basically making the patient your teammate, so if you're working in a multidisciplinary setting, you have your general or restorative specialist who manages the whole case, you have your surgical, you have your periodontal, you have your endodontic, patient is also on that team and the patient's advice, it may not be as educated, it's still extremely important because if they're not on board it's a different world today than the 'I trust you, whatever you say doc', those days don't exist anymore.

Howard Farran: Mo, I want you to go into a little more detail because how many countries have you travelled to in your lifetime?

Mo Taheri: Four or five, not many.

Howard Farran: Well I mean most Americans have never left the country, if you take out Canada and Mexico. I see in the United States, you accurately described it as age related. You know the older dentists, my way or the highway, they're insulted by questions, I'm the doctor you're not. The younger kids get it. I would say that's true in about 20 countries. Scandinavia, Australia, New Zealand, Canada but Mo when I lecture to dentists and I don't want to offend anybody, but like in Russia, Poland, Eastern Block countries, the Middle East, they're genuinely insulted when you ask them a question. So go into a little more, because we have people listen to this in every single country.

Address that Russian dentist in Moscow, Warsaw or Lebanon who genuinely feels insulted when you ask him a question when I'm a doctor, why are you asking me this question? Go into a little more detail for that guy or lady.

Mo Taheri: Well it's interesting because I've had classmates who were from the Middle East and when I was doing my pros residency two of my classmates, no one of my classmates were in my class was from Kuwait but in the program, a third of the program was either from Kuwait or Saudi and you could see it, with the way they interacted with the patients and they got it, by the end of the program they got that the cultural difference between how to talk to a patient versus how they would've expected to do it at home. Back home, and you see it all the time and hear about it all the time, it's their way. They just treat the patient, they don't even need to explain anything, it's just this is what we're going to do today, open up.

I'll say enjoy it while you still have it because it's a lot harder to manage a patient's expectations when they expect to be a part of the team and you end up spending more time and more energy to get them on board. It's a tough story but ultimately it makes it more rewarding because at the end they understand the amount of work you put into the treatment and generally that makes it worth it in the end.

Howard Farran: And how many cases have I seen in 27 years of dentistry where one person gets the four quadrants, a root planing curettage and gum surgery and everything and then goes home and doesn't change their behavior at all and three years later they're back at square one and another patient actually changed their behavior and started brushing and flossing and three month recall and ten years later they look better than the day you saw them.

Mo Taheri: Howard Chasolen is a good friend and he made a very good post that really resonated well with me, before I even started my pros training and he said if you're treating the patient more than they want to be treated or you're treating the patient to appease your ego, don't treat the patient it's not worth it and that first point, more than the patient wants to be treated, that's where this whole patient centered care comes in. They have to want to be treated too and in the ethic guidelines, we talk about patient autonomy and being able to make decisions. That means we give the patients the information to help them make the decision. We don't make the decision for them and that's really what the bottom line is.

Howard Farran: Okay I'm going to ask you a question and if you answer you're probably going to destroy your reputation and get hate mail and all this kind of stuff but obviously Mo, the 4000 pound elephant in the room is these CAD/CAM machines that about 15% of the dentists have one. Mo, are these just, do you like these CAD/CAM restorations? Do you like what you're seeing in the market? Has this been a good thing or has this been a bad thing?

Mo Taheri: I think on the whole, that's a tough question to answer because what CAD/CAM dentistry has brought to the table is tremendous and with the newer machines and the Omnicam and everything, it's amazing what even the in-office equipment is capable of. The downside to it, and I hate to say it but it's the truth, there's a lot of ugly restorations and that's really it. Marginal sealing is fine, for the most part- and there's been studies that generally speaking their equivalent, maybe not as good but adequate when it comes to marginal sealing and seating compared to lab fabricated restorations.

Howard Farran: You're saying they're the same as a lab?

Mo Taheri: Not the same, but adequate.

Howard Farran: So the marginal seal is adequate.

Mo Taheri: Correct. Where it's really going to affect us is at the level of the dental technician and we were going to and we already have started to see a major decrease in quality labs. There's still going to be high volume labs that are fine but the small mom and pop labs are going to see a decline and that's sad because there is a lot of talent out there in the dental technology field and in the US we don't have much of it. A lot of it is in Europe and in Japan and Switzerland but in the US the level of technological education is much lower and the CAD/CAM push is only going to make that worse unfortunately.

Howard Farran: Well the United States, Americans are always telling me we're number one, we're number one, we're number one and going to 50 countries and reading a lot I'd say we're number one in military, medicine, insurance banking, finance, movies, music but that's about it. We're not number one in cars, that's Germany and Japan and the one thing I noticed the difference, the major difference in Germany and Japan.

I mean Germany and the United States is, back when I was in school, I graduated in '87, the dental schools all closed down their laboratory and they were opening hygiene. So now we've got a robust number of highly educated hygienists and we don't have any lab techs.

China looked at Germany's model where Germany unlike in America, if you wanted to be a plumber, you just go get a job for a plumber and now you're a plumber and everybody talks about this great economy but half the time a plumber comes and fixes your toilet, it's still broken.

Germany and Japan have a totally different model, they say oh you want to be a plumber? You've got to go to trade school for two years, you're going to be licensed and you're going to take continued education and Germany has a smaller economy but when the plumber comes in or the drywall guy or any trade person, it's done once and right and America is the world of just, they sell the most shitty stuff on the planet.

China, who gets to look at the whole world and say who's smart, you go to the only dental school in Hong Kong. They have more students in their laboratory degree than their dental degree. They're just building, they're modeling Germany.

Mo Taheri: And it's amazing. One of my best friends is a German master technician, part of the oral design group and he knows almost as much about occlusion as I do and it's incredible, the level of training that they get. The US is really, in dentistry in general the US is starting to see itself fall out of dentistry, we're not the best. I would say that the best right now is probably Germany or Swiss.

Howard Farran: Absolutely, Lichtenstein.

Mo Taheri: Yeah Lichtenstein, Austria, those European countries are unrivaled today in both technology and dentistry. It's just incredible the talent that's coming out of those countries and it's a shame because there's no question that the knowledge is available in the US, but there's just no desire for it.

Howard Farran: So I know that probably 90% of your cases involve two or more restorations at one time, if not all of them and in dentistry, 94-95% of all the cases submitted to a crown bridge lab are for one unit and so take your infinite knowledge, your 1000 posts, you're a board certified pro- talk to the single dentists in Omaha, Nebraska who is saying is there a difference between like E.Max or Zirconia or BruxZir, are they all the same Mo, or can you go through that and help them decide which material to use for an all porcelain?

Mo Taheri: Sure absolutely. I'll talk a little bit about my experience with all those materials because I've played with them in some way, shape or form.

First up, they're fundamentally different restorations. E.Max would be comparable to the old school Empress, meaning it can be monolithic, can be layered but generally it's an etch able ceramic, a glass based ceramic.

Zirconia, porcelain fused with zirconia is more comparable to your actually traditional PFM restoration in that there's a coping, in this case made of crystallized zirconia, and then you layer regular feldspathic porcelain over it and then the last of the group is the BruxZir or really what they're really full contour zirconia which is basically a solid block of polycrystalline zirconia.

The differences are today aren't as great as they used to be. More in the sense of application and what you're trying to get out of it. First off, the BruxZir and the full contour zirconia generally is going to be the strongest but ugliest.

Howard Farran: Are you talking about me or BruxZir?

Mo Taheri: No, BruxZir. No they tend to be the strongest but the ugliest restorations, although I'm seeing some changes in that sense that they're starting to release more translucent type, but the esthetics just aren't there, the strength is and God forbid if you have to cut one of them up. The issues I'm hearing with that material is that cements aren't adhering to it so you've got to go back to your old school retention and resistance form and with the limitation here is because these have to be CAD/CAM you actually still lose out on some of those retentive features.

Okay so going on to the middle one, zirconia, there was a huge issue about three, four, five years ago with fracturing of the feldspathic porcelain off of the zirconia copings. Is

that still present today? I'm hearing a lot less about it. The one material that I knew worked out pretty well was the Katana material. I think that's GC. I'm not paid by any of these companies but this is what my experience has been, is that the Katana zirconia and their equivalent feldspathic porcelain worked out actually quite well and as long as the technicians are handling the material correctly, slow cooling and the whole nine yards, generally it holds up very well in the anterior, maybe up to the first bicuspid but I wouldn't use it in the posterior, I just wouldn't risk the fracturing.

And then E.Max is generally considered a very esthetic material with a couple of, you can't block out, even with the MO ingots, you can't really block out really badly stained stubs, teeth and they have a tendency towards low value and that's something I've really been running into, is that if you're trying to match a single central with E.Max it's a hell of a time. You're better off using something like a porcelain fused zirconia because just getting the fundamental base shave is just a challenge and they tend to come out very low value so on the whole, E.Max is an extremely strong restoration and I'd be comfortable using it anywhere in the mouth.

Howard Farran: So you say you'd be extremely comfortable using that anywhere in the mouth, so Mo, I'm a dentist, I have seven inlays, on-lays and crowns, I went with all gold. Is gold still the gold standard? Is gold still the best?

Mo Taheri: Yeah. I mean there's no question, gold is still the best material.

Howard Farran: And explain why.

Mo Taheri: A lot of reasons. It wears the way natural teeth do, you can burnish the margins together really close seal, and just pure longevity. Gold restorations I've seen gold restorations when I was working in Boston 50 years old, 60 years old.

Howard Farran: But is that because they're anti-bacterial too? Do you think that, do you agree with this statement: Captek will last longer because of the very high surface energy in the gold is bacterial static at some level and retards streptococcus mutans?

Mo Taheri: I would say first off that Captek won't last longer. Not because of the gold content but because of how thin the copings tend to be and how low the modulus of elasticity of that coping is. The ceramic, everyone I've talked to has had chipping problems with Captek.

Howard Farran: What about my old gold crowns? Do you think that my old gold crowns, take away the fact that gold is metal and composite is plastic and glass is breakable glass, do you think that my gold crowns will actually last longer because streptococcus mutans would not like to live in an apartment with high static energy and would rather go next door where there's just an inert plastic DO composite?

Mo Taheri: There's been studies that have shown that exact fact that bacterial plague doesn't like to adhere to a very polished gold surface.

Howard Farran: Is that from mechanical smoothness or is that from energy?

Mo Taheri: You can argue both. Definitive studies haven't been able to prove the energy but what's interesting is if you take extremely highly glazed porcelain, bacteria doesn't stick to that either.

Howard Farran: Great point.

Mo Taheri: So it's an interesting issue. The fact of the matter is we don't use highly, highly glazed porcelain. You can't. You have surface texturing. If you fire it at that high temperature you lose all your surface effect and everything so the glaze isn't a high, high, high polished surface. So in reality, gold is still going to have the best anti-plague properties just because of that factor.

Howard Farran: I want to go off into another direction, a pet peeve of mine. Mo, I'm 52, how old did you say you were?

Mo Taheri: 35.

Howard Farran: I'm in several dental offices a week. Mo, half the dentists wear no magnification and I think the neatest thing about the CAD/CAM was not the same day restoration, seriously Mo, I had CEREC One in the late 80's, then I had CEREC Two, then I had CEREC Three and then 3D and then Omnicam, whatever, I don't really get a bunch of feedback from patients saying oh same day crowns, this is awesome, I won't have to- I don't hear that.

What CAD/CAM did for me Mo, is when I went from no magnification to loupes, I started off at 2.5 and I thought wow, I'll never go back. Then one day I was at a convention and someone showed me 3.8 and I'm like oh my God, then I was at another convention and someone put on 4.5 with a headlamp and I'm like I swear Mo, if I go in there and my 4.5 and my headlamp is gone or missing or whatever, I don't see patients but with CEREC for me was when you scan that prep and you saw your prep 40x larger, I didn't want anybody to see it! I thought oh my God, I should turn in my dental license and it CAD/CAM makes me spend twice as long on a prep, polishing, this and that, so my question to you is- Mo, do you use magnification and what would you say to half the dentists in America and 90% of the dentists in Asia and Africa and Latin America who just say well Mo, Howard's saying that because he's an old, bald guy, 52, he probably couldn't see how many fingers he's holding up. I'm only 35 and I have perfect vision. What would you say to that guy?

Mo Taheri: I have friends on both sides of the spectrum. One of my mentors in the pros program actually refused to wear loupes and the reason was the big picture of the whole arch. When you're prepping 14 teeth, alignment is important. You can't do that under magnification cleanly and be able to- I mean you can, but it's not as intuitive as if you have full vision of the arch. Actually the way I prep is I prep gross preps without loupes so I can get the general shape of the teeth and then I go in and refine everything under magnification.

Howard Farran: That's interesting, I have not heard that before. You're talking something new.

Mo Taheri: It works really well for me. I don't prep the full margin into full depth on my first go around. I go in quickly, remove all the enamel, clean up everything, get the general shapes of all the teeth. Then I go in with my magnification and just clean up all the margins and then finish it up like that. I will say that I'm a dentist in the era of I started with loupes in dental school so I don't know of any other way of practicing.

Have I tried without loupes? Yeah when I first graduated I practiced for about four or five months without wearing loupes because they were just, the dental school loupes were very cumbersome and then I ended up buying a pair of orasoptics that I loved and actually I love these through the lens loupes as opposed to the flip down and so since then that's part of my armamentarium, I don't work without it.

Howard Farran: What magnification?

Mo Taheri: Those are 3.5, 3.8 or whatever they are.

Howard Farran: I bet you when you're 52 like me you'll be up to 4.5.

Mo Taheri: 52 like you I'll probably be in a microscope I hope.

Howard Farran: So okay when you're talking about zirconia, if a dentist doesn't understand that, are there brand names that he might be thinking are zirconia?

Mo Taheri: A lot of the very big, the most common brand.

Howard Farran: That's 3M.

Mo Taheri: 3M's Lava. Those are the big names.

Howard Farran: And you did mention how hard it is to cut off zirconia, do you have any burs that you recommend to cut off zirconia? Do you use a course diamond?

Mo Taheri: Actually cutting off a porcelain fused to zirconia is not terrible because the coping is thin. Cutting off a full contour is a nightmare and then cutting off E.Max is a nightmare too. Both of those just make me want to go back home.

Howard Farran: Is there any brand name of any course diamond or do you just use a disposable?

Mo Taheri: Komet or Brasseler.

Howard Farran: Komet is Brasseler, right?

Mo Taheri: Komet used to be Brasseler, now they're separate brands.

Howard Farran: Yeah, so Brasseler used to be a distributor for Komet burs made in Germany and now they're two separate companies.

Mo Taheri: Brasseler I think manufactures their own burs and Komet has their own burs, so both companies are fantastic.

Howard Farran: Okay so now, gosh this is flying way too fast. We're 37 minutes down. So I want to open up a can of worms, this is probably the most controversial- to me, occlusion is just about like religion. I mean there's more, there might be more occlusion camps than there are world religions. What's your thought about that, open up this can of, and Mo, what per cent of occlusion is voodoo versus science and what camp do you fall from?

Mo Taheri: I think unfortunately a lot of occlusion is voodoo versus science and I don't fall in any camp. One of the benefits of my training was that we were exposed to every different type of occlusion, from bioesthetic to Dawson-Pankey-Mann and to gnathology and I've studied all of them.

I've read the papers, I've read Pankey-Mann the original paper, I've read papers, I've read Skyler's papers, I've read Stewart's papers, I've read all of these papers and actually what's interesting is it ties back to that whole paternalistic type of care. Old literature, old papers was this idea that the clinician or researcher had an idea and then they set about to prove it as opposed to what modern research is supposed to be, you see a trend and then you try and find out what has caused that trend.

The old research, a lot of it was this is my idea, now how do I find a way to make this mainstream and what's that led us is down this road of dogma really and Lane Ochi and I always joke about this, is that occlusion is the one part of prosthodontics and dentistry in general that has left the whole realm of common sense and just entered into a world of it's own, because very little has been proven. Very little of what we do has any definitive proof, starting with TMD being tied to occlusion.

That came about in the 30's with Costen syndrome where an ENT went and basically found a way to throw TMD and orofacial pain at dentists because they couldn't treat it themselves and they kind of threw it onto us and then we felt inferior so we took it and we have been running with it for 80 years now and we've gotten no closer to- no that's not true. The last 10 years have been actually amazing in terms of research as far as getting a little bit closer to understand TMD but what's interesting is about that last 10 years have shown that occlusion has very little to do with TMD, as least as a general concept. In specific cases sure, but not as a general idea.

Howard Farran: So what's causing TMD as a general?

Mo Taheri: There's, still we don't know. There's a lot of evidence that's pushing it towards more neurological disease, the way a migraine is, as opposed to triggered by a specific tooth and that it's actually your brain interpreting normal sensory input as pain. Again, the way a migraine sufferer might and it's actually a fascinating idea. There's even some current study that says there might actually be even a genetic component and it's far in a way different than the world of Ramfjord and Ash that said that is you don't calibrate perfectly in centralization you're going to have TMD and you know Dawson took that concept and ran hog wild with it.

It's not the case.

Howard Farran: You know my chiropractor friends are saying the same thing that there's more evidence to associate lower back pain with stress than there is from anything with L4 or L5 or the alignment of your spine. Do you think a lot of migraines and TMD are related to just stress? Stuck in traffic, you're going through a divorce, you're going to get fired, you're bills are late?

Mo Taheri: Stress is a horrible thing. Stress does a lot of things for our bodies, a lot of negative things. So to say that that is a contributor, in my mind it would be limiting to say it's not. That being said, is it the only thing? No. Absolutely no. This is absolutely a multifactorial disorder so tying it down to one issue is oversimplifying it.

What's interesting about orofacial pain and TMD in general is that the epidemiological studies have shown that middle aged women are the number one sufferers of it. Whether that's still true today I don't know, this was an older study.

Howard Farran: That is a common error of all humans around the world is oversimplification to one thing. Like I just love it when the stock market falls 5% and they say it was because this guy said this or a politician did that or Putin invaded Ukraine. It's like really, you think the entire stock market fell 5% because one guy did one thing? Oh my God.

Mo Taheri: It's in our nature to do that, to oversimplify because it makes it easier to grasp complex subjects and who has time to go and read a textbook on orofacial pain. Most of us practice dentistry and we're here to make a living so you go to a continuing ed course and you expect the guy on the podium to tell you what's what. The problem is most of the guys on the podium don't actually know so you end up with a lot of misinformation and a lot of parenting of old, outdated concepts and that's a big issue in dental education today.

Howard Farran: So I want you to address TMJ occlusion, most dentists when they're, your teeth wear down, what would you say, a millimeter a decade maybe, is that over simplistic or?

Mo Taheri: Probably not even that much. Maybe half a millimeter to a millimeter.

Howard Farran: Okay half a millimeter, okay so you've got this 60 year old lady or man, they're patients, worn down, you're going to do a whole arch. The average dentist probably maybe only does one full arch case ever other year, max, and he's just frightened that if he opens this bite, it's just going to trigger this TMJ cascade and you see all these people saying well when I'm going to open the bites, I'm going to first establish it in temporaries or have them wear a night guard, will you talk about that huge fear? And what about a denture where a lady wants her bite back open and she wants the teeth out more because she basically wants a facelift from a denture and the dentists are telling me I don't want to have her TMJ go crazy because I opened her bite.

Mo Taheri: Some would argue that there's actually more harm in an over closed bite than in an excessively open bite. I don't want to get too cavalier with this because having pros training kind of tends to make you a little bit more willing to jump into treatment and that's kind of the way we're trained and I don't want anyone to go in there and prep a whole arch and crank open a VDO 6mm just because I said it.

No, the fact of the matter is though there's been a lot of studies, small stupid studies, but studies that have shown that patients who have been in permanent splints, basically cemented splints, have opened their vertical dimension three, five, nine millimeters, have adapted. Adapted usually within a week or two and so to be honest I don't give a night guard to test the vertical dimension because it's bump. Patients don't wear these things 24 hours a day. It's not representative of what their teeth are going to be like.

What I do is, the night guard is reserved strictly if I can't determine- you program the muscles and relax the mandible and then go from there. I use the provisionals. I test things out with the provisionals. I've established through the wax-up and through my clinical exam where I want the vertical dimension to be, whether I want to raise it if I have to for prosthodontic issues, or because the patient has purely lost vertical dimension.

The real test is in the provisionals and in the practice, the one I was working in Boston, the practice did so many full mouths that we just kind of went in, prepped the teeth, put in provisionals and then worked out the occlusion, worked out the vertical in the provisionals and in the final restorations.

Howard Farran: Mo, are you making your temporaries or do you have them premade in a lab?

Mo Taheri: No when I was a resident I made them myself but I have them premade. Usually Glidewell is usually the easiest one.

Howard Farran: Can you talk about that process to the general dentist who's never done that?

Mo Taheri: Sure. The easiest way is actually to have the technician who is going to be making the final restorations make the provisionals, like Al Hodge, they make gorgeous provisionals and if you're working with a technician and one on one, I don't mean sending it off to just a random lab, I mean knowing the ceramist you're working with. There's someone at the door.

Howard Farran: Do you need to get it?

Mo Taheri: My wife is going to get it. It's probably a package or something.

Howard Farran: They're not going to come in with that killer dog barking.

Mo Taheri: Yeah right. I have two little Pomeranians that just yap their heads off.

Howard Farran: They sound lovely.

Mo Taheri: They're actually wonderful dogs. Just a little talkative.

Howard Farran: That's fine.

Mo Taheri: Sorry, where were we?

Howard Farran: About provisionals, so Mo, walk me through this. What percentage of dentists have never made a lab provisional temporary in their entire life?

Mo Taheri: Probably a lot.

Howard Farran: Probably 4 out of 5, I would guess. So just talk more details, because you do big cases. That's all you do is big cases. 95-96% of what we do is one tooth at a time. So this dentist has a big case, and it's the biggest case he's done, it might be a full arch, it might be a 10 unit bridge, whatever, tell them about the benefits of having the temporaries made ahead of time instead of making them chairside and how do you

technically actually go through that, what do you do? You take an impression, you send study models, you send a bite, go through that a little bit Mo.

Mo Taheri: There's a couple of ways of doing it, it depends really on how you want to go about it. The easiest way is, say I'm working with a technician that's going to make my final restorations, I have them wax up the case. I tell them how long I want the teeth, where I want the vertical to be, where I want the vertical overlap, incisor overlap and then he basically designs the case and then if I need to I touch it up, if I don't, I leave it as is.

Then I'll actually have a duplicate of that and we send that to Glidewell and they make the provisionals off of that, basically they prep the teeth and fabricate these acrylic provisionals basically exactly to that spec.

Howard Farran: And what's GlideWell's brand name of their temp?

Mo Taheri: BioTemps.

Howard Farran: BioTemps with Mike DiTolla?

Mo Taheri: Yeah. And basically they make it to that spec. Is it exactly the same? No, but it's close enough and what they do is they send back these shells and almost every time you have to hollow them out a little bit more because they're going to bind up when you're prepping the case and a general rule, don't use the temps as your guide to prep because you're going to end up over prepping to get the shells to fit. Always hollow out the temps to get the temps to fit.

Some would argue that you should do the full arch and splint the temps in one piece. I generally don't, I do three pieces. Let's say it's fourteen teeth, I'll go six through eleven, quadrant, quadrant and the reason I do that is so that I don't have to prep as aggressively to get a path of draw, I can prep a little bit more conservatively and then down the line, re-prep and this way the only draw you have to have is between your six anteriors and your four posteriors on either side.

You reline it with this regular chairside acrylic, I use Coldpac and go, the key is not to lock it in. You're going to run into the same kind of issues as you're going to run into if you have to do the reline with Protemp on a silicone key. It's the same issues, if you lock it in, you're going to still have a bad time. You have to cut it out or just leave it the way it is.

Howard Farran: And what do you cement your temporaries with?

Mo Taheri: Usually Durelon. Durelon mixed with Vaseline or mixed with silicone gel. If I want long term hold, there's a nice product in Japan called Hybond that they don't sell in

North America but they've started to introduce, it's by Shofu I believe, and they've started to introduce it in North America as IP Cem. Amazing stuff.

Thin, you don't get any thickness so your temps don't ride a little bit high the way they might with Durelon and it's a polycarboxylate so it's a very hard cement. Temps generally don't come out.

Howard Farran: And Mo while I have you on cements, go back earlier to an E.Max or zirconium or BruxZir single unit, six year molar, most common crown, what should that dentists be thinking when they're choosing a cement to cement?

Mo Taheri: For BruxZir and porcelain fuses you can use any cement you use with regular PFM. Anything, so if you want to use resin, you can use that, if you want to use resin modified glass ionomer, like FujiCEM, you can use that. You could probably even use zinc phosphate if you wanted to, it's going to be fine because there's no bonding issue but when you're dealing with E.Max or Empress you have to use a resin cement.

You don't have to, but it's really suggested that you do a full bonding technique with etch bond and the resin cement.

Howard Farran: Brand names, what would you use?

Mo Taheri: You can use Unicem, you can use Variolink, you can use Multilink.

Variolink and Multilink are the Ivoclar, Unicem is I believe 3M but I can't remember, you can use MonoCem.

Unicem and MonoCem are nice, they're self etching, self adhesive so you don't actually have to etch if you don't want to, to keep it simple. Still probably better if you do. Variolink you have to etch and Multilink you have to etch and bond. I mean Variolink you have to etch and bond and Multilink you have to etch and bond.

Howard Farran: Back to BruxZir, we know the bigger brands with zinc phosphate cement, you could get it completely dry, right, that would be a better- but do you think zinc phosphate cement might be the most bacterial static cement?

Mo Taheri: I don't know, I don't have the answer to that.

Howard Farran: Well you're a humble guy to say you don't know the answer.

Mo Taheri: That I don't know. Sorry, give me one second.

Howard Farran: Sure.

Mo Taheri: How much longer do we have?

Howard Farran: We have seven and a half minutes and I'm going to hold your feet to the fire for seven and a half minutes. No, do you need to go? Do you need to go, Mo?

Mo Taheri: Do we need to go? I can give you another three and a half minutes? My wife has a pregnancy thing on.

Howard Farran: Oh she's pregnant?

Mo Taheri: Yup.

Howard Farran: Is this your first one?

Mo Taheri: Yup.

Howard Farran: Okay well I have four Mo, stop at one!

Mo Taheri: Okay.

Howard Farran: They're a half a million dollars each, trust me.

Mo Taheri: Alright.

Howard Farran: Last question, very last question, it's the million dollar question: Mo, you have a 65 year old lady. When you go into a nursing home in America there's 100 women and only one man and they name him Lucky. The average male is dying at 74, the average woman is living to be 80. When you go to these nursing homes, it's just all women. Mo, if you had a 65 year old lady with a broken down tooth that needed a root canal build up and crown, would you do a root canal build up and crown knowing that if she gets to the nursing home, root surface decay is going to probably wipe out everything, or would you say you know ma'am, you're 65 maybe we should just pull this tooth and do an implant and a crown because it can't get a cavity.

Mo Taheri: That's a tough question. That kind of question actually comes up in the American Board of Prosthodontics about decision making and looking at patient circumstances and I would argue that a 65, even at a nursing home doesn't have a lower capacity to clean unless they're under specific types of medications or being neglected, to be honest with you. Simple brushing and flossing is excellent but some of these patients are on antidepressants, some of these patients are on high blood pressure medication, all that stuff is going to dry your mouth out.

Those patients are better fit with dental implants because the less likelihood of root surface decay. The sad truth is I've seen a lot of patients come from nursing homes and come from even just hospitals or even just living by themselves who just don't have the capacity to maintain their dentition and those patients, you have a hard choice to make

and a lot of the times that's where sometimes you do have to be a little bit paternalistic and kind of push the patient in a specific direction.

Howard Farran: Alright well Mo, you've got a pregnant woman that needs to see her doctor so our final question is, is there even a chance you'll name that new baby E.Max?

Mo Taheri: No!

Howard Farran: Thank you so much Mo for your 1000 posts on Dentaltown and by the way, I'm always going to be begging you to do an online CE course. We don't have a prosthodontist online CE, I wish you'd do a series sometime. I know you're busy with the baby but Mo, thank you for all that you do for Dentaltown. Thank you for all you do for dentistry and your patients and good luck with that baby.

Mo Taheri: Actually I have to thank Dentaltown for everything it's done for me, so thank you both. Keep well.

Howard Farran: And one piece of advice on that baby: no matter how bad it gets between now and 21, the reward is when that baby is 25 and gives you a granddaughter named Taylor Marie. Grandchildren make every trouble those kids ever did worth it.

Mo Taheri: Absolutely. Thank you so much.

Howard Farran: Alright Mo, have a great day.

Mo Taheri: Bye Howard.

Howard Farran: Bye-bye.