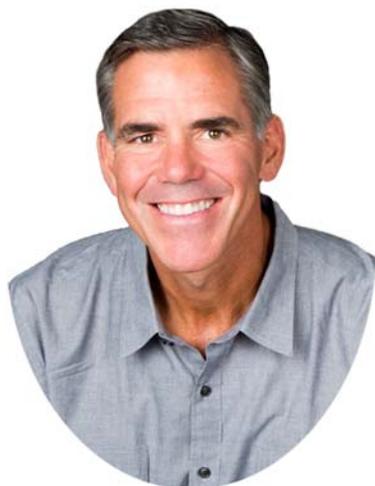


## **Anesthesia-Free Dental Procedures through Laser Technology**

**Interview conducted by: Lynn Fosse, Senior Editor, CEOCFO Magazine**



**Michael Cataldo - CEO**

**CEOCFO: Mr. Cataldo, what is the concept behind Convergent Dental?**

**Mr. Cataldo:** The concept behind Convergent Dental is to completely change what it means to go to the dentist by taking the needle, drill, vibration and the noise out of the dental experience. The way we do this is with a laser. The laser is called Solea, and it cuts everything in the oral cavity without anesthesia or pain the vast majority of the time. That changes the experience for the patient because if they can get dental procedures done without anesthesia and they don't feel anything and with very little noise, that of course takes the dread out of dentistry. For the dentist, it is important that deliver that patient experience with less chair time. We surveyed a number of our dentists and they reported that 95 percent of the treatments they do with Solea are anesthesia free, and that is for both hard and soft tissue. Ninety-eight percent of the patients report feeling no pain, and as I said a minute ago, all that is done with reduced chair time. The reduced chair time is very important because if you deliver a great patient experience but the dentists have to pay a big productivity tax, then it is not worth it. The great thing about Solea is that it does what it does with anesthesia free, pain free dentistry. It actually increases the productivity for the dentists.

**CEOCFO: Why is every dentist not offering Solea? Where are you in the process of commercialization?**

**Mr. Cataldo:** It is only a matter of time. We officially launched the product about the first of the year, so it is still very early. With any technology no matter how good it is or how shocking it is, there is always an adoption curve, which is not a bad thing. You need to work some kinks out, so we did a beta test period for six months then we launched it. Based on having more dentists using it, we can identify more improvements. It is very early, but is going extremely well. I think that lasers are already a popular topic in dentistry and in other places, and as I said, I think it is only a matter of time before it becomes the standard of care. It will be a while, but it will happen.



**CEOCFO: Have similar systems been tried in the past?**

**Mr. Cataldo:** Yes. There are lasers in dentistry for various purposes. Soft tissue only lasers, diodes and what not. There are lasers that cut hard tissue, but the problem has been that they do not deliver on the promise of lasers. The promise has been what I talked about before, which is a combination of anesthesia free, pain free and fast. You have to have all three of those for it to be worth it. Prior to Solea, there were a few erbium lasers. Erbium is the medium that is used to produce the laser's wavelength, and erbium lasers operate at a wavelength of about 2.7 or 2.9 microns. When it comes to lasers, wavelength determines everything. Our laser is the first laser that operates at 9.3 microns. It is the first 9.3 micron laser approved for dentistry, and it is the first 9.3 laser approved for anything by the FDA. It really is unique, and the unique thing about this wavelength is that it is very highly absorbed in hydroxyapatite, which makes up most of the hard tissue in the tooth. Because it is so highly absorbed, it can vaporize it directly. It literally vaporizes; it turns it from a solid to a gas. That is the key. When compared to erbium lasers, erbium lasers were pretty good. They use a different mechanism of cutting, they are not absorbed in hydroxyapatite, but the wavelength is absorbed in water. The way they cut is to vaporize the little amount of water that is in the tooth structure. As that happens, the water molecule expands and the tooth chips away. Ours actually vaporizes the tooth structure itself versus chipping it off, so the result is we get this gigantic percentage of anesthesia-free procedures and gigantic percentage of pain-free procedures. While you can get there with erbium, it can take significantly longer than the drill, two to four times longer and sometimes more. Solea cuts at near-drill speed, but the big benefit for the dentist is when they are not numbing the patient up, there are some major benefits. One is they do not have to sit there and wait. If you have been to the dentist, you might notice that they will inject you and then they will sit there and chat for ten minutes. That's ten minutes of non-productive time goes away and it never comes back. With Solea, they do not inject the patients, so they simply sit down in the chair, say hello, greet the patient

like they normally would, and then they go to work. That is a big time saving. The second thing is the patients are not as nervous, so they do not have to stop as often and talk to the patient to calm them down. On the average, our dentists are saving fifteen minutes per general operative procedure. The typical dentist would do five or so general operative procedures a day so saving 15 minutes each, that is an hour and a half they get back.

The other limitation when using anesthesia is that the dentist can only operate in one quadrant of the mouth at a time. If the dentist numbs two quadrants the patient is at risk of chewing their tongue or biting their cheek and doing serious harm to themselves. If a patient has cavities in multiple quadrants the dentist has to send them home and schedule another appointment. If they have cavities in four quadrants, that is four appointments. Now in one sitting, they can just sit there and do all the work, which is tremendous for the doctor productivity-wise and for the patient. Many people do not have a lot of flexibility. It is hard to time off from work to go the dentist. Four appointments is hard, but with one appointment you get it done and off you go.

**CEOCFO: *What about the result after a procedure is done? Will a filling last as long or will whatever the procedure is have the same results? How do you know?***

**Mr. Cataldo:** Yes, it will last as long. In fact, it is possible to do bonding studies with extracted teeth where you laser out a preparation tooth, you put the bonding material and test it to see how strong it is. There are bonding studies that show that teeth cut with our wavelength bond just as well as those done with a drill, and in some cases better.

**CEOCFO: *Do you see any reluctance with patients who, I am sure are thrilled at the thought of no pain, but me feel a little concerned about the thought of a laser?***

**Mr. Cataldo:** None whatsoever. I think most people trust their dentist, and when the dentist says I have this laser, it is great, and I do not have to numb you up, the patients are excited, not nervous. What is very interesting is that the dentists love to go straight to the phobic patients first. The patients all welcome it with open arms. In fact, I will tell you a little story. One of our dentists, Jeff Rohde Santa Barbara, California, in his first or second week with a laser he had a patient who was so phobic that she no showed for her first two appointments. She was a new patient, and by the time she showed up for her third appointment, he said he was going to use a laser with no anesthesia, and she immediately relaxed. He treated her with the laser, she popped up out of the chair and she could not believe it. She said she had been putting off whitening and getting her teeth straightened just because she was so afraid to come there, and she signed up for both on the spot.

**CEOCFO: *Many companies are selling traditional dental equipment, and I am suspecting they are not going to be very happy if Convergent comes along with something new and revolutionary. How do you address the problem with such an entrenched market and the power that they have to circumvent a new concept?***

**Mr. Cataldo:** I don't think traditional equipment companies will have an issue with Solea. The dentists will never get rid of the drill. There is always going to be a need for traditional dental equipment, including the drill. This laser in particular has a very strong analgesic affect, meaning that once the dentist uses the laser on the tooth, quite often the patient cannot feel anything. We have dentists who start with the laser and they will get to a point where they just need to clean up a margin to get it perfect, and they will take out the drill. For a few seconds they will just go around the edge of the preparation with the drill. The patient cannot feel it because the laser was used first. I have watched dentists treat little kids, and the kids sit there relaxed, watching TV not even realizing that the tooth is being prepped even if the dentist uses the drill for part of the procedure. Traditional equipment vendors are not our competitors. The only companies that should feel very uncomfortable about the introduction of Solea to the market are companies that sell erbium lasers. Those will go the way of the dinosaur. It is not like there is an application for them after this. The wavelength just does not do it. Whether it is hard or soft tissue, there literally is not a thing it does better than 9.3 microns. Those companies will go away, there is no question. We have very strong patent protection, but I think there will be a lot of companies trying to figure out how to work around them because the results are so dramatic. It is not just the patient experience; there are better clinical outcomes as well, and the big productivity gain. I think the rest of the



industry will be cheering us on. I told you the story about the woman who sat for whitening and Invasalign after getting comfortable that she was not going to get hurt by the dentist. As that happens, the patients who come to the dentist will sit for more dentistry. That means more cotton balls, more whitenings, more trays, and more everything. Those companies will love us because their volume is going to increase. We will literally drive a rise in the tide for dentistry as the fear of the dentist goes away. I think most of the companies out there except for the erbium laser companies will be happy to see us in the marketplace.

**CEOFCO: *What training is involved for the dentist?***

**Mr. Cataldo:** It is actually very straightforward. It is a one-day training. That is all they need. Depending on where they are regionally, we do them around the country or at our office. For the dentist, the thing they need to get used to is the change from tactile feedback to visual feedback. In the drill world, they feel the drill pushing through the tooth. In our world, they have to see it, so they use magnification like loupes or a microscope so they can see the tissue go away as opposed to feeling it go away. It takes very little time for the dentist to get used to it.

**CEOFCO: *How are you reaching dentists?***

**Mr. Cataldo:** All the traditional ways. We advertise, we use social media, we go to trade shows, we have regional seminars that we conduct, and we do the typical email and direct mail outreach to dentists. All the normal channels to get the word out. There is nothing too surprising, while I wish we could find something that was unique and different, that part of what we do is pretty much the same.

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**CEOFCO: *Do you find younger dentists are more interested or dentists in urban areas? Is there a demographic that you have seen?***

**Mr. Cataldo:** Not really. Our dentists range in age from late 30s to Ron Goldstein world-renowned dentist in Atlanta who 81 years old. There is no rhyme or reason with either age or geography.

**CEOFCO: *What about dentist schools or organizations? Are you able to work with that population to reach dentists?***

**Mr. Cataldo:** The thing is, this is an early stage company, and you have to manage your resources closely and Dental schools require a lot of resource to put together a curriculum, etc. You cannot just drop it off. There is a lot of work and an associated big investment to get a dental school program started. I think it is a very important place for us to be probably in 2015. We have had some interest from dental schools but at this stage it would not make sense for us. In about nine to 12 months, it will make a lot of sense.

**CEOFCO: *Put it all together for our readers. What stands out about Convergent Dental?***

**Mr. Cataldo:** It is pretty simple. The reason to pay attention to Convergent Dental is that we have a disruptive technology that is going to revolutionize an entire industry. We are going to cure a disease that effects pretty much everybody in America and worldwide, fear of the dentist. As a result, we are going to build a very large business, and I think we will do very well. It is a very interesting technology, very interesting business development story, and it will be interesting to see what the different applications are for this because we know that there are a lot more. This is just a first. I think those are probably reasons enough to pay attention to Convergent.

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**BIO:** Mr. Cataldo is CEO of Convergent Dental, an early stage dental device company that has developed the first of its kind, Computer-Aided Preparation (enamel and soft tissue cutting) System for dentistry. The device is called Solea. This disruptive innovation is being used by leading dentists to perform anesthesia-free hard and soft tissue procedures 95% of the time with 98% of patients reporting that they feel no pain. Solea eliminates the drill for the majority of dental procedures and along with it, the noise, vibration and needle that cause patients to dread going to the dentist. Prior to Convergent Dental, Mr. Cataldo was CEO of Cambridge Semantics, a Boston-based start-up which delivered the first development platform for the World Wide Web Consortium’s semantic technology standards. In 1997, he founded MediVation, which developed the first ePPI (Electronic Provider Patient Interface) connecting patients with their own doctors via the Internet. MediVation was acquired by McKesson Corporation in 2000. Mr. Cataldo’s previous positions include GM of Optika Imaging’s healthcare division and VP of Sales & Marketing for STC where the DataGate product to become healthcare’s de facto standard for integration. Earlier, Michael held management, marketing and sales positions at IBAX Healthcare Systems, Shared Medical Systems and Cable & Wireless. Michael holds a B.A. in Economics from Columbia University.

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**CONVERGENTDENTAL**

**Convergent Dental, Inc.**

**2 Vision Drive**

**Natick, MA 01760**

**800.880.8589**

**[www.convergentdental.com](http://www.convergentdental.com)**