

The Dangers of Root Canals and How to Treat Them

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✓ Fact Checked

May 27, 2023

STORY AT-A-GLANCE

- › Root canal-treated teeth can harbor dangerous pathogens that contribute to chronic disease
- › Modern technologies such as ozone and laser therapies can effectively address many issues so a root canal procedure can be avoided. They can also be used to treat infected root canal-treated teeth, and to safely perform a root canal when needed
- › If you need a root canal procedure, see an endodontist who is trained in the use of these regenerative technologies
- › Even when decay and bacteria have made it all the way into the nerve tissue, laser therapy can sterilize the surface of the nerve, while ozone gas, which also kills pathogens, can actually stimulate your immune system to kick in and eradicate the remaining infection
- › If you have a root canal-treated tooth, be sure to get a 3D cone beam scan to assess the state of the tooth and rule out infection

Editor's Note: This article is a reprint. It was originally published April 11, 2021.

In this interview, Dr. Val Kanter, a board-certified endodontist and biological dentist with a practice in Beverly Hills, California, discusses the oft-ignored dangers of root canal procedures and modern technologies with which these issues can be effectively addressed and corrected.

Unfortunately, few regular dentists fully appreciate the intimate links between your oral health and overall physical health and, as a result, some of their interventions can actually cause catastrophic health challenges.

The sad reality is that if we knew how to eat properly from the time we were born, the need for just about any type of dentistry would, in my view, decrease by at least 90%, because we just wouldn't develop cavities.

Thankfully we have trained professionals who can help restore our health, and Kanter is one of them. Her transition into holistic dentistry occurred after she moved from Florida to California and started doing some self-exploration.

"I had some enlightening moments," she says, "and it was really interesting because I was raised in mainstream dentistry and mainstream health, not really understanding what I do now. It was through that self-discovery that I actually learned about water fluoridation and the major damage that has created.

I got involved with the Fluoride Action Network and worked closely with Michael [Connett] for a long time, publishing research on some of the damages. One of the things that is so obvious to us is fluorosis in kids. It was originally thought to affect only 10% of kids, and now we're up to a place where it's affecting 50% or more.

That's a window. It's a view of what's happening inside the body. That's what got me on the path and that led me into learning about ozone and laser therapy and it really opened up a whole new world for me in the field of endodontics."

Do You Really Need a Root Canal?

One of the founding members of the American Endodontics Society, Dr. George Meinig, wrote the book "Root Canal Cover-Up." It's a really good primer and provides solid information as to why you may want to consider avoiding root canal treatment.

The conventional idea is that it's best to preserve whatever you can of the original tooth rather than replacing it entirely. Hence, they'll do a root canal and attach a crown rather than pull the tooth and replace it, typically with an implant. The downside is that **root canal-treated teeth can cause significant health complications** that often aren't recognized as being a side effect of the root canal.

“ There's a whole new world of regenerative dentistry and regenerative endodontics that if you're using the proper equipment, you can preserve the vitality of the teeth. ~ Dr. Val Kanter ”

According to Kanter, more than 20 million root canal procedures are done every year in the U.S. "It's an astronomical number, and most of those root canal procedures are done by general dentists," she says. That in itself is a problem, as you typically do less than 10 root canals while in dental school, and once you're in practice, much of the training you get is done by sales reps of various equipment.

"One of the most important things that I want the listeners to understand," Kanter says, "is that there is a specialty out there that focuses on this procedure. If you do decide to have the procedure done, please go see a specialist. See two or three. Get multiple opinions."

It's so important, because I feel that a lot of root canal procedures are done unnecessarily. It's a quick way to hit a symptom, just like a medication. It's, 'Oh, let's take out the nerve and the pain will stop.' These inflammations inside the teeth can be reversed. I see it daily in my practice. I see a lot of patients who want to prevent a root canal.

There's a whole new world of regenerative dentistry and regenerative endodontics that if you're using the proper equipment, you can preserve the vitality of the teeth and that's my passion and goal. With that said, most of my practice is retreating old, contaminated root canals ...

My goal is to teach all of the dentists out there about these procedures because then it doesn't even have to go to that level. If someone needs a root canal procedure, they should see an endodontist if they decide to go that route.

I think one of the top things that you should be seeking if you are a patient looking for a practitioner that's going to resonate with the things that you want – which are some of these regenerative procedures – is finding dentists that are using this laser therapy.

It's becoming more and more popular, but still probably about 10% of dentists use dental lasers. I would start there. Go to Fotona's website¹ and find someone in your area using this laser therapy."

Prevention Basics

Of course, prevention is the best medicine, and some basic care can help you minimize the time you need to spend in a dentist chair. The most important factor in that regard is nutrition. Three crucial nutrients for oral and dental health are vitamins A, D and K. You also need a good supply of minerals.

"Unfortunately, most of our food is deficient in the minerals and micronutrients we need because of the way that farming has been done," Kanter says. Ideally, you'll want to do micronutrient testing along with testing your vitamin D level and hemoglobin A1C. Kanter will perform many of these tests at her office, and helps patients customize their diet.

"It's challenging because the nutritional component of dental schools is minuscule. That's why I did advanced training with the ACIMD, which is basically integrative biological dentistry and medicine training to become a naturopath ... By decreasing sugar in your diet, and stress, you can actually [heal your teeth].

Your teeth are a beautiful complex system that are actually healing themselves constantly. There's an outward fluid flow inside the nerve complex in your tubules and it's protecting your teeth. As soon as you start loading your body

with sugar and all of these other things, the fluid flow just reverses, and that leads to an influx of bacteria and other toxins that can start to create inflammation in the tooth.

The tooth is a very complex and unique system, unlike anywhere else in the body. If you have inflammation from any other injury, your skin can stretch and swell, whereas the tooth is encapsulated in enamel, and it can't stretch. When inflammation starts to build up, it can quickly turn into a pathological process and that's what leads to major nerve damage."

Ozone and Laser Therapy

Once pain sets in, you're past the point of being able to prevent deterioration, but this is where regenerative dentistry can come in and save the day (and your tooth). One is ozone therapy. Another is laser therapy.

Pulpitis is inflammation of the pulp nerve complex of the tooth. Using these regenerative therapies, Kanter has successfully reversed this kind of inflammation in many patients. Even when decay and bacteria have made it all the way into the nerve tissue, laser therapy can sterilize the surface of the nerve, while ozone gas, which also kills pathogens, can actually stimulate your immune system to kick in and eradicate the remaining infection.

In the interview, you'll find a video showing how the Erbium YAG laser treatment seemingly melts away the decayed tooth structure. Contrary to mechanical drilling, the laser is so gentle on the tooth structure, you don't even need anesthesia. It also sterilizes the surface as you go along. Why is this important? Kanter explains:

"When you drill, you're starting to remove decay filled with bacteria. As the dentist is drilling deeper into the tooth into the more vulnerable layers near the nerve, you're carrying that bacteria that's trapped in the bur and you're actually driving it deeper in the tooth. With the laser, you're sterilizing cell layer by cell layer."

Were the laser to hit the nerve, it also will not kill the nerve. Once the area is free of decay, Kanter will ozonate the entire surface, and since it's a gas, the ozone is able to penetrate into and actually disinfect the tubules. Special bioceramic materials that are highly biocompatible are then used to complete the restoration of the tooth.

"Using photobiomodulation or low-level laser ... a neodymium YAG laser, which is 1064 wavelength ... you can actually stimulate the mitochondria inside the tissues, upregulating ATP production, collagen synthesis and angiogenesis," she says.

"I generally use it at 20 Hertz, so the frequency is 20. Then, if it's intraoral, we usually use it at a 2-watt power level. It takes just a couple of minutes ... We do these low-level laser procedures on every single patient that's coming to see me, and it's profound, the amount of healing and the reduction of pain and inflammation that we can see."

In the future, we may even have the ability to regenerate tooth material naturally. As explained by Kanter, researchers are investigating the ability of collagen matrices embedded with different medications to stimulate natural tooth formation. There are also studies looking at how to regrow teeth from scratch.

The Hidden Hazards of Root Canals

There are several reasons for avoiding root canals. Importantly, research by Dr. Weston A. Price demonstrated just how interconnected your teeth are with your overall health. He implanted infected root canaled teeth under the skin of rabbits, and in many cases, the rabbits went on to develop the very disease that the donor of the tooth had.

Granted, dentistry has changed a lot since Price, so his results may not be directly applicable to today. Kanter, who is the endo director of the International Academy of Oral Medicine and Toxicology (IAOMT), is now in the process of developing studies to try to recreate some of his studies to see whether the root canals of today, in which teeth are able to be cleaned to a far greater degree, still produce the same systemic effects.

That said, as recently as nine years ago, the American Association of Endodontists, which oversees the specialty of endodontics, admitted that current techniques fail to completely remove all infected material from root canaled teeth. To illustrate this, Kanter shows a CT scan of a root canaled tooth (see video).

"The red area is the area that the instrument has cleaned out. The green area wasn't even touched. What this means is that a third of the soft tissue of this necrotic tissue in the tooth is completely untouched by instruments.

Unfortunately, most [dental students] have in their head, 'I need to get these instruments in and I got to do this shaping of these canals,' and that's actually not what's cleaning the teeth at all.

What's happening is that the dentist is grabbing a syringe of a fluid to irrigate the tooth. Generally, they're using sodium hypochlorite, which is essentially bleach, and they're just taking a syringe with a small needle on it and they're introducing it down into the canal. It's not cleaning everything out. It's only cleaning a teeny tiny percentage of the dentinal tubules, leaving a ton of bacteria and toxins behind.

In the picture on the right, you see all this black material. These are complete channels of necrotic tissue that are left behind during these procedures. We can see why these teeth can be so toxic if all of this material is left behind. That's just looking at the main nerve channels, not even tubules. It's surprising that root canal treatments ever work."

The good news is that the relationship of apical periodontitis and systemic illnesses is finally starting to be more widely recognized. Apical periodontitis is an infection around a tooth that leads to infection in the bone. "If you have apical periodontitis, you're three times more likely to develop coronary artery disease," Kanter says. It's also associated with a higher risk of kidney disease and cancer.

Up to 78% of the plaques found in heart attack victims have oral pathogens in them, and they're the exact same pathogens you find in failed root canal treatments. This kind of

systemic infection can be identified by looking at biomarkers such as CRP and interleukin-6.

Yes, There Are Ways to Make Root Canals Safer

In cases where regenerative techniques are inappropriate and more aggressive treatment is required, you basically have only two options left: extraction of the tooth or a root canal. The good news is that there are safer ways of doing a root canal these days, but you need to use a combination of ozone and laser therapy in order to achieve optimal sterilization. Ozone alone isn't even enough. Kanter explains:

"I have incorporated ozone therapy into my root canal procedures for the last five years. In fact, I started a pilot study at UCLA looking at the efficacy of ozone gas and comparing it to traditional techniques. It was a blow to me, but unfortunately the ozone gas wasn't doing the job.

We use that at about 100 micrograms per milliliter, which is very high, but we only did it for one minute per canal. Now, what we know about ozone is that it's both dose dependent and time dependent. Further studies are going to be done, but we may need to create a closed system where we can completely infuse the tooth with the ozone gas in order to sterilize it because, yes, of course, a gas is going to travel deeper into tubules than a liquid is.

The main issue is that if there's debris and blockages in these tubules, I don't believe the ozone gas to be able to penetrate. Now, with the traditional techniques, you're leaving so much behind. I have a really cool video that compares the traditional technique with the new laser activated irrigation. This is what's made me feel really good about these treatments that I'm doing on my patients ...

With the new laser activation that I'm using in my practice, watch how quickly this biofilm is disrupted. The laser is simply at the top of the tooth. It doesn't have to extend down the canal, and look at that energy.

This is what not a lot of people are familiar with. You cannot have a root canal procedure without an advanced irrigation. It is absolutely critical. Within 10 to 20 seconds, look at the amount of biofilm that's disrupted. We're also seeing complete cleaning of the dentinal tubules ... down to the microtubules as well ...

There's one more technology on the market that's reaching a lot of endodontists. If you need a root canal procedure, find someone that's using either the laser or this gentle procedure. The general aid is using sound energy ... all of these different frequencies, and you have a closed system on the tooth and it actually sucks all of the necrotic tissue and debris out of the root structure.

Between these two technologies, we're getting results like this. This is the look of the tubules when they're just sparkling clean. It is possible, but unfortunately the majority of root canal procedures that are being done are not using this."

Hyperbaric Oxygen Treatment

Another alternative treatment that can be very useful is hyperbaric oxygen treatment. By introducing higher pressures, you're able to get oxygen deeper into the tooth area, thereby facilitating and speeding healing. Kanter has a couple of different hyperbaric centers in Los Angeles that she will sometimes refer patients to.

"The patients that come see me are generally very committed to their health. We do a variety of treatments that support the procedures that we're doing. We do ozone inside the tooth, where it has an antibacterial effect, but we also inject it around the tooth. We do that at their recall appointments as well, so we're constantly stimulating the immune system around these teeth.

We're also doing the low-level laser treatments, as well as microcurrent and other things to keep energy flowing in these areas where I know that there is scar tissue. We have to break that down, and eventually energy can start flowing through," she says.

Why Extraction Isn't an Ideal Solution

The second option, to extract the infected tooth, also has its issues. For example, there's a decrease in neurofeedback to the brain, and so it's correlated with early Alzheimer's and other degenerative, neurodegenerative diseases, Kanter says. Also, when you take a tooth out, the periodontal ligament that encompasses the root needs to be completely removed as well.

This ligament nourishes the root from the outside and acts as a defense mechanism against bacteria. The problem is it also provides 70% of the blood flow to the surrounding jaw bone. So, when you take a tooth and the surrounding ligament out, you also cut the blood supply to your jaw in that area by 70%, which is why you end up seeing bone degeneration and resorption, as there's nothing left to support that bone.

"There's definitely cases [in which] a tooth extraction is indicated, but I think there's plenty of patients out there that can withstand having a root canal procedure and remain healthy. Even Weston Price said there are different categories of patients out there.

There are patients who are going to be very susceptible to any sort of remnant bacteria in these teeth, causing systemic illnesses, and then there's going to be people that are just fine ... Apical periodontitis or root canal infections cause systemic illnesses. But a root canal procedure or a root canal treated tooth in itself does not cause the systemic illness ...

We need to do more research with these new techniques. It's definitely a goal of mine to get the research done, to mimic some of these older studies, using the new technology, and looking at not only getting rid of the bacteria but getting rid of the endotoxins and everything else the bacteria leave behind, because those move quicker than the bacteria once they're released into the body."

Replacing Extracted Teeth

If you have a periapical abscess, it is typically too late to save the tooth as it is dead and seriously infected. In that case, it will need to be removed. Once a tooth is extracted, you then have to decide what you're going to replace it with. Here, there are a number of options – implant, bridge or partial – each with its own pros and cons.

"First of all, if you're going to extract the tooth, it needs to be done by a surgeon using things like PRF, platelet rich fibrin, which really helps the site heal and create new bone and collagen in the area quickly, and also provides an immune response in the area. That's really important," Kanter says.

"Also, if you're thinking about doing an implant, you need to do sensitivity testing ... because [many] are sensitive to titanium, and most of the implants being placed are made of titanium. There are alternatives like zirconia, but it's important that you find out if you are compatible with these materials before you put them in your body.

If you're not able to put these in your body because of sensitivity, then your options are going to be a bridge or a partial. But metal in the mouth is becoming more and more of an issue. We're seeing it constantly. It's creating these interference fields in the mouth and a lot of people are having hypersensitivity reactions to them.

It turns into a domino effect on the patient's overall health. We're constantly evaluating that and helping our patients figure out what materials are best for them and what prosthesis or restorative plan is going to be best for them."

Call to Action

Unfortunately, many have improperly cleaned root canal-treated teeth, and more often than not, there can be silent infections around these teeth. For this reason, Kanter urges anyone who has a root canaled tooth to get a three-dimensional cone beam image done of the tooth.

Many endodontists have this machine. If they don't have one, they should be able to refer you out for one. "You should have a 3D scan if you've ever had a root canal procedure," Kanter says. "That's my call of action to all of your listeners."

In the interview video, she shows what an infected root canal looks like. You cannot see this infection, however, on a standard dental X-ray. These are the kinds of post-root canal problems Kanter deals with in her practice, using the regenerative technologies discussed above.

"That's 75% of my practice," she says. "Patients get the CT, we find these issues, we find the connections into the sinus, how it's related to all of these [health] problems, and we just start breaking it down and doing our best to help these patients."

So, getting a 3D cone scan of your tooth is the first step. Kanter recommends having the scan radiographically interpreted by your nearest university or a company called Beam Readers. "These are board-certified radiologists that look through every detail," Kanter explains.

Again, to locate a biological endodontist familiar with the regenerative technologies discussed in this interview, check out fotona.com, or gentlewave.com. They offer lists of practitioners that are using these technologies.

"If you're going to someone using either of these technologies, you're going to generally be in good hands," Kanter says. "In my practice, I'm using both. I use the laser and the gentle wave, so we are cleaning to the ultimate capacity in these teeth and that's what I feel is necessary."

More Information

Kanter is creating an educational platform to teach endodontists and dentists about diagnosis and precision dentistry on her website, i-endo.com. "These new courses are already starting, and I'm going to be spending the next decade really trying to change this paradigm and shift into the new way of healthcare," she says.

To learn more about the nutritional aspects of dental health, check out Weston Price's classic book, "Nutrition and Physical Degeneration," and for a foundational understanding of the health hazards of root canal treatment, see "Root Canal Cover-Up."

Sources and References

- ¹ Fotona.com