Root Canals – What are the trade-offs?

In order to make a wise choice in our health care, it is necessary to understand the trade-offs assumed when dead tooth structures are left in the mouth for extended periods of time (decades in many cases). If you are surprised by the idea that a root canal leaves dead tissues in the body, please read the next question *(What, exactly, is done in a root canal procedure?).*

It may seem like a good idea to keep the dead root remnants of the natural tooth in place, however, research has shown that there are significant consequences that should be considered.

Remember that the fundamental understanding that supports holistic dentistry is *dental procedures and materials can have an effect on your whole body*, not just your teeth. In the case of a root-canal procedure, it can lead to a number of chronic health problems and even degenerative diseases.

Current practice in conventional dentistry assumes that a root-canal treated tooth is "cured," thereby discounting the possibility of infection and resulting disease development. However, this attitude is beginning to change as our understanding of the complexity of the body and the origins of auto-immune diseases lead more and more people (researchers, health care professionals, patients) to re-examine the pros and cons of the root-canal procedure.

In addition to potentially being a causative factor for a specific degenerative disease*, a root-canal-treated tooth can also be a direct cause of a wide variety of ailments, such as infections, inflammation, pain, blood cell abnormalities and fatigue.

Although I acknowledge there are special circumstances in which a root canal has short-term value, I believe that phasing out the procedure as a standard-of-care practice would significantly reduce the amount of chronic illnesses that burden the American people.

*For example:

- Arthritis
- Meningitis
- Pneumonia
- Appendicitis
- Anemia
- Heart lesions
- Endocarditis, myocarditis (heart inflammation)
- Hardening of the arteries
- Nervous system breakdowns
- Eye infections
- Kidney, liver and gallbladder problems
- Cancer

What, exactly, is done in a root-canal procedure?

A root-canal procedure involves *the removal of the soft pulp tissue inside a tooth*. The soft pulp is located in the root canals that run through the middle of the harder tissue inside a tooth, called the dentin. The canals start in a part of the tooth called the pulp chamber and extend to the end of each root. (Front teeth generally have only one root, while molars usually have two or even three roots.)

The roots of teeth are anchored into the jawbone by way of the periodontal ligament, which develops from both the bone and the teeth. The pulp extends from the pulp chamber down through each root canal to the bottom of the root in the jawbone. *The pulp contains blood vessels, lymphatic fluid, nerves and connective tissue that are essential to keep the tooth alive and healthy.*

A root-canal procedure is typically done when the soft pulp tissue inside a tooth becomes infected and/or inflamed, or because a tooth is abscessed. The infection or inflammation can have a variety of causes, such as deep decay, repeated dental procedures on a tooth, a chip or crack in a tooth, or a fracture in a tooth resulting in exposure of the pulp and nerves. An abscessed tooth occurs when pus forms at the root of an infected tooth. Any of this can occur with or without the presence of pain or other symptoms.

The objective of a root-canal procedure is to remove all of the soft pulp inside a tooth, which obviously also eliminates the blood supply, lymphatic circulation and nerves in the tooth. Then the hollowed-out pulp chamber is "*sterilized*," filled and sealed, always with material that contains some metal (so the root-canal treated tooth can be identified on an X-ray), and finally, a crown is placed over the *pulp-less tooth*. (For some teeth, however, the root-canal procedure is completed by using a filling instead of a crown.)

The root-canal procedure is often described as "*saving*" the tooth, rather than extracting it. But to phrase it as "saving" the tooth is not quite accurate because if the tooth is not already dead (for example if it is still producing painful sensations), having a root-canal procedure means that the dentist is actually removing living tissue, which results in "*killing*" the tooth.

In cases of intense pain, it may be thought of as a "*mercy killing*," as having a root canal can definitely be an effective way to eliminate the pain — kill the tooth and you kill the pain. The pain is gone because the nerves are gone. However, a much more accurate, no nonsense way of describing the end result of a root canal is this: It doesn't "*save*" the life of the tooth, but it does keep enough of the tooth's hard outer structure intact so that the crowned chewing surface will be functional, while maintaining the aesthetic value of the tooth.

So there you are — you are now left with a functional but dead tooth in your mouth that looks good when you smile. But think about this for a moment. Doesn't it seem unhealthy, and even strange, to leave a dead tooth in your mouth? If another organ in your body were dead, it would have to be removed or else very aggressive strains of microbes that nature uses to decompose dead tissue would set in and threaten your life! And something similar happens with a dead tooth, whether it is killed from infection, trauma or the root-canal procedure.

After a root canal is done, the dead tooth is an environment conducive to chronic infection (growth of anaerobic bacteria and the toxins produced by the bacteria). Because there is no reliable way, practically speaking, to completely sterilize a root-canal-treated tooth, (while it is still in a patient's mouth), it may be a source of infection for the whole body until it is extracted and the tooth socket is cleaned. Because chronic infection can occur without the presence of pain or other symptoms in or near the root canal treated tooth, it is often overlooked when diagnosing the cause of illness.

Why is there no reliable way to completely sterilize a root-canal-treated tooth?

The reason there's no reliable way, practically speaking, to completely sterilize the tooth is related to the vast numbers of a structure known as dentin tubules. The body of the tooth, which surrounds the main root canal, consists of tissue called dentin that is incredibly porous and accounts for about 90 percent of a tooth's structure. Under a microscope, the dentin looks similar to a honeycomb.

This porous tissue is made up of a vast and intricate network of microscopically tiny canals called dentin tubules. The dentin tubules run from the main root canal out toward the exterior of the tooth. The dentin tubules serve the purpose of transporting nutrients obtained from blood to all parts of the tooth. The nutrient rich fluid, or protoplasm, that flows through the dentin tubules is necessary to keep a tooth alive and healthy.

As incredible as it seems, the number of dentin tubules in every tooth is so enormous that, if you could somehow lay all of them end-to-end, they would actually extend for at least several miles. Though microscopically small, the dentin tubules provide enough space to accommodate the even smaller bacteria cells and other microbes, such as streptococcus, staphylococcus, spirochetes and protozoa. A chip, crack or fracture in a tooth, or deep decay, or the root- canal procedure itself can give bacteria a chance to get into the dentin tubules.

The treatments and techniques to sterilize the root-canal space cannot get to all of the microscopic dentin tubules in the tooth where microbes feed on the decaying protoplasm. Root-canal filling materials, disinfecting chemicals, antibiotics, lasers and ozone therapy can be effective in sterilizing the hollowed-out pulp chamber, but these treatments are not effective at getting into and sterilizing the entire system of dentin tubules.

Orally taken antibiotics *cannot* circulate into the tooth because the tooth's blood supply is gone. The antibiotics simply have no way of getting to the bacteria inside the root-canal-treated tooth. So, all root-canal-treated teeth will harbor some bacteria, and possibly other microbes, even if they are done perfectly.

What happens to the bacteria in a root-canal-treated tooth?

A dead tooth creates a situation in which pathogenic bacteria, in the absence of oxygen, mutate into micro-organisms capable of excreting pathogenic poisons called thioethers. So, once a root-canal-treated tooth is sealed with a crown or a filling, some of the entombed bacteria in this oxygen-free environment begin to mutate from *aerobic* organisms that utilize oxygen into *anaerobic* organisms that do not. As this change in their metabolism occurs, the bacteria become smaller, more virulent and more dangerous. These *anaerobic* bacteria produce highly toxic thioethers as their metabolic waste.

If you wonder what these toxins do, research has shown that thioethers, which can seep out of the tooth into the bone and gum tissue and eventually into the rest of the body through the bloodstream, can damage the heart, kidneys, lungs, eyes, stomach, brain and any other part of the human body.

Why doesn't everyone with a root canal suffer symptoms of chronic disease?

From my clinical experience, there is absolutely no doubt in my mind that there are many people suffering from various ailments and diseases that are directly caused by the infection and toxicity coming from root-canal-treated teeth.

There is also no doubt that there are many people, with strong enough immune systems and livers capable of efficient detoxification activity, who can live with a root-canal-treated tooth or teeth, symptom-free, for many years. However, if someone's immune system and liver are significantly weakened (for example, by mercury leeching from amalgam fillings, environmental pollution, poor nutrition, lack of sleep, chronic stress, toxic medical treatments, alcoholism or other types of substance abuse, physical or emotional trauma), that person's body may no longer be able to handle infection and toxicity from a root canal.

What are the options?

Options for replacing the functionality of a missing tooth have improved a great deal since the 1950s when root-canal treatment became the standard of care. Every individual needs to evaluate his or her situation and consider the "*up side*" and "*downside*" of each available option.

TOOTH-REPLACEMENT ALTERNATIVES:

- *Metal-Free "Partial" (removable partial denture): a replacement tooth attached to a pink or gum-colored base that is "clipped" to the adjoining natural teeth like a puzzle piece; it can be removed for cleaning and easily reinserted.*

- *Metal-Free Bridge: a replacement tooth that is permanently joined to adjacent teeth; the neighboring teeth on each side are crowned, and the false tooth is fused between these crowns (thereby "bridging" the teeth together).*

- *Metal-Free Implant: an artificial root that is permanently implanted into the jawbone. It serves as a support structure for a metal-free crown.*

On the surface, having a root-canal procedure, instead of extracting a dead or unrestorable tooth, is very appealing. But it's important to consider health in a holistic way. Most people have learned to think of themselves as being like a machine — as a collection of body parts that function independently of each other. However, seeing your health in a holistic way leads to understanding that every, and any, part of your body can have an influence on the whole.

If you do decide that undergoing a root-canal procedure is worth risking possible damage to your overall health, it would be wise to consider the root-canal-treated tooth as no more than a temporary solution for your present circumstances. Having it in your plans to remove the tooth, at an appropriate time, should be seriously considered, especially if you develop a specific health problem or experience a noticeable decrease in your energy and an increase in your susceptibility to feeling ill after undergoing the root-canal procedure. Remember to always pay attention to your dental history when considering the cause of a seemingly unrelated health problem.

Where can one get more information about the pros and cons of root canals?

For more in-depth information about the history of root canals, root canal research, and case studies, please read ***Cleaner Teeth, Longer Life*** by Dr. Lina Garcia,

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