

# Root Canals

## The Good

## The Bad

## The Ugly

### THE GOOD

Approximately 25 million Americans undergo root canal therapy every year in an effort to prevent the loss of teeth that have “died”. This common procedure is promoted by most dentists and endodontists, who are dental specialists limiting their practices to root canals and related problems. During this procedure “dead nerve tissue” is removed and a filling material is placed within a prepared chamber. This chamber housed not only the nerves, but blood vessels and specialized cells for tooth health. In the majority of cases the obvious infection resolves and the pain is eliminated without complications.

In fact, most teeth with rot canals can remain as a functioning component, especially if appropriately restored. It is not surprising that most dentists and their patients pursue this therapy when indicated. However, there is more than meets the eye regarding this subject.

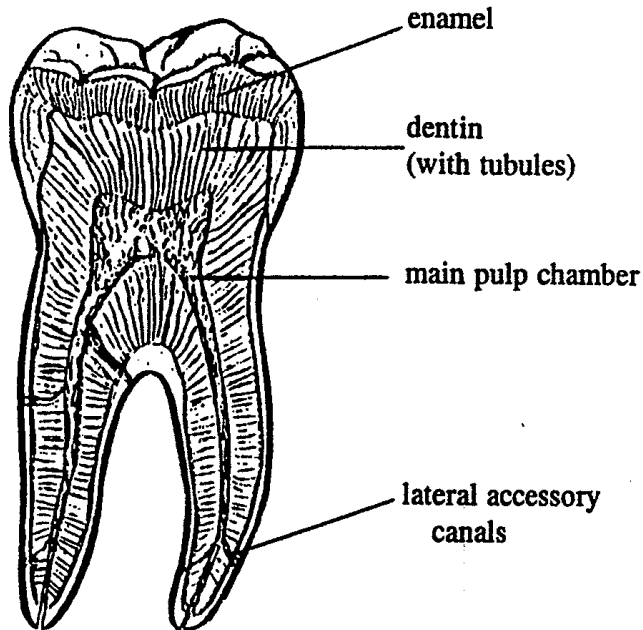
### THE BAD

The bad news begins with the anatomy of our teeth. The enamel covers the chewing surfaces of our teeth and is generally what we see inside our mouths. This layer is very strong, yet only 1 ½ to 2 millimeters thick at the most. It covers dentin, which comprises most of the tooth volume. A less strong, but dense, single cell layer called cementum covers the roots of teeth. The pulp chamber is within the body of the tooth.

The main pulp chamber, generally centered within the body of the tooth and root(s), is not the only tube within our teeth. In fact, there can be one or more “lateral accessory canals” running from the main chamber outward and through the cementum. In addition, there is also a highly specialized network of microscopic tubes (tubules), designed by our Creator to supply nutrients to the dentin as long as the tooth is alive. Each of these tubules begins at the surface of the pulp chamber and extends out to the enamel or cementum surface of the dentin.

These tubules do not interconnect and house extensions of living cells which line the pulp chamber and conduct fluids outward from the living pulp ( see figure ). The intricacy of

this microscopic anatomy simply cannot be appreciated until we realize that each tooth contains approximately 1.5 million tubules! One front tooth with a single root has an estimated 3 miles of tubules!



## **THE UGLY**

The ugly part of root canals is what happens within these tubules when a tooth dies. As the living cells necrose (rot) within the central pulp chamber, their extensions also necrose within their tubules. Although root canal therapy should completely obliterate and fill the main pulp chamber, (or chambers in teeth with multiple roots), it is impossible to fill the millions of microscopic tubules.

Bacteria from infected teeth or from the dental procedure itself can remain within the tubules, growing and multiplying. Because microbes can change their form and function in response to a changed microenvironment within the tubules they can go on living in spite of the altered oxygen and food supply. As they do so, they begin to produce various toxic chemicals that have been shown to be harmful to you and me. In fact some of these toxins can be especially toxic to specific organs and/or organ systems.

The research on this issue was carried-out by Dr. Weston Price during the early 1900s. For over 14 years he donated more than half of his daily time as the Director for the Research Institute of the National Dental Association, now the National Institute of Dental Research associated with the American Dental Association. His research, involving thousands of patients and tens of thousands of rabbits, formed the basis for the over 220 articles and three major books which he authored.

While performing research at the institute Dr. Price published 25 articles on the effects of teeth with root canals on systemic disease. He also authored what he considered a condensed version of these findings in the following two publications:

1. Dental infections, Oral and Systemic (700 pages)
2. Dental infections and the Degenerative Diseases (400 pages)

His research was extensive, time consuming and highly accurate, even in light of today's technology.

Briefly, what Dr. Price demonstrated was that teeth with root canals can contribute to serious disease and even death in some cases. To show this he implanted teeth, with and without root canals, under the skins of rabbits. The difference in responses was remarkable!

When healthy teeth, non-decayed- and freshly extracted (such as impacted wisdom teeth or for orthodontic purposes) were implanted under the skins of rabbits, nothing happened. No reaction was seen no matter how long they remained. As a comparison Dr. Price also implanted sterile objects, such as coins, pieces of glass or metal, and saw no reactions. Over 100 sterile foreign objects were tested to verify this! The rabbits merely formed a thin skin-like sac around each object.

An immense difference was observed in animals following the implantation of root filled teeth. Most of the embedded teeth became surrounded by pus or inflammation: the rabbits usually died within 6-10 days! Some rabbits developed a thick fibrous capsule around the teeth and lived for several months to a year; fewer showed no evidence whatsoever of injury or illness from these teeth. Many of the rabbits with encapsulated teeth went on to develop degenerative diseases, notably of the heart and kidneys.

Dr. Price went on to remove embedded teeth from a rabbit which had just died, and then reimplant it into another rabbit. Each time he would carefully wash the tooth with pumice and disinfectant. The same tooth could kill 30 rabbits in succession. (He stopped at that point, having fulfilled his purposes.)

One time he removed an implanted tooth from a rabbit which died, placed it in boiling water for one hour, let it cool and reimplanted it into another rabbit. It took 22 days for this rabbit to die instead of the usual 6-10 days.

Taking this one step further, Dr. Price placed one such tooth in a hospital autoclave for one hour at 30 lbs. Pressure. When this tooth caused a rabbit to die he then used 60 lbs. Pressure for one hour and eventually 300 lbs. Pressure for two hours! Although more lengthy sterilization prolonged their lives, all of the rabbits died.

In order to confirm that the microbial toxins were the source of the problem and not the bacteria themselves, he crushed roots of root filled teeth, rinsed them and filtered this rinse liquid through a special filter that removes all bacteria. After proving that no

bacteria remained, by attempting to culture the liquid (to no avail.), it was injected into rabbits. Death usually occurred within a couple of weeks!

Dr Price reported extensively on the changes in blood chemistry induced by root canals in both man and laboratory animals. Repeatedly he demonstrated such alterations following placement and/or removal, and even reinsertion of root canals. Several changes induced by root canals were as follows:

- Calcium/Phosphorus imbalance
- Lower pH
- Higher blood sugar
- Higher uric acid
- Altered total protein (and subcomponents thereof)
- White blood cell alterations
  - e.g. depressed PMNs (by 33%)
  - elevated lymphocytes (by 58%)

He wrote at length of alterations of calcium metabolism and its essential role in cell, organ and systemic function. For example, Ca +2 within cells is utilized to regulate numerous cell functions. Alterations of various forms of calcium—e.g. ionic vs. bound forms—were caused by root canals and normalized by their removal.

While the average patient may not readily identify with the significance of such changes most health professionals will understand the implications thereof. Dr. Price stated, “...that the disturbances of the normal levels of the chemicals of the blood are apart of the general condition...when these conditions exist for an extended period they tend definitely to contribute to the degenerative diseases, though they may exist as disturbances and measurable changes in the blood stream for months or years before the clinical symptoms become manifest.”

Dr. Price went on to demonstrate and document the clinical improvement of patients from serious diseases following the removal of their teeth with root canals. Some of these he had performed on his own patients before becoming aware of this information. In spite of the immense contribution of his extensive impeccable research and his personal integrity, his message has been forgotten, or possibly suppressed. The present paradigm of organized dentistry will not reconsider the validity of his findings or even inform patients that a controversy exists regarding this issue.

In defense of most dentists, they cannot discuss information of which they have not been made aware! As dental students they are simply not taught this information. Later, as practitioners, it is easier to accept assurances of safety if a question arises rather than to step-out of their comfort zone and consider concepts that challenge their paradigm. However, in this information age a professional paradigm should be flexible enough to question the status quo for the sake of his or her patients.

Clearly patients are not dying in the streets from root canal therapy. However at a time in history, when an increasing percent of the population is experiencing lower levels of wellness than desired, it is important that we attempt to “remove straws from the camel’s back” in pursuit of health.

Our civilized world is highly chemicalized. The United States, Office of Technology Assessment states that the EPA lists more than 65,000 chemicals in its inventory of toxic chemicals, and is receiving more than 1500 notices of intent to manufacture new substances every year. Few have been tested and no information is available “on any aspect of toxicity” of more than 80% of these chemicals. Our body burden of toxins is increasing steadily even without the voluntary addition of toxins from root canals within our mouths. For that matter, we also don’t need the exposure to mercury from “silver dental fillings” which are 50% mercury!

Obviously many people appear to be able to handle root canals and dental fillings. The problem is that we have no way of knowing if or when our toxic threshold might be reached, beyond which we experience problems. Whether these problems are minor or major no one can project.

Without question root canals in our teeth are a burden to our bodies and especially to our immune system. If you feel more comfortable saving a tooth by means of a root canal rather than losing it and having it replaced then do so. Remember it is your body! You decide, without pressure from your dentist, because you will live with it in good health or bad.

For a thorough discussion of this issue by a former founder and past president of the American Academy of Endodontists read “Root Canal Cover Up Exposed”, by Dr. George Meinig. A more detailed and scientific review can be found in reprints of Dr. Weston Price’s original published research. This is available under the title, “The Price of Root Canals”, compiled by Dr. Hal Huggins. The former is written for the average patient; the latter is geared to health professionals or information driven patients.

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