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## **Tooth Saver: Root canals no longer the ultimate in agony, dental professionals say**

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When faced with a distasteful task, people sometimes say, "I'd rather have a root canal."

To people who haven't had one lately, a root canal may sound like the lesser of two evils when compared to, say, a teenager having to tell his parents that he wrecked the family car.

The idea that a root canal has to be a painful, scary proposition persists, even though modern dentistry has evolved to the point that some patients actually sleep through the process. Improvements in anesthesia and dental instruments, the use of better X-rays, and specialized training have radically improved the process.

A root canal is a tooth-sparing procedure used when the pulp tissue inside the tooth is damaged. The pulp lies in the hollow space of a tooth, beneath the outer layer of enamel and a layer of dentin, a hard tissue that forms the body of the tooth. Pulp contains the nerves and blood vessels that nourish the tooth. Damage can be caused by decay, extensive dental work, a crack in the tooth or trauma, such as being hit in the mouth with a baseball.

Last week, Katie Haggerty, 19, had her first root canal. Braces had damaged one of her teeth. The tooth turned gray, and the change in color alerted her dentist that she needed a root canal. From what she had heard, she figured that she was in for an unpleasant experience.

"I guess it's supposed to be really painful, really uncomfortable," she said. "It wasn't at all."

While Dr. Robin McGurkin-Smith worked on her tooth, Haggerty watched a DVD of Kill Bill on a pair of special glasses, with the sound playing through speakers in her ears.

"I picked an action film because I figured it would keep me more distracted," she said. "It was a really good experience."

McGurkin-Smith is an endodontist, a dentist who specializes in root canals. So is Dr. Martin Gambill. Both practice in Winston-Salem.

Root canals have been around for a long time, Gambill said. Some skeletons from ancient Egypt showed signs of attempted root canals. But as a specialty, performing root canals has gained acceptance over the past 100 years, he said.

About 17 million root canals are performed in the United States each year, according to the American Association of Endodontists.

Pain is often the first signal that a patient needs a root canal, Gambill said. Sensitivity to cold, then to heat is usually an indicator that a tooth is going bad.

"Eventually, the pulp tissue will die completely," he said. When that happens, the pain goes away. But bacteria can find its way into the dead tissue, start an infection, and a new set of symptoms can appear - soreness and sometimes swelling.

Sometimes the process moves so slowly that patients feel no symptoms and don't realize they need a root canal until a dentist spots a problem on an X-ray.

"Once that tissue becomes irritated and inflamed, you can't treat it," Gambill said. "We use fine instruments to go down there and remove that tissue, clean it out."

The empty space is then filled with a rubber material called gutta-percha and topped with a temporary filling. If the affected tooth is in the back of the mouth, Gambill said, the temporary filling is usually replaced with a crown, a covering that looks like a tooth and covers the remainder of the tooth down to the gum line. A filling is usually sufficient for a front tooth, he said.

After a root canal, the tooth has no sensation because the pulp and nerves within it are dead. But the tooth continues to function just as well as other teeth, he said.

Although root canals can spare people the trauma of losing a tooth, people fear them because they have a bad reputation, McGurkin-Smith said.

"I think in the past, it was difficult to get people numb," she said.

And many patients can't get past pain they felt before the root canal.

"That kind of gets lumped into it," she said. "The whole experience was not a good experience."

Gambill said, "What they don't often tell you is that when they had the root canal, the pain went away." Getting a root canal, he tells his patients, is no worse than having a cavity filled.

"It just takes a little bit longer."

Mannon and Lee Eldreth of West Jefferson both had root canals many years ago, and their stories could set one's teeth on edge. Lee Eldreth, 74, was stationed on Okinawa with the Army in 1954 when a dentist told him that the pain and swelling in his jaw meant that he needed a root canal.

The dentist removed infected pulp from the tooth with a big, slow drill, Lee Eldreth said. The dentist rolled up some absorbent material and packed it into the hole, then covered the tooth with a temporary filling. For three days after the root canal, the dentist removed the packing and replaced it. Then he covered the tooth with a permanent filling.

Mannon Eldreth, 70, wasn't given the opportunity to save one of her eyeteeth, also known as a canine tooth, when it became abscessed in 1962. She was in Germany, where her husband was stationed, and the dentist she saw there simply gave her massive doses of penicillin and yanked the tooth.

She was 26 years old, and she had to get a partial plate, "one little tooth that hooked on at the back," she said. To the dentist, she said, "It was no big deal to him that I was going to have a fake tooth." Today, she said, dentists bend over backward to help people preserve their teeth.

"Lee has all his teeth, and I'm so mad at him," she said.

In the 1980s, she needed several root canals. Although anesthetic used kept the pain down during the procedures, she often felt pain and soreness for days afterward. The anxiety that she felt during the treatment caused her to tense up, and she always left the dentist's office with a stiff neck.

The noise of the old drills bothered her, too.

"That grinding just unnerved me," she said.

In the '50s and '60s, dentists had only a few local anesthetics to choose from, and those didn't work very well, Gambill said.

"Unfortunately, that's when root canals got a bad name for the pain." Now, it's much easier to numb a tooth, and the procedures take far less time.

When Gambill was in dental school 22 years ago, he said, a typical root canal took two or three appointments, and each appointment lasted several hours. Dentists worked with hand instruments, instead of the mechanical ones available today. Now, a root canal usually takes one to four hours, McGurkin-Smith said, depending on the location of the tooth and the problems with it.

"Some are straightforward; some are more complicated," she said. "We want the success to be as high as it can be."

Root canals succeed in saving teeth 85 percent to 95 percent of the time, she said.

McGurkin-Smith said that endodontists can now use magnification to help them see things that they couldn't find before. X-rays, Gambill said, help endodontists see that the tiny files they use to clean out the tooth actually reach to the end of its root.

"Everything gets better, the more you can see," McGurkin-Smith said.

The cost of a root canal can range between \$400 and \$1,000, she said.

Over the years, Mannon Eldreth has spent thousands of dollars on root canals, crowns and other dental procedures.

"If I can preserve my teeth," she said, "it's worth every dime."