

Revolutionary new dental procedures spell the end of the painful old drill-and-fill techniques

the need for local and more importantly general anaesthetic which often leaves patients, particularly children, extremely groggy and can pose a health risk.

Once the tooth has been cleared of bacteria any leftover ozone is sucked back into the machine. If it's a small cavity your dentist will coat your tooth with a mineral wash which will encourage the tooth to repair itself by remineralising the surface that has been damaged by decay.

After two months you'll need to revisit your dentist who'll assess how well your tooth has healed and perhaps deliver another ozone blast to the affected area.

Instead of a conventional filling he may apply a sealant or "smart filling" to close the fissure created by the cavity. The "smart filling" releases fluoride and calcium which help your tooth heal itself until it's stronger than before.

This is good news because although these days most dentists use composite resin fillings rather than risky mercury amalgam ones, whenever a tooth is filled it's weakened because tooth structure is removed and replaced with a foreign substance. This means in five or 10 years you may need to have the filling replaced or get a crown fitted.

Ozone can also be used to treat deeper, more serious cavities. While some drilling may be necessary to remove contaminated matter, if your dentist uses ozone he won't need to excavate as much as before. He may however still need to plug the hole with a conventional filling.

The treatment isn't the answer in all cases but for early decay it provides a painless alternative, says a Cape Town dentist who's used it to treat about 200 cavities.

AT the moment the one serious drawback to ozone therapy is the cost. It's not covered by medical aid so expect to fork out between R150 and R300 per tooth. However additional costs such as the consultation fee, infection control and the application of the smart filling should be covered by your medical aid.

The South African Dental Association regards ozone treatment as experimental and would want to see conclusive results from rigorous scientific studies before endorsing it.

It's still relatively new technology – the most popular system, known as HealOzone, has been used in practices in the United Kingdom for the past four years and in the rest of Europe for three years but arrived in South Africa only early last year. Only 18 local dentists use the equipment.

Another problem is it's suitable for use only on the top or side of the tooth – because it uses a cap to create a vacuum it can't treat cavities between teeth.

This is why many dentists are cautioning that although it's a wonderful therapy it shouldn't be regarded as a miracle cure.

"If there's a big hole in your tooth, you're not going to be able to heal it using ozone. You're still going to need conventional dentistry," says Professor Yusuf Osman of the University of the Western Cape's department of restorative dentistry.

But he's excited about the development. "This is a great time to be a dentist," he says. "We previously thought caries were something that could be treated only with fillings. Now we realise they're a living thing that develops over nine months. We can interact with them and stop them – with ozone therapy, fluoride treatments or basic brushing and flossing."

If you have a serious dental cavity there's no getting around the need for some drilling and scraping. But it's only a matter of time before this changes, says Dr Julian Holmes, the UK dentist who helped conduct the initial research that led to the development of the HealOzone system.

He's based in Cape Town these days, doing more research into the uses of ozone. And apparently there are plenty – from providing pain relief to sterilising root canals to the treatment and prevention of cold sores.

He's most excited about ozone's potential to eradicate tooth decay completely. Within the next year he and his team hope to release a patented mouthguard system that will fit snugly around patients' upper and lower jaws, allowing the safe and effective delivery of ozone to all parts of the teeth.

"This is a major breakthrough for the dental profession," he says. "Up to now the standard practice has been to drill or amputate the infected area, then place a filling. Yet

'A blast of ozone can stop decay'

tooth decay is simply an infection so our research has concentrated on targeting and eliminating the bacteria responsible then allowing the body to heal in a natural way.

"You may still need a filling as, once destroyed, the tooth can't grow again. Healing in this context is the hardening of the previously soft area of decay that dentists traditionally drilled away."

Julian predicts in future we'll visit a dentist every three months to have "an ozone spa" – a two-minute preventative treatment to get rid of decay and gum disease while whitening and cleaning teeth.

"We've only begun to scratch the surface of what this technology can do. It's going to change the face of dentistry completely because no longer will we be known as the drill-and-fill merchants; it will instead allow us to offer disease control in a simple fashion that's totally safe and cost-effective."

Even now he believes all cavities are avoidable. "The key is early detection of decay," he says, "and the traditional mirror, probe and x-rays are not sensitive enough to detect early mineral loss that will lead to cavity formation."

If you want to avoid having injections or being subjected to drilling it's important to have regular checkups so problems can be detected early. And these days there's no need to feel terrified because thanks to the latest developments a trip to the dentist has become a whole new drill.

■ Visit www.rainbow-smiles.co.za for more information. □

* NOT HIS REAL NAME.

what the future holds

■ It's possible that within the next five years you'll be able to have a once-off vaccine to spare you having fillings for the rest of your life. Researchers at the Forsyth Institute in the US are testing a vaccine that supplies the body with antibodies to help fight tooth decay.

■ Developments in stem-cell technology mean within the next five years you could grow an entirely new set of teeth. Dentists will one day be able to implant healthy tooth cells into your jaw then apply protein to make them grow. Within months new teeth would emerge where once there was just gum.