

# Implant practice ozonates water supply

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Sydney dentist John Berne has turned to ozone as a solution for both ensuring optimum water quality for his practice and also as a treatment option that is particularly effective for addressing implant and periodontal problems.

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"I've been a fan of using ozone to kill bugs for some time and its efficacy in relation to this is well documented," Dr Berne said. "However, it's only been relatively recently that viable solutions for dental practices have become available.

"I recently attended a lecture by Prof. Laurie Walsh on this subject and he reinforced what I knew about ozone and also highlighted new technology that has been developed by Biotek Ozone to produce ozonated water. This led me to invest in a system to ozonate all the water coming into my practice.

"Now every drop of water we use is automatically treated with ozone. The water that goes into the dental units is ozonated, the water in our ultrasonic scalers is ozonated, the water we wash our hands with is ozonated and even the water in the toilet bowl is ozonated. Everything."

As an unstable form of oxygen, ozone possesses several of the properties of an ideal disinfectant: it effectively removes pathogens over a range of physical and chemical conditions; it produces no residues and no unacceptable by-products (only oxygen); it is

relatively easy to generate, safe to handle, suitable for widespread use and cost-effective. Ozone requires only a short contact time to kill and inactivate bacteria, parasites, viruses and fungi and its antimicrobial action is relatively unaffected by pH. Ozone will kill legionella and unlike chlorination, it is able to give greater than 99% reductions in the levels of parasites such as *Giardia lamblia* and *Cryptosporidium* spp.<sup>1</sup>

Dr Berne has three different systems for producing ozone within his practice. The Biotek Ozone WT7200 ozonates the entire water supply of the practice to a level approaching 1ppm. A point-of-use Biotek Ozone H7110 mounted in the sterilisation room delivers a higher concentration of up to 3ppm to the water. This system is used to wash instruments prior to ultrasonic cleaning, for hand washing or to create a pre-procedural mouth rinse that has replaced CHX in the practice. Finally, a TTT Ozotop system can deliver ozone gas into perio pockets and root canals or to treat pericoronitis and peri-implantitis by immediately reducing bacteriological load, promoting faster healing.

"I see a lot of difficult and complicated cases and we see a lot of special needs patients," Dr Berne said. "We do a lot of implant surgery and a lot of treatment under IV sedation. Infection control is paramount for us and ozonating all the water in the practice, for all intents and purposes, sterilises it.

"Using ozonated water in the dental units effectively eliminates biofilms and reduces the need to flush the water lines as often.

"From a treatment perspective, most of the evidence I have for the effectiveness of using ozone is purely anecdotal. The experiences I've had include better socket healing following surgical extractions and reduction in pocket depth when treating periodontal disease. I had a patient with a 10mm pocket recently where I'd tried everything to fix it and in the end, only ozone had any effect.

"I also used to provide antibiotic prophylaxis to prevent bacteraemias in at-risk patients with very inflamed tissue but using ozonated water as a preprocedural rinse and in the ultrasonic scaler, has eliminated the need for this with many patients.

"We use ozonated water in the ultrasonic when we scale and clean and there are studies to show this increases its efficacy markedly. There are also studies to show that ozone is a better disinfectant than both sodium hypochlorite and CHX in root canals.

"In any aspect of dentistry where bacteria is a potential problem, using ozone will have reduce that bacteriological load significantly. Based on what I've seen from using ozone on a daily basis, I now believe it has become an essential tool in modern dentistry and no practice should be without it."

1. Walsh, LJ. *Electrolytic ozonation of water: a new solution to the problem of dental unit waterline biofilms. Australasian Dental Practice. 2011;1:132-134.*