

# OZONE IN DENTISTRY

## INTRODUCTION

One of the most complex and challenging problems in dentistry today is infection control. The mouth is a sea of bacteria normally living in balance within the entire human body. Under certain conditions disease causing bacteria can become dominant, creating infection. These bacteria live together in what is called a biofilm. This biofilm supports a mixed type of infection made up of bacteria, viruses, fungi and even parasites. The complication is that each of these disease causing types needs a different drug to eliminate its dominance.

What if we had a technology that could eliminate the infection and, in addition, ENCOURAGE the health of surrounding tissue without toxic side effects? We do now with **ozone therapy** for dentistry.



## HOW DOES OZONE THERAPY WORK?

**What is Ozone?** - Ozone (O<sub>3</sub>) is a gas that kills bacteria, viruses and fungi within seconds. It has been used for over a hundred years as a common water and air purifier.

**Can I Be Allergic to Ozone?** - No, it is impossible to be allergic to ozone. Ozone is just an energized form of oxygen. Ozone is naturally formed by the sun and lightning in storms. Without the ozone layer high in the atmosphere, life could not exist on our planet. Ozone actually filters out the sun's harmful ultraviolet rays and, in addition, makes for that beautiful blue color in the sky.

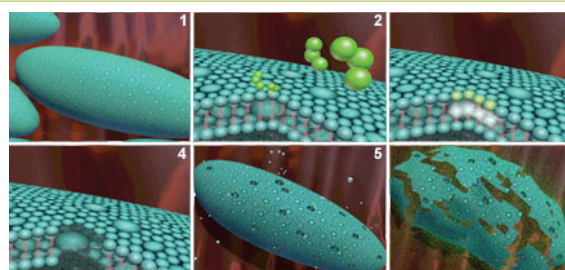
## HOW CAN OZONE HELP IN MY DENTAL CARE?

### How can it help my teeth? Ozone Dentistry

- First, the surface of the teeth are looked at with a small laser called the Diagnodent. It detects areas

of bacteria that cause cavities and provides the level of decay that is present. The CMU3 handpiece is used to focus Ozone onto the decayed area for 60 seconds up to 10 minutes. Once these bacteria have been eliminated, a special remineralization fluid is placed on the cleaned area which begins the healing treatment.

**Is there any pain?** - No! The entire process from the laser readings, application of ozone on your tooth to the mineral wash are all painless.



## THE EFFECT OF OZONE ON BACTERIA

1. Computer generated image of a bacteria cell
2. Close-up of ozone molecule coming into contact with bacterial wall
3. Ozone penetrating and creating hole in bacterial wall
4. Close-up effect of ozone on cell wall
5. Bacterial cell after a few ozone molecules come into contact
6. Total destruction of cell after ozone (cell lysing)

**How do I know if it has worked?** - At a future visit we will check the Diagnodent laser readings. Studies conducted at Belfast University discovered that 99% of bacteria, viruses and fungi that were present in the tooth (including the bacteria inside a tooth that creates a cavity) were killed in less than a minute of Ozone treatment. In one study, 99% of cavities were halted. Of the control group in the same study, where teeth were left untreated, 80% of cavities became worse.

## IS THERE ANY SCIENCE TO SUPPORT OZONE THERAPY?

There are several specific references and IADR Abstracts included in this brochure. In brief, this concept of ozone in dentistry was introduced in the early 1900s by a Swiss dentist, E.A. Fisch.

## CMU-3 DENTAL SAFE OZONE

Ozone has been in use in Europe and the United States for over a hundred years. To our advantage, this technology is finally being reintroduced in the dental field here in the United States. Dental Ozone can eliminate infection allowing holistic healing, all in a matter of minutes.

Given the phenomenal sterilization and sanitizing effects of ozone, the CMU3 may be used to reverse the decay process – WITHOUT THE NEED FOR ANESTHETIC OR DRILLING! Dental Ozone is safe and may be used successfully on patients of all ages (children through adults); and can be effective for:

gum and bone infection • tooth sensitivity • gum recession  
exposed root surfaces  
sterilization • pain control  
infection control • accelerated healing • tissue regeneration  
decay arrest and reversal • oral odor control • cold sores • teeth whitening • remineralization  
cross infection control

*This product is not intended to diagnose, treat, cure, or prevent any disease.*

## SCIENTIFIC REFERENCES

**Ozone Therapy In Clinical Practice** - Maslennikov O, Budilin S, Filatov D.

**Diseases Of The Mouth** - Caries & Dental Infections - Abu-Salem O, Marashdeh M, Holmes J, Lynch E.

**Clinical Management Of Deciduous Caries Using Ozone** - In: Lynch E, ed. *Ozone: the revolution in dentistry*. Copenhagen: Quintessence Publishing, 2004:155-164, ISBN18-5097-08-82.

**Clinical Management Of Root Caries Using Ozone** - Baysan A, Lynch E. In: Lynch E, ed. *Ozone: the revolution in dentistry*. Copenhagen: Quintessence Publishing, 2004:173-180, ISBN 18-5097-08-82.

**Clinical Studies Of Therapeutic Results From Ozonized Water For Gingivitis And Periodontitis** - Brauner A. *Zahnärztl Prax* 1991; 42:48-50.

**Clinical reversal of occlusal pit and fissure caries using ozone** - Hamid A. *J Dent Res* 2004; 83:B-3470.

## IADR ABSTRACTS

**Ozone in Dentistry**. 0165 Ozone in Dentistry E.F. REICH, Biberach, Germany Ozone is a very powerful oxidizer, which is used for disinfection in the food industry, medicine and water treatment. For a few years it is used in dentistry to treat caries in a more causal way than with the use of operative procedures. Besides...

**The effect of ozone on tooth colour in vitro**. 0134 The effect of ozone on tooth colour in vitro K. GUJRAL, B.J. MILLAR, and C. LOUCA, King's College London, United Kingdom. Objectives: It has been suggested that when ozone breaks down to release a free oxygen radical this may be able to whiten teeth. The aim of this study is to measure any change...

**Ozone, An Effective Treatment For Dental Unit Water Lines**. 0711 Ozone, An Effective Treatment For Dental Unit Water Lines H.M. AL SHORMAN, L. ABU-NABA'A, W.A. COULTER, and E. LYNCH, Queens University Belfast, United Kingdom Ozone (O<sub>3</sub>) has been used for purification of water due to its efficiency and lack of side effects. Objectives: The aim of this study was...

**The Use of Ozone in Dentistry - Antimicrobial and Cellular Aspects**. The Use of Ozone in Dentistry - Antimicrobial and Cellular Aspects. K.C. HUTH 1, K. KAMERECK 2, K. BRAND 2, and R. HICKEL 1, 1 University of Munich, Germany, 2 Technische Universität München, Munich, Germany Recently, the use of ozone as an antiseptic agent has become a relevant topic in dentistry....

**Remineralization of Occlusal Pit and Fissure Caries After Using Ozone**. 0680 Remineralization of Occlusal Pit and Fissure Caries After Using Ozone R. MORRISON, Harbour Dental Practice, Donaghadee, United Kingdom, and E. LYNCH, Queen's University, Belfast, United Kingdom Ozone has been shown to clinically reverse primary root carious lesions and early occlusal pit and fissure...

**Evaluation of Antibacterial Effects of Different Root Canal.**

**Disinfection Methods....** Objectives: To assess the antimicrobial effect of 17% EDTA, TopClear, Sodium Hypochlorite (NaOCl), Sterilox, STEDS, Hydrogen Peroxide (H<sub>2</sub>O<sub>2</sub>), Ozone Gas, and Chlorhexidine (CHX) on *Enterococcus faecalis* in root canals. Methods: Root canals of 27 single rooted teeth were prepared with ProTaper files ...



**THIS BREAKTHROUGH TECHNOLOGY  
WILL REVOLUTIONIZE DENTISTRY FOREVER!**

**The Lime Technologies Clinical Module Unit 3  
(CMU3) is used for the provision of  
ozone dental procedures.**



CLINICAL MODULE UNIT3 (CMU3)

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# OZONE

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## IN DENTISTRY



# CMU3

Naturally reverse tooth decay  
in just seconds.

**Impossible?** Not with Ozone!