



Benefits of using Ozone Gas & Water

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Abstract

Dentistry is considered one of the oldest medical professions. The field of Dentistry has been dated back to 5000 BC. It wasn't until 1700's that dentistry has become a more defined profession. Pierre Fauchard of France 1678 – 1761 is known today as the Father of Modern Dentistry.

We have come a long way since the 1700. Traditional dental offices are based on the drill & fill concept. A patient comes in with a cavity, the decay needs to be removed and a different variety of filling material can be placed inside the tooth. The costs continue to rise [1].

The public is starting to ask for a gentler way of treatment, they are starting to seek out alternative treatment. Is there another way to treat decay & gum disease other than drill, fill and scrape?

They are searching for less painful, less traumatic types of treatments.

Most dental office now employs Dental Hygienists. We as trained professionals have the honour of helping people to become healthier. Patients in Canada and the USA see their dentist/dental hygienist more then they visit their family doctor. This enables the Dental professional to give greater level of care to our patients.

Introduction

As a Biological Dental Hygienists we are able to offer a greater level of care. Biological Dental Hygienists are now screening for oral cancers on a regular basis. We are able to check and monitor blood pressures & can have the patient follow up with their blood sugar with their primary care physician. Dental Hygienists are no longer seen as "teeth cleaners" We have adopted a Preventive Role. This involves more involvement with the patient, reviewing homecare techniques, looking at the how the role of inflammation affect the whole body, not just in the patients mouth. This does involve scraping/scaling/root planning, to remove hard and soft deposits but we also look at the bacterial cascade that is set up in the bodies of our patients when the DH [2].

Inflammation = Infection, Infection = Disease.

How can we help our patients:

We as DH need to take a step back and look at how inflammation in the mouth can affect the rest of the body. If we do not pay attention to the bacterial cascade that happens every time we clean patients teeth.

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Ozone Dental Therapy:

Another tool in our tool box. Ozone can be used in dentistry to treat many

Inactivation of bacteria, viruses, fungi, yeast and protozoa: Ozone therapy disrupts the integrity of the bacterial cell envelope through oxidation of the phospholipids and lipoproteins. In fungi, O₃ inhibits cell growth at certain stages.

Ozone therapy: A clinical review

- It's kinder and gentler.
- It doesn't make noise
- It doesn't hurt
- It doesn't make the patient uncomfortable
- It's versatile and can be used on every patient, every day
- Kinder, Gentler way of doing dentistry
- Remove as little tooth/tissue structure as possible/ conserve healthy tooth structure
- Focus on prevention, remineralization and healing
- Consider biology of individual mouth.
- Treat root causes of disease

What is Ozone?

- Highly reactive
- Very unstable molecule
- Has huge oxidative properties
- Has distinctive smell.
- Is the strongest antimicrobial agent known

Discovery of Ozone:

- 1785, Van Marum noticed that air near his electrostatic machine acquired a characteristic odour when electric sparks were passed
- 1801, Cruickshank observed the same odour at the anode during electrolysis of water.
- 1840, Shonbein named the substance, which gave off this odour, ozone, from the Greek word "ozein" - to smell.
- The vast majority of historical references to ozone indicate Shonbein was the first scientist to name ozone, although there are some references to another German scientist, Christian Fernandez as the first.

Uses of Ozone

- World War 1, ozone was used to treat gunshot and trauma wounds, trench foot, gangrene and the effects of poison gas.
- 1915 - Dr. Albert Wolff of Berlin also used ozone for treating

colon cancer, cervical cancer and decubitus ulcers in 1915.

- 1920 - Dr. Charles Neiswanger MD, the President of the Chicago Hospital College of Medicine, published "Electro Therapeutical Practice." Chapter 32 was entitled "Ozone as a Therapeutic Agent."
- 1932 - Dr E Fisch first dental use of ozone.
- 1950's - ozone used to treat cancers

History of Ozone Therapy

- 1934- FDA/AMA stop O3 medical use
- 1961- Cuban success using ozone to treat eye infections.
- 1977 - Dr. Renate Viebahn - technical overview of ozone action in the body.
- 1979 - Dr. George Freibott began treating his first AIDS patient with ozone
- 1990's - Reynolds & HIV treatments with ozone.
- 1994- Atkins decision allows treatment of practitioners choice.

Frank Schallenberger, MD- Teaches

Frank Schallenberger, MD- Teaches medical ozone techniques/ Written two ozone books/ Head of AAOT- Nevada

Renate Viebahn- Extensive research in ozone and medicine/ Wrote medical ozone book/ Has company that makes ozone equipment/ Father did ozone research in the 1950's- Germany

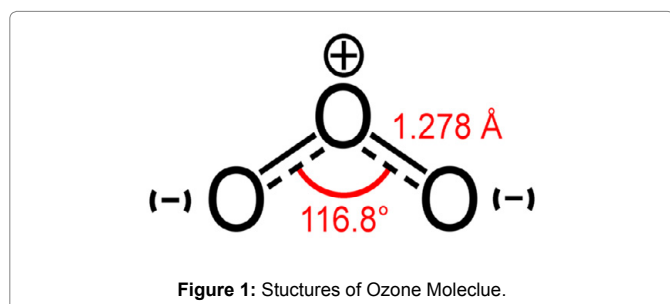
Phil Mollica, DDS- Along with Bob Harris has taught dental ozone and naturalopathic courses for many years- New Jersey

Ozone Uses around the World

- O3 used in Europe, Russia and Cuba in medicine and dentistry for last century.
- Research and clinical evidence to treat most diseases with ozone
- 7000 Municipalities around the world use O3 to purify their water.
- Over 8000 German M.D.'s use ozone therapy today. (Figure 1)

Ozone VS Chloride

- 150x more powerful sterilant
- 3500x faster acting in bactericidal action
- Safer & less reactant by-product compounds
- Overall- healthier and less toxic than chlorine



Ozone therapy is a form of alternative treatment that is designed to increase the amount of oxygen delivered to the body through the use of pure ozone gas.

"Ozone has been used to medically to disinfect & treat disease since its discovery. In 1896 Nikola Tesla patented the first ozone generator in the United States. Ozone has been used as a safe and effective water purifier for more than a century. Ozone deactivates pathogenic microbes in the human body in much the same way it does in water, unsurprising since our bodies are made up of 70% water" [3-5].

Mechanism of Action:

"Inactivation of bacteria, viruses, fungi, yeast and protozoa: Ozone therapy disrupts the integrity of the bacterial cell envelope through oxidation of the phospholipids and lipoproteins. In fungi, O3 inhibits cell growth at certain stages." (2)

How is medical grade ozone made?

Ozone is made by passing pure oxygen gas through a crystal tube through which an electrical spark is directed. The electrical energy breaks apart the oxygen molecules as described above, and what emerges from the other side is a mixture of oxygen and ozone [6-8].

"The potential application of ozone therapy in human body and its biological horizons are listed in Antimicrobial effect of ozone is the most studied. Oxygen/ozone therapy in dentistry contains a multiplicity of protocols to deal with dental infection. Three fundamental forms of application to oral tissue are applied" (3) An Ozone Generator must be made with medical grade, chemically inert components to ensure high purity for ozone therapy.

Ozone Uses in Dentistry

- Restorative
- Oral Surgery
- Periodontology
- Endodontics
- Pedodontics
- Implantology
- Whitening
- Desensitizing teeth
- Cold sores/Herpetic lesions
- Water Line Disinfection

Heal Ozone –

A specialized cup is placed around affected tooth. 99% reduction of microorganisms after 20 seconds of Heal Ozone.

Ozone and Pathogens:

- Bacteria, fungi, viruses and prions lack antioxidants.
- The ozone breaks down the polysaccharides in their cell walls or disrupts their replication cycles.
- Effectively lyses them!

Ozone Action in the Body:

- Disinfectant
- Oxygen Donor
- Immunomodulator
- Inducer of antioxidant enzymes
- Metabolic Enhancer
- Induce Endothelial Nitric Oxide Synthetase
- Possibly stem cell activator
- Rubber gloves AND bacterial cell walls are polysaccharides—
- Instant disruption

Ozone Vs Antibiotics

- Most antibiotics show specificity towards certain bacterial strains.
- Ozone shows generalized bactericidal effects against all bacterial strains.

Ozonated Water

- Extremely potent
- Oxygenates tissue
- Leaves no chemical residue
- Ozonated water has a half life of 37 min at 20 C.4ug/ml (min dose) O3 H2O applied for 10 sec leaves no visible trace of microorganisms.

Uses in Dentistry

- Water Disinfection
- Preprocedural Rinse
- Syringe into pockets
- Ultrasonic scaler
- Endo canal rinse
- Injection

Ozonated Oils:

- Medical
- Dental
- Veterinary
- Ozone gas changes into ozonides when diffused into oils.
- Ozone reacts with the double carbon bond to give an ozonoid, and this is estimated to have a reactivity of 50 – 70% to that of ozone gas.
- The amount incorporated is proportional to the amount of double bonds/omega fatty-acids within the particular oil.
- ◆ Periodontal Disease and Lesions
- ◆ Endodontic Applications and Fistulas/ Endo treatment in canals - on files

Implant Treatment and Peri-Implantitis

- ◆ Oral Surgeries
- ◆ Treatment of Oral Herpes, Aphthous Ulcers, Angular Chelitis and other Lesions

Ozonated oils applied daily can help heal the lesions

- ◆ Oral Lichen Planus
- ◆ Calculus/Biofilm Debridement
- ◆ Denture Sore Mouth & Angular Cheilitis
- ◆ Extractions – Alveolar Site
- ◆ Infections / Fistulae
- ◆ Peri- implantitis
- ◆ Burns
- ◆ May be ingested - encapsulated for taste

Ozone Gas

Ozone gas applied to aphthous ulcers/cold sores can help shorten healing times. (Figure 2)

Global Ozone Organizations:

- ISCO3- International Umbrella Ozone Organization
- AAOT- American Academy of Ozone Therapy

Most European and So. American countries have their own medical ozone organizations.

Brazil just lobbied their government to approve ozone treatments in dentistry, but not medicine [8-10].

General uses of ozone

Hotel & home use:

- Removal of unwanted odors – air purifying – fish smell, cigarette smoke
- Room sterilization (Legionnaires)
- Water sterilization – ice manufacture, showers
- Hand washing / cross infection control
- Food preparation / preservation Public buildings

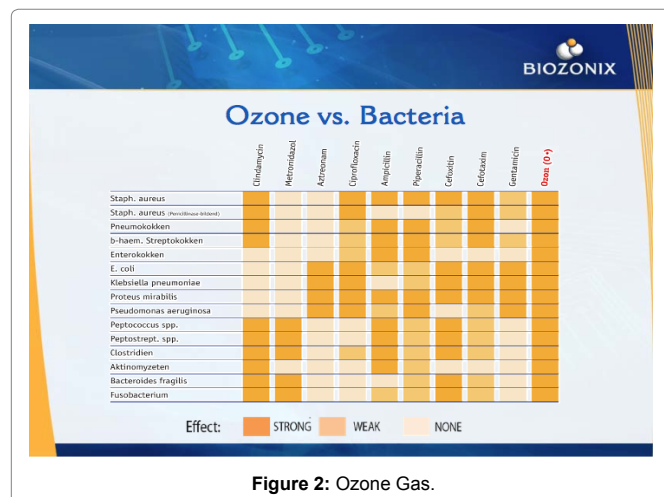


Figure 2: Ozone Gas.

- Sterilize air-conditioned rooms and spaces
- Reduction in air-borne infections – SARS, TB, Influenza
- Disinfect water supplies

Ozone in Medical treatments

- Infectious Diseases
- Degenerative Ischemic Diseases
- Cancer/HIV
- Metabolic Syndrome
- Hematological Diseases
- Pulmonary Diseases
- Tinnitus/Sudden Hearing Loss
- Dermatology
- Orthopedic Conditions

Diseases Treated with Ozone

- RA/ Lupus/ Scleroderma
- RSD / CRPS
- Burns
- Parkinson's / Alzheimer disease
- ASO / Atherosclerosis
- Diabetic neuropathy / retinopathy / ulcers
- Allergies /asthma
- Glaucoma / Macular degeneration / Conjunctivitis (all forms)
- Anything with "itis" at the end of it
- Psoriasis / Eczema & most every other skin condition

Conditions Treated with Ozone:

All viral, bacterial and fungal diseases and infections:

- Measles; Herpes (all forms); Lyme; AIDS; Acne; Hepatitis A, B, C; Gangrene; Flu; Rhinovirus;
- Candidiasis; Tinea; C. dif.; E. coli; Krohn's; Pneumonia; Polio;

Warts; Stealth viruses (echovirus); Shingles (post-herpetic pain); Protozoal infections of all kinds.

- Bells palsy; MS; ALS (Viral?)

Ozonated Water:

- Extremely potent
- Oxygenates tissue
- Leaves no chemical residue
- Ozonated water has a half-life of 37 min at 20 C.

4 ug/ml (min dose) O₃ H₂O applied for 10 sec leaves no visible trace of microorganisms.

It is time to help our patients to be Healthy.

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