HealOzone / Fuji Triage: 6 months by Prof Ray Bertolotti

Activators

Chlorine dioxide

Lynch E. et al. (1997)

Multicomponent spectroscopic investigations of salivary antioxidant consumption by an oral preparation containing the stable free radical species chlorine dioxide (ClO2).

**Peroxoborate**

Lynch E. et al. (1999)

Multicomponent evaluations of the oxidizing actions and status of a peroxoborate-containing tooth-whitening system in whole human saliva using high resolution proton NMR spectroscopy.

*Journal of Inorganic Biochemistry* 73: 65-84.

---

**Surgery Bleaching**

**Ozone activates hydrogen peroxide**

---

**Can Heal**

Ozone activates hydrogen peroxide

---

**Ozonated gel and Composite restorations**

Superior whitening effect was demonstrated with the ozonated gel. Ozonated gel showed statistically significant lowest roughness compared to both carbamide peroxide and polishing paste.

---

**Ozonated gel and Composite Restorations**

The pulps can be bleached to brightness values of 80–83% ISO by a short ozone-based TCF bleaching sequence.

---

**Ozone and effluent biodegradability**

The O3/H2O2 process increased effluent biodegradability by up to 68%. Increasing the O3 dose had a greater effect on biodegradability improvement and lignin and colour removal efficiencies than increasing the H2O2 dose.
Introduction of ozone stream into the UV-photolysis system result in appreciable improvement in both decolorization and dechlorination.

Considerable improvements were obtained with respect to other bleaching sequences such as ozone. Hydrogen peroxide bleaching decreased the kappa index 51.3% less than ozone bleaching.

Bleaching;
Ozone and hydrogen peroxide combinations

Effect of ozone, chlorine and hydrogen peroxide on the elimination of colour in treated textile wastewater by MBR.


Brik M; Chamam B; Schoberl P; Braun R; Fuchs W

Effect of oxygen, ozone and hydrogen peroxide bleaching stages on the contents and composition of extractives of Eucalyptus globulus kraft pulps.

Bioresour Technol 2006 Feb;97(3):420-8

Freire CS; Silvestre AJ; Pascoal Neto C; Evtuguin DV

Dechlorination of chlorophenols found in pulp bleach plant E-1 effluents by advanced oxidation processes.

Bioresour Technol 2005 May;96(8):897-906

Wang R; Chen CL; Gratzl JS

Rate of dibutyldisulfide decomposition by ozonation and the O3/H2O2 advanced oxidation process.

J Hazard Mater 2009 May 30;164(2-3):1364-71

Popiel S; Nalepa T; Dzierzak D; Stankiewicz R; Witkiewicz Z

Dehalogenation, degradation and mineralization of diuron by perozone (peroxide/ozone) treatment.

J Environ Sci Health A Tox Hazard Subst Environ Eng 44;6(630-8 S1093-4529

Catalkaya EC; Kargi F
Kinetics study on photochemical oxidation of polyacrylamide by ozone combined with hydrogen peroxide and ultraviolet radiation.
J Environ Sci (China) 2006;18(4):660-4
Ren GM; Sun DZ; Chung JS

Elimination of Listeria monocytogenes biofilms by ozone, chlorine, and hydrogen peroxide.
J Food Prot 2005 Mar;68(3):494-8
Robbins JB; Fisher CW; Moltz AG; Martin SE

J Environ Sci Health A Tox Hazard Subst Environ Eng 42;8(1177-81)
Yin G; Liao PH; Lo KV

Oxidative degradation of N-nitrosodimethylamine by conventional ozonation and the advanced oxidation process ozone/hydrogen peroxide.
Lee C; Yoon J; Von Gunten U

Treatment of volatile organic chemicals on the EPA Contaminant Candidate List using ozonation and the O3/H2O2 advanced oxidation process.
Chen WR; Sharpless CM; Linden KG; Suffet IH

Oxidative Consumption of Biomolecules by Ozone; Clinical Relevance.
Professional bleaching of teeth in dental practice techniques.
Samarawickrama DY, Lynch E, et al

Surgery Bleaching
Ozone activates hydrogen peroxide
• No impressions
• No trays
• No sensitivity
• No paint-on dam

New paint-on system with get2smile Thermal Diffuser
• Gentle raised temperature of bleaching gel at gel/enamel interface
• Enhancing diffusion of gel inside enamel
• wy10 10% H₂O₂

Professor Lawrence Walsh, Dean, Brisbane, Australia.
Also proved the efficacy of the HealOzone to activate peroxide

Internal bleaching
HealOzone and the walking bleach technique
Access and Seal over GP
37% Phosphoric Acid Etch
Paste of Sodium Peroxyborate Powder and H₂O₂
HealOzone 30 seconds
Seal with GIC 1 wk

Biocompatible

- HealOzone X4
- Curozone
- www.ukdent.com
- E.lynch@warwick.ac.uk

HealOzone handpiece from CurOzone Germany
HealOzone (CurOzone Germany)
2,350 ppm ozone, 615 cc/min flow rate
X4 = 9400 ppm Ozone

The needle to deliver ozone into root canals.
HealOzone handpiece from CurOzone Germany used to deliver Ozone gas into root canals.

**Ozone (O₃) treatment of caries:**
- The “ecological niche” of acidogenic and aciduric microorganisms is eliminated, for at least 14 weeks
- Remineralization overpowers demineralization
- Rapid remineralization occurs

Some examples of radiographic changes in Ozone treated caries follows:

**Knight GM et al., Aust Dent J 2008;53:349-353.**

**Treatment of dentine with HealOzone**

Ozone and 3 months. Dipak Joshi

**DEEP CARIES**

OZONE AND FUJI 7 GLASS Ionomer. 3 MONTH RESULT
"I have included a sequence of X-rays I did on one of these patients."

X-ray 1: Child patient aged 4 years. Presents with rampant bottle decay on all teeth. No pain or infection present. Suggested GA with pulpotomy to try to save 55 to allow 16 to erupt into favourable position. Parents refused general anesthesia.

X-ray 2: Child presents 6 months later. Again, no pain or infection. Parents do not want GA. Child uncooperative but allowed ART technique with Fuji IX.

X-ray 3: Child returned over one year later as an emergency with toothache. ART technique had failed on 55. Child still unable to have conventional dentistry performed in the chair. Parents still unwilling to accept GA. Ozone from the Healozone and Fuji VII was used.

X-ray 4: Child came for a "check-up" just over 1 year later. Miraculous! No pain or infection. The 16 has erupted perfectly into position.

My question here is: how is the tooth "healing"? Please can you explain the mechanism by which this hyper-mineralised tissue is formed?

Most Dentists charge the same fee for Ozone treatment and sealing (flowable composite) of an occlusal caries lesion as they do for a posterior composite. This saves the Dentist time.

Reversal of deciduous caries after HealOzone treatment

Dahrhardt J, Jaeggi T, Lussi A.

Reversal of Deciduous Caries using HealOzone

M Phil Thesis, UK 2004

OT. Abu-Salem

HealOzone uses with Caries

Professor Sebastian Ciancio, USA Biological Therapies in Dentistry 2005
“Studies with over 2000 Patients have shown remineralisation of HealOzone treated permanent and deciduous occlusal surfaces as well as root caries”. “The HealOzone is a novel new and painless way to treat early caries”.

Amna Al Shamsi
PhD thesis 2007

HealOzone significantly reduces caries incidence around orthodontic brackets (9% versus 28%)

Dahrhardt J, Jaeggi T, Lussi A.

Huth K, Paschos E, Brand and Hickel R.
Effect of Healzone treatment on different cariogenic microorganisms in vitro.

Swed Dent J 2008;32(3):139-47 (ISSN: 0347-9994)
Fagrell TG; Dietz W; Lingstrom P; Steiniger F; Noren JG

The Use of Ozone in Dentistry and Medicine.
Part 1.
Baysan A and Lynch E.
Primary Dental Care, 12; 2: April 2005, 47 – 52.

The use of Ozone in Dentistry and Medicine.
Part 2.
Baysan and Lynch
Primary Dental Care 2006;
13: 37 – 41

The use of Ozone in Dentistry and Medicine.
Part 2.
Baysan and Lynch
Primary Dental Care 2006;
13: 37 – 41

Anti-microbial effects of a novel ozone generating device on micro-organisms associated with root carious lesions

A. Baysan, R. Whiley and E. Lynch

99% microbial killing achieved after ozone treatment

HealOzone treatment for deep caries or as an alternative to stepwise excavation
Studies in London and Isle of Wight

Reversal of root caries using HealOzone
- A 12 month longitudinal study
A. Baysan (London)


• Baysan A and Lynch E.
• 91% Reversal of Caries at 5.5 months after Healzone treatment.
• 99% Reduction in Microorganisms at 5.5 months.


• The Root Caries deeper then 2mms did not reverse.
• The Root Caries deeper then 2mms did not reverse.

Clinical reversal of root caries using Healzone, double blind, randomised, controlled 18-month trial.
• Julian Holmes
• 100% Reversal of Non Cavitated Root Caries at 18 months
Antibacterial effect of Healozone on cariogenic bacterial species.

Johansson E, Claesson R, van Dijken JW

The influence of Healozone on microleakage and fissure penetration of different sealing materials.

Dukić W, Dukić OL, Milardović S.

Ozone improves lipopolysaccharide-induced responses of an odontoblast-like cell line.
J Endod. 2009 May;35(5):668-72

Noguchi F, Kitamura C, Nagayoshi M, Chen KK, Terashita M, Nishihara T.

The inability of Streptococcus mutans and Lactobacillus acidophilus to form a biofilm in vitro on dentine pretreated with Healozone.

Knight GM, McIntyre JM, Craig GG, Mulyani, Zilm PS.

Treating sensitive cervical areas with Healozone. A prospective controlled clinical trial.
Am J Dent. 2008 Apr;21(2):74-6

Dähnhardt JE, Gygax M, Martignoni B, Suter F, Lusei A.

85% Reduction in Mutans Streptococci with HealOzone and 78.6% Reduction in Lactobacilli

Khairul Matin, Junji Tagami
99% Microbial killing with HealOzone
Dept of Restorative Sciences and Cariology
Tokyo Medical and Dental University

Professor Michael Noack and Suzanne Kneist
ORCA & Caries Research 2006
99% reduction in microorganisms following 20 seconds of HealOzone treatment
Studies in London and Isle of Wight

HealOzone treatment for deep caries or as an alternative to stepwise excavation
Are Ozone systems safe?

Ozone air levels from a dental ozone gas delivery system
Johansson E, Andersson-Wenckert I, Hagenbjork-Gustafsson A, van Dijken JWV
Acta Odontol Scand. 2007 Nov;65(6):324-330

Conclusion
HealOzone is safe

Assessment of the safety of two ozone delivery devices
Millar BJ, Hodson N.
J Dent. 2007 Mar;35(3):195-200

Conclusion
HealOzone is safe and the Ozone system which blows out Ozone is not safe

Ozone exerts inhibitory effects on the NF-kB system suggesting it has an anti-inflammatory capacity. IkBa proteolysis, cytokine expression and kB-dependent transcription were prevented.

Huth et al.
Effect of ozone on oral cells compared to established antimicrobials.

Filippi A
The effects of ozone on epithelial wound healing.

Research Awards to Ozone researchers
• Dr Dan Mc Kenna  
  Proven successful prevention of Peri-implantitis using HealOzone  
  Awarded First Prize IADR 2009 (International Association for Dental Research annual meeting)

• Dr Jameela Alawadi  
  Proven successful use of HealOzone in root canal therapy  
  Awarded First Prize IADR 2008

• Professor Martin Grootveld  
  Proven successful management of Dental Unit Water Lines using Ozone  
  Awarded First Prize IADR 2007

• Professor Dr Liviu Steier  
  Proven successful use of HealOzone and sealing to manage caries  
  Awarded First Prize IADR 2006

• Dr Wyman Chan  
  Awarded First Prize IADR for his HealOzone research 2005

• Dr Julian Holmes  
  Awarded First Prize IADR for his HealOzone research 2004

• Dr Aylin Baysan  
  Awarded two First Prizes at IADR

• Dr Layla Abu-Naba’a  
  Awarded the prestigious Basil Bibby cariology award at IADR partly for her HealOzone research 2001

• Helene Domingo  
  Awarded First Prize IADR for HealOzone research
**Amna Al Shamsi**

*PhD thesis 2007*

*HealOzone significantly reduces caries incidence around orthodontic brackets (9% versus 28%)*

**Ozone therapy in the treatment of avascular bisphosphonate – related jaw osteonecrosis**


*Ozone increased the complete healing of lesions with the disappearance of symptoms and brings lesion progression down to zero. Ozone’s “benefits were remarkable”*

**Objective Quantitative Use of Saliva to Reflect Health or Disease**

E Lynch

IADR Symposium 2009

---

**ADVANTAGES OF SALIVA AS BIOFLUID MEDIUM FOR DIAGNOSTIC PURPOSES**

- Ease of Collection
- Low cost of Collection
- Non-invasive Collection for Patients (reduces Anxiety and Stress)
- Facilitates Collection of Multiple Samples for Time-Dependent Monitoring Purposes
- Easy to Handle and Deal with

**Markers for pregnancy-related disorders, such as fetal aneuploidy, preterm birth, preeclampsia, intra- amniotic infection and fetal stress.**

**MANY OTHER DIAGNOSTIC ANALYTES ('BIOMARKERS') HAVE BEEN SHOWN TO BE PRESENT IN HUMAN SALIVA**

For example:
- Steroid Hormones
- HIV Antibody
- Those for Hepatitis A, B and C
Unique diagnostic panels of salivary mRNAs in subjects with Sjögren’s disease.

Four salivary mRNAs (OAZ, SAT, IL8, and IL1b) collectively have a discriminatory power of 91% sensitivity and specificity for oral cancer detection.

Recommended Reading

The Axelsson Series on Preventive Dentistry

Ozone – the Revolution in Dentistry. Quintessence Dec 2004

New opinions are always suspected, and usually opposed, without any other reason but because they are not already common

John Locke 1690

Thank you for listening

E.LYNCH@WARWICK.AC.UK

See

www.realityesthetics.com

EL103

E.LYNCH@WARWICK.AC.UK
• Effect of Ozone on Dental Caries Progression
  - Seghi et al
  - AADR Dallas April 2008
  - Ozone significantly (P=0.003) reduced caries progression in experimental rats

• Oxidation of Biomolecules by Ozone
  - E Lynch et al
  - AADR Dallas April 2008
  - Oxidation of Cysteine and Methionine proving Ozone (TherOzone) can combat oral malodour

• Bleaching of compounds responsible for Tooth Discoloration by Ozone
  - H Domingo et al
  - AADR Dallas 2008
  - Ozonated water (TherOzone) bleaches

Han S. Uhm, Kwang H. Lee, and Baik L. Seong.

“Inactivation of H1N1 viruses exposed to acidic ozone water.”


Ozone use in RCT, benefits of Ozone for healing, periodontology and safety.

HealOzone is safe

Ozi-cure is not safe


Ozonated water improves lipopolysaccharide-induced responses of an odontoblast-like cell line.

J Endod. 2009 May;35(5):668-72

Noguchi F, Kitamura C, Nagayoshi M, Chen KK, Terasita M, Nishihara T


Johansson E, Andersson-Wenckert I, Hagenbjork-Gustafsson A, van Dijken JWV.

HealOzone is safe.
• Wounds receive more Oxygen when Ozonated Water is applied.
• Enhances the phagocitary activity defending cells
• Accelerates migration of epithelial cells
• Activates Fibroblasts
• Increases collagen synthesis
• Improves cell proliferation
• Increases chemotaxis of monocytes and fibroblasts
• Increases synthesis of extracellular matrix
• Professor Bocci / Professor Filippi

Ozone therapy in medicine and dentistry.
J Contemp Dent Pract 2008;9(4):75-84 (ISSN: 1526-3711)
Nogales CG; Ferrari PH; Kantorovich EO; Lage-Marques JL

• Scientific and medical aspects of Ozone therapy. State of the art.
• Professor Velio Bocci
• Beneficial effects of Ozone discussed

• Ozone accelerates wound healing
• Chronic leg ulcers. Aust Farm Physician 1985; 14: 292 - 298


Aqueous Ozone exerts inhibitory effects on the NF-kB system suggesting it has an anti-inflammatory capacity. IkBa proteolysis, cytokine expression and kB-dependent transcription were prevented.

Evidence-based efficacy of ozone for root canal irrigation.
Lynch E.

Efficacy of calcium hydroxide, Er:YAG laser or gaseous ozone against Enterococcus faecalis in root canals.

Bactericidal effect of KTP laser irradiation against Enterococcus faecalis compared with gaseous ozone: an ex vivo study.
Kustarci A, Sümer Z, Altunbaş D, Koşum S.
• Jameela Mohammed Alawadi
• PhD thesis 2008
• Successful use of Ozone in root canal therapy
• World First Prize IADR 2008

• Experience in ozone use for root canal therapy
• Berukova et al
• Stomatologia 2005; 84: 20 – 22.
• Proved efficacy of Ozone for root canal therapy.

• Nagayoshi M, Kitamura C, Fukuizumi T, Nishihara T, Terashita M.
• Antimicrobial effect of ozonised water on bacteria invading dentinal tubules.

Filippi A

The effects of ozonised water on epithelial wound healing.

• The influence of Ozonated Water on the epithelial wound healing process in the oral cavity
• Professor A Filippi
• Use of Ozonater Water clearly showed an acceleration of wound healing within the first 48 hours, resulting in earlier epithelial wound closure after 7 days.

Huth et al.

Effect of ozone on oral cells compared to established antimicrobials.

• Antimicrobial potential of ozone in an ultrasonic cleaning system against Staphylococcus aureus.
• Estrela C, Estrela CR, Decurcio Dde A, Silva JA, Bammann LL

Ozone sterilises 10⁶ cfu Enterococcus Faecalis
Chang H
IADR 2003

• Professor Beer and Liviu Steier
Witten University
Sterilisation of root canals using HealOzone 2006
Efficacy of Ozone on Survival and Permeability of Oral Microorganisms

M Nagayoshi, T Fukuiizumi, C Kitamura, J Yano, M Terashita, T Nishihara


Therapeutic effects of topical application of ozone on acute cutaneous wound healing.


Kim HS, Noh SU, Han YW, Kim KM, Kang H, Kim HO, Park YM

Superficially, longer, intermittent ozone therapy in the treatment of the chronic, infected wounds.


Białoszewski D, Kowalewski M


Leave decay in my cavity? You must be kidding!

Knight GM, McIntyre JM, Craig GG, Mulyani.

Clin Oral Investig. 2010 Jan 7. [Epub ahead of print]

Influence of ozone on the composite-to-composite bond.

Magni E, Ferrari M, Papacchini F, Hickel R, Ilie N.


Enamel and dentin bond strength following gaseous ozone application.

Cadenaro M, Delise C, Antoniollo F, Navarra OC, Di Lenarda R, Breschi L.


Novel preventive treatment options.

Longbottom C, Ekstrand K, Zero D, Kambara M.


Bactericidal effect of KTP laser irradiation against Enterococcus faecalis compared with gaseous ozone: an ex vivo study.

Kuştarci A, Sümer Z, Altunbaş D, Koşum S.


Ozonated water improves lipopolysaccharide-induced responses of an odontoblast-like cell line.

Noguchi F, Kitamura C, Nagayoshi M, Chen KK, Terashita M, Nishihara T.
The influence of Healozone on microleakage and fissure penetration of different sealing materials.

Dukić, Dukić OL, Milardović S.

Antibacterial effect of ozone on cariogenic bacterial species.

Johansson E, Claesson R, van Di ken J.

Efficacy of calcium hydroxide, Er:YAG laser or gaseous ozone against Enterococcus faecalis in root canals.


Stomatologiia (Mosk). 2008;87(6):24-6. [Application of medical ozone in endodontic practice] [Article in Russian]

Bezrukova I, Petrukhina NB, Dmitrieva NA, Snegirev M.

Some published research with the TherOzone

New therapeutic strategies for the treatment of difficult wounds

G Chir. 2008 May;29(5):212-20

Onesti MG, Bitonti A, Fino P, Clotti M, Scuderi N

Beneficial effects of pro-antioxidant-based nutraceuticals in the skin reuvenation techniques.


de Luca C, Deeva I, Mikhail Chik E, Korkina L

Therapeutic effects of topical application of ozone on acute cutaneous wound healing.


Kim HS, Noh S, Han Y, Kim KM, Kang H, Kim HO, Park YM.
Experimental-morphological study of the anti-inflammatory action of ozone-perfluorane complex application.

Stomatologiia (Mosk). 2008;87(2):4-9
Grigorian AS, Grigoriants LA, Guchetl MN.

The case for oxygen-ozonetherapy.

Bocci .

Periradicular repair after two-visit endodontic treatment using two different intracanal medications compared to single-visit endodontic treatment.

Silveira AM, Lopes HP, Sicueira JF Jr, Macedo SB, Consolaro A.

The clinical efficacy of the local, deep insufflation of an oxygen-ozone mixture in the prevention and treatment of infections in the locomotor system.

Ortop Traumatol Rehabil. 2001;3(4):552-6
Białoszewski D, Kowalewski M.

Superficially, longer, intermittent ozone therapy in the treatment of the chronic, infected wounds.

Białoszewski D, Kowalewski M.

Therapeutic efficacy of ozone in patients with diabetic foot.

Martinez-Sanchez G, Al-Dalain SM, Menendez S, Re L, Giuliani A, Candelario-Jalil E, Alvarez H, Fernandez-Montenegro JI, León OS.

Modulation of cutaneous wound healing by ozone: differences between young and aged mice.

Lim Y, Phung AD, Corbacho AM, Aung HH, Maioli E, Reznick AZ, Cross CE, Davis PA, alacchi G.

Intravesical ozone therapy for progressive radiation-induced hematuria.

Clavo B, Gutierrez D, Martinez D, Suarez G, Hernandez MA, Robaina F.

Can the combination of localized proliferative therapy with minor ozonated autohemotherapy restore the natural healing process?

Gracer RI, Bocci .

Intravesical ozone therapy for progressive radiation-induced hematuria.
Ma or ozonated autohemotherapy in chronic limb ischemia with ulcerations.

Effects of sodium hypochlorite and ozone on healing of intestinal anastomosis in simulated strangulation colorectal obstruction.

Ozone treatment for radiotherapy skin reactions: is there an evidence base for practice?

[Effect of ozone on antibiotic sensitivity of microorganisms]
Stomatologiiia (Mosk). 2003;82(2):36-8

[Sound treatment using the flow of an ozonized solution under high pressure]
Khirurgiia (Mosk). 1998;(8):23-4

Effects of ozone on how well split-thickness skin grafts according to Thiersch take in war wounds. Results of prospective study.


A physicochemical investigation on the effects of ozone on blood
Travagli, , a Zanardi, I, a Silvietti, A, b Bocci, .

Bocci, .A.
Scientific and Medical Aspects of Ozone Therapy. State of the Art
<table>
<thead>
<tr>
<th>Source</th>
<th>Title</th>
<th>Authors</th>
<th>Details</th>
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</thead>
<tbody>
<tr>
<td>Randomised, double-blinded, placebo-controlled, clinical trial of ozone therapy as treatment of sudden sensorineural hearing loss</td>
<td>Bocci, L., Travagli, I., Zanardi, I.</td>
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Bocci, L.
Application of medical ozone in endodontic practice

Stomatologija (Mosk) (Russia 2008;87(6):24-6 (ISSN: 0039-1735)
Bezrukova I ; Petrukhina NB; Dmitrieva NA; Snegirev M

Ozone and its usage in general medicine and dentistry. A review article.

Prague Med Rep 2008;109(1):5-13 (ISSN: 1214-6994)
Seidler ; Linetskiy I; Hubalkova H; Stankova H; Smucler R; Mazanek J

Effectiveness of ozone against endodontopathogenic microorganisms in a root canal biofilm model.

Int Endod J 2009 Jan;42(1):3-13 (ISSN: 1365-2591)
Huth KC; uirling M; Maier S; Kamereck K; Alkhayer M; Paschos E; elsch ; Miethke T; Brand K; Hickel R

Reduction by gaseous ozone of Salmonella and microbial flora associated with fresh-cut cantaloupe.

Food Microbiol 2008 Jun;25(4):558-65 (ISSN: 1095-9998)
Selma M ; Ibanez AM; Cantwell M; Suslow T

Efficacy of ozonated and electrolyzed oxidative waters to decontaminate hides of cattle before slaughter.

J Food Prot 2005 Jul;68(7):1393-8 (ISSN: 0362-028)
Bosilevac JM; Shackelford SD; Brichta DM; Koohmaraie M

Lelyanov AD, Sergienko I, lvliev N , et al.
Effects of sodium hypochlorite and ozone on healing of intestinal anastomosis in simulated strangulation colorectal obstruction.

Kim HS, Noh S , Han Y , et al.
Therapeutic effects of topical application of ozone on acute cutaneous wound healing.

de Monte A, van der Zee H, Bocci
Ma or ozonated autohemotherapy in chronic limb ischemia with ulcerations.
J Altern Complement Med ( nited States), Apr 2005, 11(2) p363-7

Grigorian AS, Grigoriants LA, Guchetl MN
Experimental-morphological study of the anti-inflammatory action of ozone-perfluorane complex application Stomatologiia (Mosk) (Russia (federation)), 2008, 87(2) p4-9
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<tr>
<td>Ozone exposure in the culture medium inhibits enterovirus 71 virus replication and modulates cytokine production in rhabdomyosarcoma cells.</td>
<td>Antiviral Res (Netherlands), Dec 2007, 76(3) p241-51</td>
<td>Lin YC, Juan HC, Cheng YC</td>
</tr>
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<td>Decontamination of Escherichia coli O157:H7 and Salmonella enterica on blueberries using ozone and pulsed -light.</td>
<td>J Food Sci (United States), Nov 2007, 72(9) pM391-6</td>
<td>Bialka KL, Demirci A</td>
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Cicatrizing and antimicrobial properties of an ozonised oil from sunflower seeds. Inflammopharmacology (Netherlands), 2004, 12(3) p261-70

Silveira AM, Lopes HP, Silveira JF, et al.
Periradicular repair after two-visit endodontic treatment using two different intracanal medications compared to single-visit endodontic treatment. Braz Dent J (Brazil), 2007, 18(4) p299-304

Rae ID
Ozonised oils as disinfectants.
Ambix (England), Mar 2006, 53(1) p3-20

• Professor Bocci has proven a striking cleansing effect with improved oxygenation and enhanced healing of soreness to diabetic ulcers, burns, traumatic and surgical wounds, abscesses and skin reactions after radiotherapy.

Grootveld M, Silwood C, Lynch E.
Biofactors 2006; 27: 5 18.
Oxidative Consumption of Biomolecules by Ozone; Clinical Relevance.

• The application of Ozone in dentistry: A systematic review of literature
• Azarpazhooh and Limeback, J Dent 2008; 36: 104 116
• Good evidence of Ozone biocompatibility with human oral epithelial cells, gingival fibroblasts and periodontal cells
• Ozone removes micro-organisms from dental unit water lines, the oral cavity and dentures
• Good evidence of the prophylactic application of Ozone in Restorative Dentistry

• Ozonated water had no negative effect on periodontal cells remaining on the root surface after irrigation for 2 minutes

Ebensberger et al
PCNA-expression of cementoblasts and fibroblasts on the root surface after extraoral rinsing with ozonized water for decontamination.
Dent Traumatol 2002; 18: 262-266.

• Irrigate all avulsed teeth with Ozonated water for decontamination and to have a positive effect on the cementoblasts.
Aqueous ozone exerts inhibitory effects on the NF-kB system suggesting it has an anti-inflammatory capacity. IkBa proteolysis, cytokine expression and kB-dependent transcription were prevented.

Scientific and medical aspects of Ozone therapy. State of the art.

Professor elio Bocci


Beneficial effects of Ozone discussed

The use of Ozone in dentistry and maxillofacial surgery

Stubinger et al


Ozone in the treatment of avascular bisphosphonate related av osteonecrosis


Ozone increased the complete healing of lesions with the disappearance of symptoms and brings lesion progression down to zero. Ozone's benefits were remarkable.

New therapeutic protocol in the treatment of avascular necrosis of the aws

Agrillo et al.

J Craniofac Surg 2006; 17: 1080–1083

Intravesical ozone therapy for progressive radiation-induced hematuria.

J Altern Complement Med (United States), Jun 2005, 11(3) p539-41
Ozone therapy in extractive surgery on patients treated with bisphosphonates.

Agrillo A, Sassano P, Rinna C, Priore P, Iannetti G.

Role of Ozone therapy in the treatment of osteonecrosis of the jaw in multiple myeloma patients.

Petrucci et al.


Ozone accelerates wound healing.


Ozone activates cellular metabolism.


Ozone raises intracellular ATP.


Ozone increases cytokines relevant to wound healing, especially Transforming Growth Factor.


Ozonated water clearly accelerates the healing of the human oral mucosa.


The dual action of Ozone on the skin.

alacchi et al

British Journal of Dermatology 2005; 153: 1096-1100

Proven beneficial effect after exposure to Ozone or Ozonated oils to chronic wounds.

The use of Ozone to treat Dental Unit Water Lines.


Disinfection proven using Ozonated water.

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CH₃CO₂⁻ + O₃ → CH₃CO₂⁺ + CO₂
Pyruvic acid O₂ Acetate

Ozone effects the oxidative decarboxylation of pyruvic acid, generating acetate and CO₂ as products

No detrimental effect of the use of Ozone on bond strength
Effect of Ozone on Enamel and Dentin Bond Strength

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Antimicrobial management

$^1$H NMR spectra of root caries

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Root caries remineralisation using 5,000 and 1,100 ppm fluoride dentifrices

A. BAYSAN and E. LYNCH
The Morita Investigator Award for the Best Clinical Science Presentation from Geriatric Oral Research Group at the International Association of Dental Research in April 2000

Conclusion

The use of dentifrices containing either 5,000 or 1,100 ppm fluoride was associated with the reversal of some of PRCLs.

The use of a dentifrice with a high fluoride content was significantly better to reverse leathery lesions than an 1,100 ppm fluoride dentifrice within 6 months.

Dentine sensitivity is one of the most painful and least predictably treated clinical conditions.

It has been established that dentinal hypersensitivity affects 1 in 6 people. Incidence tends to peak around the third decade of life and is equally divided between men and women.
Aim

The aim of this study was to assess a new protective root sealant for the treatment of cervical sensitivity.

Results

Sensitivity scores at baseline and at time points of 3, 6 and 19 months

Conclusions

There was a significant reduction in sensitivity scores compared to baseline after 19 months.

The protective sealant was found to be capable of covering the cervical surface to prevent further wear.

In addition, there was a significant reduction of some representative caries associated micro-organisms in the overlying plaque.

Understanding the Results

(5 7)

LCD: 51 – 90

LED: 3 yellows warning

AUD: 2 beeps

OBSERVATION: Probability of significant carious change beneath the enamel surface warranting specific preventive care.

ADVICE: Preventive Care Advised (PCA)

Strongly consider fluoride varnish or ion gel & fissure sealants, with localised oral hygiene, diet advice and periodontal review with monitoring at shorter intervals.

Is Ozone useful for Periodontal Endodontic Lesions?

Cleanability of dental instruments--implications of residual protein and risks from Creutzfeldt-Jakob disease.


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LIMITED TIME SPECIAL OFFER ON HEALOZONE x4

Is Ozone useful for Periodontal Endodontic Lesions?
Professional chemical free cleaning

“Cleans better than chemicals; without chemicals”

e-cloth professional products utilise the highest quality fibres available today. They neither contain nor use any chemicals, to remove grease, dirt and bacteria from all hard surfaces, using only water.
**Treatment options**

- Dietary Advice
- Oral Hygiene Advice
- Re-mineralising agents
- Great Oral Health products
- Pit Fissure Sealants
- Topical Fluorides and varnishes
- Other agents

**Remote view**

- Wireless capture of data
- Monitoring feature
- Alternative display option
- Link to plate
- Links to existing practice software
- Included in system price

**Conclusion**

*HealOzone is safe*

HealOzone treatment of all deep caries. Complete remineralisation.

Leathery pre Ozone + GIC

Hard 3 months later