

January 2023

Neues Poster

Neues Poster zur Ozonanwendung in deutscher Sprache, Format A3.  
Für Mitglieder kostenfrei, für Nichtmitglieder 5,00 EUR + Versandkosten.

Niedrig-Dosis Ozon-Konzept  
eine Redox-Bioregulations  
Therapie

Indikationen  
Chronisch entzündliche Erkrankungen  
in Prävention und Rekonvaleszenz

- Rheumatoide Arthritis
- Entzündliche Gefäßerkrankungen
- Immundefizit
- Fatigue Syndrom
- Post / Long Covid
- Altersbedingte Erkrankungen

Wirkungsweise

Antiinflammatorisch: Oxidativer Stress /  
Antioxidantien Regulation  
Immunmodulation

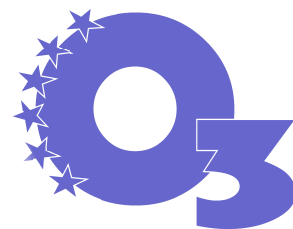
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Unser Praxisteam berät Sie gern.  
Wissenschaftliche Literatur oder Patienteninformationen erhalten Sie bei:  
Ärztliche Gesellschaft für Ozonanwendung in Prävention und  
Therapie e.V. [www.ozongesellschaft.de](http://www.ozongesellschaft.de) [info@ozongesellschaft.de](mailto:info@ozongesellschaft.de)

Ärztliche Gesellschaft für Ozonanwendung in Prävention und Therapie e.V.

1. Vorsitzender: Prof. Dr. Ziad Fahmy, D-Bad Kreuznach, Germany

GF und Sekretariat: Dr. Renate Viebahn-Hänsler, Nordring 8, D-76473 Iffezheim/Baden-Baden



## NEW PUBLICATIONS / NEUE PUBLIKATIONEN

Olga Sonia León Fernández, Gabriel Takon Oru, Renate Viebhan-Hänsler, Gilberto López Cabreja, Irainis Serrano Espinosa, Elizabeth García Fernández, **Medical ozone arrests oxidative damage progression and regulates vasoactive mediator levels in older patients (60-70 years) with oxidative etiology diseases** Front. Physiol., 03 November 2022

<https://www.frontiersin.org/articles/10.3389/fphys.2022.1029805/full>

Renate Viebahn-Haensler, Olga Sonia León Fernández  
Ozone In Medicine. The Low-Dose Ozone Concept and Its Basic Biochemical Mechanisms of Action In Chronic Inflammatory Diseases

Int. J. Mol. Sci. 2021, 22, 7890. <https://doi.org/10.3390/ijms22157890>

Renate Viebahn-Hänsler, Olga Sonia León Fernández

### Ozon in der Medizin

#### Wissenschaft-Guidelines-Behandlungskonzepte

4. Auflage MedO3 Publisher 2022 ISBN 978-3-949499-12-8

(Free for members, see under „books and videos“)

## ABSTRACT

### Das Niedrig - Dosis Ozonkonzept als Bioregulator zellulärer Antioxidantien und als

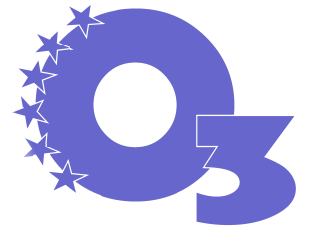
**Immunmodulator** Die Ozon-Sauerstoff-Therapie in Form des Niedrig - Dosis - Konzeptes hat sich als fundiertes komplementärmedizinisches Verfahren etabliert. Als wichtigste systemische Applikationsformen erweisen sich die Große Ozon- Eigenblutinfusion und die Rektale Verabreichung als evidenzbasiert gemäß der internationalen Klassifizierung; Wirkmechanismen und Pharmakologie

sind gut erforscht, dokumentiert und international publiziert (peer reviewed), womit die Indikationen ihr wissenschaftliches Fundament erhalten: Chronisch entzündliche Erkrankungen und solche, die mit einer chronischen Entzündung einhergehen

- Angiopathien und arterielle Durchblutungsstörungen
- Rheumatoide Arthritis, Schmerztherapie
- Hepatitiden
- Komplementäre Onkologie

Auf der Grundlage der Guidelines der Ozontherapie werden Behandlungskonzepte vorgestellt:

Indikationen, Applikationen, Dosierungen, Ozonkonzentrationen, Behandlungsfrequenzen; ebenso die Grundlagen in gestraffter Form sowie Pharmakodynamik und Pharmakokinetik des Ozons.



Renate Viebahn-Haensler, Olga Sonia León Fernández

**The Low-Dose Ozone Concept and its Pharmacology in Prevention and Convalescence**

***Önlemede ve İyileşmede Düşük Doz Ozon Konsepti ve Farmakolojisi***

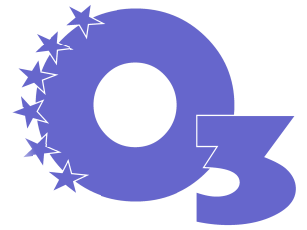
YAYIMCI - PUBLISHER Ortadoğu Reklam Tanıtım Yayıncılık Turizm Eğitim İnşaat Sanayi ve Ticaret A.Ş. E-ISBN: 978-625-401-668-4 © 2022 Türkiye Klinikleri. Türkiye Klinikleri Publication Serial Number: 1129. 1 st Edition, April 2022, Ankara-Türkiye

**ABSTRACT.** Systemically administered ozone with its mild oxidative eustress, able to upregulate antioxidative enzymes and to modulate the immune response e.g. “cytokine storm” is recommended as part of a complementary treatment concept in chronic inflammatory, long lasting processes with high oxidative stress and in diseases which are accompanied by an redox imbalance, rather than in the acute stages. To restore the glutathione equilibrium GSH/GSSG the low-dose ozone concept offers a strategy in redox medicine as shown here in primary and secondary prevention and convalescence. To illustrate the main pharmacological effects and to follow the treatment success we focus to the following reference substances: GSH (reduced glutathione),  $\gamma$ GT (gamma glutamyl transferase) or SOD (superoxide dismutase) as protection markers and one or two parameters of stress markers: MDA (malondialdehyde). Especially liver and kidneys are prevented from oxidative stress, regularly GSH increases, MDA decreases. In post acute inflammations (convalescence) we find the same biochemical mechanisms, summarized in virus diseases and diabetic angiopathy.

**Keywords:** Ozone therapy; bioregulation; glutathione balance; redox balance

**ÖZET** Sistemik uygulandığında, sağladığı hafif oksidatif stres ile antioksidan enzimleri regüle edebilen ozon tedavisi ve bağışıklık tepkisini modüle etmek için de önerilmektedir. Yüksek oksidatif stres ile kronik inflamatuvar, uzun süreli süreçlerde redoks dengesizliği eşlik eder. Glutatyon dengesini yeniden sağlamak için düşük dozlu ozon konsepti, burada birincil ve ikincil olarak önleyici yaklaşımda ve nekahat döneminde redoks tıbbında bir strateji sunar. Ana farmakolojik etkileri göstermek ve tedavi başarısını takip etmek için odaklanılması gereken referans başlıklar: GSH (indirgenmiş glutatyon), GT (gama glutamil transferaz) veya SOD (süperoksit dismutaz) koruma belirteçleri ve bir veya iki stres belirteç parametresi olarak: MDA (malondialdehit). Özellikle karaciğer ve böbreklerin oksidatif stresten korunması ile, düzenli olarak GSH artar, MDA düşer. Akut inflamasyon sonrası (nekahat döneminde) viral enfeksiyonlarda, diabetik anjiopatide özetlenen aynı biyokimyasal mekanizmaları buluruz.

# ÄRZTLICHE GESELLSCHAFT FÜR OZONANWENDUNG IN PRÄVENTION UND THERAPIE



**January 15, 2022 until December 2022 and repeated in 2023, program will follow.**



UNIVERSITÀ  
di VERONA

## **Oxygen-ozone therapy in the medical practice: from basic mechanisms to treatment**

**A MASTER CURRICULUM, offered by the University of Verona,**

**January 15, 2022 until December 2022 and repeated in 2023, program will follow.**

starts again on February 4 and with a contribution of our society on march 4, 2023. For details please go to the website of the University Verona:

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<https://www.corsi.univr.it/?ent=cs&id=1017&menu=home&lang=en>

*Responsible: Prof. Manuela Malatesta*

*Dipartimento di Neuroscienze, Biomedicina e Movimento, Sezione di Anatomia e Istologia, Università di Verona, Strada Le Grazie, 8 - 37134 Verona, Italy Tel. +39.045.8027569/8425115*

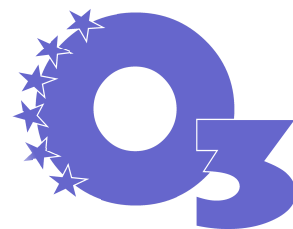
[www.dnbm.univr.it/?ent=persona&id=3911](http://www.dnbm.univr.it/?ent=persona&id=3911)

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Ärztliche Gesellschaft für Ozonanwendung in Prävention und Therapie e.V.

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A remarkable number of articles have been published in a special issue **Basic, Biological and Therapeutic Processes of Ozone Therapy** in the **International Journal of Molecular Sciences in 2021/2022**

Auszug neuer interessanter Publikationen / Excerpt of New publications 2021/2022  
which might interest you

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### All publications have free access

Intra Articular Ozone Modulates Inflammation and Has Anabolic Effect on Knee Osteoarthritis: IL-6 and IGF-1 as Pro-Inflammatory and Anabolic Biomarkers  
*Processes* **2022**, 10(1), 138; <https://doi.org/10.3390/pr10010138>

Male vs. Female Differences in Responding to Oxygen–Ozone Autohemotherapy (O<sub>2</sub>-O<sub>3</sub>-AHT) in Patients with Myalgic Encephalomyelitis/Chronic Fatigue Syndrome (ME/CFS) *J. Clin. Med.* **2022**, **11(1)**, **173**; <https://doi.org/10.3390/jcm11010173>

Patients with Myalgic Encephalomyelitis/Chronic Fatigue Syndrome (ME/CFS) Greatly Improved Fatigue Symptoms When Treated with Oxygen-Ozone Autohemotherapy *J. Clin. Med.* **2022**, **11(1)**, **29**; <https://doi.org/10.3390/jcm11010029>

The Relationship between Ozone and Human Blood in the Course of a Well-Controlled, Mild, and Transitory Oxidative Eustress *Antioxidants* **2021**, **10(12)**, **1946**; <https://doi.org/10.3390/antiox10121946>

The Biological Effects of Ozone Gas on Soft and Hard Dental Tissues and the Impact on Human Gingival Fibroblasts and Gingival Keratinocytes *Processes* **2021**, **9(11)**, **1978**; <https://doi.org/10.3390/pr9111978>

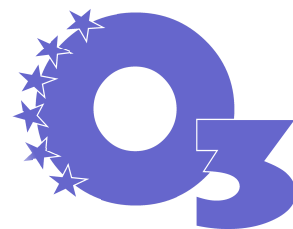
Systemic Review: Ozone: A Potential New Chemotherapy *Int. J. Mol. Sci.* **2021**, **22(21)**, **11796**; <https://doi.org/10.3390/ijms222111796>

Comparison of the Efficacy of Dextrose Prolotherapy and Ozone in Patients with Knee Osteoarthritis: A Randomized Cross-Sectional Study *Appl. Sci.* **2021**, **11(21)**, **9991**; <https://doi.org/10.3390/app11219991>

Low Ozone Concentrations Differentially Affect the Structural and Functional Features of Non-Activated and Activated Fibroblasts In Vitro *Int. J. Mol. Sci.* **2021**, **22(18)**, **10133**; <https://doi.org/10.3390/ijms221810133>

Ozone as Modulator of Resorption and Inflammatory Response in Extruded Nucleus Pulposus Herniation. Revising Concepts *Int. J. Mol. Sci.* **2021**, **22(18)**, **9946**; <https://doi.org/10.3390/ijms22189946>

Ozonized Water Administration in Peri-Implant Mucositis Sites: A Randomized Clinical Trial *Appl. Sci.* **2021**, **11(17)**, **7812**; <https://doi.org/10.3390/app11177812>



Potential Short-Term Air Pollution Effects on Rheumatoid Arthritis Activity in Metropolitan Areas in the North of Italy: A Cross-Sectional Study *Int. J. Environ. Res. Public Health* 2021, **18(16)**, 8490; <https://doi.org/10.3390/ijerph18168490>

Ozone Gel in Chronic Periodontal Disease: A Randomized Clinical Trial on the Anti-Inflammatory Effects of Ozone Application *Biology* 2021, **10(7)**, 625; <https://doi.org/10.3390/biology10070625>

Application of Ozone Therapy in the Conservative Surgical Treatment of Osteonecrosis of the Jaw: Preliminary Results <https://doi.org/10.3390/proceedings2019035022>

Modulation of Oxidative Stress by Ozone Therapy in the Prevention and Treatment of Chemotherapy-Induced Toxicity: Review and Prospects *Antioxidants* 2019, **8(12)**, 588; <https://doi.org/10.3390/antiox8120588>

The Role of Nrf2 in the Antioxidant Cellular Response to Medical Ozone Exposure *Int. J. Mol. Sci.* 2019, **20(16)**, 4009; <https://doi.org/10.3390/ijms20164009>

A Systematic Review of Oxygen Therapy for the Management of Medication-Related Osteonecrosis of the Jaw (MRONJ) *Appl. Sci.* 2019, 9(5), 026; <https://doi.org/10.3390/app9051026>

**Intraperitoneal Administration of Oxygen/Ozone to Rats Reduces the Pancreatic Damage Induced by Streptozotocin**  
*Biology* 2018, 7(1),10; <https://doi.org/10.3390/biology7010010>

Ozone In Medicine. The Low-Dose Ozone Concept and Its Basic Biochemical Mechanisms of Action In Chronic Inflammatory Diseases  
Renate Viebahn-Haensler <sup>1</sup>, Olga Sonia León Fernández<sup>2</sup>

*Int. J. Mol. Sci.* 2021, 22, 7890. <https://doi.org/10.3390/ijms22157890>

#### Abstract

Low-dose ozone acts as bioregulator in chronic inflammatory diseases, biochemically characterized by high oxidative stress and a blocked regulation. During systemic applications “Ozone peroxides” are able to replace H<sub>2</sub>O<sub>2</sub> in its specific function of regulation, restore redox signaling and improve the antioxidant capacity.

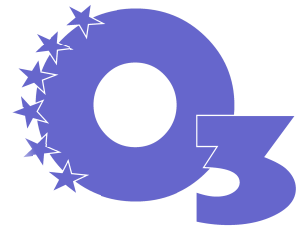
Two different mechanisms have to be understood; in systemic treatments the indirect, ionic mechanism is to be discussed: “ozone peroxide” will be directly reduced by the glutathione system, informing the nuclear factors to start the regulation. The GSH/GSSG balance outlines the ozone dose and concentration limiting factor. Antioxidants are regulated, in case of inflammatory diseases up-regulated; cytokines are modulated, here downregulated. Rheumatoid arthritis RA as a model for chronic inflammation: RA -in preclinical and clinical trials- reflects the pharmacology of ozone in a typical manner: SOD (superoxide dismutase), CAT (catalase)... and finally GSH (reduced glutathione) increase, followed by a significant reduction of oxidative stress. Inflammatory cytokines are downregulated. Accordingly the clinical status improves.

The pharmacological background investigated in a remarkable number of cell experiments, preclinical and clinical trials, well documented and published in international peer reviewed journals, should encourage clinicians to set up clinical trials with chronic inflammatory diseases integrating medical ozone as a complement.

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April 1, 2021

Aktuelles zum Medizinischen  
Ozon und Corona

NEWS in Medical Ozone  
and Corona

01042021

Was ist aktuell? Natürlich  
Corona.

Unser Video Teil 6 widmet sich dem  
Thema „**Prävention**“, das ist und wäre  
die erstrebenswerteste Lösung, siehe  
„Videothek“.

Inzwischen liegen einige Klinische  
Studien vor, alle online frei zugänglich

**Eine Kontrollierte Klinische Studie** sei hier  
erwähnt, weiter unten:

Die Rektale Insufflation in der  
Rekonvaleszenz-Phase ist eine gute,  
empfehlenswerte Anwendung, da hier  
die ureigenen Wirkmechanismen des  
Medizinischen Ozons genutzt werden, in  
der 2. Arbeit ausführlich diskutiert:  
**Immunmodulation, Redox-Regulation  
und Erythrozyten- Aktivierung mit  
verbessertem Sauerstoff-Durchsatz.**

*1. Amelioration of symptoms and  
oxidative stress in hospitalized  
convalescent post sars-cov-2 patients  
treated with rectal ozone therapy and  
nutritional supplementation”*

*IJMPR 2020, 4(6), 94-107*

Lizette Gil-del-Valle<sup>1</sup>, Olga Elena López-Fernández,  
Joniel Arnoldo Sánchez- Márquez<sup>2</sup>, Zullyt Zamora-  
Rodríguez et al.

<http://www.histoterapia-placentaria.cu/img/O3-OS-in-COVID19-UCI-2020-.pdf>

What is current? Corona, of  
course.

Our Video part 6 is focused to **Ozone in  
Virus Diseases?  
Detoxification and Prevention**

Several clinical studies are published in  
the meantime, available online free of  
charge.

**A controlled clinical trial** using rectal  
ozone insufflations in convalescent  
patients is mentioned here, a method  
which is a good recommendation as  
ozone reveals its full efficacy:

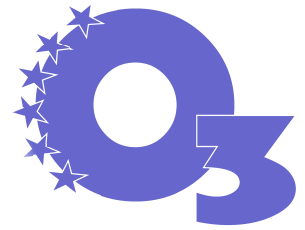
- immunomodulation
- redox regulation
- RBC metab. activation with  
improvement of oxygen release

*1. Amelioration of symptoms and  
oxidative stress in hospitalized  
convalescent post sars-cov-2 patients  
treated with rectal ozone therapy and  
nutritional supplementation*

*IJMPR 2020, 4(6), 94-107*

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<http://www.histoterapia-placentaria.cu/img/O3-OS-in-COVID19-UCI-2020-.pdf>



In aller Kürze:

**Klinik:** 32 Patienten, 16 mit Vitamingabe (10 Tage) als Kontrollgruppe, 16 mit zusätzlicher Rektaler Insufflation 2x täglich (12 Stunden Abstand) über 10 Tage, Ozon-Konzentration: 35 bis 40  $\mu\text{g/ml}$ ; Volumen: 200 ml.

**Ergebnis:** am Tag 5 waren 75 % der Ozongruppe virusnegativ, Kontrollgruppe 43 %. Verbesserung der hämatologischen Indikatoren entsprechend.

*2. Medical Ozone: The Pharmacological Mechanisms Accounting for its Effectiveness against COVID-19 / SARS-COV-2*

Olga S. León Fernández, Gabriel Takon Oru, Renate Viebahn Hansler, Gilberto López Cabreja, Irainis Serrano Espinosa, Juan Carlos Polo Vega, Elizabeth García Fernández  
Clin Res & Rev. 2021; 5(3): 1-10

<https://scivisionpub.com/pdfs/medical-ozone-the-pharmacological-mechanisms-accounting-for-its-effectiveness-against-covid19sarscov2-1581.pdf>

In short:

**Clinic:** Controlled Clinical Trial, n = 32; Control group: n= 16 with vitamin treatment. Ozone group: n = 16 patients with vitamin treatment plus rectal ozone insufflation twice per day during 10 days. Concentration: 35 bis 40  $\mu\text{g/ml}$ ; volume 200 ml. **Result:** 75 % of the patients in the ozone group were virus negative on day 5, compared to 43 % in the control group. Improvement of the corresponding hematological indicators, discussed extensively in:

2. „Medical Ozone: The Pharmacological Mechanisms Accounting for its Effectiveness against COVID-19 / SARS-COV-2“

Olga S. León Fernández, Gabriel Takon Oru, Renate Viebahn Hansler, Gilberto López Cabreja, Irainis Serrano Espinosa, Juan Carlos Polo Vega, Elizabeth García Fernández  
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<https://scivisionpub.com/pdfs/medical-ozone-the-pharmacological-mechanisms-accounting-for-its-effectiveness-against-covid19sarscov2-1581.pdf>