



The International Ozone Association
is pleased to invite you to take part in the
26th World Congress & Exhibition
2 - 7 July 2023, Milan, Italy

MEDICAL SOCIETY FOR THE
USE OF OZONE
IN PREVENTION AND
THERAPY

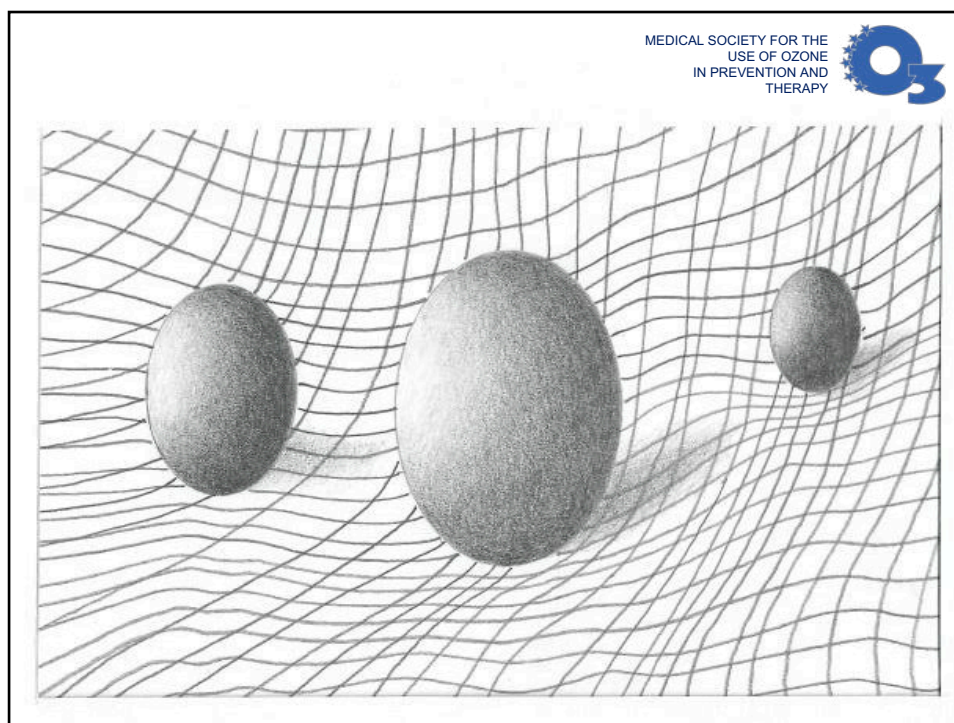
Ozone in Medicine. The Low-Dose Ozone Concept.

Is there a prominent biochemical mechanism
underlying all indications of systemically
administered ozone?

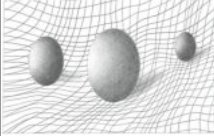
Renate Viebahn-Hänsler, Olga Sonia León Fernández

1


1



2



MEDICAL SOCIETY FOR THE
USE OF OZONE
IN PREVENTION AND
THERAPY



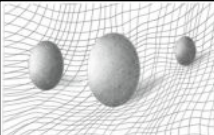
Ozone as Redox Bioregulator

The biochemistry of life is a kaleidoscope of dynamic processes, dynamically interacting equilibria in an almost confusing network.


If individual cycles, partial balances, are disturbed, this biological network is still able to compensate for disturbances, to repair defects and to keep the overall system "viable" for a long time.

3

3



MEDICAL SOCIETY FOR THE
USE OF OZONE
IN PREVENTION AND
THERAPY



Aim of Biological Medicine

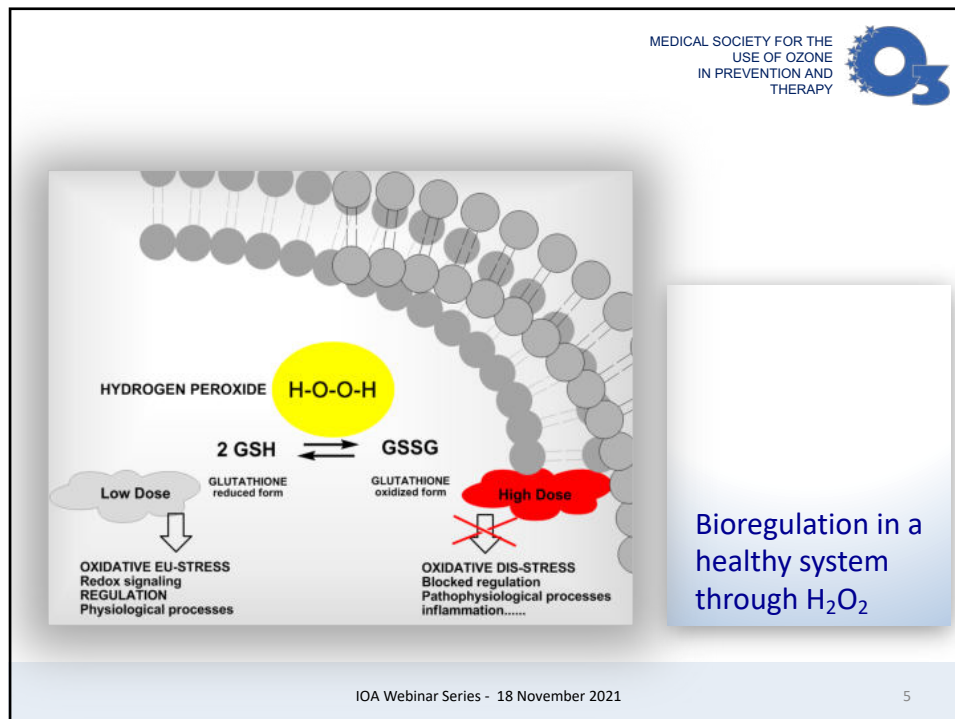
Reactivating biological processes and, if possible, restarting repair mechanisms is the aim of biological medicine.

In diseases with chronic oxidative stress, medical ozone has a special significance:

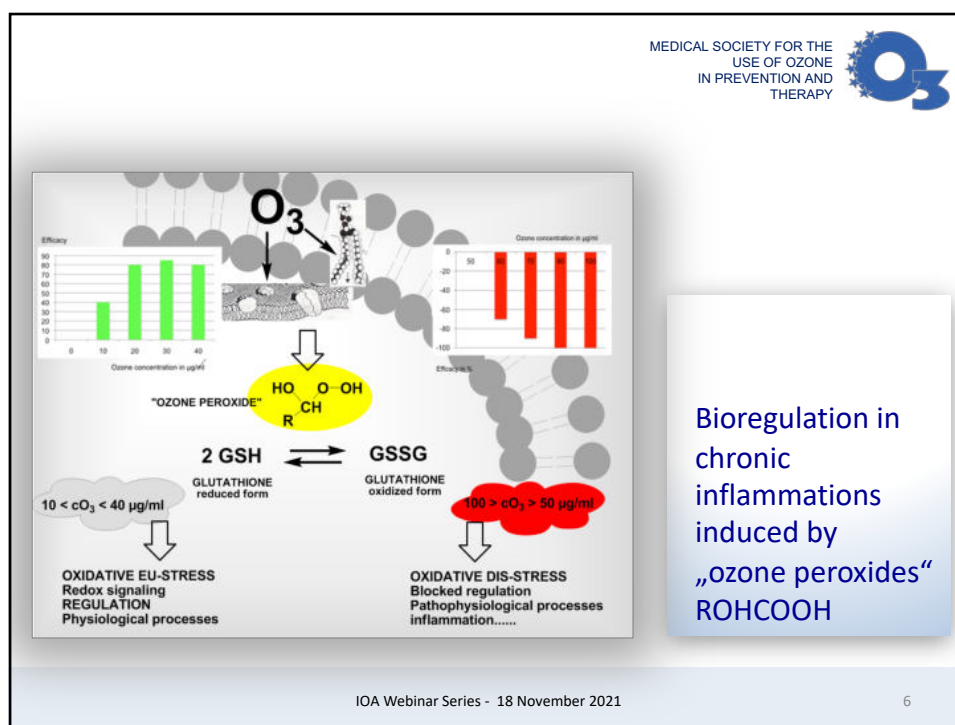
At low concentrations and dosages, ozone acts as a REDOX BIOREGULATOR, while this regulation is blocked when high concentrations are used.

4

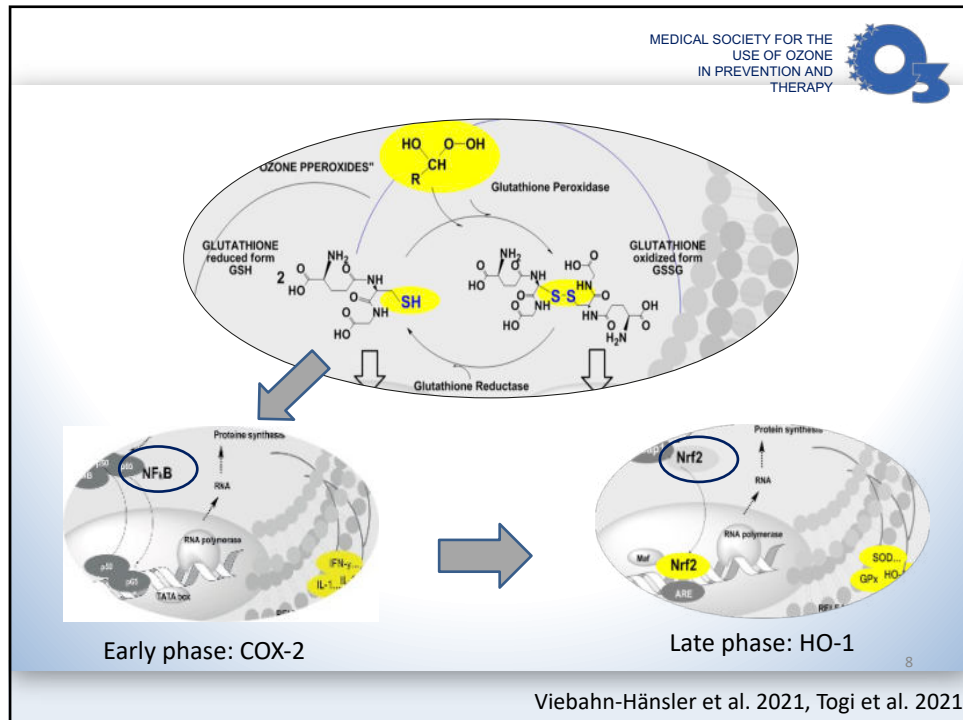
4



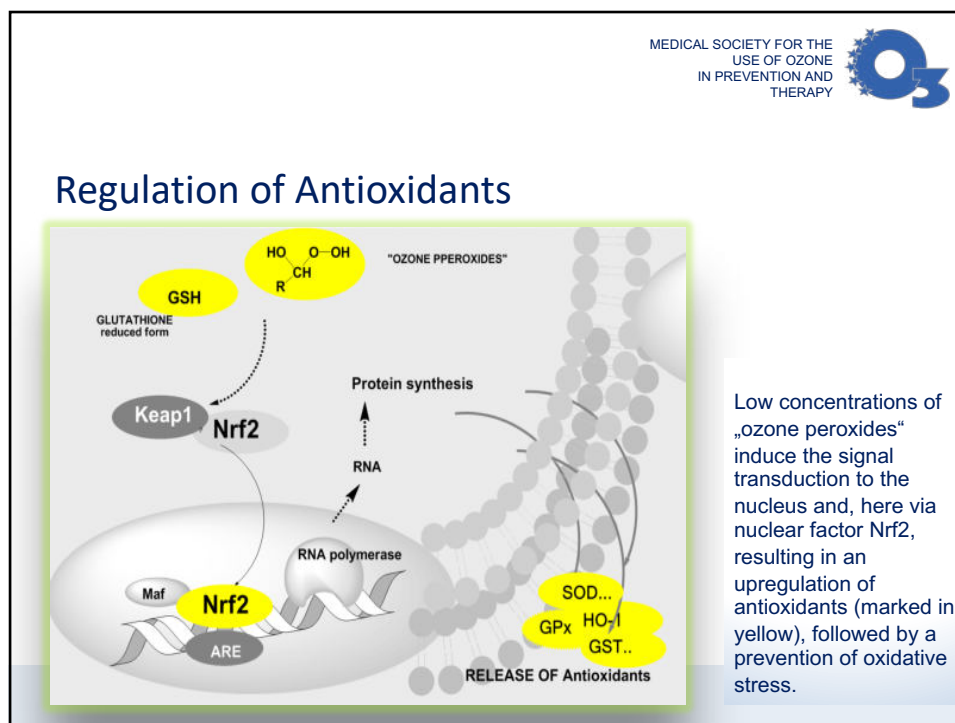
5



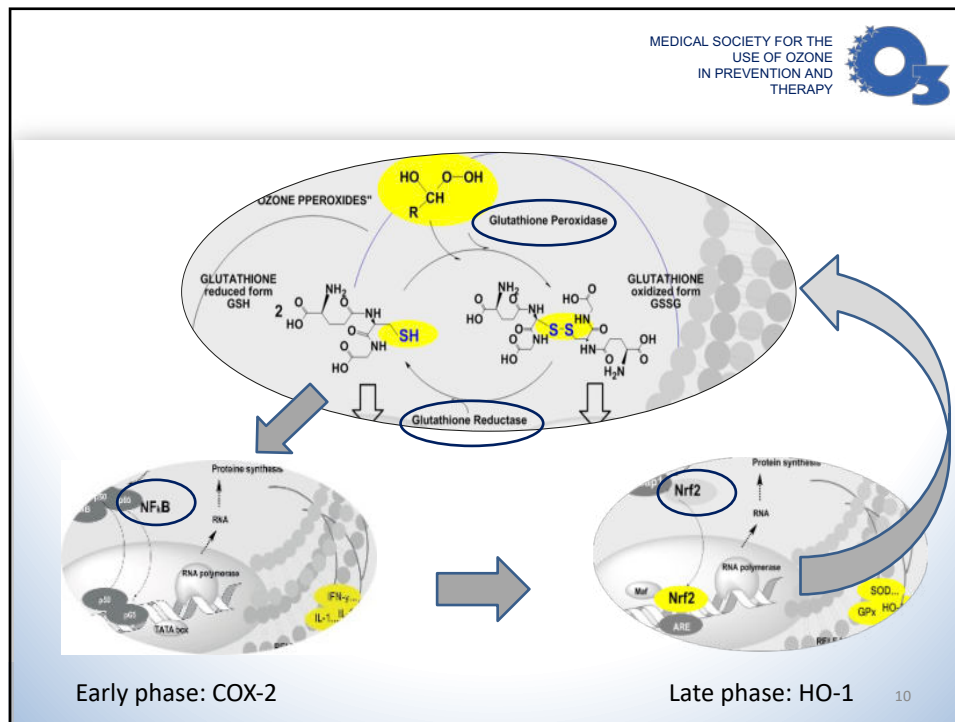
6



8



9



10

MEDICAL SOCIETY FOR THE USE OF OZONE IN PREVENTION AND THERAPY

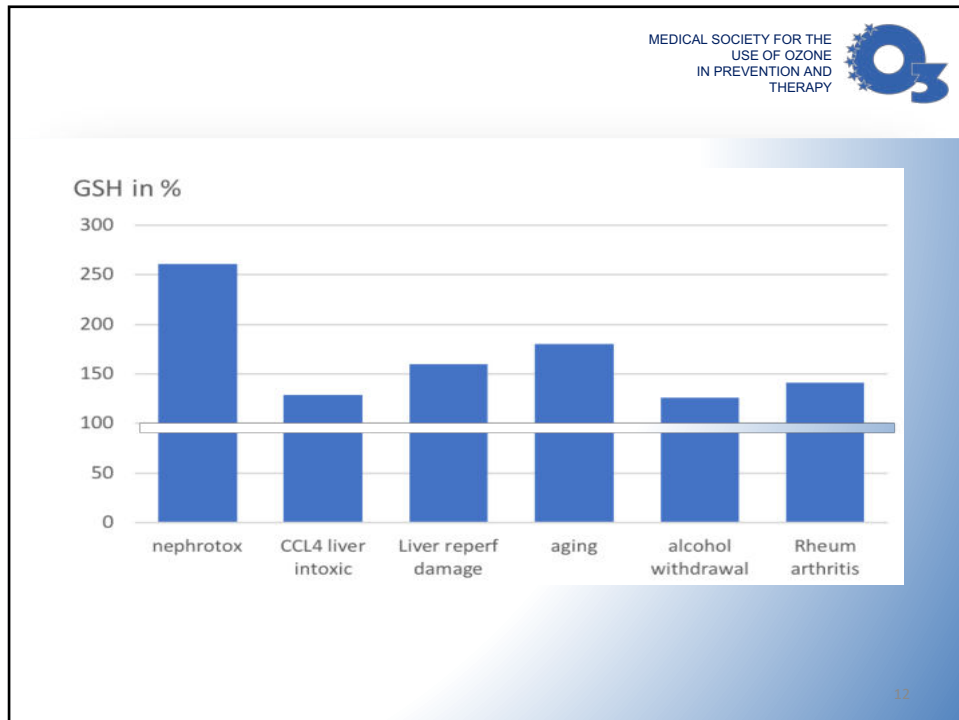
Glutathione GSH, the most important cellular antioxidant GSH:GSSG \approx 90% : 10% with the majority in red blood and liver cells

GSH deficiency:

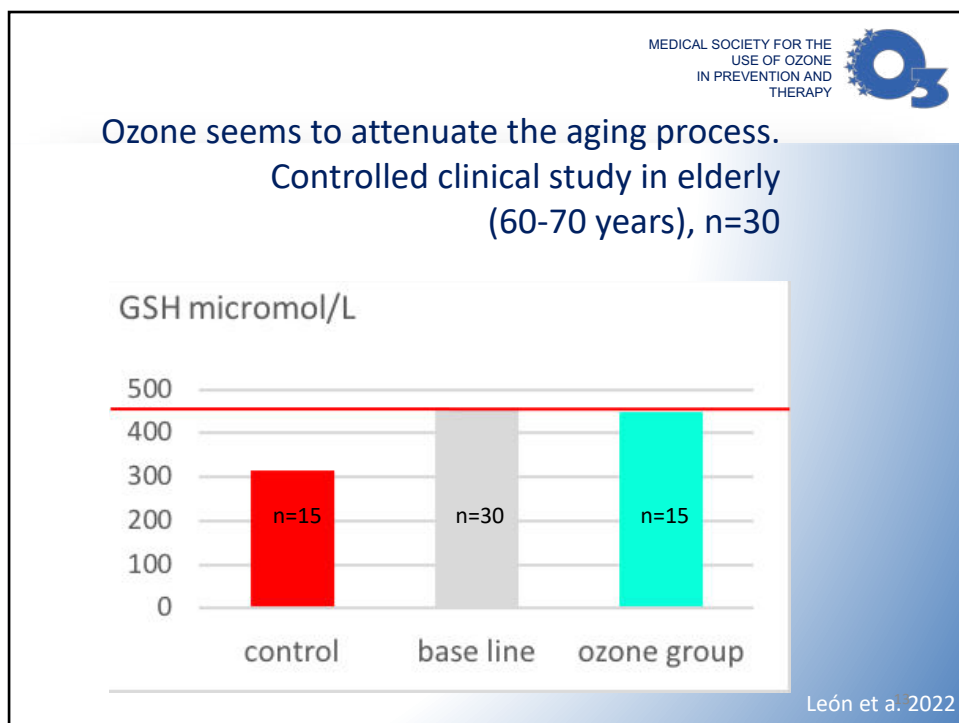
- In chronic inflammatory diseases
- Cancer diseases, especially age-related
- In aging processes
- Age related diseases

That means: in diseases, associated with chronic oxidative stress

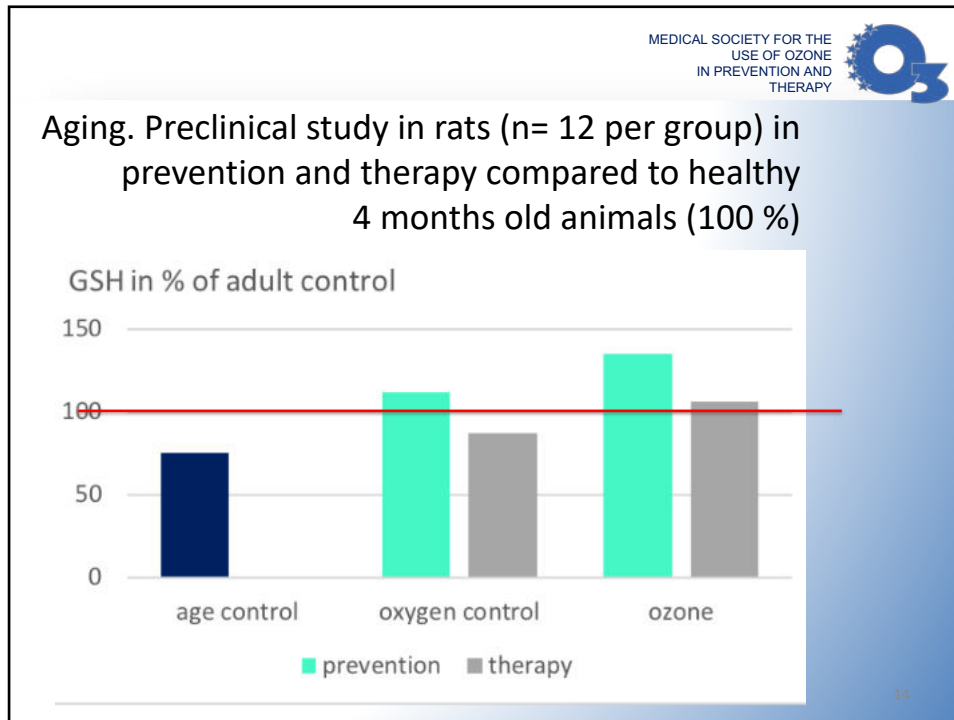
11



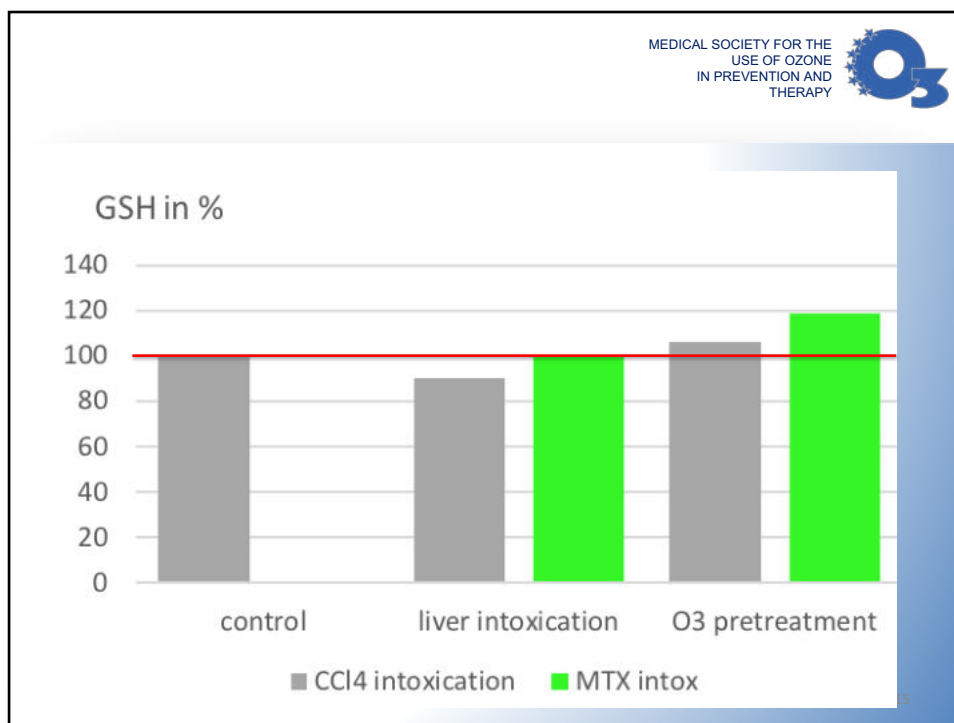
12



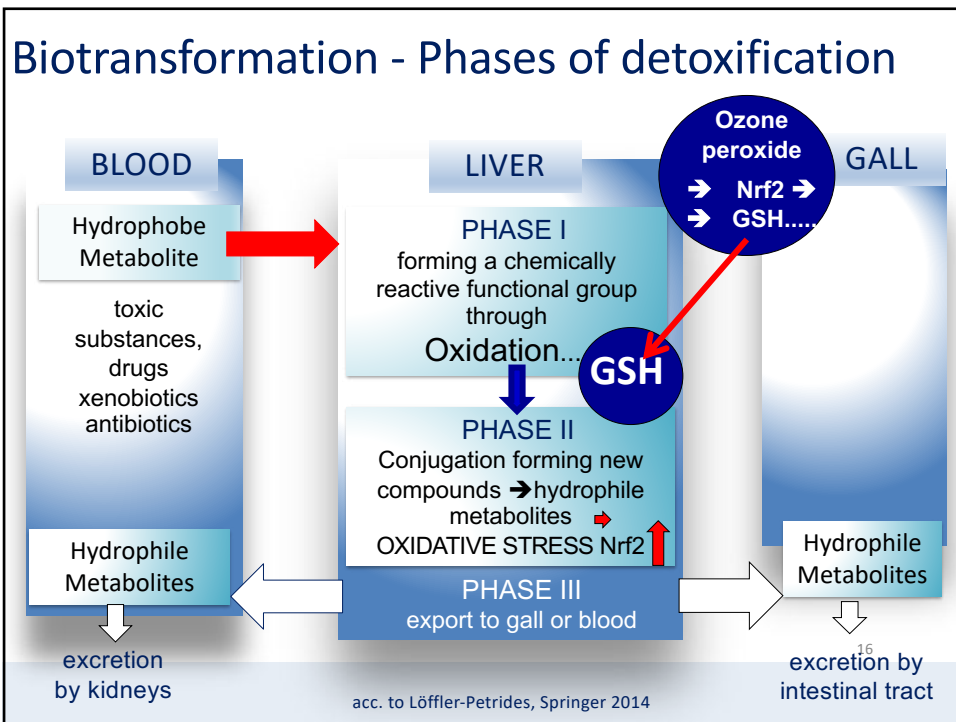
13



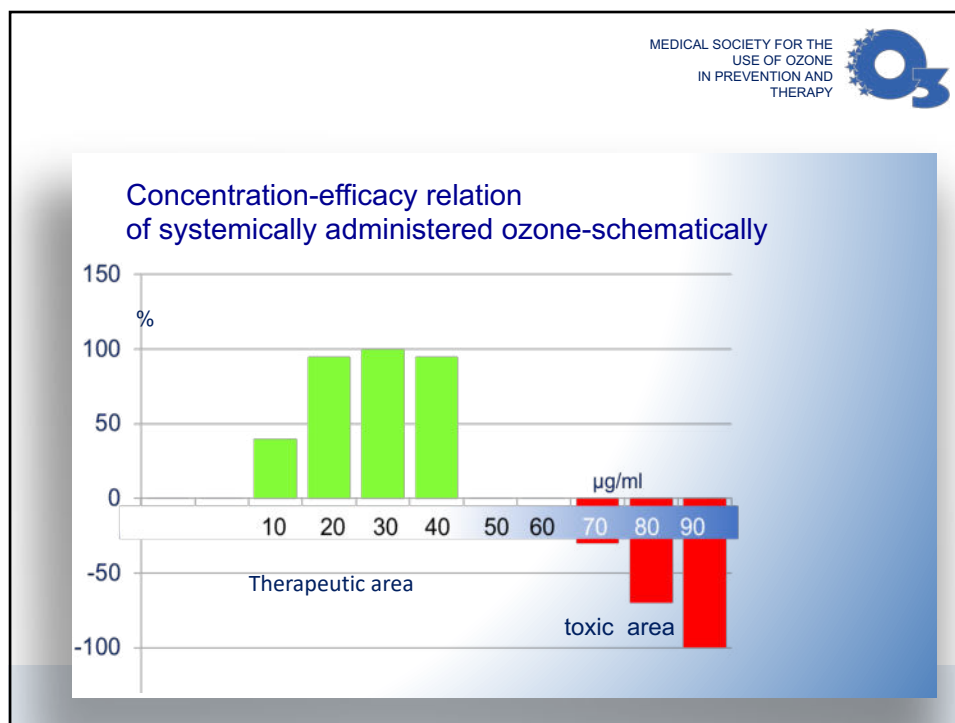
14




15



16



17

MEDICAL SOCIETY FOR THE
USE OF OZONE
IN PREVENTION AND
THERAPY 

High oxidative stress is one of the key elements in respiratory diseases, such as in COVID-19

In combination with excessive cytokin production, inflammatory conditions, cell death and other pathological processes:


- **high oxidative stress**
- **imbalance of oxidants/antioxidants**
- **impaired glutathione-balance GSH / GSSG**

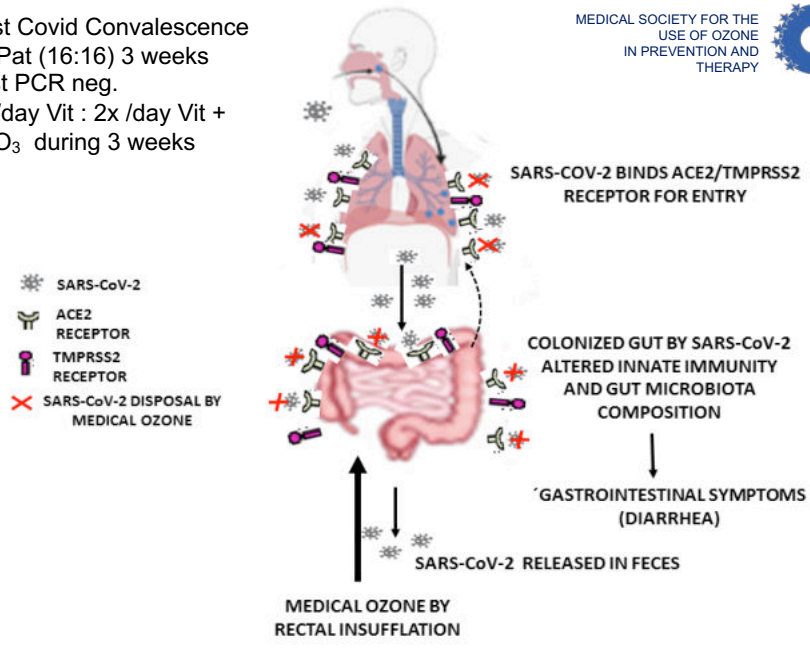
Delgado-Roche et al. 2020 Arch Med Res May 2020

18

18

Post Covid Convalescence
32 Pat (16:16) 3 weeks
post PCR neg.
2x /day Vit : 2x /day Vit +
RI O₃ during 3 weeks

MEDICAL SOCIETY FOR THE
USE OF OZONE
IN PREVENTION AND
THERAPY 







SARS-CoV-2 BINDS ACE2/TMPRSS2 RECEPTOR FOR ENTRY

COLONIZED GUT BY SARS-CoV-2 ALTERED INNATE IMMUNITY AND GUT MICROBIOTA COMPOSITION

GASTROINTESTINAL SYMPTOMS (DIARRHEA)


SARS-CoV-2 RELEASED IN FECES

MEDICAL OZONE BY RECTAL INSUFFLATION

 SARS-CoV-2
 ACE2 RECEPTOR
 TMPRSS2 RECEPTOR
 SARS-CoV-2 DISPOSAL BY MEDICAL OZONE

León et al. 2021

19

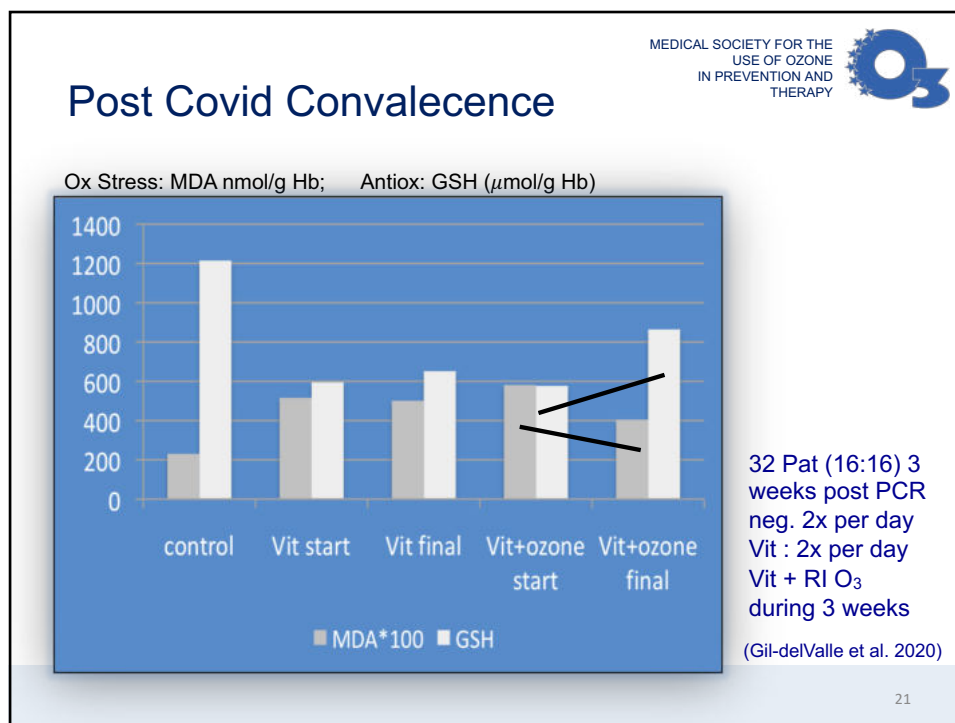
MEDICAL SOCIETY FOR THE
USE OF OZONE
IN PREVENTION AND
THERAPY 

Post COVID situation
High oxidative stress induced by the COVID
itself and the the medication persists after
viral recovering (PCR negative) and
contributes to the detrimental outcomes.

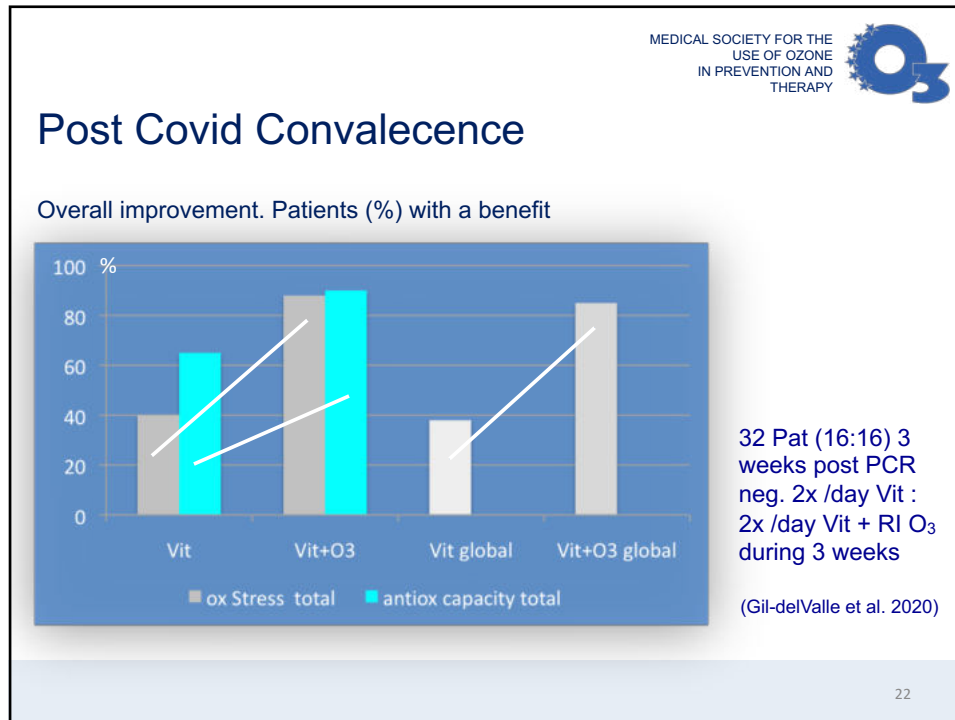
Systemically administered ozone and other
 biological complements are the ideal
 procedures to shorten the
 Convalescence-Phase

20

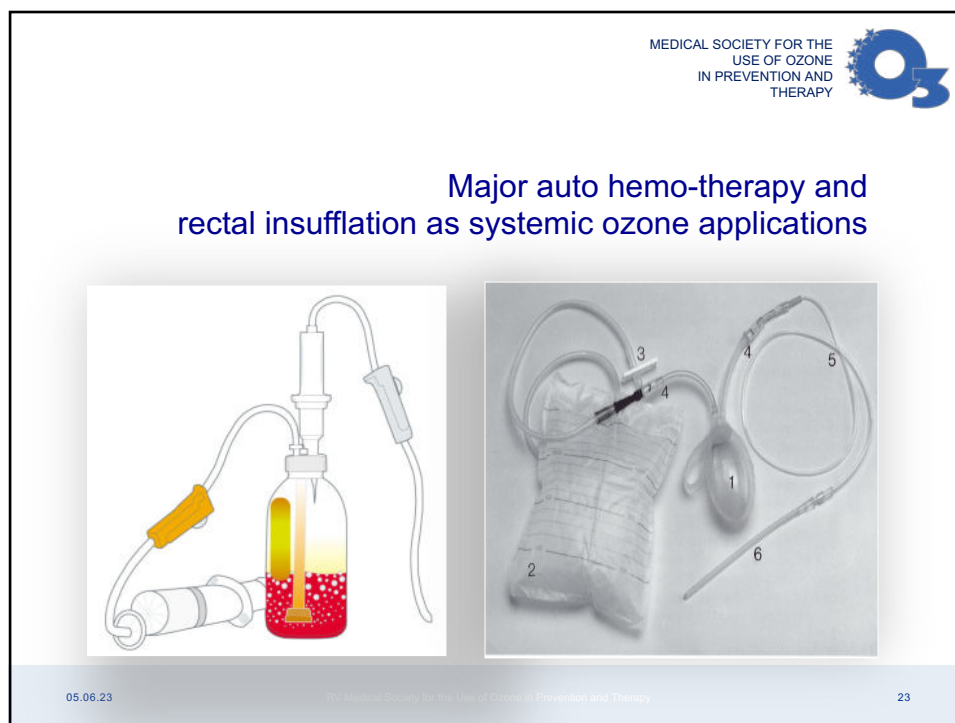
20



21



22



23



Conclusion and Outlook

Low-Dose medical ozone in virus diseases

1. **prevention**: by activating the immune system and upregulation of antioxidative capacity: MAH or RI; c: 10-30 mg/L 1x week or 2x per month
2. **convalescence**: immunomodulation and regulation of the redox balance MAH or RI daily; c: ≤ 25 mg/L
3. **reference substances**: eg IFN- γ \uparrow , IL-6 \downarrow ...and GSH \uparrow or SOD \uparrow γ GT \downarrow / oxidative stress MDA \downarrow ...

24