

REGENERATIVE MEDICINE | EVIDENCE & SAFETY

OXYGEN-OZONE THERAPY

Scientific overview of proposed mechanisms, clinical research and patient safety

Dr. med. Krassimir Shelev

Educational website edition | October 2026



DOCTOR'S EXPLANATION

This educational presentation introduces oxygen-ozone interventions as they are discussed in regenerative and integrative medicine. It separates the laboratory rationale from evidence that a procedure improves outcomes in people. Some uses have been studied in small clinical trials, while others remain experimental. Ozone is a reactive gas, and its effects depend on concentration, route of exposure, and clinical context. The aim is to support informed discussion, not to recommend ozone as a replacement for established treatment.

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About the presenter

Dr. med. Krassimir Shelev

01

Anesthesiology and pain medicine

02

Integrative and functional medicine

03

Clinical practice in Switzerland and Bulgaria

04

Bulgarian Association for Oxygen-Ozone Therapy (BAOOT)



Presenter details should be checked before website publication.

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DOCTOR'S EXPLANATION

Dr. Krassimir Shelev presents perspectives from anesthesiology, pain management and integrative clinical care. This background provides a useful starting point for discussing symptom assessment, procedural safety and coordination between specialties. Professional titles and affiliations shown here reproduce the information supplied in the original presentation and should be reconfirmed by the clinic before website publication.

The clinical setting

The environment in which patients are evaluated



Assessment and informed consent | Appropriate equipment and monitoring | Clear referral pathways

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DOCTOR'S EXPLANATION

The setting of a treatment matters as much as the intervention itself. A patient should know who performs the procedure, what training and safeguards are in place and how concerns or complications will be handled. For every proposed complementary intervention, clinicians should also discuss available alternatives, uncertainty about benefit, potential adverse effects and expected follow-up. Photographs of the original clinic location are presented for context, not as evidence of therapeutic effectiveness.

Kreuzlingen and Lake Constance

A regional perspective on clinical practice



Swiss-German border region | International medical exchange | Continuity of care

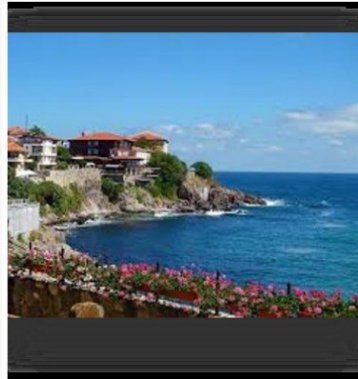
EDUCATIONAL OVERVIEW / OCT 2026

DOCTOR'S EXPLANATION

The original lecture included images from the Lake Constance region and Kreuzlingen. Their role is to introduce the location and international context of part of the presenter's clinical work. Geography is not a substitute for medical accreditation: when considering a procedure, readers should still confirm the credentials of the practitioner, local regulatory requirements and the availability of appropriate emergency support.

Bulgaria

Clinical and professional roots



Bulgarian medical community | Professional education | Cross-border collaboration

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DOCTOR'S EXPLANATION

Bulgaria is another important part of the professional setting described in the original presentation. These images highlight the country and its cultural context. Cross-border collaboration can encourage dialogue between practitioners, but clinical recommendations must always be assessed against the evidence and the regulations that apply in the country where a treatment is actually delivered.

Biological medicine

A framework for whole-person assessment

01

Nutrition and metabolic health

02

Symptoms, sleep, activity and stress

03

Evidence-based care and shared decisions

04

Complementary approaches: assess separately

DOCTOR'S EXPLANATION

The phrase biological medicine is used in different ways by different clinics. The most constructive interpretation is a whole-person assessment of health, nutrition, lifestyle, comorbidities and conventional treatment. Some modalities historically grouped under this label, such as homeopathy or unproven detoxification, do not have reliable evidence for the broad effects often claimed. Heavy-metal chelation, for example, is a medical treatment for specific documented poisonings, not a general wellness measure. Dental or implant removal is not a routine detoxification strategy.

Complementary methods

Different techniques require different evidence

01

Nutrition and
micronutrient care

02

Manual and mind-body
practices

03

Oxygen-ozone
procedures

04

Neural therapy and
injections

05

Topical procedures and
wound care

06

Other complementary
approaches

DOCTOR'S EXPLANATION

The methods grouped under integrative care differ greatly in rationale, clinical evidence and risk. Appropriate treatment of a diagnosed nutritional deficiency is not equivalent to high-dose infusions in people without such a deficiency. Likewise, acupuncture, injection-based neural therapy, ozone applications and homeopathy cannot be assigned one shared effectiveness rating. Every method needs its own question: for which condition, compared with what, with which benefits and harms? The answers must be communicated honestly.

Introducing oxygen-ozone therapy

A reactive gas mixture, not a universal cure

01

Ozone (O₃) reacts rapidly with biological materials

02

O₂ and O₃ are not interchangeable

03

Potential effects depend on delivery route

04

Clinical effectiveness is indication-specific

Biological plausibility does not equal clinical efficacy.

DOCTOR'S EXPLANATION

Medical ozone is generated from oxygen, creating a mixture with a small ozone fraction. Ozone has a strong oxidative capacity and reacts quickly with proteins, lipids and antioxidants. Descriptions of a chemical mechanism should not be mistaken for proof that a particular treatment works. Statements such as oxygenating the entire body or selectively attacking mutated cells are oversimplified and are not established clinical outcomes. Any discussion of regenerative medicine must start with the actual condition being addressed and the evidence available for that condition.

What is medical ozone?

Chemistry, application and the clinical question

01

An oxygen-derived molecule: O₃

02

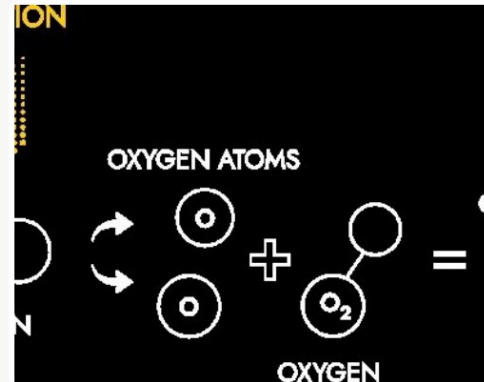
Produced with a medical-grade generator

03

Ozone rapidly reacts at the exposure site

04

Proposed signaling effects require clinical validation



Biological plausibility does not equal clinical efficacy.

DOCTOR'S EXPLANATION

An ozone molecule contains three oxygen atoms. In contact with blood or other biological fluids, it is highly reactive and does not simply travel unchanged through the body. Experimental literature has described reactive oxygen species and lipid oxidation products generated during exposure. Whether those responses deliver a meaningful clinical benefit depends on the condition, the administration route and the quality of supporting human trials. Inhalation is harmful and should not be presented as a therapeutic route.

Why route and dose matter

Biological action is not the same as effectiveness

01

Topical exposure is different from systemic exposure

02

Higher intensity may increase injury risk

03

No one protocol suits every diagnosis

04

Adverse event surveillance is essential

DOCTOR'S EXPLANATION

Ozone-based interventions have been proposed for many different health problems, but the route of administration changes both potential effect and potential harm. An application to a wound cannot be equated with an injection or an extracorporeal blood procedure. In particular, direct intravenous ozone gas administration carries serious risks and should not be confused with extracorporeal autohemotherapy. Broad lists of alleged indications do not establish effectiveness. The patient and procedure require a distinct risk-benefit assessment.

Forms of ozone application

Descriptive overview of proposed routes

01

Topical exposure in enclosed systems

02

Ozonated water or oil

03

Extracorporeal autohemotherapy

04

Selected injection-based approaches

05

Other routes under investigation

06

Routes are not interchangeable

DOCTOR'S EXPLANATION

Reported ozone methods include topical techniques, ozonated liquids, extracorporeal blood processing and injection-based approaches. Different routes have different safety profiles and levels of evidence. The presence of a technique in this overview does not imply medical endorsement. Direct intravenous injection of ozone gas and inhalation have significant safety concerns. Patient information should never assume that a method is harmless simply because it has been used in complementary practice.

Cellular responses

The proposed redox signaling model

01

Ozone reacts with extracellular components

02

Transient oxidation products may signal

03

Adaptive pathways have been proposed

04

Clinical outcomes remain uncertain

Biological plausibility does not equal clinical efficacy.

DOCTOR'S EXPLANATION

The proposed model starts with a short oxidative signal that may activate cellular stress-response pathways. Some experimental systems suggest changes in antioxidant signaling and inflammatory regulation. However, the size and direction of these effects can differ among tissues, doses and health conditions. Research on mechanisms is important for generating hypotheses, but claims that ozone repairs cells or removes the cause of pain require separate high-quality clinical studies demonstrating those patient outcomes.

Proposed biological effects

Mechanistic hypotheses, not proven universal effects

01

Inflammatory signaling

02

Microcirculation and
rheology

03

Antimicrobial activity in
some settings

04

Pain and tissue recovery
research

05

Redox adaptation

06

Immune-cell responses

DOCTOR'S EXPLANATION

The original presentation listed ten biological effects as if they applied broadly. This updated slide groups them as topics being researched rather than as guaranteed outcomes. Ozone is capable of antimicrobial action outside the body, yet that does not establish safe systemic treatment of infections. Anti-inflammatory or wound-healing effects have been investigated in certain models and clinical contexts, but results are not consistent across conditions. The distinction between a plausible mechanism and a validated indication must remain visible.

Potential harms and side effects

Safety must not be minimized

01

Local pain, irritation and bruising

02

Vasovagal symptoms and blood pressure changes

03

Infection or procedure-related complications

04

Rare serious complications reported

05

Ozone inhalation injures airways

Safety assessment must be specific to the patient and procedure.

DOCTOR'S EXPLANATION

Potential adverse effects depend on the technique. Local procedures may cause pain, bruising, bleeding, vasovagal symptoms or infection; invasive applications also introduce route-specific hazards. Published reports describe uncommon but serious problems, including embolic and vascular complications. These events cannot be ruled out by saying that ozone has antiseptic properties. An absence of adverse events in a small trial is not the same as proof of safety. Monitoring, informed consent and appropriate emergency preparedness are indispensable.

Contraindications and precautions

A patient-specific checklist is needed

01

Pregnancy and pediatric care require special caution

02

G6PD deficiency: hemolysis concern with systemic exposure

03

Active instability, serious organ disease or acute illness

04

Coagulation problems and invasive-route risks

05

Allergies to materials or anticoagulants

06

Clinical review of concurrent treatments

Safety assessment must be specific to the patient and procedure.

DOCTOR'S EXPLANATION

Contraindications vary by technique, and there is no single checklist that can be applied without considering route of administration. For instance, glucose-6-phosphate dehydrogenase deficiency is a particular concern for ozone-related oxidative hemolysis in systemic applications. Other clinical issues include pregnancy, hematological problems, significant cardiorespiratory disease and concurrent medication. This overview is not a substitute for a procedure-specific safety protocol or a specialist assessment.

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Pre-treatment risk screen

From a long list to useful clinical decisions

01

1 Clarify diagnosis and goals

02

2 Review blood counts and medical history

03

3 Screen for route-specific contraindications

04

4 Explain uncertainty and alternatives

05

5 Decide, document and monitor

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Sources: [1,2,3]

DOCTOR'S EXPLANATION

The previous slide in the original deck contained an editing instruction and a long unverified list of contraindications. This version replaces it with a practical framework. Before considering any complementary procedure, clinicians should identify the problem they intend to treat, review history and laboratory information where medically indicated, and screen for complications associated with that specific intervention. Decisions should be made collaboratively and documented, including the option not to proceed.

Application routes

Local and systemic methods are distinct

- 01 Topical and surface applications
- 02 Periarticular or other targeted procedures
- 03 Extracorporeal blood-based methods
- 04 Selected gastrointestinal applications
- 05 Clinical protocols are technique-specific

DOCTOR'S EXPLANATION

Applications described in the clinical literature are not one homogeneous treatment. Localized procedures, blood-based systems and gastrointestinal administration have different mechanisms, risks and evidence bases. Injection into or near spinal structures is an invasive intervention that requires strict selection and expertise; it should not be portrayed as equivalent to a simple surface application. Concentrations are deliberately omitted from this public overview because copying a number does not make a procedure safe or appropriate.

Local versus systemic exposure

Terminology matters for patient safety

01

Local: effect sought at a defined tissue site

02

Extracorporeal: blood processed outside the body

03

Systemic effects remain a research question

04

Direct intravenous ozone gas is not recommended

Do not conflate extracorporeal processing with injection of ozone gas.

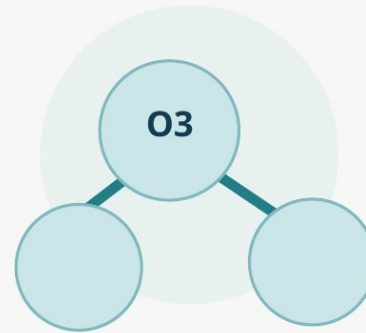
DOCTOR'S EXPLANATION

One especially important distinction is between processing withdrawn blood outside the body and directly injecting ozone gas into a vein. These are not the same procedure. Descriptions in some older presentations can blur that distinction and leave readers with the wrong impression. The corrected terminology highlights how the exposure occurs and why methods must never be improvised. Any systemic intervention requires specific training, sterile technique and careful assessment of the evidence.

Chemical properties of ozone

A three-atom oxygen molecule with high reactivity

- O₃ contains three oxygen atoms
- Strong oxidizing properties
- Limited stability in aqueous systems
- Temperature and conditions affect degradation
- Freshly generated for controlled applications



DOCTOR'S EXPLANATION

Ozone is a triatomic form of oxygen. Its chemical reactivity is responsible for antimicrobial effects in certain non-clinical applications and for potential injury to exposed human tissues. Because the molecule is unstable, conditions of preparation and exposure strongly affect the chemistry. The useful scientific lesson is not that higher ozone means more benefit, but that chemical properties alone cannot predict clinical benefit or safety. Inhalation should be avoided because of ozone's well-documented respiratory toxicity.

Medical ozone equipment

Device quality is only one part of safety



Appropriate device compliance for the jurisdiction | Verified output and regular maintenance | Ozone-resistant, sterile consumables | Ventilation and prevention of accidental inhalation | Trained operators and incident response

DOCTOR'S EXPLANATION

The original deck showed equipment from a commercial manufacturer. Equipment selection should focus on the regulatory status applicable in the country, technical performance, calibration and safe consumables. The existence of a medical-looking device does not itself validate an indication or demonstrate better patient outcomes. Procedures also require standard hygiene measures, occupational exposure safeguards and documentation. Equipment photographs are included here as contextual examples rather than as endorsements.

Redox biochemistry

Reactive oxygen species and antioxidant systems

01

O₃ reacts with lipids and antioxidants

02

Reactive intermediates may form

03

Catalase and glutathione systems provide defense

04

Effects can be adaptive or harmful

Biological plausibility does not equal clinical efficacy.

DOCTOR'S EXPLANATION

When ozone contacts a biological medium, transient oxidizing intermediates may form. Protective systems involving glutathione and related enzymes can participate in managing oxidative stress. Researchers have proposed that appropriately controlled signals trigger stress-response pathways. That model does not justify the absolute statement in the original slide that there is no danger of toxicity. Harm depends on route, exposure and individual factors. Mechanistic results must be evaluated alongside adverse-event data from human studies.

Blood flow and rheology

An area of hypothesis and ongoing investigation

01

Red cell deformability

02

Blood viscosity

03

Platelet interactions

04

Microvascular perfusion

DOCTOR'S EXPLANATION

Some studies have examined whether ozone exposure influences red blood cell behavior, oxidative markers or blood flow. Different methods and experimental conditions have yielded heterogeneous findings. It would be inaccurate to promise improved circulation in all patients, or to infer reduced cardiovascular risk from laboratory changes alone. The clinically important question is whether any observed change improves symptoms, tissue healing or function without causing harm. More rigorous research is needed to answer it.

Immune signaling

Laboratory markers are not patient outcomes

01

Cytokine profiles may change

02

NF-kB and Nrf2 are studied pathways

03

Immune responses vary by context

04

No universal immune-boosting effect is established

Biological plausibility does not equal clinical efficacy.

DOCTOR'S EXPLANATION

Studies of ozone-associated redox signaling often mention cytokines and pathways such as Nrf2 and NF-kB. Such observations offer biological hypotheses, but the phrase boosts immunity can mislead patients. Increasing or decreasing a laboratory marker does not necessarily improve health, and immune activation is not always desirable. The effects of interventions in immune-compromised or oncological populations warrant particular care. Clinical decisions should be driven by patient outcomes, not by a single proposed pathway.

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Possible indications: evidence map

Separate investigated uses from established treatment

01
Diabetic foot ulcers: mixed low-certainty data

02
Low-back pain: heterogeneous findings

03
Dentistry: limited indication-specific evidence

04
Cancer and neurological disease: not established

05
Standard care must continue

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Sources: [1,2,4,6]

DOCTOR'S EXPLANATION

Historically, ozone therapy has been promoted for a very broad range of disorders. That list is not a list of proven indications. A 2026 umbrella review found low or very low certainty across the studied outcomes, including diabetic foot ulcers, periodontal care and third-molar procedures. Other reviews describe variable results for disc-related pain, but methodological problems remain. There is no reliable basis for presenting ozone as a treatment for cancer, Parkinson disease, Alzheimer disease or multiple sclerosis. Established care should never be delayed.

Major autohemotherapy (MAH)

How the procedure is described

01

A portion of blood is withdrawn

02

Blood is processed extracorporeally

03

Blood is then returned by a controlled system

04

This is NOT a direct intravenous gas injection

Biological plausibility does not equal clinical efficacy.

DOCTOR'S EXPLANATION

Major autohemotherapy, often abbreviated MAH, is an extracorporeal blood-processing technique described in ozone practice. The concept involves withdrawing some of the patient's blood, exposing it to an oxygen-ozone mixture in a controlled external system and returning the blood. The method should not be confused with direct intravenous ozone gas injection, which can cause dangerous embolic complications. Evidence of clinical benefit for many claimed indications is insufficient, and the procedure has specific technical and infectious risks.

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MAH: the importance of process controls

Safety-critical elements of an invasive procedure

01

Trained clinical team

02

Sterile closed system

03

Appropriate screening and monitoring

04

Documentation and emergency readiness

05

Clear informed consent

EDUCATIONAL OVERVIEW / OCT 2026

Sources: [1,2,3]

DOCTOR'S EXPLANATION

The original slide displayed a formula for the amount of blood used. A publicly accessible educational summary should not present a weight-based formula as a universal instruction, because clinical risk depends on the individual, procedure and system. This revised slide instead identifies elements necessary for any invasive blood-handling technique: trained personnel, a sterile compatible device, review of risk factors, documented consent and monitoring. No dose or procedural schedule should be copied from a presentation into practice.

Anticoagulation and MAH

Individual medical assessment is essential

01

Anticoagulant choice is not interchangeable

02

Bleeding and clotting risks must be assessed

03

G6PD status and other factors may matter

04

Complications require an escalation pathway

Safety assessment must be specific to the patient and procedure.

DOCTOR'S EXPLANATION

The original deck specified anticoagulant choices and amounts. Those are not appropriate as general website instructions. A medical professional must decide whether the procedure is indicated, which components are compatible and how bleeding or thrombotic risks will be managed. Anticoagulant use carries its own risks, and a previous adverse drug reaction may matter. This slide therefore communicates the safety principles without supplying a protocol for performing an invasive blood-based intervention.

MAH exposure levels

Why published ranges do not define a standard

01

Concentrations vary across experimental protocols

02

Higher exposure may increase oxidative injury

03

No validated universal regenerative dose

04

Patient benefit requires controlled evidence

DOCTOR'S EXPLANATION

Published protocols use different ozone concentrations and frequencies. A number quoted in one study cannot be assumed to be correct for another patient, another machine or a different treatment goal. Some experimental work and clinical reports describe oxidative damage at greater exposures, including hemolysis. The central issue for patients is not the precise number of micrograms but whether a particular intervention has meaningful expected benefit and an acceptable safety profile for their diagnosis.

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MAH treatment courses

Fixed treatment packages are not proof of benefit

01

Indication must be explicit

02

Goals should be measurable

03

Stop criteria should be defined

04

Reassessment is more important than a fixed number

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Sources: [1,2]

DOCTOR'S EXPLANATION

The original presentation described courses and repeat intervals as though a standard schedule existed. The clinical literature does not establish one universal treatment package for regenerative medicine. Any proposed program should begin with a clearly stated reason for treatment and a discussion of what improvement would count as meaningful. Follow-up should look for both benefit and harm. In the absence of a credible indication or measurable improvement, continuing repeated sessions should not be automatic.

Before a proposed procedure

A safer, patient-centered workflow

- 01 Review diagnosis, current treatments and allergies
- 02 Discuss evidence, uncertainty and alternatives
- 03 Assess procedural risk and informed consent
- 04 Ensure appropriate monitoring and response plan

DOCTOR'S EXPLANATION

Before an invasive or complementary intervention, clinicians should establish what clinical problem is being addressed and which established treatments are already in use. The patient should receive understandable information about the strength of evidence, possible benefits, adverse events, costs and alternatives. Monitoring needs depend on the technique and the person. Routine sedation is not an appropriate universal condition for beginning treatment and is not recommended simply to avoid a vasovagal response.

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Aftercare and reassessment

Individualization is not a fixed booster schedule

01

Record symptoms and objective changes

02

Ask about adverse effects

03

Revisit the original treatment goal

04

Coordinate with the primary clinician

05

Stop or change approach when appropriate

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Sources: [1,2]

DOCTOR'S EXPLANATION

An individual care plan should not be reduced to automatic booster sessions. Follow-up is the point at which patients and clinicians consider whether the intended benefit has actually occurred, whether any side effects appeared and whether a different approach would be more appropriate. Outcome measures might include validated pain scales, functional activity and quality-of-life assessments. Specific ozone doses, blood volumes and session timing have been removed from this general website version to avoid implying a validated regimen.

Neural therapy

A complementary injection-based approach

- 01 Uses local anesthetics in selected locations
- 02 Often discussed in chronic pain settings
- 03 Proposed autonomic effects remain uncertain
- 04 Injection and drug-related risks require screening



Clinical benefit varies by condition and must be assessed separately.

DOCTOR'S EXPLANATION

Neural therapy refers to complementary techniques involving injections of local anesthetics, sometimes around scars or sites of tenderness. The original presentation described broader regulatory effects on the autonomic nervous system. Those effects remain hypothetical in many settings and should not be presented as established cures. Injections can cause complications, and local anesthetics have dose-dependent adverse effects and allergy-related considerations. A conventional diagnostic assessment remains essential before any injection is considered.

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Neural therapy: proposed model

A hypothesis, not a validated causal pathway

01

Identify pain or a scar-related complaint

02

Complete diagnostic assessment

03

Consider targeted intervention only if justified

04

Track pain, function and adverse effects

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Sources: [7]

DOCTOR'S EXPLANATION

Some models of neural therapy describe an autonomic reset after injecting local anesthetic at a suspected interference field. This idea is not a proven universal physiological mechanism. A more clinically useful description starts with diagnosis, clear treatment goals, discussion of conventional options and careful outcome tracking. The diagram here is a decision pathway rather than a claim that all symptoms can be traced to an interference field. The strength of evidence varies across pain conditions.

Integrating care responsibly

What a multidisciplinary approach can achieve

- 01 Clarify the underlying diagnosis
- 02 Preserve effective conventional treatment
- 03 Consider complementary measures case by case
- 04 Use validated outcome measures
- 05 Communicate across clinicians



Clinical benefit varies by condition and must be assessed separately.

DOCTOR'S EXPLANATION

Integration should mean coordination, not accumulation of procedures. Pain, poor wound healing or fatigue can have treatable conventional causes that must be identified first. Complementary approaches, if considered at all, should be discussed honestly and coordinated with the clinicians responsible for established care. Interventions must not obscure infection, structural disease or other serious pathology. The most important practical message is that a patient-centered approach requires clear goals, measurable outcomes and willingness to reconsider a treatment when evidence or results do not support it.

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Selected scientific references

Sources for claims and limitations

[1] Cacciatore et al. 2026 - umbrella review

[2] Clinical use of ozone therapy - critical appraisal (2026)

[3] CAM Cancer: Ozone Therapy (2025)

[4] Chang et al. 2024 - intradiscal ozone review

[5] FDA 21 CFR 801.415

[6] NCCIH: Cancer and Complementary Health Approaches

EDUCATIONAL OVERVIEW / OCT 2026

Sources: [1,2,3,4,5,6]

DOCTOR'S EXPLANATION

These references are included to make the distinction between established findings, preliminary clinical signals and experimental mechanisms transparent. The 2026 umbrella review concluded that trial evidence was low or very low in the evaluated indications. The CAM Cancer review does not identify a demonstrated survival benefit for cancer patients. Regulatory and clinical recommendations differ by country and indication. A full linked reference list follows the slide-and-text pages in this downloadable document.

Clinical care, not patient identification

Patient privacy and responsible communication

PATIENT PRIVACY

01 A clinical photograph needs informed publication consent

02 A clinical case cannot prove efficacy

03 Use de-identified data and meaningful outcomes

04 Respect privacy in all website materials

Recognizable patient photographs were omitted from this public edition.

DOCTOR'S EXPLANATION

The original slide contained recognizable photographs of patients receiving treatment. Because those images are intended for a public website, the redesigned version does not reproduce them without verified consent for publication. A clinical photograph can document a setting or a procedure, but does not show that the treatment was effective. If the clinic wishes to add real patient examples later, consent, appropriate anonymization and accurate outcome reporting should be checked before publication.

Time and attentive care

A principle worth keeping

"The quality of care begins with listening."

Time | Trust | Informed choice

DOCTOR'S EXPLANATION

The original deck ended with a quotation attributed to Pier Paolo Pasolini. The provenance of that exact wording is uncertain, so it is not reproduced as a verified quotation. Its central message remains valuable in clinical practice: time, attention and clear communication are part of good care. Patients deserve both compassion and accurate information about evidence and risks, particularly when discussing procedures that are not yet fully validated.

Thank you

Oxygen-Ozone Therapy in Regenerative Medicine

THANK YOU

Dr. med. Krassimir Shelev

Educational overview | Discuss individual care with your clinical team

DOCTOR'S EXPLANATION

Thank you for exploring this presentation. The slides and accompanying explanations provide general educational information, not individualized medical advice. The clinical uses of ozone vary in evidence and risk, and promising laboratory mechanisms do not establish patient benefit. Decisions about diagnosis and treatment should be made with appropriately qualified professionals who can assess the medical situation and relevant standards of care.

References and publication notes

Background literature supporting the clinical and safety qualifications

[1] Cacciatore S, Abbatecola G, Calvani R, Veronese N. Effectiveness and Safety of Ozone Therapy in Humans: An Umbrella Review of Systematic Reviews with Meta-Analyses of Randomized Clinical Trials. Med Sci. 2026;14(2):289. DOI: 10.3390/medsci14020289

[2] Clinical use of ozone therapy: a critical appraisal of evidence, safety, and methodological quality. 2026. PubMed PMID: 42755540.

[3] CAM Cancer Collaboration. Ozone therapy. Evidence and safety review. Published November 24, 2025.

[4] Chang MC et al. Effectiveness of intradiscal ozone injections for treating pain following herniated lumbar disc: systematic review and meta-analysis. 2024. DOI: 10.3233/BMR-240024.

[5] US FDA. 21 CFR 801.415 - Maximum acceptable level of ozone; labeling requirements.

[6] NCCIH. Cancer and Complementary Health Approaches: What You Need To Know.

[7] Neural therapy: outcomes and methodology vary by condition; not a validated universal autonomic reset. Clinical claims in the original deck should be independently assessed.

[8] Patient confidentiality and image publication: informed authorization should be confirmed for any recognizable clinical photograph.