



UNDERSTANDING & TREATING SPIKE PROTEIN-INDUCED DISEASES

October 14-16, 2022 • Orlando, Florida

Integrative Medical Approach to All Things COVID

5 Integrative Modalities

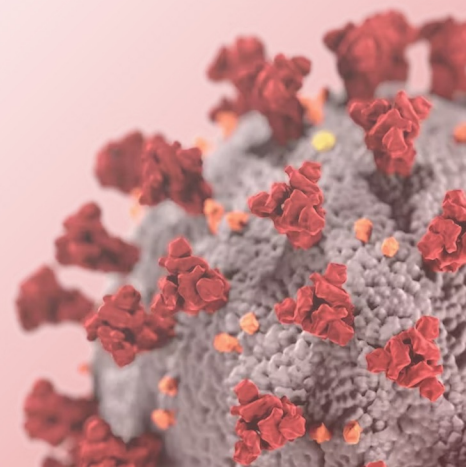
Presented By:



AMA

**Regenerative Medicine
& Skincare**

Asher Milgrom, PhD Chief Science Officer
Alice Pien, MD Medical Director



Alice Pien, MD Medical Director



We all went to medical school
in a free democracy
but now practice medicine
(or try)
in a strange new world.

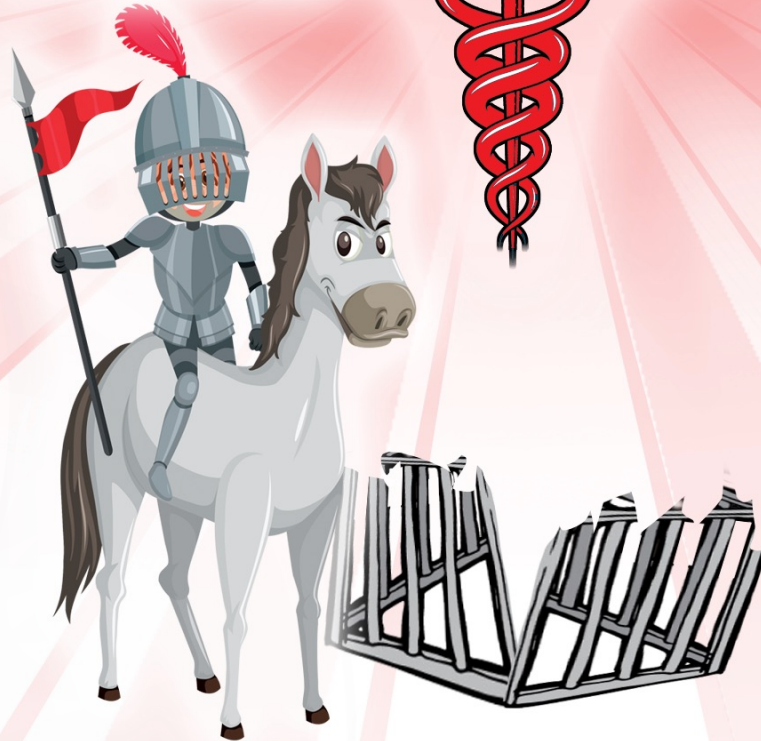
The doctor and patient aren't even included in the conversation.



Dr. Pierre Kory



Dr. Paul Marik



Dr. Vladimir Zelenko

May his memory be a blessing



FLCCC
ALLIANCE
EDUCATIONAL
CONFERENCE
2022

Dr. Pierre Kory



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Good medicine is an art. It requires the freedom to practice and develop the most clinically effective protocols, customized for each patient, under the exclusive control of doctors. The relationship between doctor and patient is sacred...
It must be protected from the interference of the gorillas.

Our Experience with COVID

Our first patient was me in December 2019.

By the end of Delta and the emergence of Omicron **we had treated approx 1700 patients. 100% success.**

The vast majority of these patients **recovered at home** using the FLCCC Early Treatment Protocol.

Those who were already beyond the second week of their illness and experiencing more serious symptoms were treated in our clinic with the **5 Integrative Modalities** that are the focus of this lecture.

We lost only 2 patients who had already been swallowed up by the machine and admitted for ICU care before their families notified us of their condition. They both died... alone in isolation... while on ventilators.

The credit for this extraordinary success in the early months of the pandemic belongs to **Dr. Zelenko** (may his memory be a blessing), and thereafter to **the FLCCC** who became our major source of ongoing guidance.

And of course to God.



5 Effective Integrative Modalities

1. Ozone

- a. Single Dose
- b. High Dose Multi-pass

2. EBOO/F (extracorporeal blood oxygenation, ozonation & filtration)

3. IV Therapies

- a. Redox Reactions - Sodium Ascorbate (NOT Ascorbate Acid)
- b. Redox Reactions - Photodynamic Therapy with Methylene Blue
- c. NAD

4. Hyperbaric Oxygen Therapy (presented by different speaker)

5. Stem Cells (presented by different speaker)

- a. Autologous
- b. Allogeneic Mesenchymal Stem Cells (umbilical cord)
- c. Autologous VSEL Embryonic Stem Cells

Ozone - Single Dose



Ozone - High Dose (Multi-Pass)



EBOO/F



IV Therapies - Sodium Ascorbate



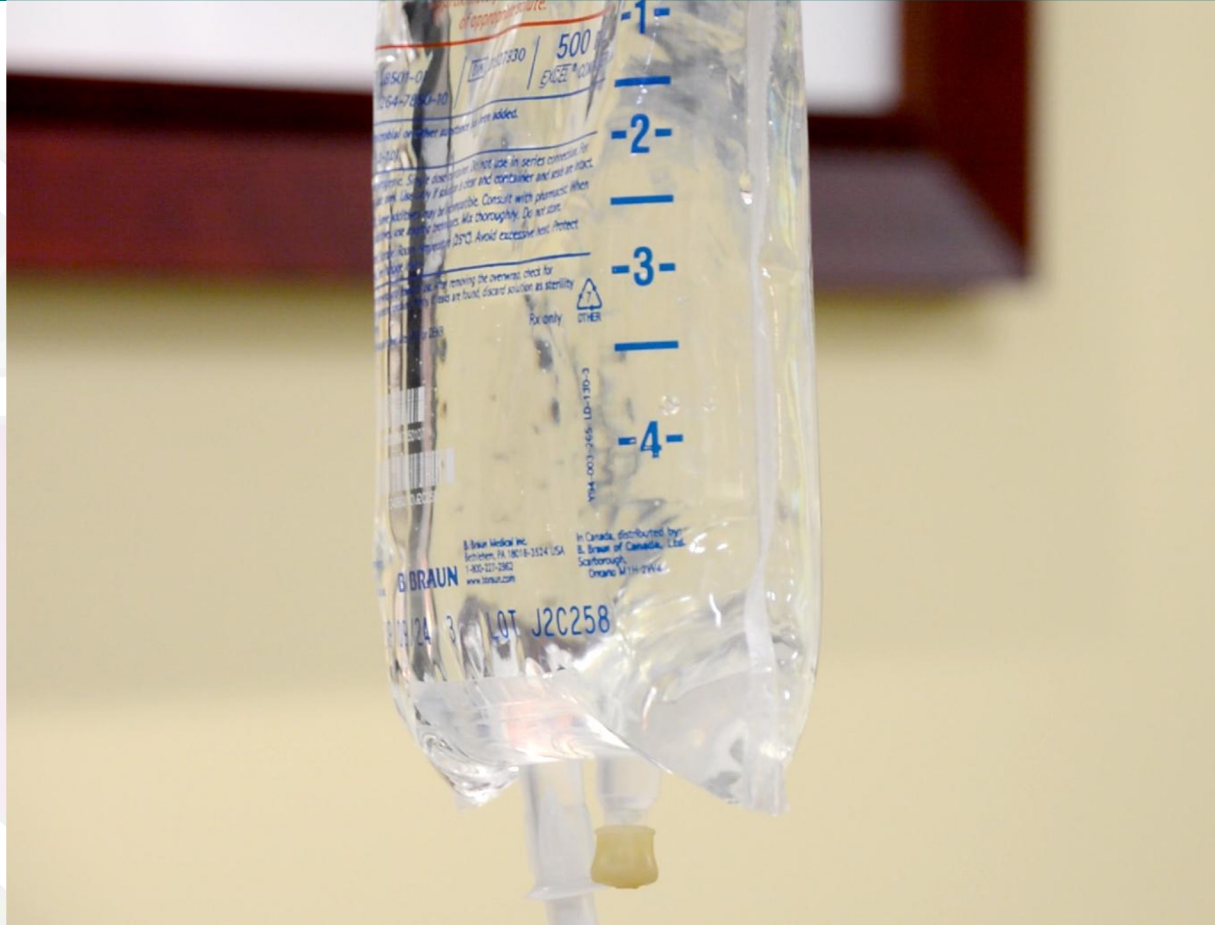
IV Therapies - PDT Methylene Blue



IV Therapies - PDT Methylene Blue



IV Therapies - NAD



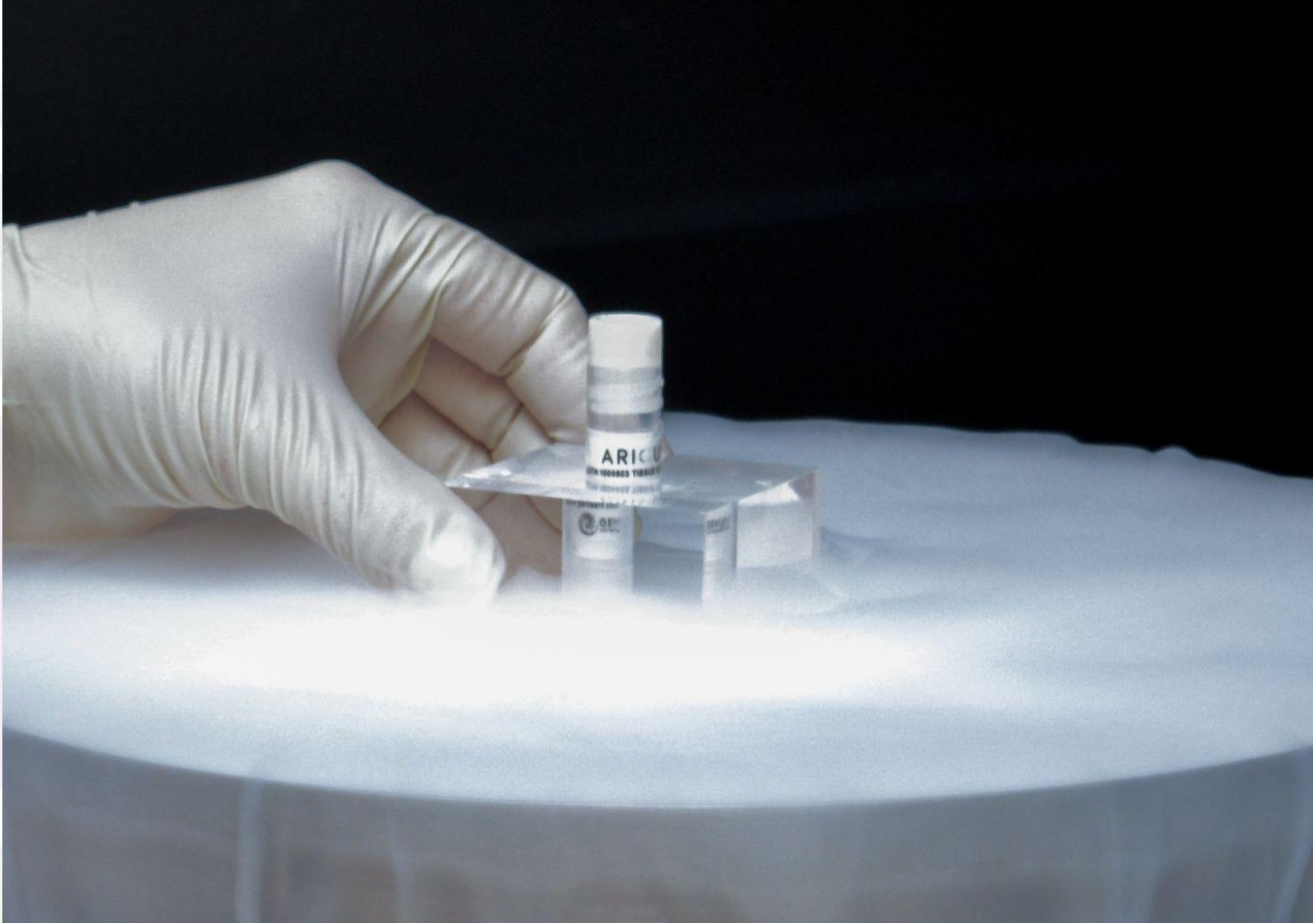
Hyperbaric Oxygen Therapy



Hyperbaric Oxygen Therapy



Stem Cells



Stem Cells



Stem Cells



Stem Cells



Stem Cells



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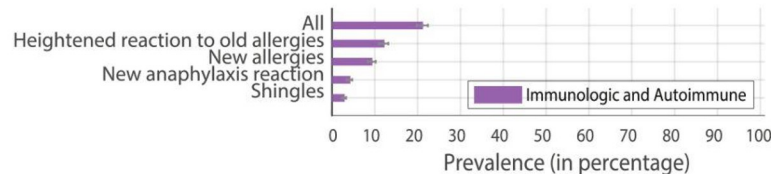
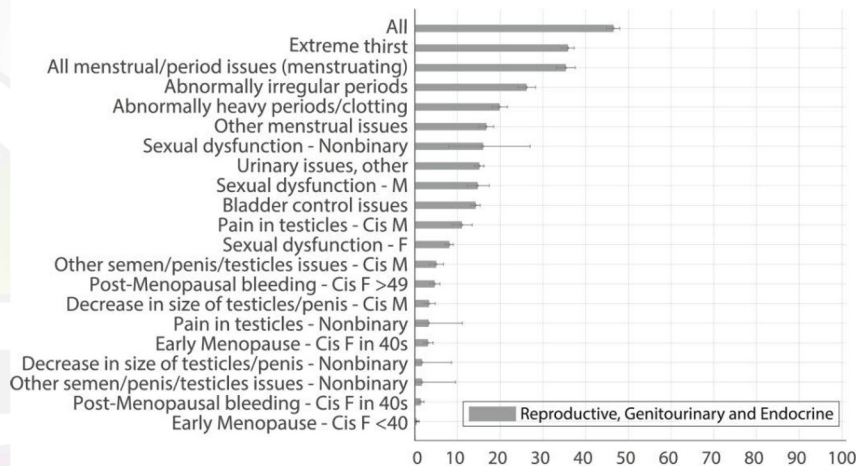
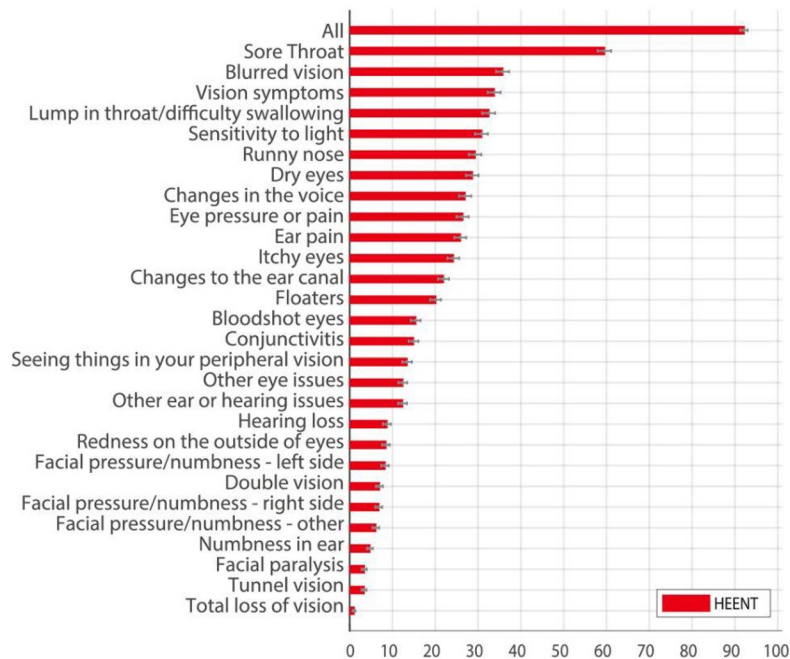
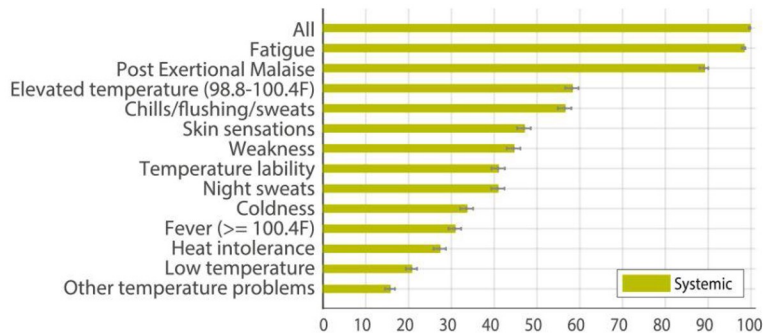
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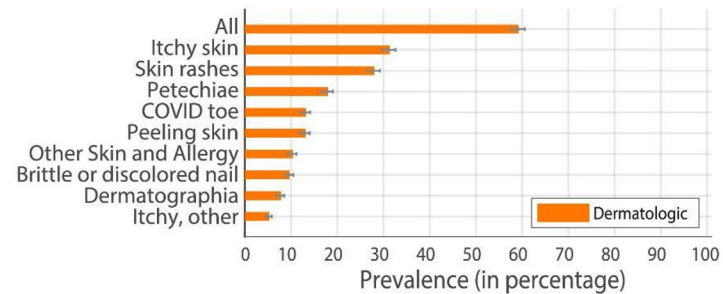
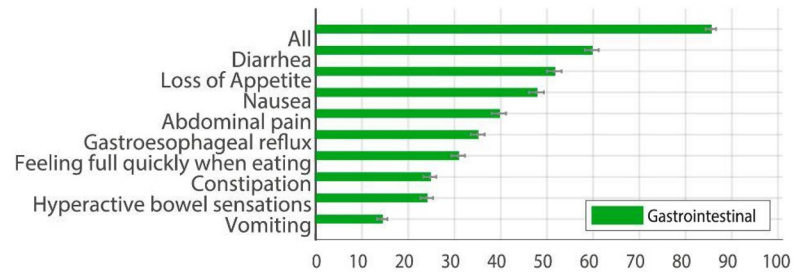
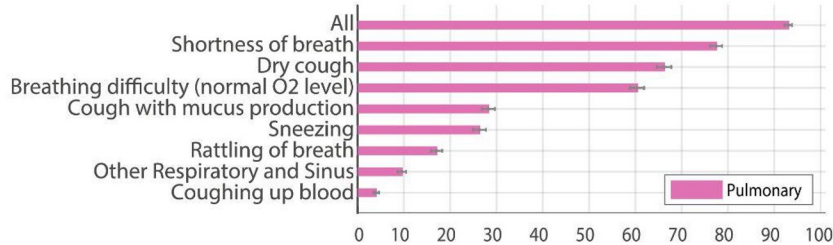
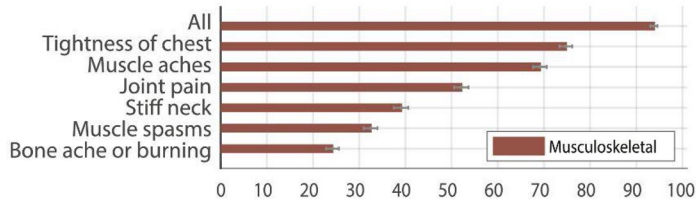
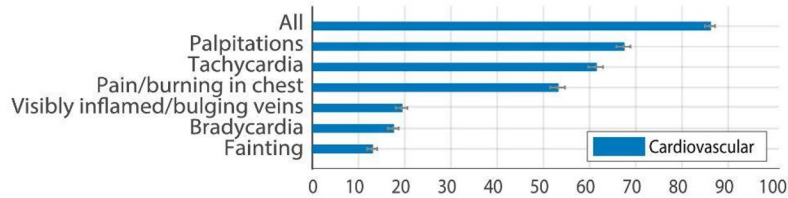
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200+ Documented Symptoms of COVID



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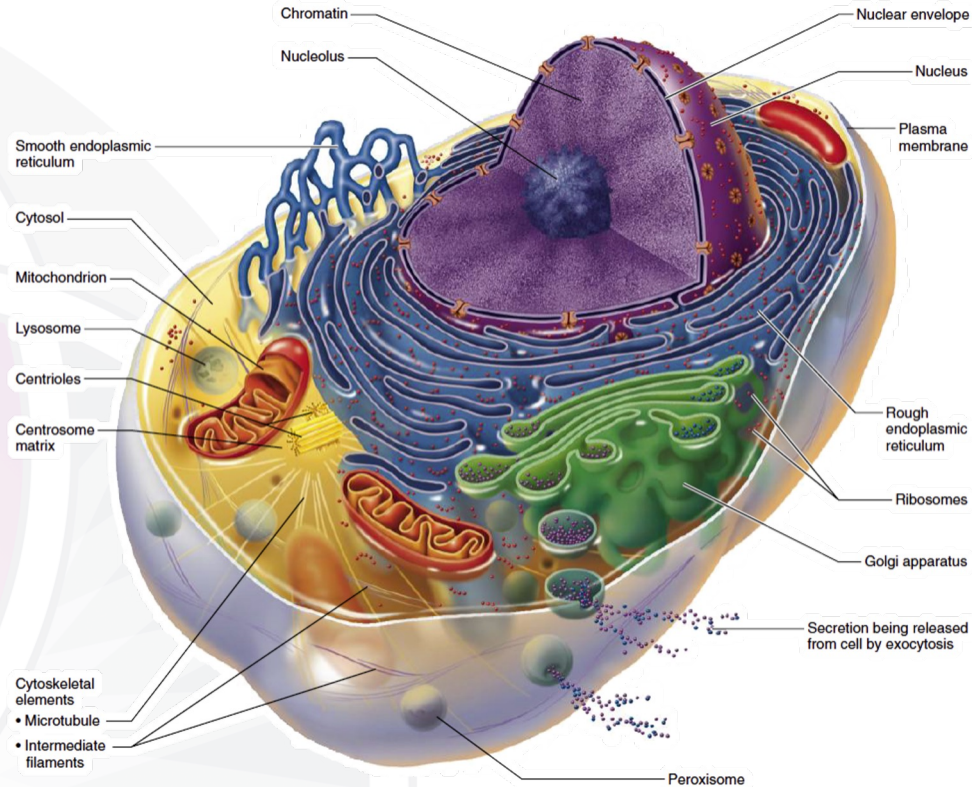


A major cause of all the symptoms we see in COVID patients stem from **dysfunctional mitochondria** and systemic inflammation caused by the spike proteins.

Therefore the target of all five modalities is...

Mitochondria & Systemic Inflammation

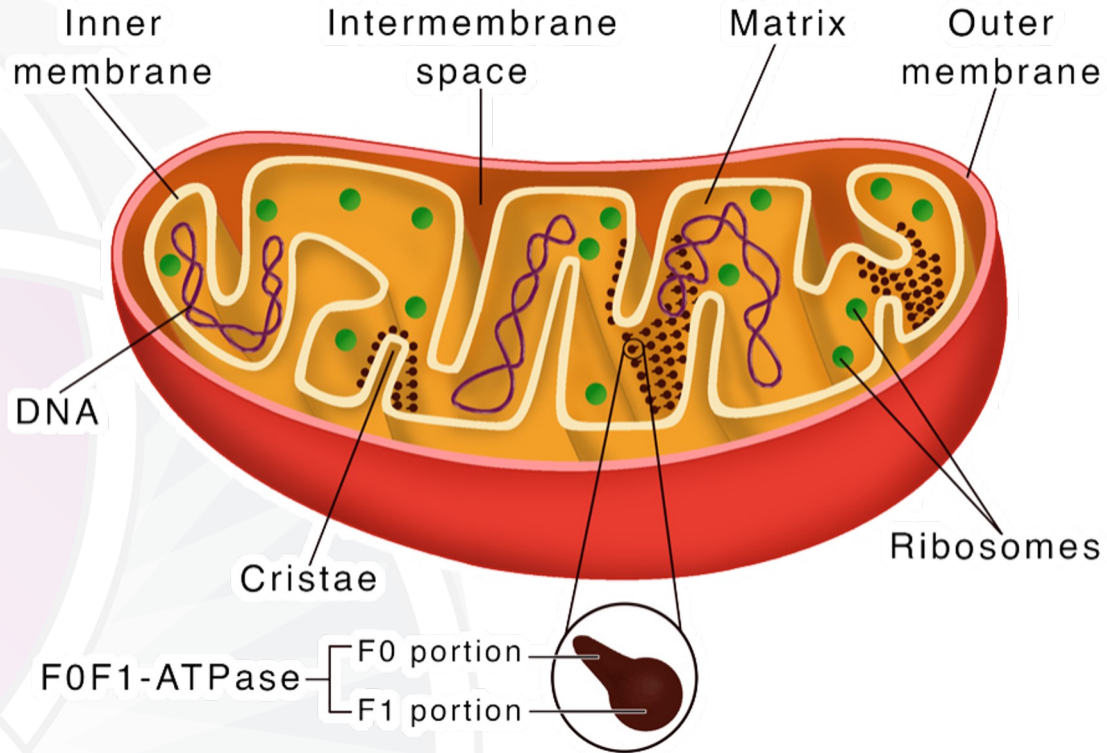
Human Cell



To arrive at this conclusion and the rationale of focusing on treating mitochondria we have to go back to the beginning and for many - including me - back to the beginning means back to school.

**AND RELEARN FROM THE BEGINNING
THE MYSTERY AND THE MIRACLE
OF MITOCHONDRIA AND
THE ELECTRON TRANSPORT CHAIN.**

Mitochondria



All we have time for today is the 5 mile view of:

1. COVID and how the pathology progresses due to mitochondrial dysfunction.
2. How the spike protein causes systemic inflammation and can cause dysfunction in any organ system.
3. Why these 5 Integrative Modalities work. Any one of these Integrative Modalities is worthy of a week-long conference.

Today is not the day for a “deep dive” into the science

In addition to not having the time for a deep dive into the science, I have a slightly different approach to presenting, in simple terms, sophisticated scientific concepts that can be digested and understood by our patients.

Even as valuable as this education is for US attending this conference, and for FLCCC doctors all around the world who are tuning in... **the value of sharing this educational experience with our COVID patients and our staff is equally as important.**

As Einstein said... “If you can’t explain it simply, you don’t really know it”.

The magic of healing sick patients starts at the very beginning with their learning about their condition during the initial consultation and **informed consent.**

Patient Consultations and Informed Consent

We believe and have experienced that successful clinical outcomes start long before treatments begin by **establishing in the patient “an alignment of mind and heart”**.

Until **the mind and heart are in alignment** and the patient can give a genuine and authentic informed consent to involve his / her body in collaborating with the proposed protocols, the body is likely to resist participation. At the very least undermining the success that in contrast we see with patients whose mind, heart and body are all “on board” and fully engaged with the protocol.

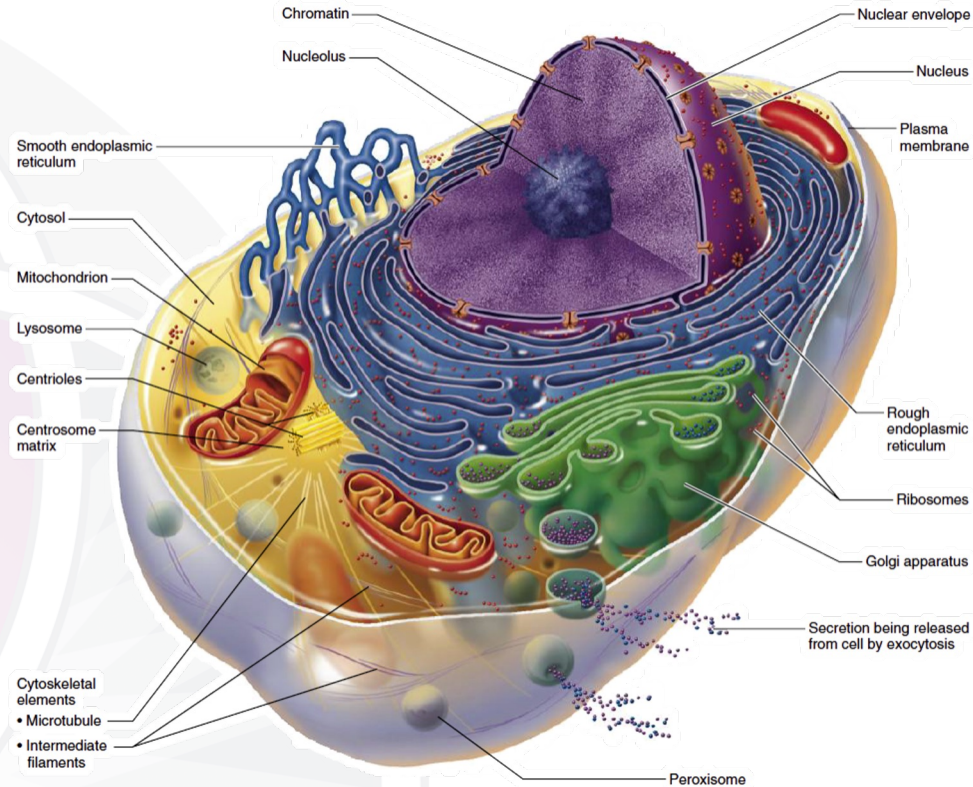
Therefore, this presentation is deliberately composed at a level that is designed in layman's terms to resonate with the mindset of patients as well as our staff. The purpose of this is to provide for all concerned parties the same platform of understanding and communication that will elevate and focus everyone's intentionality to fully participate in achieving a successful clinical outcome.

We believe that the extraordinary intelligence of human physiology, **designed by God**, becomes engaged in achieving optimal results the instant this resonance between mind, heart and body is established.

Therefore, please feel free to use this material in working with your patients as you wish.

Back to School

Human Cell



Back to School

Human body is comprised of around 50 trillion cells.

Every cell is a biochemical factory with an immense capacity to successfully generate biochemical reactions.

How many biochemical reactions?

Back to School

20,000 per second!

In perfect synergy, synchrony, sequence and in harmony
with the other 50 trillion cells that are
performing their 20,000 biochemical reactions every second.

In trying to fathom this kind of exquisite design, consider that in order for you to take your next breath 1,000,000,000,000,000,000 different activities must work together in perfect harmony in every single second! **What is the probability that you could exist for even one second**, without an underlying purpose that animates, coordinates, synergizes and synchronizes all this activity?

Back to School

Our patients may walk into our clinic deathly ill and feeling that their body and the divine intelligence that created it, is failing them.

Our goal of their consultation and even before receiving any treatments...

To engage our patients in the mystery and encourage them in recognizing the miracle and unfathomable intelligence that created them, whether they stay or seek treatments elsewhere.

Back to School

Mitochondria

The purpose of mitochondria is to supply all the needed energy required to execute 20,000 biochemical reactions per second.

Virtually every biochemical reaction requires the input of energy in the form of ATP.

NOTE: Our cells have no capacity to store ATP.

Without ATP all it takes is six seconds for the cell to start deteriorating.

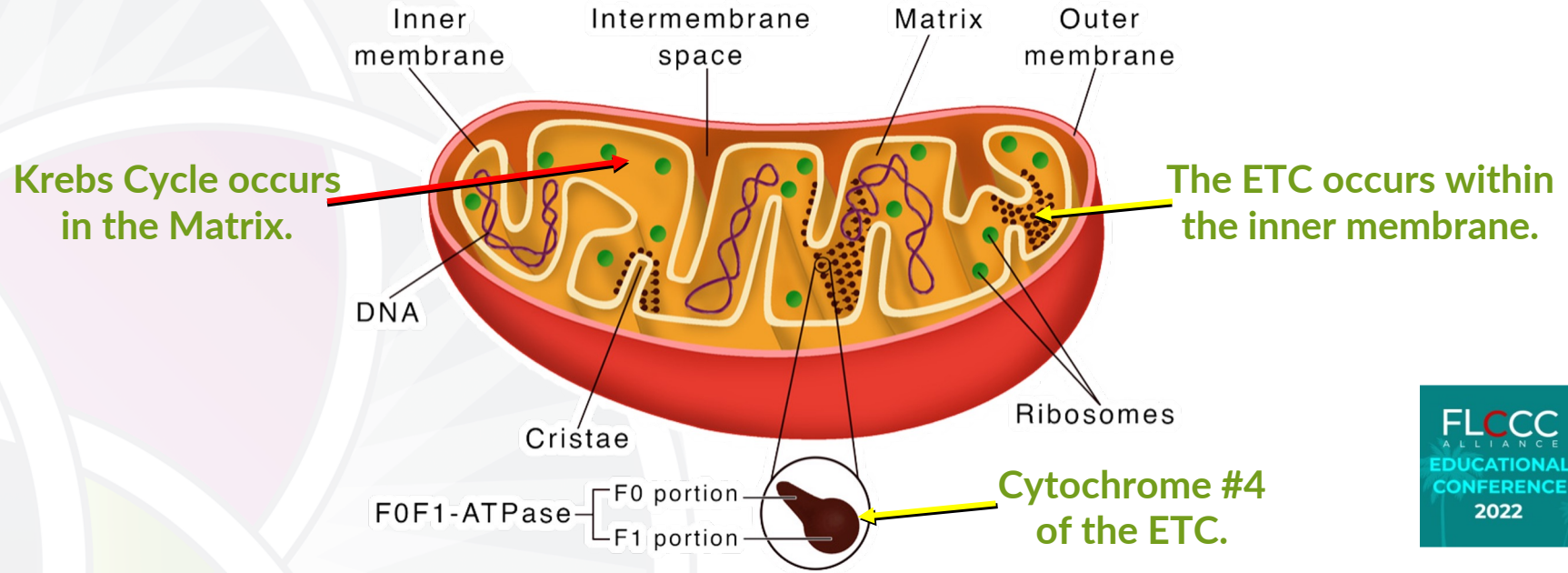
The first thing that deteriorates in the cell without ATP is the mitochondria itself.

How is the ATP generated?

Back to School

Mitochondria

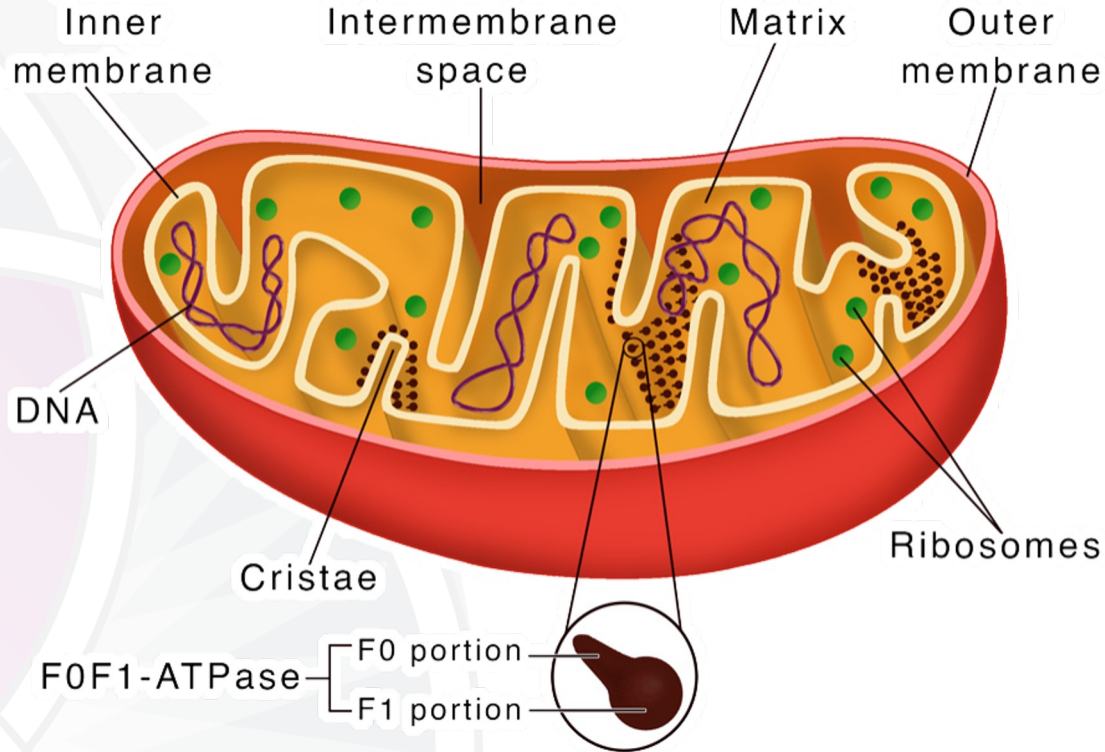
Every ounce of energy generated in your body comes from the Krebs Cycle and the Electron Transport Chain both found in the mitochondria.



Back to School

?

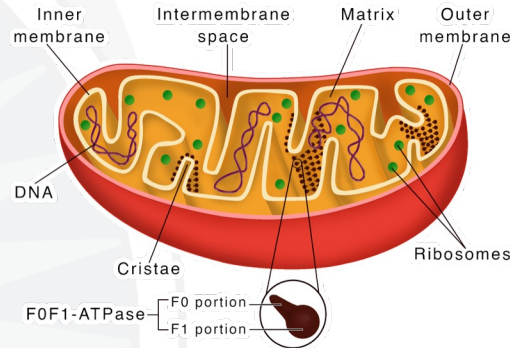
Mitochondria



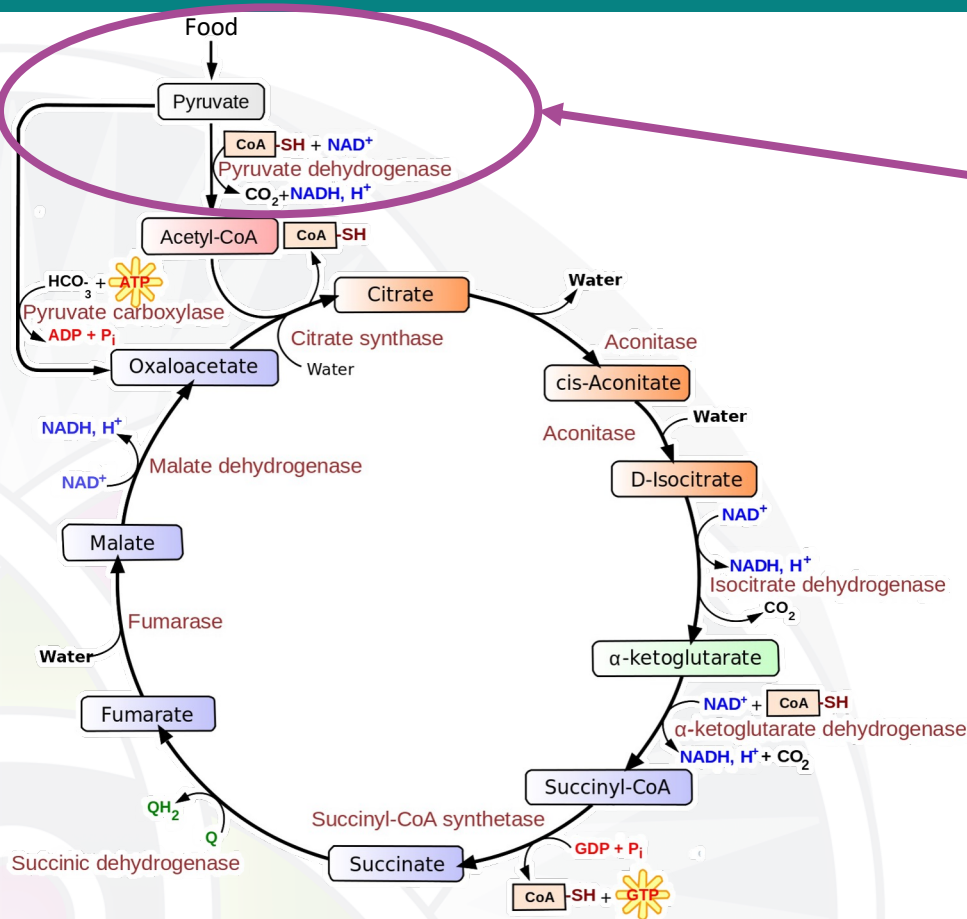
Back to School - Energy Generation

Energy generation is essentially divided into two separate biochemical machines.

1. **Krebs Cycle** which is located in the Matrix of the mitochondria, the space surrounded by the inner membrane. The Krebs Cycle generates protons H^+ and singlet electrons which will end up separated on either side of the inner membrane causing a significant electrical gradient across the membrane.
2. The **Electron Transport Chain** which is composed of a set of cytochrome protein complexes that are located and embedded within the inner membrane. These cytochrome complexes extract energy from the singlet electrons in precise, small and manageable packets of energy that are used to pump the protons to one side of the membrane and who's energy will eventually be used to create ATP.

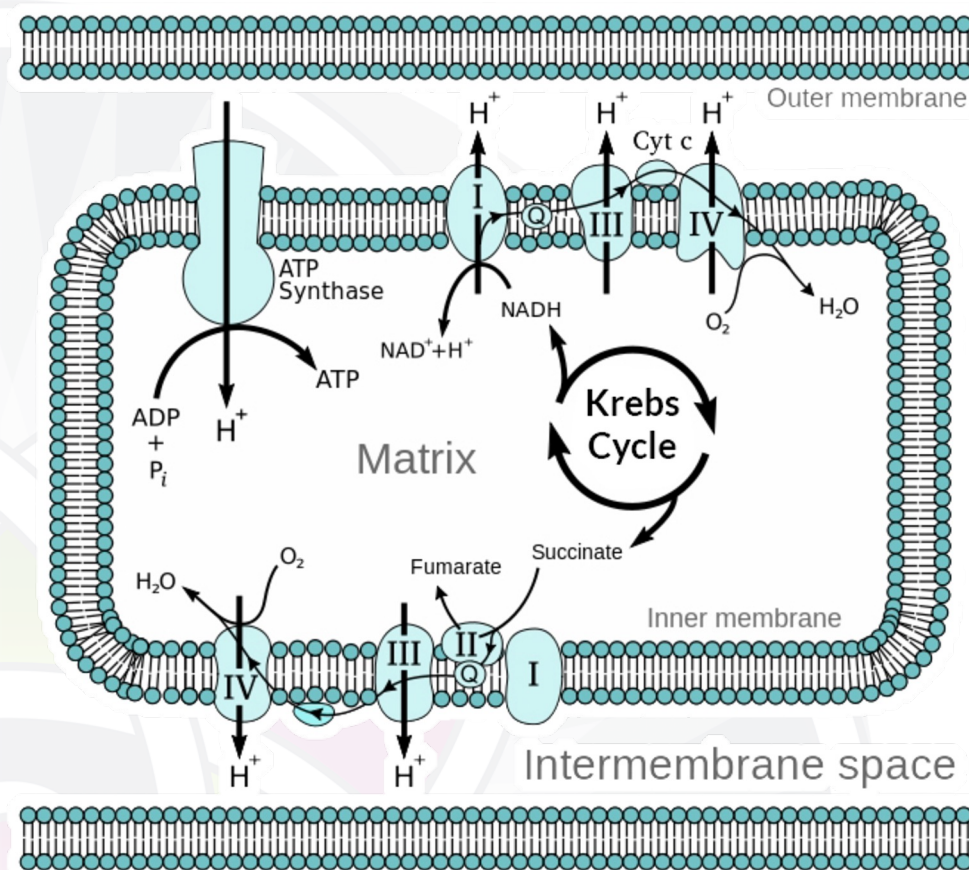


Back to School - Krebs Cycle



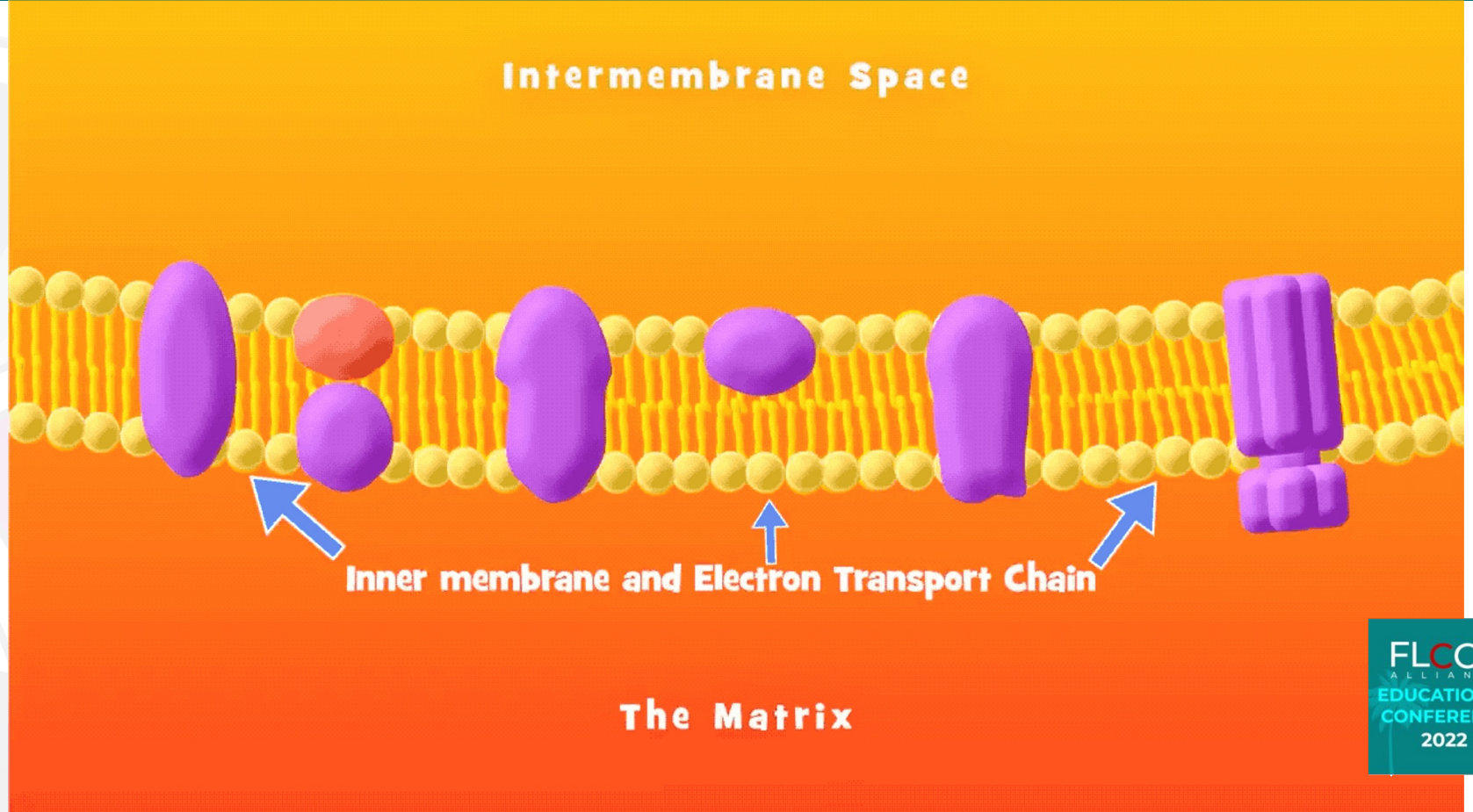
1. Our food (glucose and fatty acids) is converted into pyruvate. Occurs in cell cytosol. Not in mitochondria.
2. Pyruvate enters into the mitochondria where it engages the Krebs Cycle in the matrix.
3. Electrons are extracted from the constituents of the Krebs Cycle as they go around and are transformed from one compound to another.
4. Electrons that are shed/extracted by these biochemical transformations are carried by **NADH** and **FADH** and inserted into the Electron Transport Chain.
5. See the Electron Transport Chain next slide.

Back to School - Electron Transport Chain



6. Cytochrome complexes of the ETC use the energy of the electrons contributed by NADH and FADH to pump protons (H^+) out of the matrix and are concentrated in the intermembrane space.
7. This creates a significant electron gradient across the inner membrane.
8. Protons energized by the gradient re-enter the matrix through ATP synthase complex which uses the energy to convert ADP into ATP.

Back to School



Beyond Unfathomable Complexity

To give your patients an idea of the scale involved...

The average cell in the human body has between 1000-2000 mitochondria depending on the metabolic energy it needs to:

1. Maintain its own health.
2. Provide for the rest of the body what it was designed to provide.

In contrast, neurological cells are by far the most metabolically active cells in human physiology and contain on average between **2 - 3 million mitochondria** in order to:

1. Maintain their own health.
2. Provide for the body a functioning neural network.

Given that severe brain fog, migraines, and declining cognitive ability is a hallmark of COVID; and given that a fully functional Krebs Cycle is the source of the electrons that are carried primarily by NADH and that feed the Electron Transport Chain, it is now easy to see why **NAD is so essential to maintain a fully functional brain and neural network.**

Therefore, it's no wonder that NAD Therapy is so effective on neurodegenerative diseases, PTSD, TBI, addiction, mental health, and specifically COVID brain fog (modality #3).

So...

Why is all this information about mitochondria important to a COVID patient?

Because it is the COVID **Spike Protein** that:

1. Attacks and disables the patient's mitochondria causing the COVID-19 disease.
2. Causes the systemic vasculature inflammation that results in organ tissue damage.

It's easy for your patients to now understand given the vital importance of mitochondria as the generator of all of your biochemical energy, that without healthy mitochondria your damaged organs - #2 - cannot be repaired.

Spike Protein

The COVID spike protein has 4 primary pathogenic mechanisms (discovery is ongoing), regardless if it originated from a natural COVID infection or was generated by a vaccine.

1. It binds to healthy cells and opens up the pathway for the COVID virion to enter into the healthy cell. It is extremely efficient at doing this causing an unusually rapid replication and increased viral load. It also sheds its remaining spike proteins creating systemic inflammation throughout the patient's body.
2. It is in and of itself highly inflammatory, especially systemic inflammation of vascular endothelium. This is further aggravated by immune monocyte cells that ingest the spike proteins and carry them throughout the patient's body (see Dr. Bruce Patterson's pioneering research in this area).

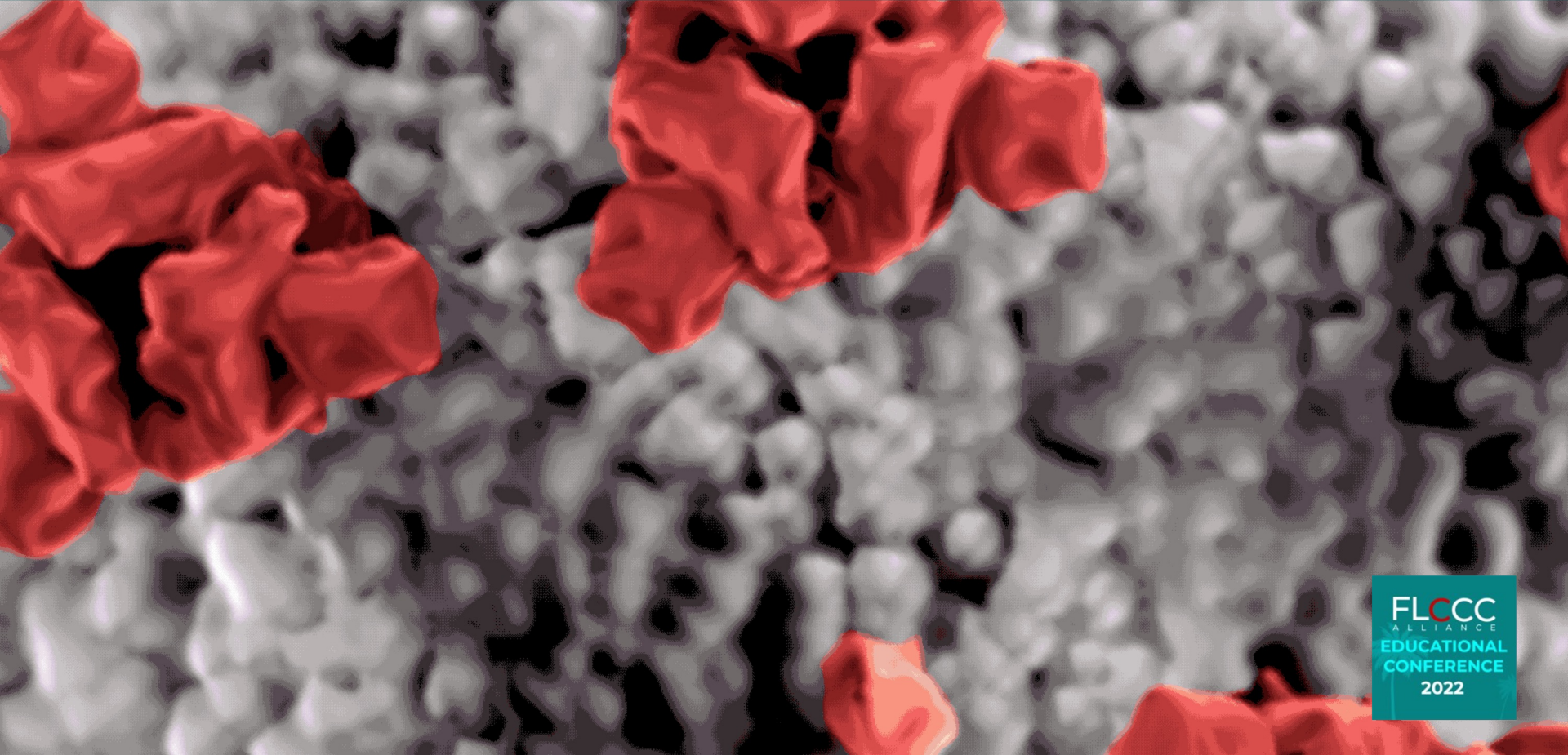
As you will see, this inflammation often causes ischemic damage to organs resulting in the symptoms of COVID.

3. The spike protein is also a prion disrupting heme complexes such as hemoglobin in RBCs and cytochrome complexes in mitochondria.
4. Spike protein binds to blood coagulation factor fibrinogen and induces structurally abnormal blood clots with heightened pro-inflammatory activity disrupting blood flow and perfusion to organs throughout the patient's body (see dialyzer lab analysis wherein clots are identified but spike proteins can not be individually identified).

Remember:

COVID is documented to produce as many as 200 symptoms caused by mitochondrial dysfunction and by systemic vascular inflammation and abnormal blood clotting that can induce ischemic damage to virtually every organ system in our bodies.

Spike Protein Attaching to ACE Receptor



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Spike Protein – Systemic Inflammation



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Spike Protein - Prion Characteristics

Large protein complexes derive their functionality from their 3D shape that, like a puzzle piece, fit exactly into a specific space engineered for it in the overall puzzle. If you change it's shape it no longer fits, loses its ability to bind and has become dysfunctional.

In the case of the spike protein, it disrupts the shape of heme complexes such as hemoglobin and disrupts hemoglobin's ability to carry iron and subsequently oxygen. This can be detected by laboratory blood analysis of COVID patients.

The cytochrome complexes of the Electron Transport Chain are also heme proteins to which the spike protein can bind and disrupt the mitochondria's ability to generate ATP.

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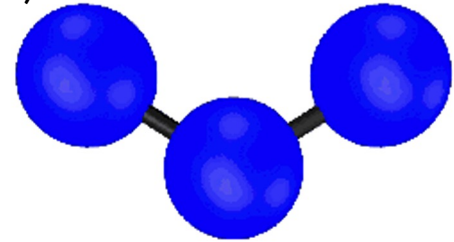
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Treating COVID

Therapeutic Modality #1 **Ozone**

Ozone

1. Chemistry of ozone.
2. Where does ozone occur in nature.
3. Where is ozone used in human industry (over 100 industries).
 - a. Water purification
 - b. Food production
 - c. Sanitation
 - d. Pharmaceutical production
 - e. Blood banking
4. A few things ozone does in human physiology.
5. Methods of administration.
6. Clinical outcomes for COVID patients.
7. Presence in medicine.



1. Chemistry of Ozone

Oxygen as a single atom is missing one electron to fill and complete the outermost electron orbital which is driven to have pairs of electrons. With only a single electron in the outer orbital the oxygen atom is very unstable.

By combining a single oxygen atom with a second oxygen atom they share their outermost single electrons to create a stable double bond between the atoms comprised of 2 electrons that are now paired. The O₂ molecule that we breathe is so stable that contrary to popular belief O₂ is not flammable. It does however provide the necessary oxidative energy for the burning of materials that are flammable.

To create ozone a third oxygen atom is added to an O₂ molecule. The extra oxygen atom brings with it a spare unpaired electron causing the O₃ ozone molecule to be unstable. This instability is the source of ozone's power. In simple terms, the ozone molecule with its spare electron has too much energy to be a stable and happy trio and is eager to abandon the extra oxygen atom and find a different receptive place to contribute the singlet electron with all its extra energy.

In human physiology it is the mitochondria and its ATP generating machinery that is the happy recipient of this extra energy derived from the third oxygen atom and its unpaired singlet electron. Our mitochondria use this energy to dramatically increase its ATP production. This energy is also used in the biogenesis of new mitochondria.

> [Transl Med Commun.](#) 2022;7(1):17. doi: 10.1186/s41231-022-00123-7. Epub 2022 Jul 21.

Ozone high dose therapy (OHT) improves mitochondrial bioenergetics in peripheral blood mononuclear cells

Brigitte König ¹, Johann Lahodny ²

Affiliations + expand

PMID: 35880042 PMCID: [PMC9301618](#) DOI: [10.1186/s41231-022-00123-7](#)

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Abstract

Background: The worldwide increasing number of people with chronic diseases is pushing conventional therapy to its limits. The so-called Major AutoHaemo Therapy (MAH) has been used in many practices for years. Despite suspicions, especially the 10-passes ozone-high-dosis Therapy (OHT) has shown substantial benefits in chronic ailments. However, knowledge of scientifically based effects of high ozone concentrations are still rare. The present investigation focussed on verifying whether OHT may be linked to a beneficial effect on mitochondrial bioenergetics which can be expressed as a bioenergetic health index (BHI).

2. Where Does Ozone Occur in Nature

1. In nature ozone is the most powerful source of oxidation.
2. Ozone is found in the Earth's atmosphere protecting our planet from solar UV radiation.
3. Ozone is created by the interaction of O₂ in electrical storms and lightning.
4. Ozone is also generated in the ocean.
5. Ozone is also a minor component of automobile smog, and even though its concentration in smog is so low as to be non toxic to human beings, its presence in smog has created much confusion in the minds of the public. Ozone as a byproduct of industrial smog and medical grade ozone used by caring and knowledgeable physicians have **NOTHING** in common.

Statistically speaking, ozone as utilized in medical treatments is the single safest therapy in the history of medicine.

3. Where is Ozone Used in Human Industry

Over 100 industries actively use ozone in thousands of applications.

1. Water treatment

- a. Aquaculture
- b. Aquariums
- c. Waterparks
- d. Zoos and aquariums

2. Manufacturing for a range of products

- a. Deodorant
- b. Dental equipment
- c. Pools, spas and hot tubs

3. Disinfection agent

- a. Sporicidal
- b. Algaecide
- c. viricide

4. Clinical

- a. Medical and aesthetic treatments
- b. Disinfecting and sterilizing

5. Domestic

- a. Treating drinking water
- b. Washing fruits and vegetables
- c. Purifying the air

6. Pharmaceutical

- a. Disinfection of air in GMP workshops:
- b. Disinfection and sterilization of space
- c. Disinfection of dressing rooms and work clothes
- d. Sterilization and purification of production water

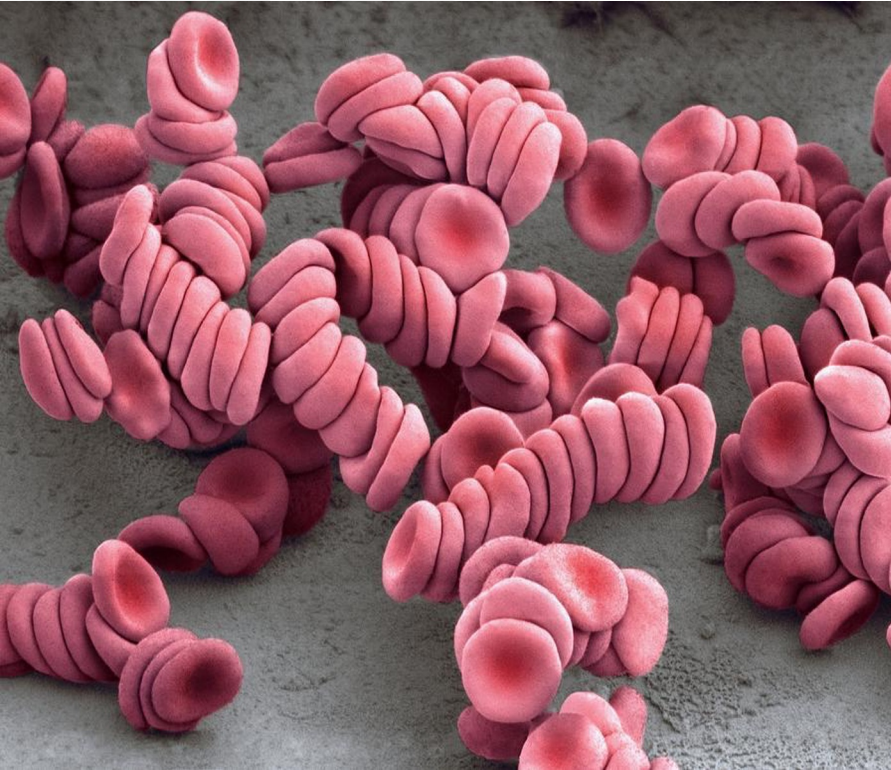
4. A Few Things Ozone Does in Human Physiology

1. Increases RBCs oxygen carrying capacity by increasing glycolysis rate.
2. Increases RBCs delivery of oxygen to your tissues (increased 2,3,DPG).
3. Increases production of the vasodilator prostacyclin and increases perfusion, blood flow (rheology).
4. Increases RBCs flexibility and pliability – especially important in flowing / squeezing through tiny arterials of organs.

The spike protein penetrates RBCs and causes the damage to all 4 above. This leads to lowering oxygen carry capacity, lowering delivery of oxygen to tissues, reduced blood flow and perfusion, reduced flexibility and pliability. RBCs become deflated, flat, rigid and stick to one another creating rouleaux formations that further degrade their ability to deliver oxygen to inflamed tissues. **Ozone reverses the rouleaux formations and immediately improves RBC functions.**

4. A Few Things Ozone Does in Human Physiology

Rouleaux Formation



After Ozone



4. A Few Things Ozone Does in Human Physiology

5. Increases production of interferon, tumor necrosis factor and interleukin 2.
6. Stimulates the immune system.
7. Reduces musculoskeletal pain.
8. Decreases inflammation and oxidative stress by decreasing free radicals, activating superoxide dismutase, etc.
9. Instantly interacts with tissues, especially lipids in the blood, to form peroxides, which oxidate and destroy viral capsids and bacterial phospholipid membranes.
 - a. Peroxides kill pathogenic bacteria, fungi and viruses.
 - b. Peroxides penetrate and break-up biofilm.
10. Ozone oxidizes the mitochondrial environment to ensure a healthy and vital ratio of NAD^+/NADH (700/1) thereby stimulating the Krebs Cycle and supplying needed electrons to the Electron Transport Chain increasing ATP production.
10. Under temporary stressful situations, ozone increases nitric-oxide production supporting healthy circulation and increased perfusion.

4. A Few Things Ozone Does in Human Physiology

12. Stimulates detoxification of metabolic waste as well as heavy metals.
13. Modulates the immune system and is an effective treatment of autoimmune diseases such as:
 - a. Multiple Sclerosis
 - b. Lupus
 - c. Rheumatoid Arthritis
 - d. Scleroderma
14. Effectively treats bladder problems and infections (via bladder insufflation).
15. Is very effective treating prostatitis and prostate cancer (injections).
16. Effectively treats difficult, slow healing, dermatological lesions (limb bagging).
17. Effective in treating ulcerative colitis and Crohn's disease (oral).
18. And many, many more.

5. Methods of Ozone Administration

1. Intravenous

- a. Single dose – extracorporeal blood
- b. High dose multi-pass – extracorporeal blood
- c. Ozonated saline – especially important for poor venous access with small needles

2. Injection

- a. Soft tissue - bruises, muscles, tendons, trigger points
- b. Intra-articular - injury, functional degeneration
- c. Glandular - prostate, parotid

3. Insufflation

- a. Sinus
- b. Ear
- c. Vaginal
- d. Rectal
- e. Bladder
- f. Inhalation - only under very controlled and specific protocols

4. Limb Bagging

- a. Decubitus ulcers
- b. Non-healing wounds
- c. Resistant infections

Intravenous Administration



Injection



Insufflation



Limb Bagging



6. Clinical Outcomes of Ozone for COVID Patients

1. IV administration or insufflation.
2. 100% positive clinical outcomes.
3. Depending on severity, 1 - 3 treatments per week, typically no more than 10 sessions are sufficient.
4. Depending on ease of venous access, single versus multi-pass or ozonated saline IV treatments.
5. Deficiency of G6PD enzyme is the only contraindication.
RBCs have no mitochondria, therefore the oxidative energy of ozone has no place to be utilized within RBC metabolism and can cause hemolysis.
6. Testing for G6PD accomplished in office by urinalysis for hemolysis after single dose at low gamma.
6. If hemolysis is present, more accurate lab analysis is required before further treatment.
6. Typically, patients experience notable relief from brain fog during first treatment.
6. Typically, patients experience notable relief from musculoskeletal pain during first treatment.

7. Presence of Ozone in Medicine

1. Over **6300 peer reviewed published studies in the NCBI Library** regarding aging, mitochondrial function and ozone therapy.
2. Over **16,000 citations** regarding diseases due to mitochondrial dysfunction that are treated with ozone therapy.
3. And of course we know that **ozone increases mitochondrial production of ATP and the biogenesis of new mitochondria** which would then reverse the pathogenic consequences of mitochondrial dysfunction mentioned above.
4. Ozone was prevalently used in USA medicine until the 1950s when the FDA turned against it.

7. Presence of Ozone in Medicine

Even Tesla used it to make Ozonated Olive Oil in 1904



Why is Ozone Important for a COVID Patient?

1. **Ozone strongly stimulates the many cells of a healthy human immune system and is thus protective against any and all viruses.**
2. Systemic inflammation of vasculature means that any organ system can be targeted by circulating spike proteins and the abnormal clotting they create. That is why so many symptoms associated with different organ systems can be created by COVID. Tissue of an organ whose vasculature is inflamed will suffer from poor blood perfusion and subsequent ischemia. **Ozone has been proven to reduce inflammation wherever it occurs. Ozone stimulates free radical scavengers such as glutathione, peroxidase, catalase, superoxide dismutase, etc.**
3. The spike protein is also a prion and disrupts the functionality of heme proteins and complexes. Thus, it not only reduces RBC oxygen carrying capacity, it also disrupts the cytochrome complexes of the Electron Transport Chain severely reducing ATP production... which is the cause of the extreme chronic fatigue so often seen in COVID patients.

Ozone is a highly effective electron donor proven to increase mitochondrial production of ATP, effectively bypassing damaged portions of the ETC and delivering the needed electrons to ATP synthase. Though the mechanism is unknown, ozone increases biogenesis of new mitochondria.

Why is Ozone Important for a COVID Patient?

Systemic Inflammation of Vasculature

Systemic inflammation due to the spike protein and its abnormal blood clotting causes subsequent organ inflammation and poor perfusion. That is exactly why we use **Hyperbaric Oxygen Therapy** in all our COVID patients.



Simply put, the only way to deliver oxygen to tissues who can not get oxygen through the normal mechanisms of blood flow is by **Hyperbaric Oxygen Therapy** that saturates all bodily fluids with oxygen independent of blood flow.

Why is Ozone Important for a COVID Patient?

1. Ozone strongly stimulates the many cells of a healthy human immune system and is thus protective against any and all viruses.
2. Systemic inflammation of vasculature means that any organ system can be targeted by circulating spike proteins and the abnormal clotting they create. That is why so many symptoms associated with different organ systems can be created by COVID. Tissue of an organ whose vasculature is inflamed will suffer from poor blood perfusion and subsequent ischemia. **Ozone has been proven to reduce inflammation wherever it occurs. Ozone stimulates free radical scavengers such as glutathione, peroxidase, catalase, superoxide dismutase, etc.**
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Single Dose Ozone Therapy



Single Dose Ozone Therapy



Single Dose Ozone Therapy



Single Dose Ozone Therapy



Single Dose Ozone Therapy



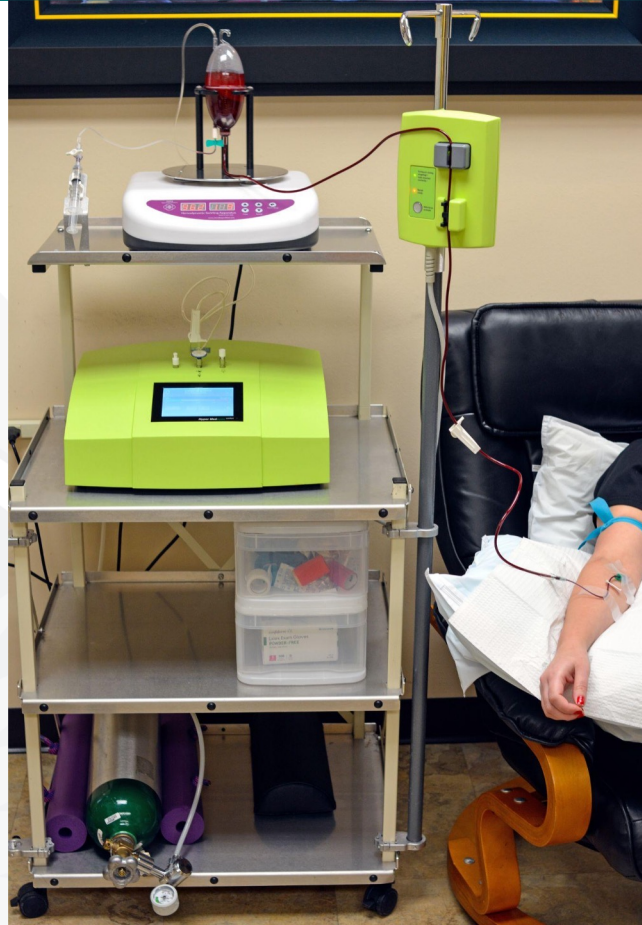
Single Dose Ozone Therapy



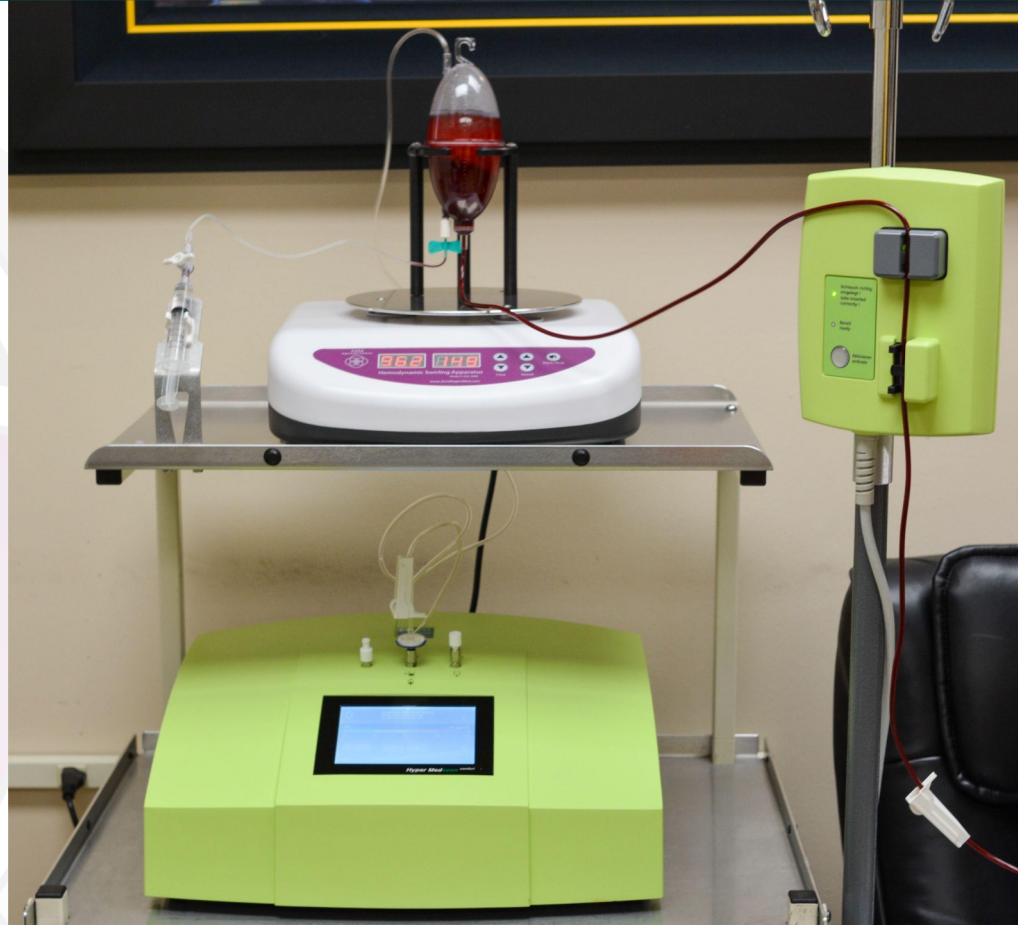
Single Dose Ozone Therapy



High Dose Ozone Therapy



High Dose Ozone Therapy



High Dose Ozone Therapy



Therapeutic Modality #2

EBOO/F

Extracorporeal Blood Oxygenation, Ozonation & Filtration
(Apheresis)

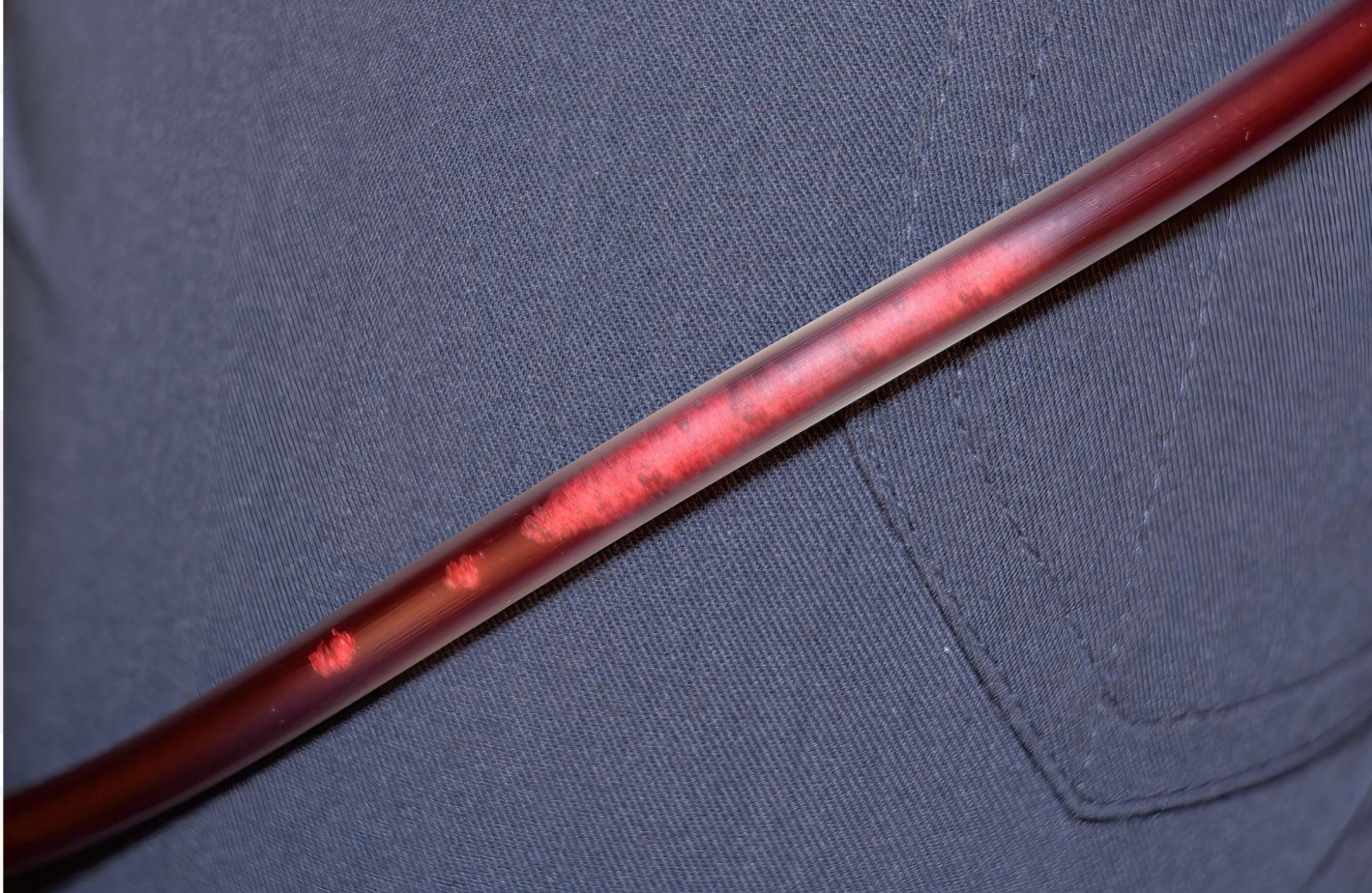
EBOO/F Overview

1. Invented in the USA in the 1980s.
2. Process in which different constituents of the blood can be separated from one another and treated individually.
 - a. Red blood cell
 - b. White blood cells
 - c. Plasma
 - d. Platelets/Stem Cells
3. Various apheresis filters called dialyzers are engineered differently and from different materials in order to filter out specifically targeted elements.
4. Historically dialyzers were designed as a last resort to capture and remove excess lipids from patients at risk for cardiovascular failure, who did not respond to conventional therapy.
5. Technology was further developed in Asia, primarily Japan and Malaysia.

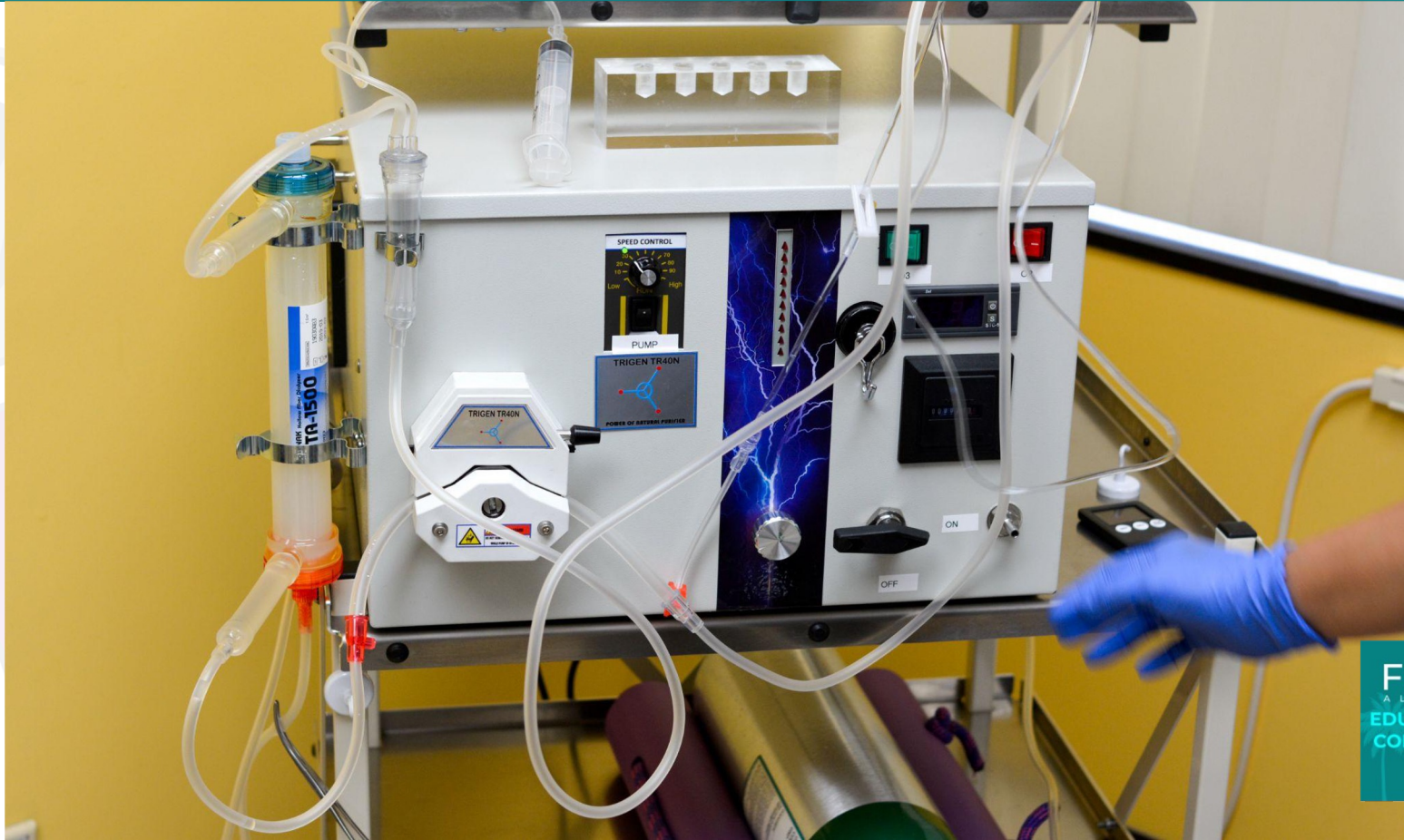
EBOO/F Protocols

1. Depending on the severity of the typical COVID patient's symptoms EBOO/F sessions will range from 1 - 10 treatments.
2. Rarely will we need to go beyond 5 treatments.
3. Often "gunk" will be observed emerging within the flow of venous blood.
4. "Gunk" will typically stop appearing by the third EBOO/F treatment.
5. However, an IV chelation with disodium EDTA 1-2 days prior to the next EBOO/F treatment often releases additional "gunk".

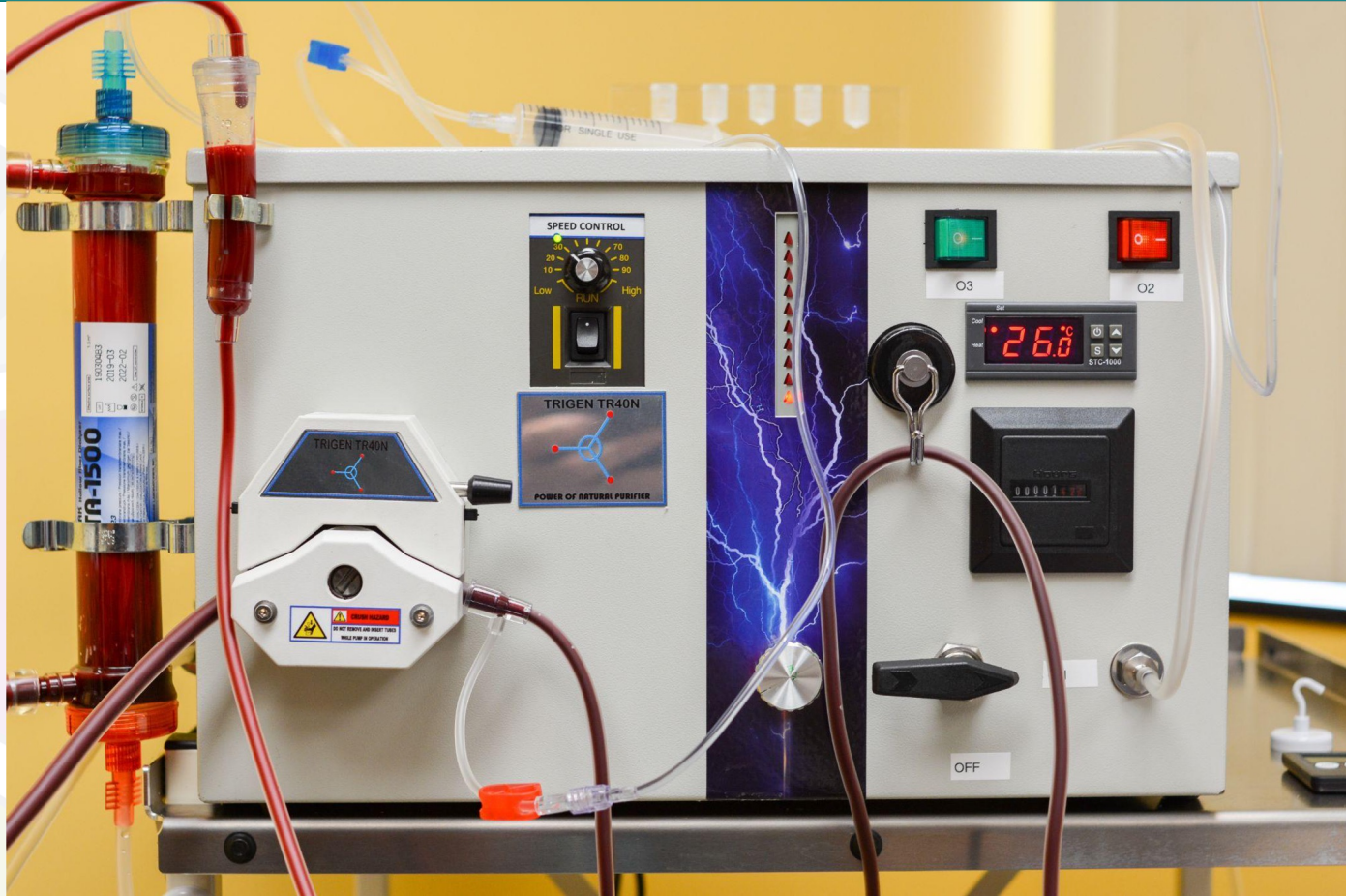
EBOO/F



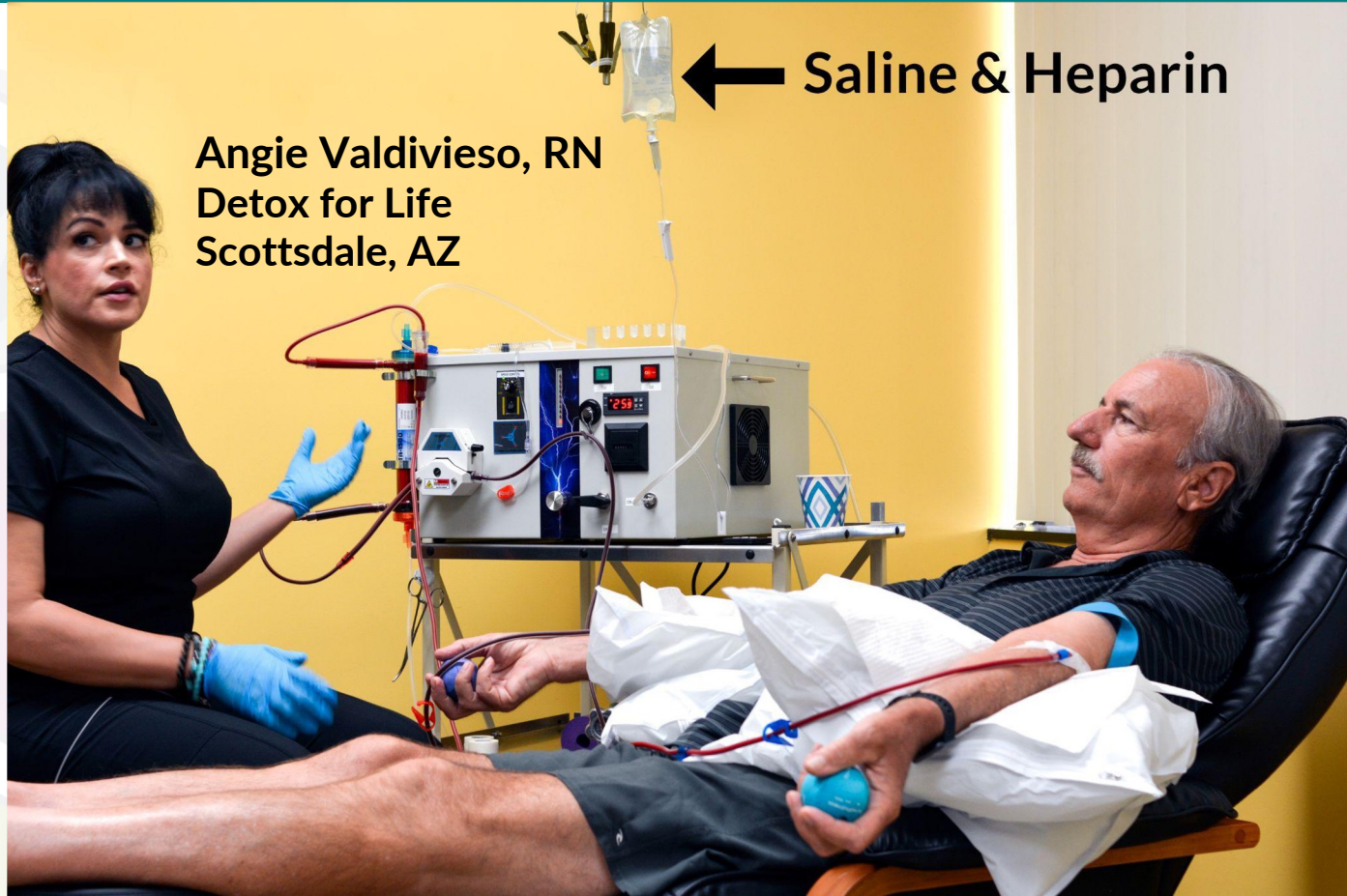
EBOO/F



EBOO/F



EBOO/F



Angie Valdivieso, RN
Detox for Life
Scottsdale, AZ

← **Saline & Heparin**

EBOO/F – Dialyzer & Blood Lab Analysis

Dialyzer and Blood Lab Analysis

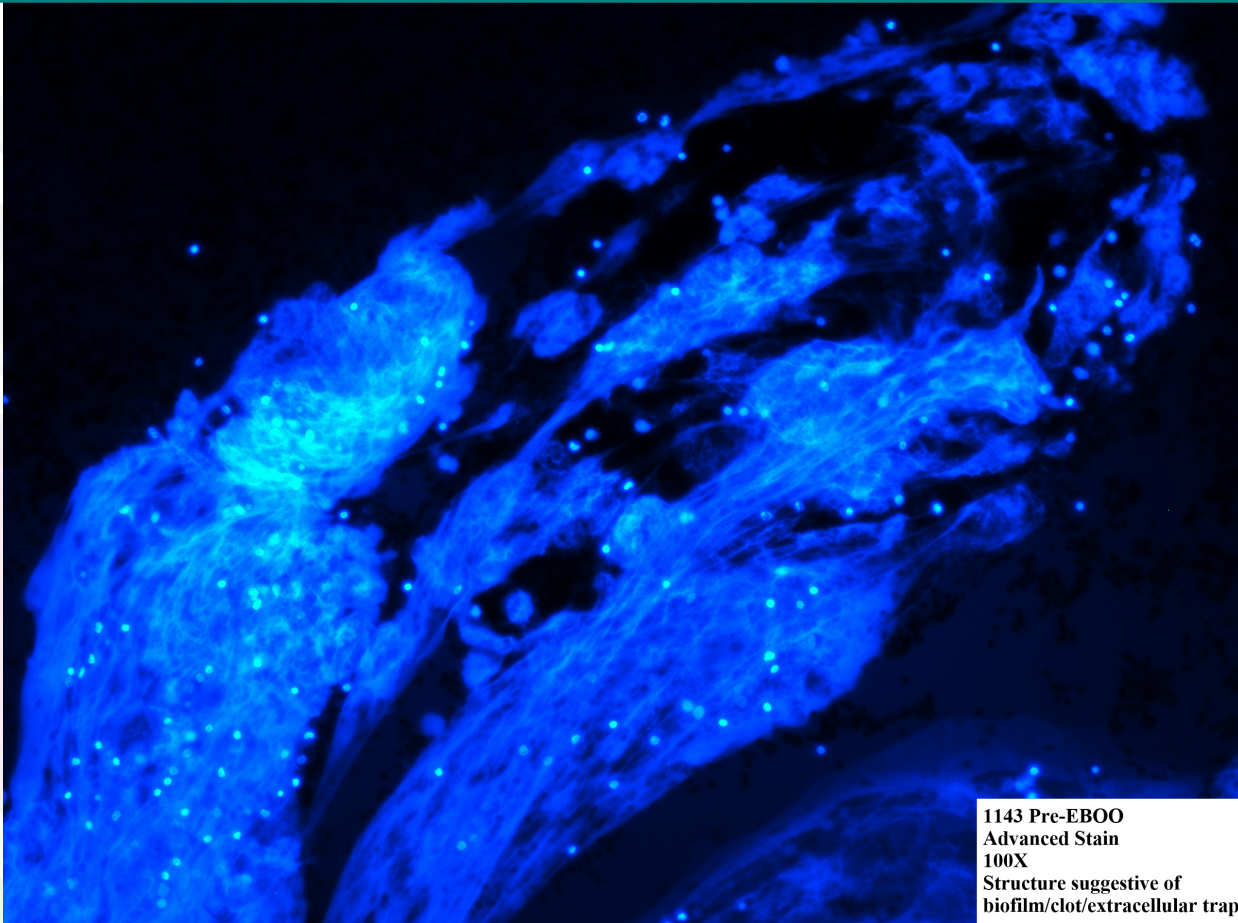
1. Biofilm
2. Microclots
3. Bacteria
4. Extracellular Traps

Separate Tests

1. Microplastics
2. Heavy Metals

EBOO/F – Lab Analysis Patient #1

Biofilm / Clot /
Extracellular traps
observed.



COVID Blood
Pre-EBOO/F

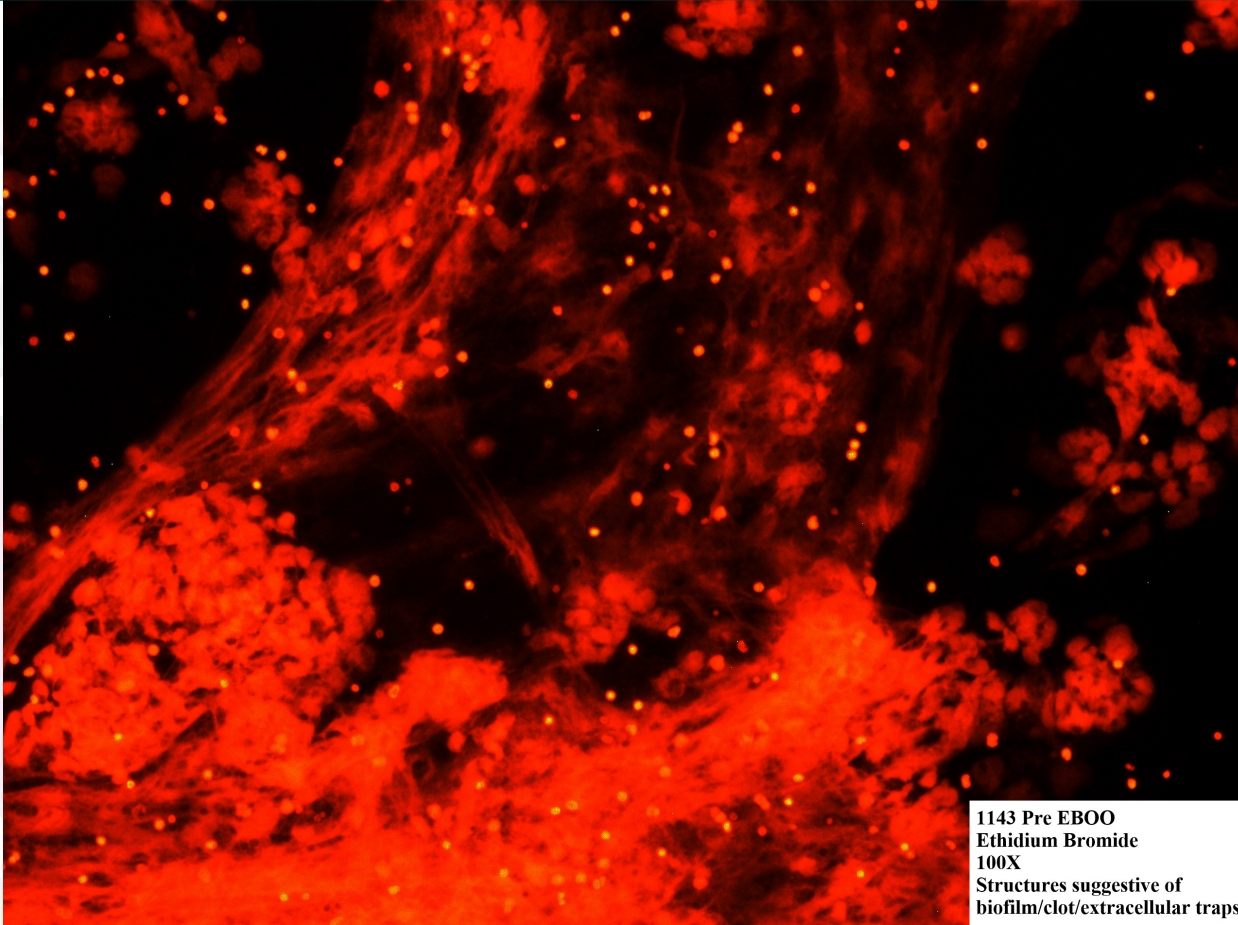


Protein and DNA
sequencing device
was inoperative.

1143 Pre-EBOO
Advanced Stain
100X
Structure suggestive of
biofilm/clot/extracellular trap

EBOO/F – Lab Analysis Patient #1

Biofilm / Clot /
Extracellular traps
observed.



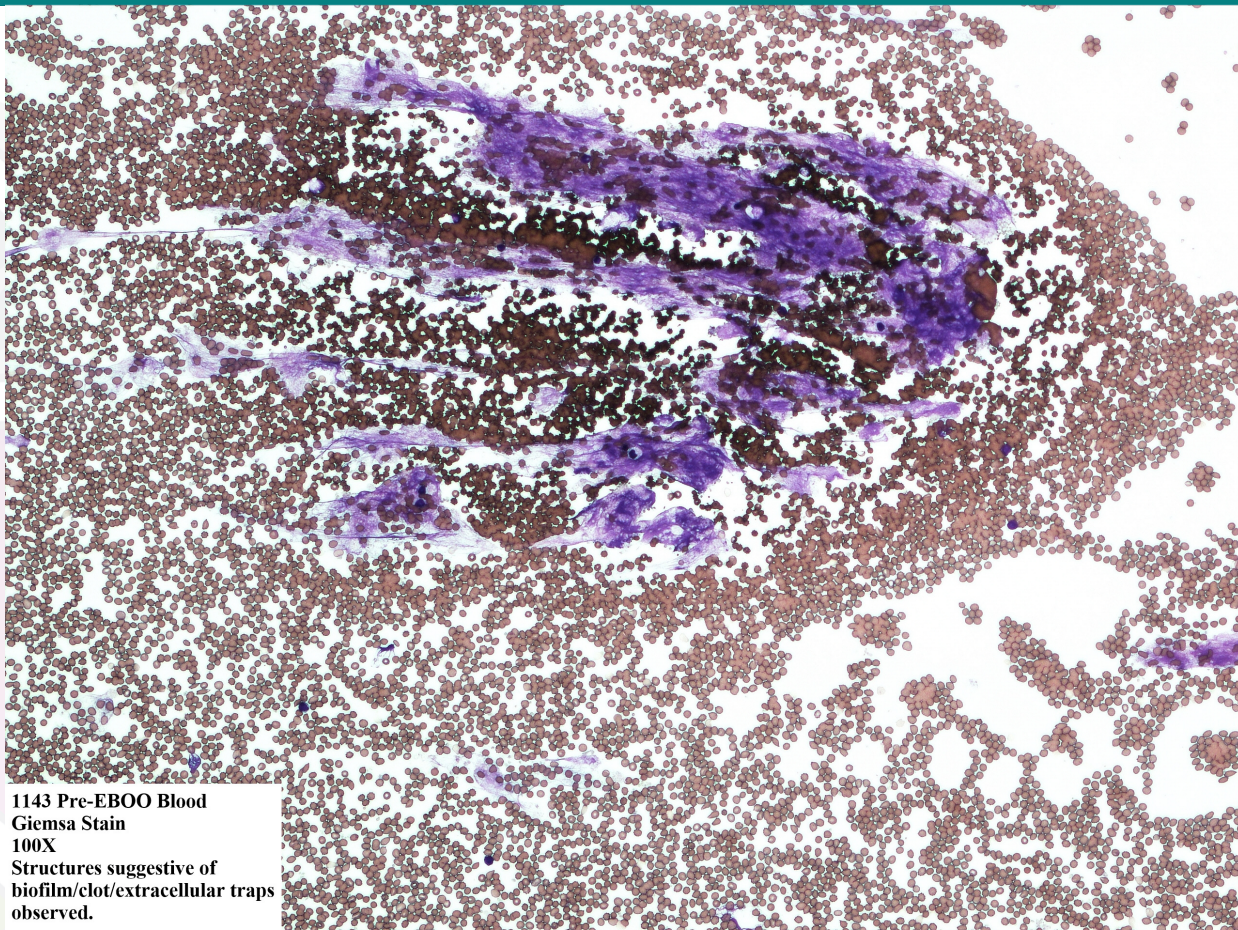
COVID Blood

Pre-EBOO/F

1143 Pre EBOO
Ethidium Bromide
100X
Structures suggestive of
biofilm/clot/extracellular traps

EBOO/F – Lab Analysis Patient #1

Biofilm / Clot /
Extracellular traps
observed.



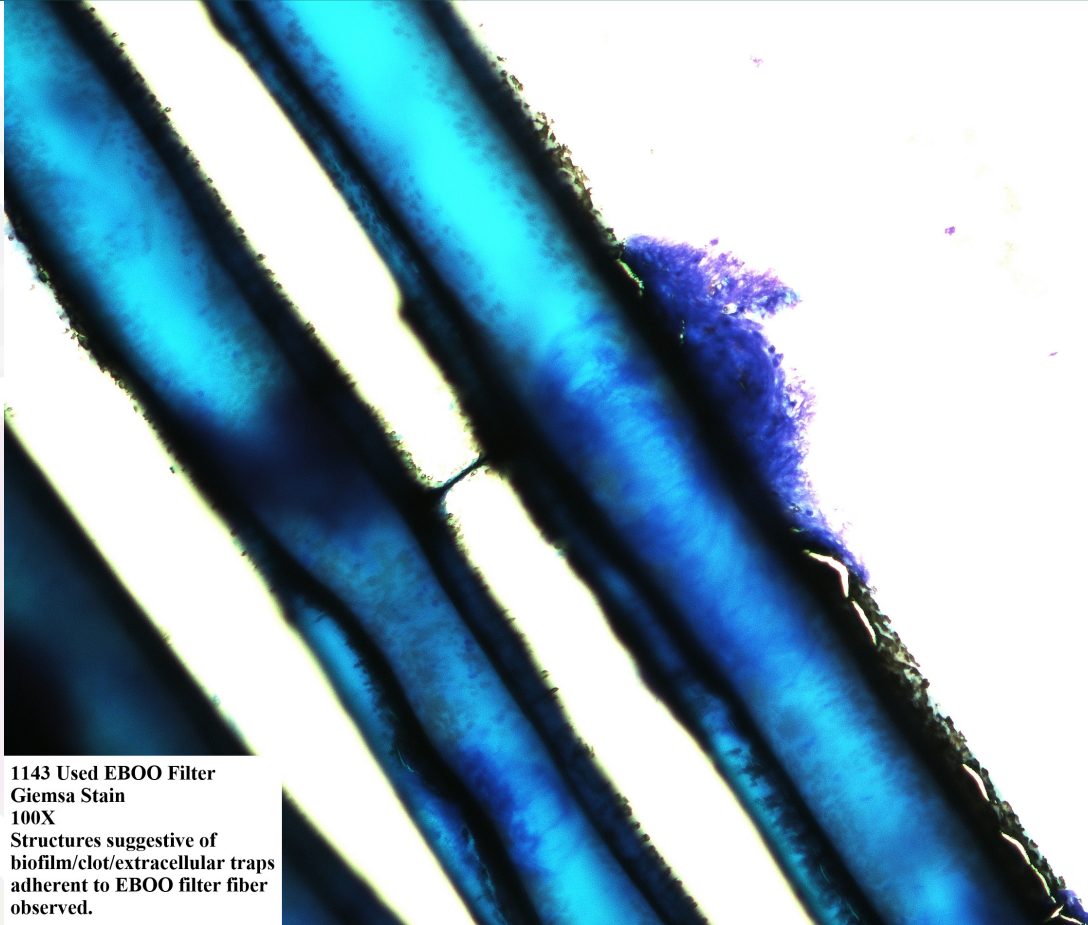
COVID Blood

Pre-EBOO/F

1143 Pre-EBOO Blood
Giemsa Stain
100X
Structures suggestive of
biofilm/clot/extracellular traps
observed.

EBOO/F – Lab Analysis Patient #1

Biofilm / Clot /
Extracellular traps
adherent to EBOO
filter fiber
observed.

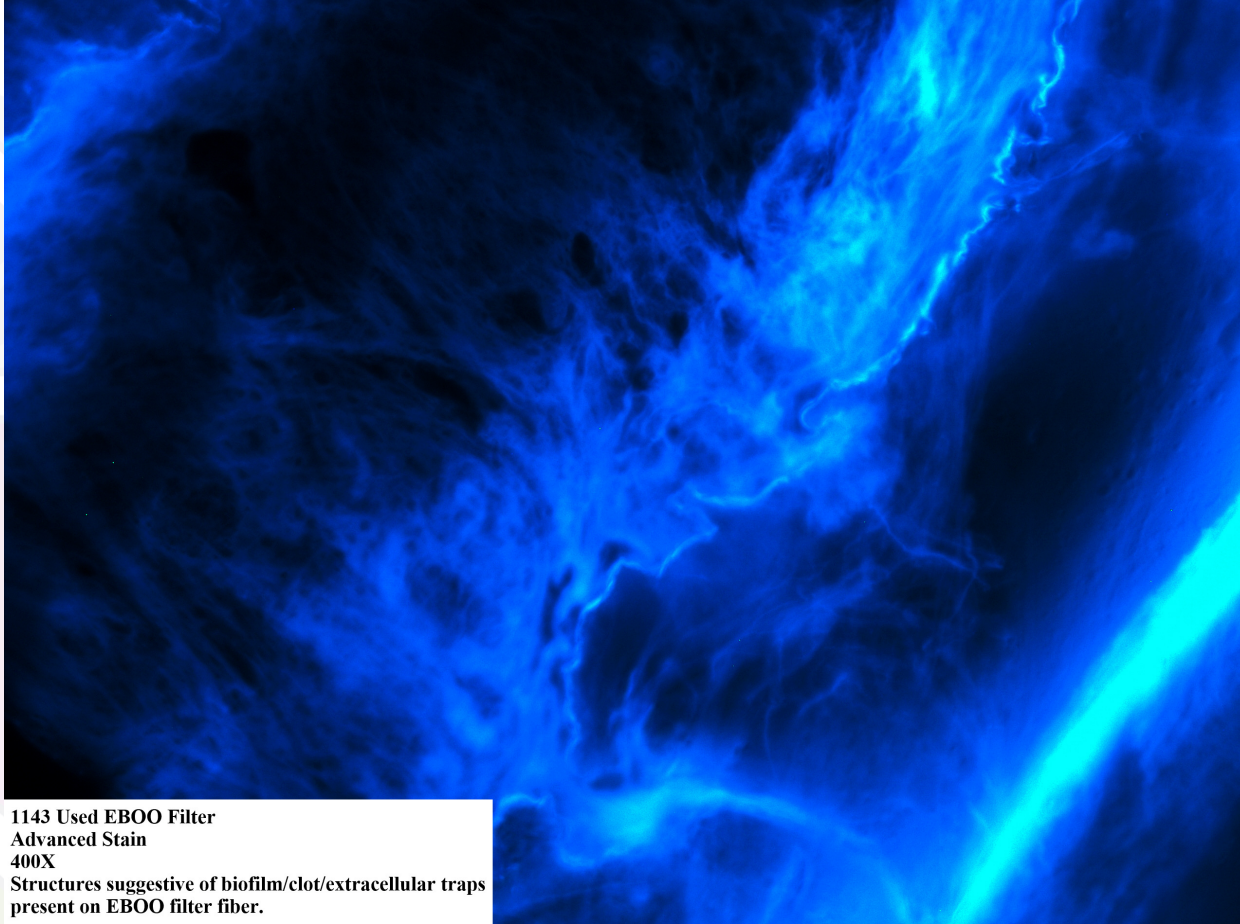


COVID Blood in
used EBOO/F

1143 Used EBOO Filter
Giemsa Stain
100X
Structures suggestive of
biofilm/clot/extracellular traps
adherent to EBOO filter fiber
observed.

EBOO/F – Lab Analysis Patient #1

Biofilm / Clot /
Extracellular traps
present on EBOO
filter fiber.

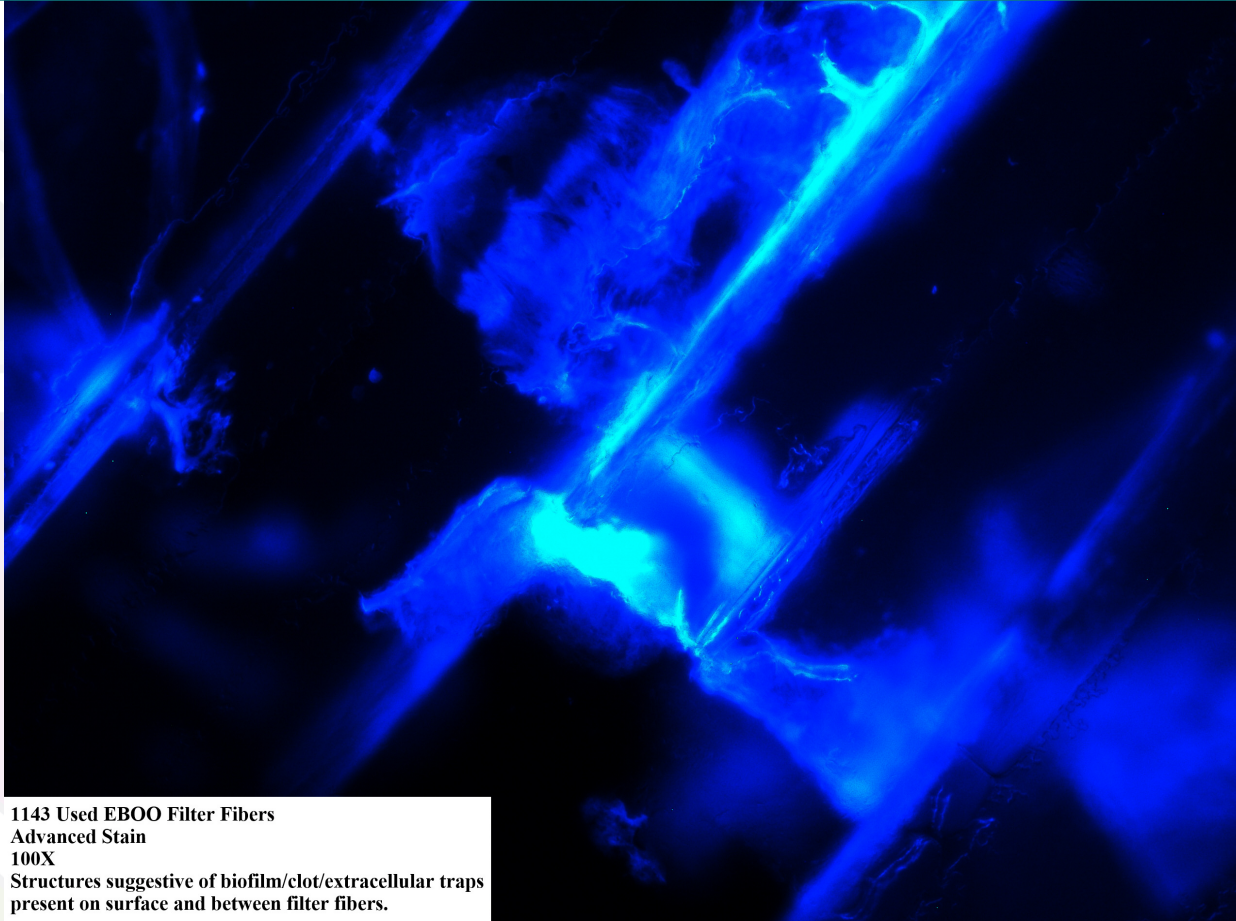


COVID Blood in
used EBOO/F

1143 Used EBOO Filter
Advanced Stain
400X
Structures suggestive of biofilm/clot/extracellular traps
present on EBOO filter fiber.

EBOO/F – Lab Analysis Patient #1

Biofilm / Clot /
Extracellular traps
present on surface
and between filter
fibers.

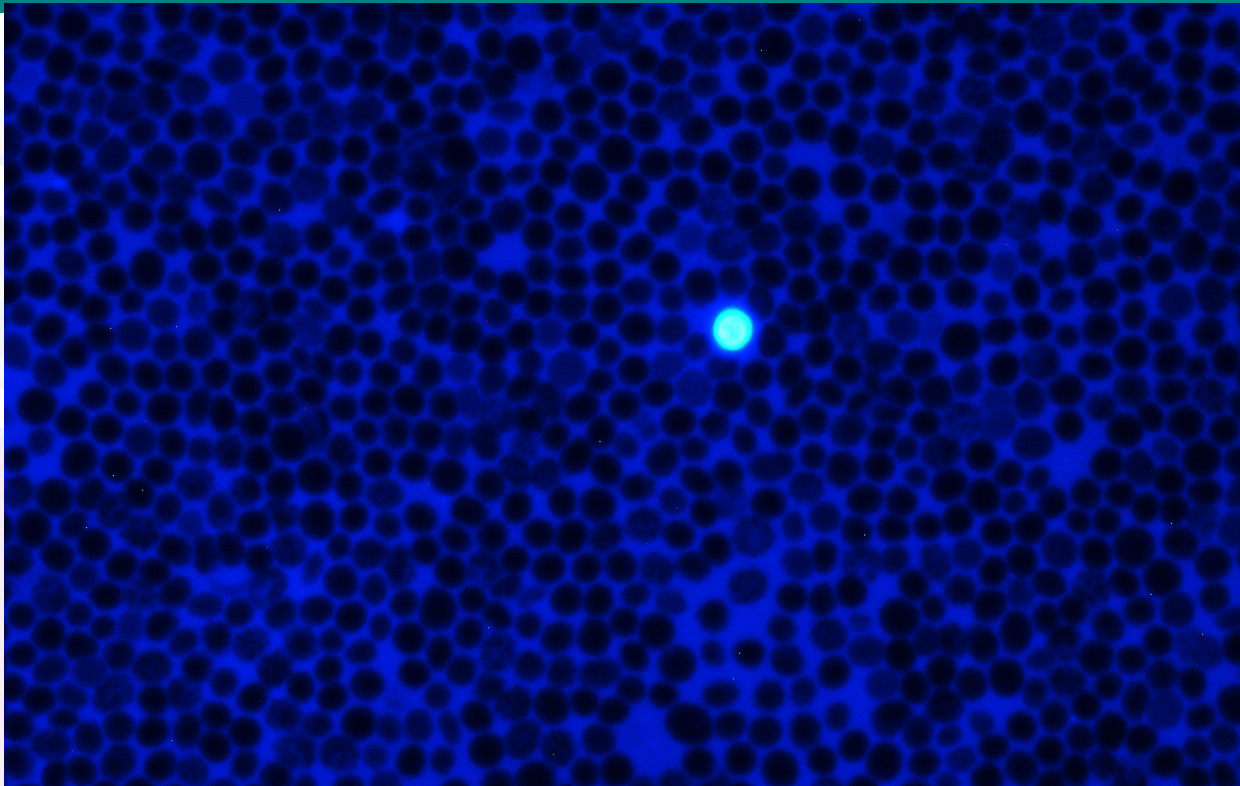


1143 Used EBOO Filter Fibers
Advanced Stain
100X
Structures suggestive of biofilm/clot/extracellular traps
present on surface and between filter fibers.

COVID Blood in
used EBOO/F

EBOO/F – Lab Analysis Patient #1

Normal blood was observed. No structures suggestive of biofilm observed. Platelet clotting / microclotting not observed.



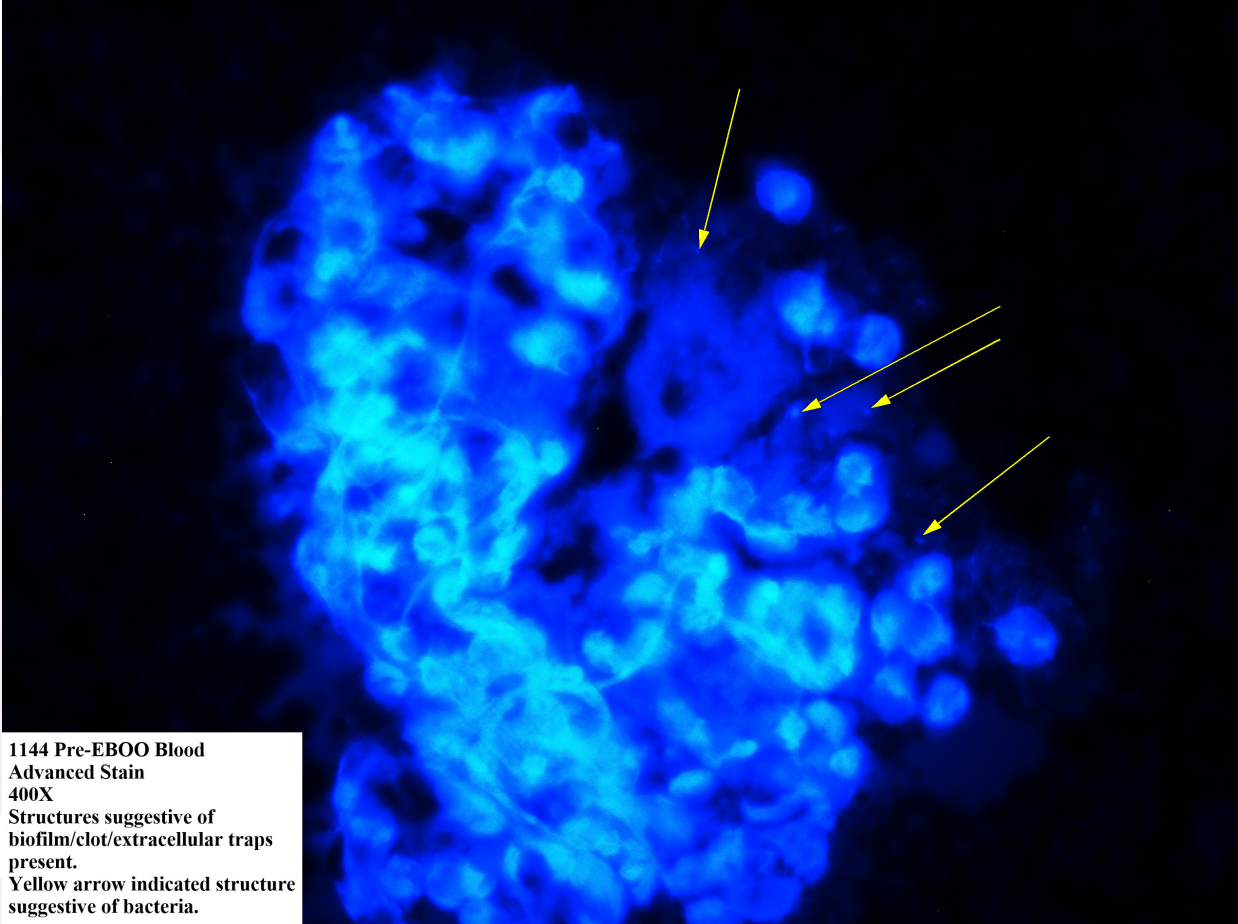
1143 Post EBOO
Advanced Stain
400X
Normal blood was observed.
No structures suggestive of biofilm observed.
Platelet clotting/microclotting not observed.

COVID Blood

Post-EBOO/F

EBOO/F – Lab Analysis Patient #2

Biofilm / Clot /
Extracellular traps
present. Yellow
arrow indicated
structure
suggestive of
bacteria.

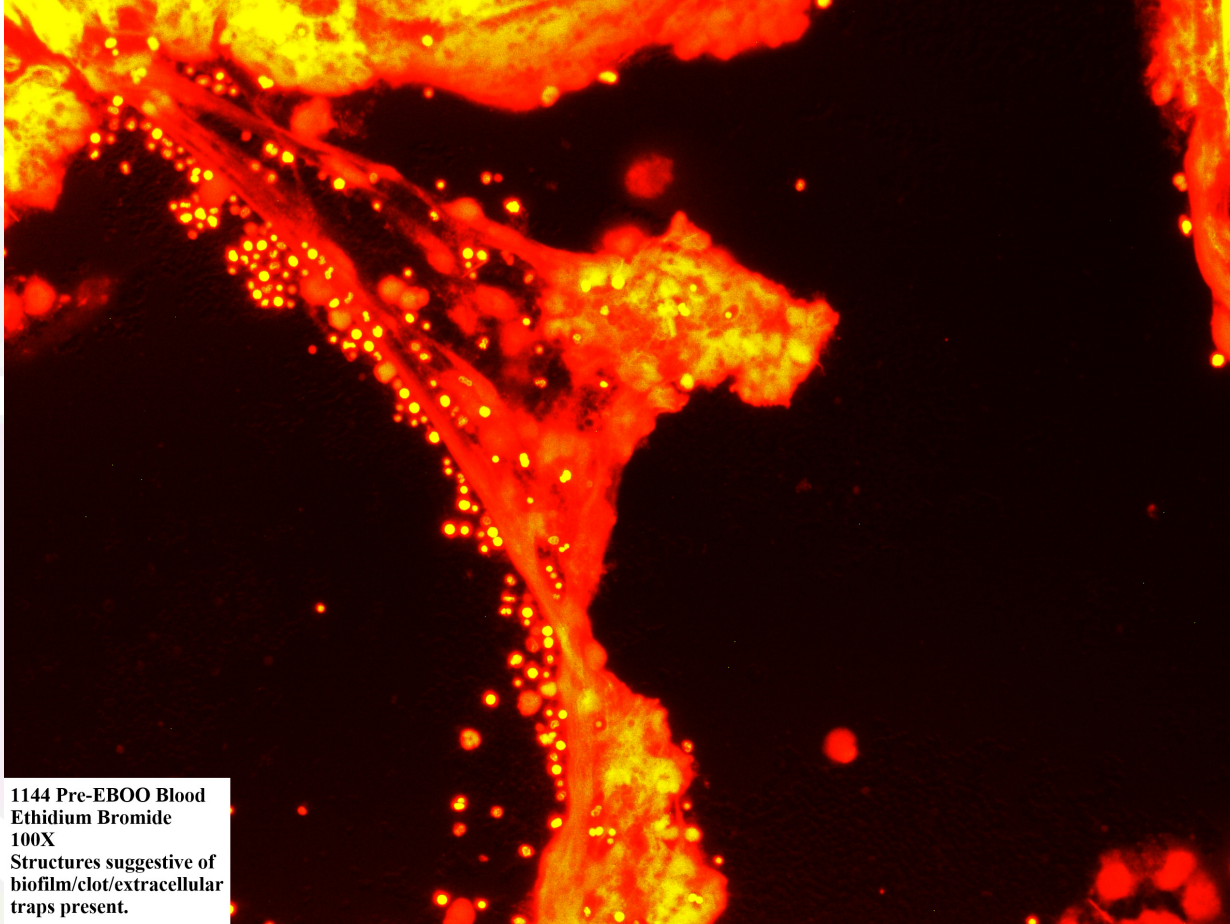


COVID Blood
Pre-EBOO/F

1144 Pre-EBOO Blood
Advanced Stain
400X
Structures suggestive of
biofilm/clot/extracellular traps
present.
Yellow arrow indicated structure
suggestive of bacteria.

EBOO/F – Lab Analysis Patient #2

Biofilm / Clot /
Extracellular traps
present.

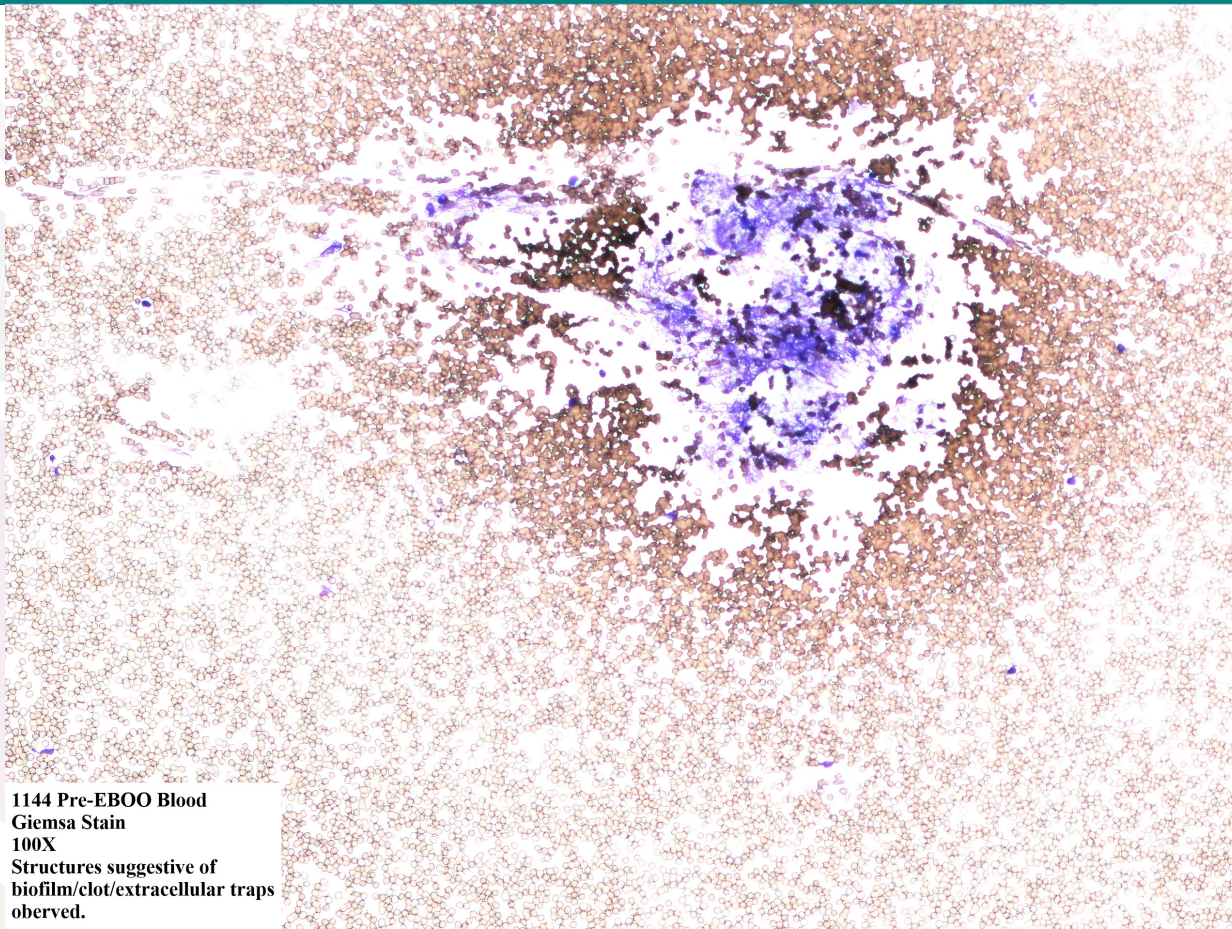


COVID Blood
Pre-EBOO/F

1144 Pre-EBOO Blood
Ethidium Bromide
100X
Structures suggestive of
biofilm/clot/extracellular
traps present.

EBOO/F – Lab Analysis Patient #2

Biofilm / Clot /
Extracellular traps
observed.



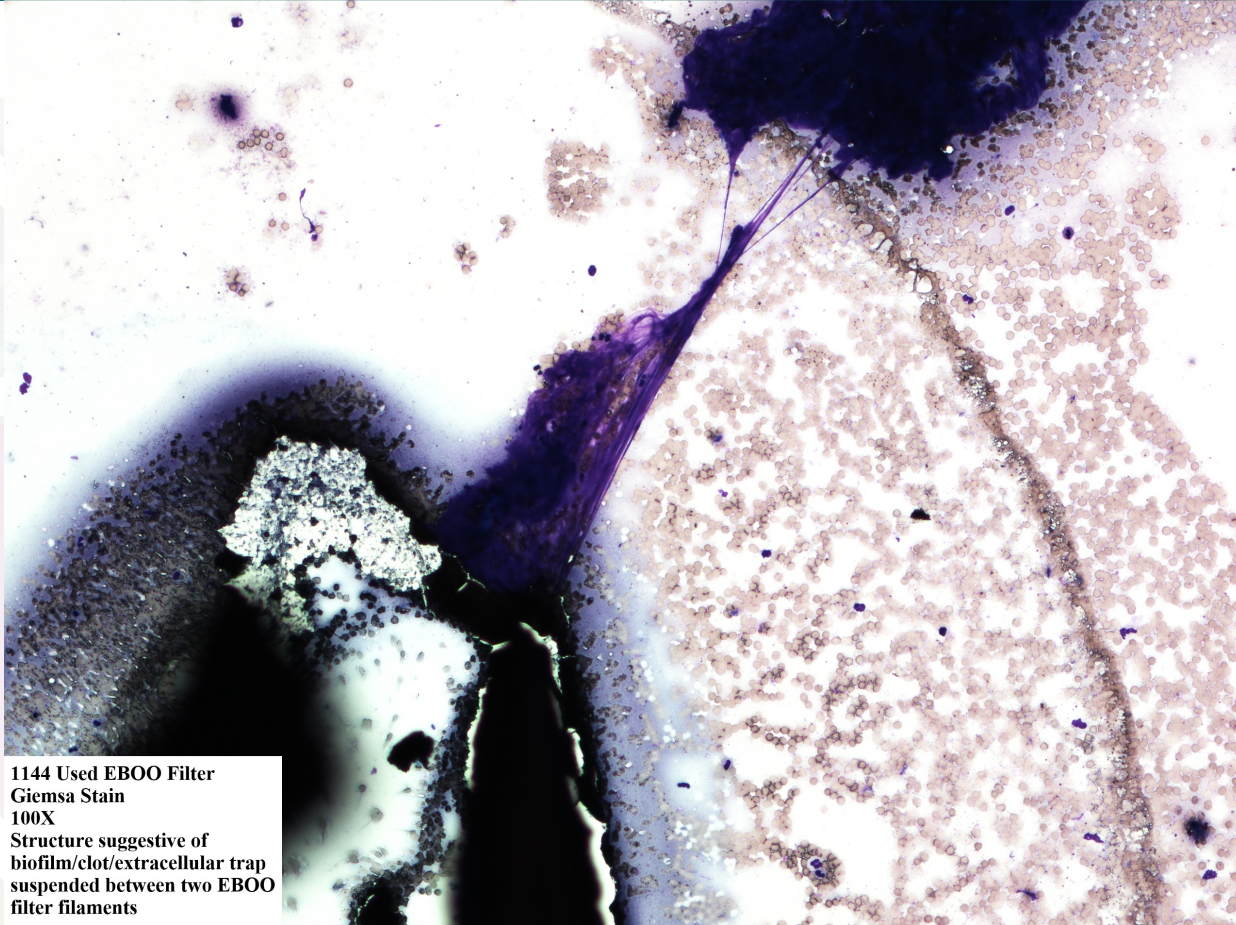
COVID Blood
Pre-EBOO/F

1144 Pre-EBOO Blood
Giemsa Stain
100X
Structures suggestive of
biofilm/clot/extracellular traps
observed.

EBOO/F – Lab Analysis Patient #2

Biofilm / Clot /
Extracellular traps
suspended
between two
EBOO filter
filaments.

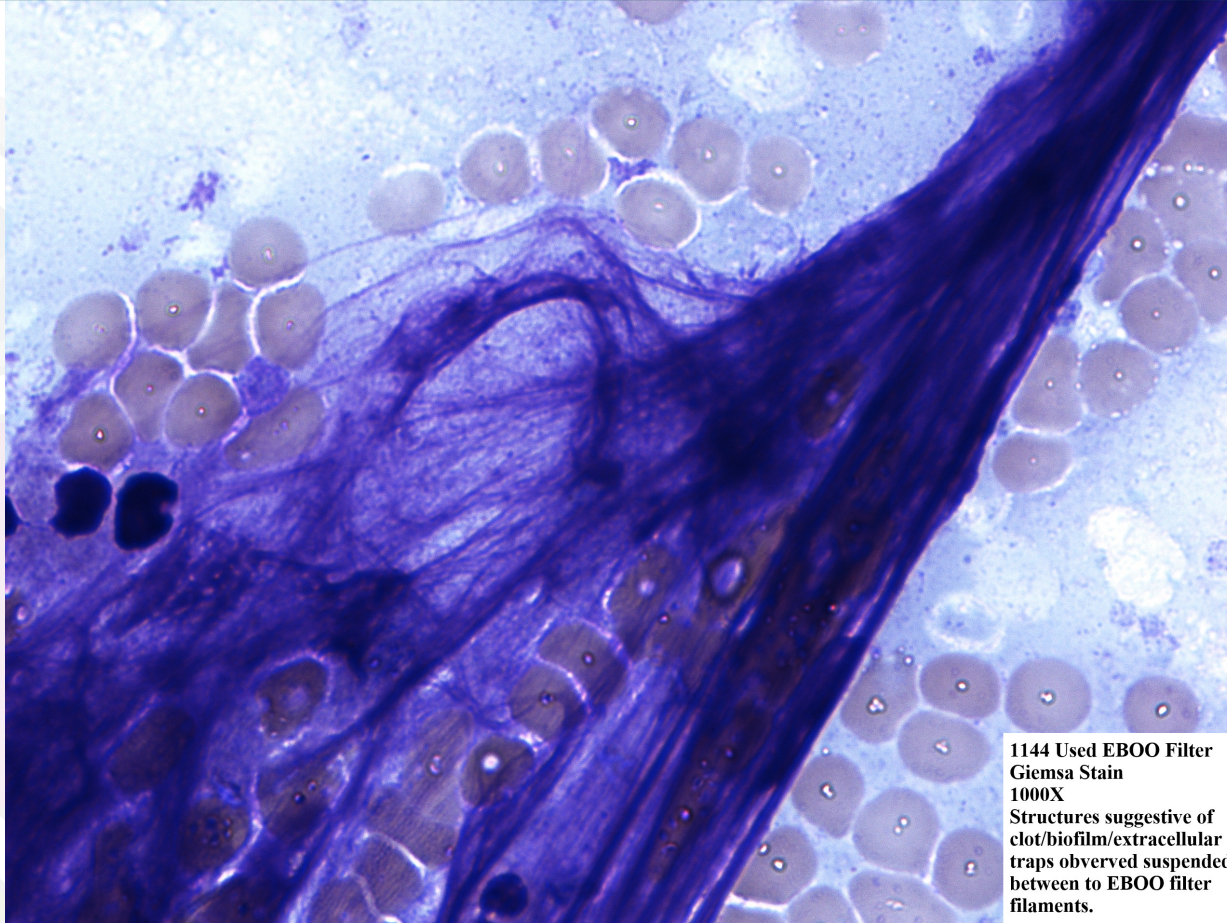
COVID Blood in
used EBOO/F



1144 Used EBOO Filter
Giemsa Stain
100X
Structure suggestive of
biofilm/clot/extracellular trap
suspended between two EBOO
filter filaments

EBOO/F – Lab Analysis Patient #2

Biofilm / Clot /
Extracellular traps
observed
suspended
between two
EBOO filter
filaments.

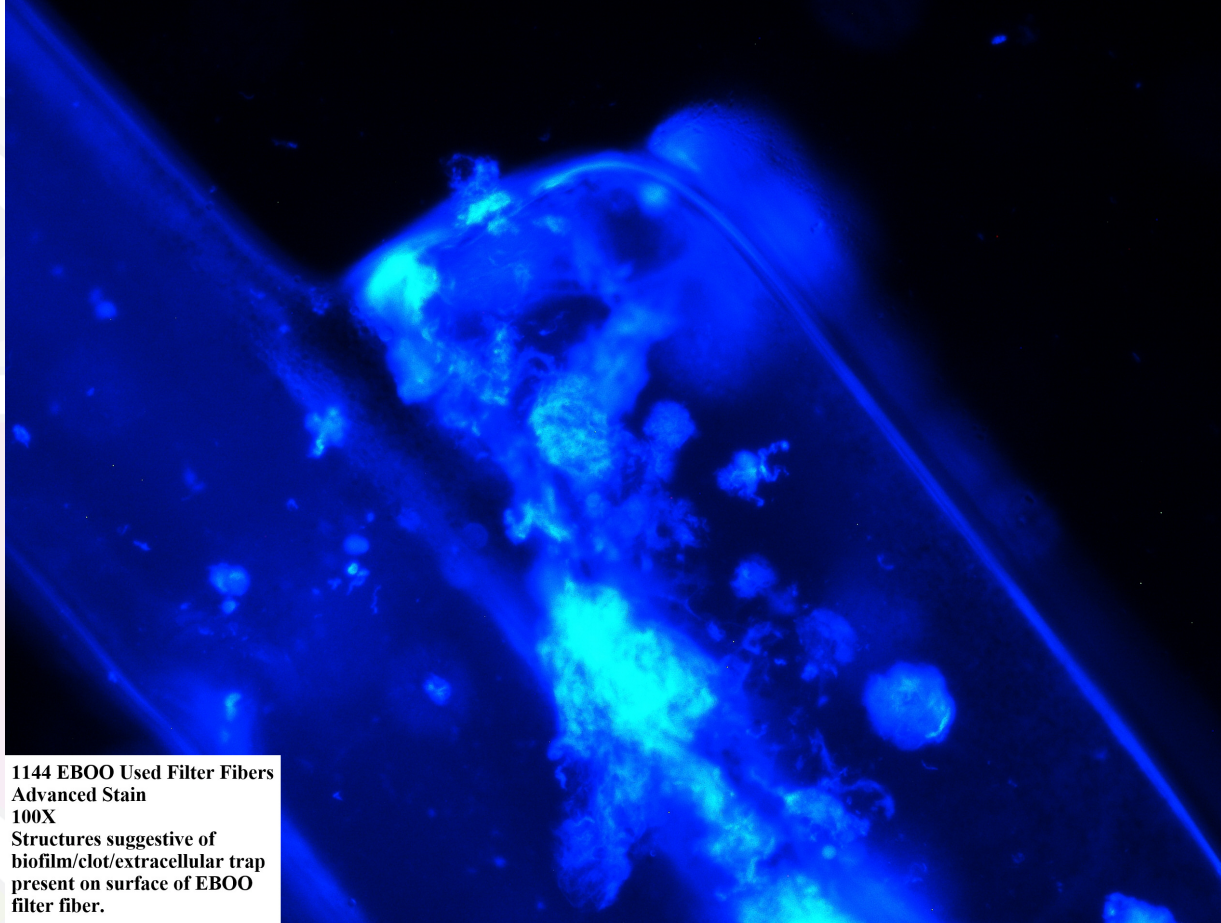


COVID Blood in
used EBOO/F

1144 Used EBOO Filter
Giemsa Stain
1000X
Structures suggestive of
clot/biofilm/extracellular
traps observed suspended
between to EBOO filter
filaments.

EBOO/F – Lab Analysis Patient #2

Biofilm / Clot /
Extracellular traps
present on surface
of EBOO filter
fiber.

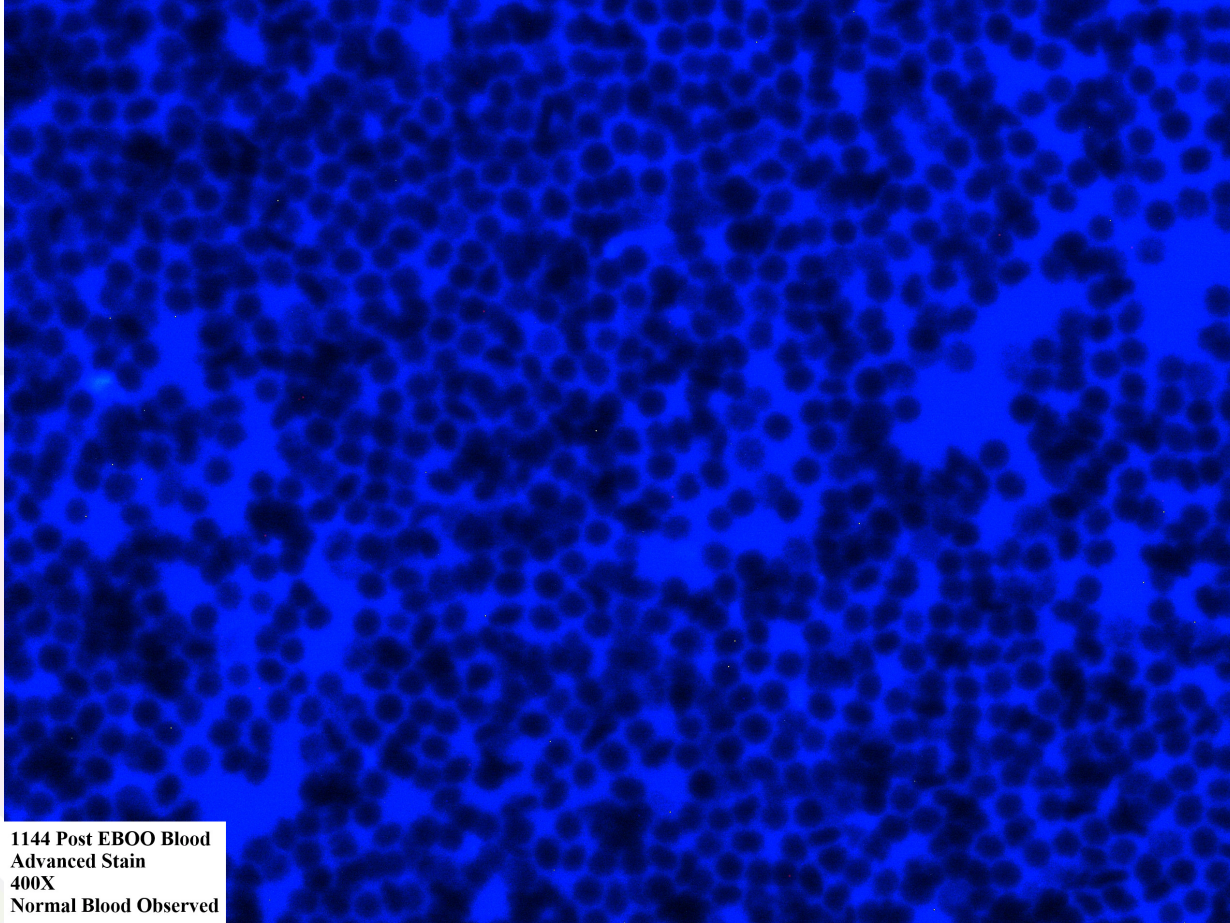


1144 EBOO Used Filter Fibers
Advanced Stain
100X
Structures suggestive of
biofilm/clot/extracellular trap
present on surface of EBOO
filter fiber.

COVID Blood in
used EBOO/F

EBOO/F – Lab Analysis Patient #2

Normal blood was observed. No structures suggestive of biofilm observed. Platelet clotting / microclotting not observed.



1144 Post EBOO Blood
Advanced Stain
400X
Normal Blood Observed

COVID Blood

Post-EBOO/F

EBOO/F



EBOO/F



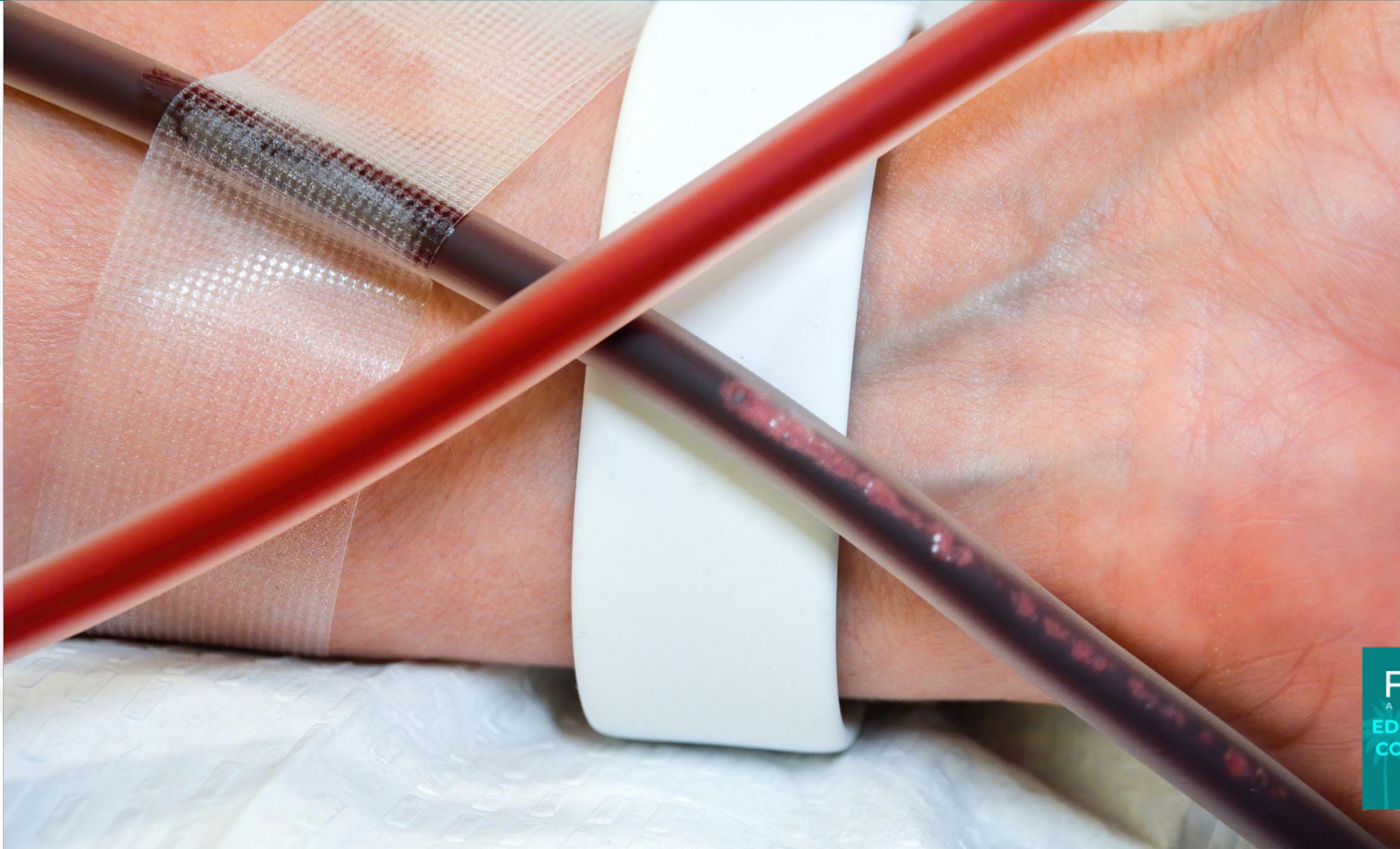
EBOO/F



EBOO/F



EBOO/F



EBOO/F - Dialyzer After Treatment



EBOO/F



EBOO/F – Heavy Metals Analysis

Date	Age	Sex	Name	Heavy Metal				
				Aluminum	Arsenic	Cadmium	Lead	Mercury
12/16/19	28	m	JR					
1/11/20				80	8.9	0.8	3.3	0.6
1/8/20								
1/24/20								
2/20/20				44	5.7	0.3	2.2	<dl
2/20/20								

Date	Age	Sex	Name	Heavy Metal				
				Aluminum	Arsenic	Cadmium	Lead	Mercury
12/11/19	25	m	JC					
12/16/19				85	8.2	0.3	3.6	1.9
1/24/20								
2/25/20				78	5	0.5	<dl	<dl
2/20/20								

EBOO/F – Heavy Metals Analysis

Date	Age	Sex	Name	Heavy Metal				
				Aluminum	Arsenic	Cadmium	Lead	Mercury
12/16/19	28	m	JR					
1/11/20				80	8.9	0.8	3.3	0.6
1/8/20								
1/24/20								
2/20/20				44	5.7	0.3	2.2	<dl
2/20/20								

Date	Age	Sex	Name	Heavy Metal				
				Aluminum	Arsenic	Cadmium	Lead	Mercury
12/11/19	25	m	JC					
12/16/19				85	8.2	0.3	3.6	1.9
1/24/20								
2/25/20				78	5	0.5	<dl	<dl
2/20/20								

EBOO/F – Heavy Metals Analysis

Date	Age	Sex	Name	Heavy Metal				
				Aluminum	Arsenic	Cadmium	Lead	Mercury
11/15/19	45		AV					
12/10/19				57	140	1.8	6.1	1.1
2/21/20				1.4	9.7	1.3	3.8	1.9
2/19/20	45							

Unfortunate Marketing BS

Too ugly to print.

Many sitting in this room have taken huge risks to pursue the truth and to do the right thing.

However, there are others who, as soon as they smell a hint of a potential windfall, will discard matters of integrity and ethics and do whatever they can to grab market share.

Before COVID no one knew or cared about EBOO/F, but EBOO/F is the real deal and is an important tool in treating many systemic inflammatory infectious illnesses. The clinical results are outstanding, and when people are scared and overwhelmed by the fear mongering coming from powerful sources they used to trust, they will chase down the magical treatment ready to pay out of pocket.

To accelerate their efforts, some will cut corners, and some will even fabricate lies about the quality of technology that preceded them.

Personally, I think competition is terrific. When pursued with integrity it brings the best out of everybody and I hope that all the new EBOO/F like devices that enter the market are of excellent quality deserving of success.

Very quickly, let me put one of these falsehoods in the toilet where it belongs.

EBOO/F - Dialyzer Microplastics Analysis



Environmental Technology & Innovation

Volume 26, May 2022, 102271

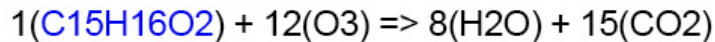


Oxidation of bisphenol-A by ozone microbubbles: Effects of operational parameters and kinetics study

1. Introduction

Endocrine-disrupting chemicals (EDCs) are among the top emerging contaminants as they are subclasses of the ubiquitous organic pollutants present in various types of water (i.e., seawater, streams, groundwater, drinking water, and wastewater) at very low concentrations. They have become the focus of environmental research in the recent years ...

They often have adverse impacts on both human and natural organisms at trace or low concentrations, which may cause disruption of the endocrine systems. Thus, it is desirable to remove these chemicals from water.



polycarbonate from bottled water



EBOO/F - Dialyzer Microplastics Analysis

Pre EBOO/F Microplastics Analysis



EMSL Analytical, Inc.

5700 Memorial Highway, Suite 122, Tampa, FL 33615
200 Route 130 North, Cinnaminson, NJ 08077
Phone: (813)-280-8752 (856) 858-4800

Attn.: Reporting
Simple Lab
1345 4th Street
Berkley, CA. 94710
reporting@gosimplelab.com
Phone: 203-219-8202

EMSL Order No.: 362202454
Sample(s) Received: 8/17/2022
Date Reported: 8/31/2022
Date Printed: 8/31/2022
Reported By: E.Mirica

- Laboratory Report -

Analysis of Microplastics

Project: s-424-FLM-inf-DW-1-S12

Conclusions:

The data obtained during analysis indicates the following:

- Microplastics were detected in the sample submitted.

Procurement of Samples and Analytical Overview:

The sample submitted for analysis arrived at EMSL Analytical on 8/17/2022. The package arrived in satisfactory condition with no evidence of damage to the contents. The data reported herein has been obtained using the following equipment and methodologies.

Methods & Equipment: Polarized Light Microscopy (PLM) – Zeiss, Universal Petrographic Microscope
Reflected Light Microscopy (RLM) – Nikon, DF Microscope
Fluorescence Microscopy (FLM) – Zeiss, Fluorescence Microscope

Analyzed by:

John Newton
Senior Materials Scientist

31 August 2022

Date

Reviewed/Approved by:

Eugenio Mirica, Ph.D.
Laboratory Director

31 August 2022

Date

Post EBOO/F Microplastics Analysis



EMSL Analytical, Inc.

5700 Memorial Highway, Suite 122, Tampa, FL 33615
200 Route 130 North, Cinnaminson, NJ 08077
Phone: (813)-280-8752 (856) 858-4800

Attn.: Reporting
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EMSL Order No.: 362202453
Sample(s) Received: 8/17/2022
Date Reported: 8/31/2022
Date Printed: 8/31/2022
Reported By: E.Mirica

- Laboratory Report -

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Reflected Light Microscopy (RLM) – Nikon, DF Microscope
Fluorescence Microscopy (FLM) – Zeiss, Fluorescence Microscope

Analyzed by:

John Newton
Senior Materials Scientist

26 August 2022

Date

Reviewed/Approved by:

Eugenio Mirica, Ph.D.
Laboratory Director

31 August 2022

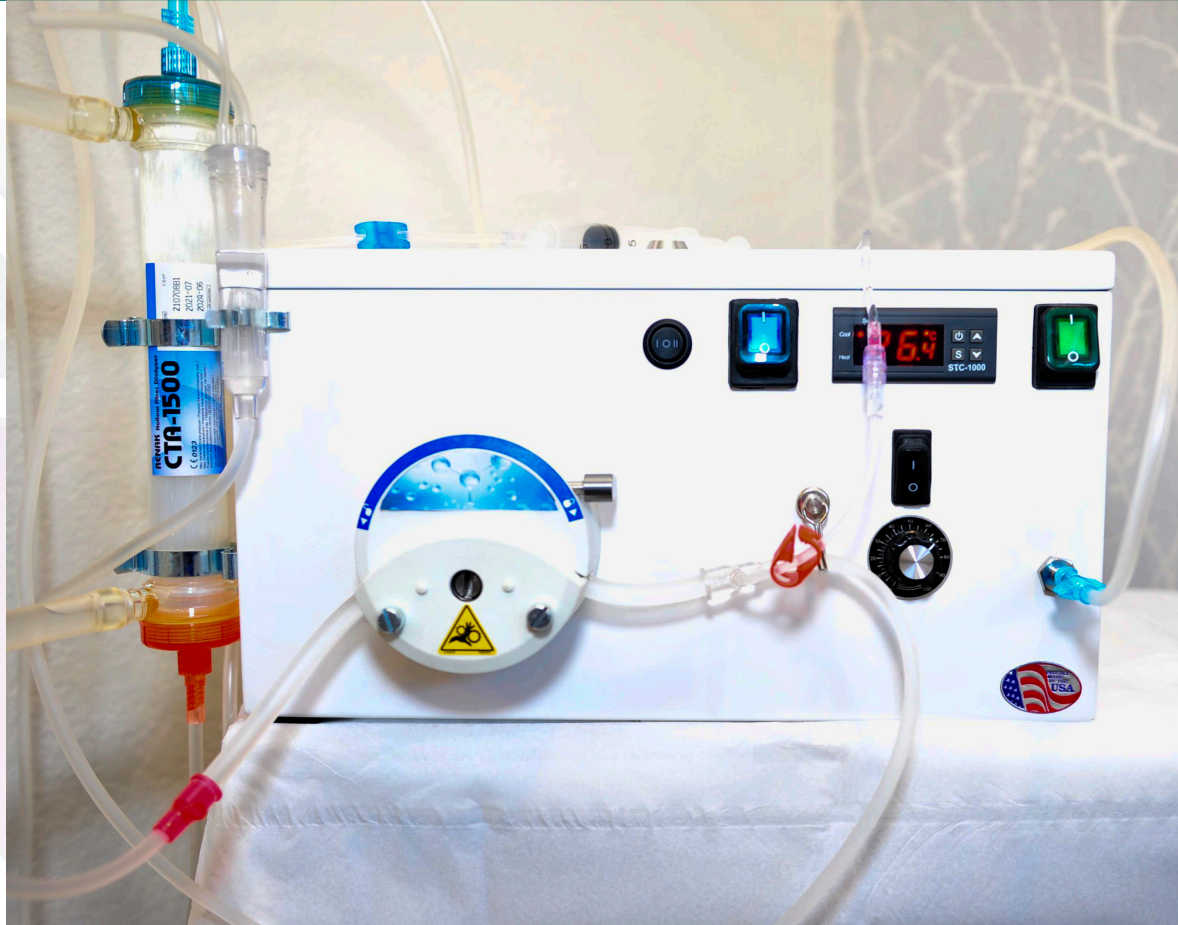
Date

Distilled bottled water – Branded OTC – Analyzed “as is”

Distilled bottled water – Branded OTC – Analyzed after EBOO/F dialyzer



EBOO/F – Made in the USA



EBOO/F – Made in the USA





Therapeutic Modality #3

IV Therapies

IV Therapy and Photo-biomodulation

As we know the COVID virus primary weapon against human physiology is the spike protein.

In addition to binding to human cells so that the virion can enter and replicate, the spike protein's primary targets are:

1. Mitochondria, it damages the Electron Transport Chain and disables the mitochondria's ability to generate ATP.
2. Vascular endothelium causing systemic inflammation and subsequent ischemic damage to inflamed organ systems.

Accordingly, any effective therapy administered through an IV would need to counteract the COVID virus itself as well as protect the cellular elements that the spike protein attacks.

IV Therapy #1 - Anti-inflammatory

In addition to their anti-inflammatory properties the four compounds listed below also provide critical support to mitochondria by donating electrons to the Electron Transport Chain (ATP Synthase) thereby bypassing the dysfunctional sections of the Electron Transport Chain damaged by the spike protein and increasing ATP production.

1. Ozone IV
2. Sodium Ascorbate (not ascorbic acid) (sodium ascorbate is a redox molecule)
3. Methylene Blue (redox molecule)
4. NAD – Recall the vital importance of NAD to the Krebs Cycle. Without NAD the Krebs Cycle can not function and no electrons can be delivered to the Electron Transport Chain.

Light Based Therapies

1. Photo-biomodulation (PBM) and Photodynamic Therapy (PDT)

In general, Photo-biomodulation (PBM) and photodynamic therapy (PDT) are two primary methods, which use light in medicine and dentistry.

- a. PBM uses low-level laser light to induce healthy cellular activity including proliferation and repair.
- b. In contrast, PDT uses low level laser light combined with a photosensitizing compound (PS) to cause cell death.

Due to similar, but not fully understood mechanisms and biphasic response of light, unexpected and complex outcomes that as yet defy explanation may be observed. Thus, step-by-step protocols have yet to be developed that produce thorough, reliable, and reproducible results for a majority of conditions.

What is clear however, is that the low-level energy of the lasers and LED light being used are safe and easy to use without the fear of causing damage to the patient.

Light Based Therapies

Regarding COVID, both of these modalities should theoretically be useful, perhaps even critically important if they can be combined.

1. We need to kill the virus as soon and as quickly as possible. For this Photodynamic Therapy with a Photosensitizing agent that can target and become concentrated in the virus, and a laser with a corresponding frequency of energy (wavelength) that is readily absorbed by the Photosensitizing agent. The energized Photosensitizing agent will now release ROS that are deadly to the virus. Ideally a properly constructed protocol that takes advantage of these properties will clear a patient of an entire viral load quickly, and before systemic damage is created.
2. Once the virus has been killed, the patient may still experience many Long-Haul symptoms that persist for many weeks. This is due to the ubiquitous cellular damage caused by the spike protein's ability to invade the cell despite the absence of the actual virus. Once inside, the spike protein's disruption of the Electron Transport Chain disables the cell from being able to generate sufficient energy to effectively repair itself and return to a healthy state.

Furthermore, because of ischemic tissue damage caused by systemic inflammation and the abnormal toxic clotting (also caused by the spike protein), restoring healthy cellular activity via the effect of PBM, that stimulates proliferation might enhance and accelerate a COVID patient's recovery.

Light Based Therapies

3. Ideally, a magical combination of the “right” Photodynamic protocol that successfully kills the COVID virus, followed by the “right” Photo-biomodulation protocol to heal and rebuild damaged tissue, would be the most effective way to heal COVID patients, especially those who postponed early treatment allowing the virus to proliferate unchecked causing extensive damage.

Another example is cystic acne:

ALA (5-aminolaevulinic acid (ALA) is spread on the effected skin and allowed to “incubate” for 45 min to 3 hours depending on the severity of the lesions. Skin cancers require longer incubation periods. During the incubation, the ALA saturates the cysts, who because of their hyperactive cystic activity are also saturated with naturally produced porphyrins. Thereafter, when the correct blue light is shined on the treated skin, through a variety of reactions between the ALA the Porphyrins and the blue light, powerfully toxic ROS such as a singlet oxygen is created that will kill the cystic cells.

IV Therapies - PDT Methylene Blue



Light Based Therapies

Photodynamic Therapy (PDT)- The basics

- a. For reasons that remain obscure, certain Photosensitizing compounds possess a powerful affinity for unhealthy cells, pathogenic microbes or specific components therein, especially but not limited to malignancy. For example: Methylene Blue is powerfully attracted to Malaria, and is considered by many to be the perfect therapy to completely rid the patient from the infection.
- b. Once administered to the body (IV) and given sufficient time to saturate the targeted cells (incubation time) the targeted malignant/pathogenic cells will retain the Photosensitizing compound, while healthy cells are able to clear themselves of the Photosensitizing compound during the “incubation” time.
- c. The Photosensitizing compound must also contain the needed molecular components that when stimulated by a specific wavelength of light, are able to release the needed ROS, that will kill the malignant or pathogenic cells.

Light Based Therapies

PhotoBiomodulation (PBM) – The basics

Using a specific wavelength of light that is absorbed by particular components of healthy cells, vital metabolic activity, healthy and balanced cellular turnover and internal cellular functions can be stimulated and enhanced. In cases such as COVID with severe mitochondrial disruption the photons of the correct light will stimulate ATP production.

Given the ubiquitous cellular damage caused by the COVID spike protein's disruption of the Electron Transport Chain in mitochondria of otherwise healthy cells, and because of ischemic tissue damage caused by systemic inflammation, stimulating healthy cellular activity as well as proliferation might prove to enhance and accelerate a COVID patient's recovery.

As the list of drug resistant microbes continues to grow, their virulence also grows, as does the list of obsolete antibiotics. In contrast, Photodynamic Therapy does not engage pathogens at the genetic level where resistance can be developed. Consequently, there is an increasing focus on developing new Photodynamic Protocols, including laser devices and novel photosensitizing compounds to which resistance cannot be developed.

Light Based Therapies

A perfect example is the use of Methylene Blue as the photosensitizing agent of PDT.

1. Methylene Blue inactivates Zika virus and Sindbis virus
2. Methylene Blue + light inactivates West Nile virus
3. Methylene Blue + light reduces Ebola virus infectivity
4. Methylene Blue + light reduces Middle East respiratory syndrome virus infectivity
5. Methylene Blue + light reduces HIV-1 “to nondetectable levels”
6. Methylene Blue + light reduces Bovine Diarrhea virus “to nondetectable levels”
7. Methylene Blue + light reduces Pseudorabies virus “to nondetectable levels”
8. Methylene Blue + light reduces Hepatitis A virus
9. Methylene Blue + light reduces Porcine Parvovirus
10. Methylene Blue + light inactivates Enterovirus
11. Methylene Blue + light inactivates Flavivirus
12. Methylene Blue + light inactivates Herpes virus
13. Methylene Blue + light reduces Dengue virus

REFERENCES

EBOO/F - Dialyzer Microplastics Analysis

Pre EBOO/F Microplastics Analysis



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- Laboratory Report -

Analysis of Microplastics

Project: s-424-FLM-inf-DW-1-S12

Conclusions:

The data obtained during analysis indicates the following:

- Microplastics were detected in the sample submitted.

Procurement of Samples and Analytical Overview:

The sample submitted for analysis arrived at EMSL Analytical on 8/17/2022. The package arrived in satisfactory condition with no evidence of damage to the contents. The data reported herein has been obtained using the following equipment and methodologies.

Methods & Equipment: Polarized Light Microscopy (PLM) – Zeiss, Universal Petrographic Microscope
Reflected Light Microscopy (RLM) – Nikon, DF Microscope
Fluorescence Microscopy (FLM) – Zeiss, Fluorescence Microscope

Analyzed by:

John Newton
Senior Materials Scientist

31 August 2022

Date

Reviewed/Approved by:

Eugenia Mirica, Ph.D.
Laboratory Director

31 August 2022

Date

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Background:

One sample was submitted for analysis. The purpose of the analysis was to determine the microplastics concentration.

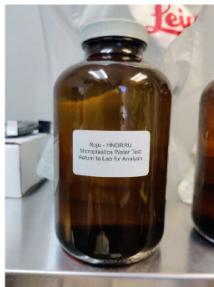


Figure 1: Samples as received for analysis.

Sample ID	Description	Date/Time Sampled
HNDRRU	Matrix: DW	Not Supplied

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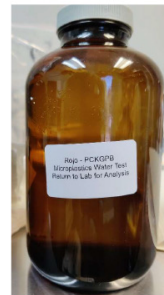


Figure 1: Samples as received for analysis.

Sample ID	Description	Date/Time Sampled
PCKGPB	Matrix: DW	Not Supplied

EBOO/F - Dialyzer Microplastics Analysis

Pre EBOO/F Microplastics



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Summary of Results:

Table 1: Summary of microplastics analysis.

Sample ID	Description	Microplastics
HNDRRU	Matrix: DW	Microplastics Detected
NIST Spike ^A	EMSL Lab	NIST traceable polystyrene spheres present within accepted control range
Laboratory Blank ^B	EMSL Lab Water	No Microplastics Detected

Comments: A) NIST traceable polystyrene microsphere control sample prepared by laboratory for QC purposes.
B) Laboratory prepared particle-free water used during NIST sample preparation, filter rinse and glassware cleaning.

Sample Preparation:

See Appendix 1 for sample preparation.

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Results and Discussion:

Table 2: Microplastics results for sample HNDRRU.

EMSL ID:	362202454-0001		
Sample ID:	HNDRRU		
Description:	Matrix: DW		
Amount Analyzed:	500 (ml) LOQ Particles/(ml):0.0020		
Preparation Parameters	Value	Units	Comments
Sub-sample (prepared):	500	(ml)	A
Effective Filter Area:	1370	(mm2)	
Field Area:	1370	(mm2)	
No. Fields Analyzed:	1	(No.)	
Area Analyzed:	1370	(mm2)	
Limit of Quantitation:	0.0020	(Particles/ml)	E
Particle Size Range (µm)	Concentration (Particles/ml)	Percent in Range	Comments
<1	<LOQ	0.0	B
1 - 5	0.006	75.0	B
5 - 10	<LOQ	0.0	B
10 - 50	0.002	25.0	B
50 - 100	<LOQ	0.0	B
100 - 500	<LOQ	0.0	B
500 - 1000	<LOQ	0.0	B,C
1000 - 5000	<LOQ	0.0	C
>5600	<LOQ	0.0	C, D
Total Microplastics	0.008	Max. Diameter = 13.2um	Max. Length = 18.2um
Count by Morphology	(%)		(%)
Spherical	ND	Sheet	ND
Non-uniform	100.0	Fibrous	ND
		Shaving	ND

Comments: LOQ = Limit of Quantitation (see Appendix 2). Sample volume based on particle concentration.

A) Parameters used in the preparation of the sample.

B) Particles observed by microscopic analysis.

C) Particles observed by sieve separation and stereo microscopic analysis.

D) Particles larger than the generally accepted definition of microplastics.

E) See appendix 2 for calculations.

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Results and Discussion:

Table 2: Microplastics results for sample PCKGPB.

EMSL ID:	362202453-0001		
Sample ID:	PCKGPB		
Description:	Matrix: DW		
Amount Analyzed:	300 (ml)	LOQ Particles/(ml): 0.0033	
Preparation Parameters	Value	Units	Comments
Sub-sample (prepared):	300	(ml)	A
Effective Filter Area:	1370	(mm2)	
Field Area:	1370	(mm2)	
No. Fields Analyzed:	1	(No.)	
Area Analyzed:	1370	(mm2)	
Limit of Quantitation:	0.0033	(Particles/ml)	E
Particle Size Range (µm)	Concentration (Particles/ml)	Percent in Range	Comments
<1	<LOQ	N/A	B
1 - 5	<LOQ	N/A	B
5 - 10	<LOQ	N/A	B
10 - 50	<LOQ	N/A	B
50 - 100	<LOQ	N/A	B
100 - 500	<LOQ	N/A	B
500 - 1000	<LOQ	N/A	B,C
1000 - 5000	<LOQ	N/A	C
>5600	<LOQ	N/A	C, D
Total Microplastics	None Detected	N/A	N/A
Count by Morphology (%)	(%)		(%)
Spherical	ND	Sheet	ND
Non-uniform	ND	Fibrous	ND
		Shaving	ND

Comments: LOQ = Limit of Quantitation (see Appendix 2). Sample volume based on particle concentration.

A) Parameters used in the preparation of the sample.

B) Particles observed by microscopic analysis.

C) Particles observed by sieve separation and stereo microscopic analysis.

D) Particles larger than the generally accepted definition of microplastics.

E) See appendix 2 for calculations.

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Pre EBOO/F Microplastics



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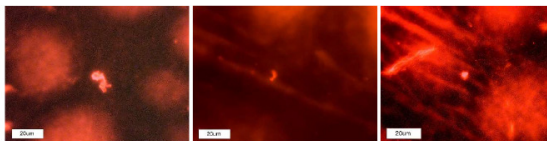


Figure 3: Microplastics observed in sample HNDRRU.

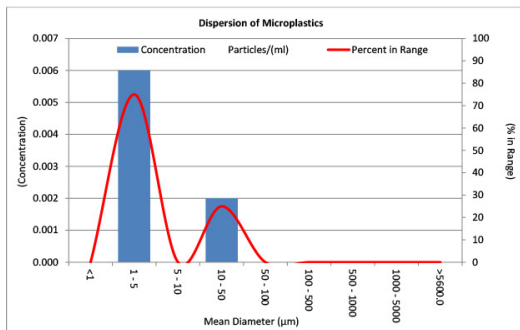


Figure 4: Histogram showing the particle size dispersion of sample HNDRRU

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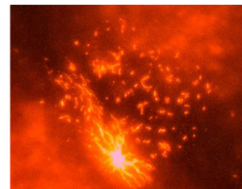


Figure 2: Bacteria observed in sample PCKGPB. No microplastics were detected.

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Appendix 1: Sample Preparation

Preparation for Level 1 Analysis: Fluorescence Microscopy

A measured portion of the sample is filtered through a 0.4µm polycarbonate membrane. In order to remove organic material, such as plant matter, the collected particles are subjected to hydrogen peroxide treatment and filtered through a 0.4µm polycarbonate filter. This process does not affect microplastics. The filter and particles are placed into a glass vial and dried in a desiccator at ambient temperature (~23°C). Once dry the sample is covered with Nile Red reagent and sonicated to remove the particles from the filter media. The filter is removed from the suspension and analyzed to ensure all particles have been removed. The particle suspension is stored at ambient temperatures for no less than sixty minutes to complete the staining process. The resulting suspension is filtered through a clean (not introduced to Nile Red reagent) 0.2µm polycarbonate filter for analysis.

All dyed structures are counted and assumed to be microplastic particles unless obvious characteristics, such as cell structure or crystallinity detected by phase or polarized light microscopy, is observed.

Note: Analysis by Nile red stain with Fluorescence microscopy may include materials other than microplastics which may result in false positives. All attempts are made to differentiate microplastics from other stain-retaining materials.

Appendix 2: Analysis Calculations

Limit of Detection (LOD): For microscopic analysis the limit of detection is considered to be a single (1) observed particle.

$$\text{Limit of Quantitation (LOQ): } LOQ = \frac{LOD \times EFA}{FA \times F \times SP}$$

Where:
LOD = Limit of Detection (1 particle)
FA = Field Area (mm²)
F = Number of Fields Analyzed
EFA = Effective Filter Area (mm²)
SP = Sample Portion Prepared (gm or ml)
Dependent upon solid or liquid sample.

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Descriptions & Definitions:

Microplastics are generally defined as polymeric particles smaller than 5 mm in size in any one dimension, present in waste water, rivers, lakes and oceans. Due to the small size, they may not be easily removed during the waste water filtration processes and can enter the ecosystem, negatively impacting the environment. The common sources of microplastics are: additives in personal care products, synthetic fibers, resin pellets, tire recycling, medical products, abrasion and exfoliating beads used in furniture and insulation, fragments of larger plastic items as they degrade from the effects of ultraviolet rays and other weathering factors. Microplastics can potentially leach toxic chemicals, including endocrine disruption chemicals, such as bisphenol A and phthalates.

None Detected (ND) denotes the absence of analyte in the subsample analyzed. Trace levels of the analyte may be present in the sample below the limit of detection (LOD).

Limit of Detection (LOD): The minimum concentration that can be theoretically achieved for a given analytical procedure in the absence of matrix or sample processing effects. Particle analysis is limited to a single occurrence of an analyte particle in the sub-sample analyzed.

Limit of Quantitation (LOQ): The minimum concentration of an analyte that can be measured within specified limits of precision and accuracy during routine laboratory operating conditions

Important Terms, Conditions, and Limitations:

Sample Retention: Samples analyzed by EMSL will be retained for 60 days after analysis date. Storage beyond this period is available for a fee with written request prior to the initial 30 day period. Samples containing hazardous/toxic substances which require special handling may be returned to the client immediately. EMSL reserves the right to charge a sample disposal or return shipping fee.

Change Orders and Cancellation: All changes in the scope of work or turnaround time requested by the client after sample acceptance must be made in writing and confirmed in writing by EMSL. If requested changes result in a change in cost the client must accept payment responsibility. In the event work is cancelled by a client, EMSL will complete work in progress and invoice for work completed to the point of cancellation notice. EMSL is not responsible for holding times that are exceeded due to such changes.

Warranty: EMSL warrants to its clients that all services provided hereunder shall be performed in accordance with established and recognized analytical testing procedures, when available. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied. EMSL disclaims any other warranties, express or implied, including a warranty of fitness for particular purpose and warranty of merchantability.

Limits of Liability: In no event shall EMSL be liable for indirect, special, consequential, or incidental damages, including, but not limited to, damages for loss of profit or goodwill regardless of the negligence (either sole or concurrent) of EMSL and whether EMSL has been informed of the possibility of such damages, arising out of or in connection with EMSL's services thereunder or the delivery, use, reliance upon or interpretation of test results by client or any third party. We accept no legal responsibility for the purposes for which the client uses the test results. EMSL will not be held responsible for the improper selection of sampling devices even if we supply the device to the user. The user of the sampling device has the sole responsibility to select the proper sampler and sampling conditions to ensure that a valid sample is taken for analysis. Any resampling performed will be at the sole discretion of EMSL, the cost of which shall be limited to the reasonable value of the original sample delivery group (SDG) samples. In no event shall EMSL be liable to a client or any third party, whether based upon theories of tort, contract or any other legal or equitable theory, in excess of the amount paid to EMSL by client thereunder.

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Post EBOO/F Microplastics



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