MedMasters
MASTER THE ART OF HEALING

EBOO Didactic

PRESENTED BY: KIM LOOK

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Kim Look

- I know what it's like to have lots of knowledge and services but unable to pull them together for best utilization.
- I have grown new and old practices selling millions of dollars in medical services.
- Want to promote safe and effective therapies via great education and practical hands-on learning.

Jason DeLeon

Over the past year, I have been a part of 500+ EBOO procedures that has helped me gain a huge understanding of all things EBOO. This amazing device has had me travel all across the nation along with internationally as well. I have installed EBOO in clinics of all sizes with various numbers of staff. The knowledge gained through my journey combined with the network of clinicians I have worked with is what I enjoy sharing the most.

Jason has been a part of the Functional Medicine space for 10 years. He has been a patient, marketing representative, assistant, Lab Director and consultant. Despite his broad general understanding of functional medicine modalities his specialty is Ozone. Jason has helped multiples of medical practitioners get started with ozone therapy then guided them to proficiency and profitability.

MedMasters

TOTAL

- Authorized trainers on O3UV.com equipment
- Started training in 2014
- Trained approx. 2,143 practitioners in Ozone and UV
- Trained 695 clinics in Ozone and UV
- 793,000 therapies administered
- Clinicians in 13 countries

EBOO

- Started in 2022
- 103 EBOOs placed and trained
- 9500 therapies administered
- 18 states, 3 countries

Join our community of practitioners who care deeply for their patients.

About Us

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Just get into the system and start your journey

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Go to **www.MedMasters**.org to register.

Certification

We are happy to issue certificates of EBOO training as soon as you have completed the virtual courses AND the live onsite EBOO training with our MedMaster's trainer. If you have any inquiries about certification, please contact our Training Coordinator, Vicki Lintemuth.

vicki@MedMasters.org

Reasons for Training

- Protect the patient
- Protect the providers
- Protect the medicine
- Medical understanding of therapies
- Calculating doses
- Accuracy and safety
- Competence and confidence
- Liability
- Malpractice
- Trouble shooting and critical thinking
- A+ Skills

Why EBOO with MedMasters

PROBLEM 1	PROBLEM 2	PROBLEM 3
Patients are not receiving the best outcomes possible.	Clinics are not as profitable as they should be and it's challenging when trying to scale your business.	Staff training, competence and compliance (engagement)

Evolution of EBOO

Extracorporeal Blood Oxygenation-Ozonation

We will look at:

- Evolution of EBOO
- Ozone Overview
- Equipment Description
- Filter/Diffuser Function
- Comparing Therapies and Doses
- Titration and Protocol Suggestions
- Patient Requirements and Evaluation
- FAQs
- Patient Pricing
- How to Screw This Up

What is EBOO?

Extracorporeal **B**lood **O**xygenation and **O**zonation

- Started in Malaysia 22 years ago
- Elevating Major Autohemotherapy
- Low concentration of ozone
- Treating more blood at once
- Repurposing dialysis filter

EBOO Origin Story

- Dr. Velio Bocci was the first to receive an EBOO treatment in 1993
- Tests were conducted to determine the optimal concentration of ozone and ozone compatibility with dialysis filter materials
- 3 mcg/ml was determined to be the optimal concentration
- Malaysians started building EBOO Machines in 2002
- Studied mostly HIV patients and then cardiovascular conditions

EBOO in 2023

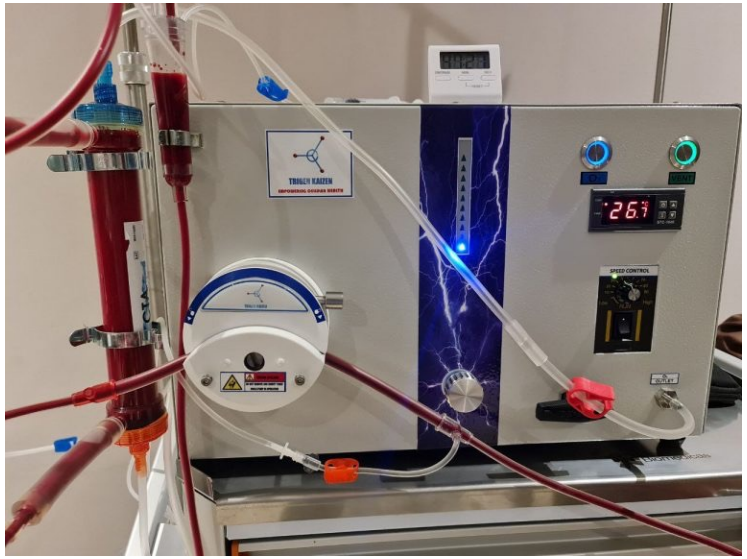
ALL EBOO

- EBOO has proven to be significant clinical tool for wellness, athlete and disease patients alike.
- Adds a significant amount of ozone through a large surface area to treat 2L of blood in 50 minutes – dialysis filter repurposed
- Peristaltic Pump
- Collection Cup
- Bilateral Access

ADDITIONS

- UBI therapy - Full Spectrum and UV lights.
  - There is synergy between UBI and ozone therapies
  - LED source
- EBO2 – light source added (different than UBI)

EBOO in 2023



EBOO Currently

Two Phases of clinical trials done in 2023
Further collection cup testing
Working on better, organic ”filter”
Working on true gas exchanger (vs repurposed dialysis filter)
Comprehensive hands-on training

Proper patient education
Cleaning up false claim marketing
Rich and famous in destination locations

Procedure and Equipment

Basic EBOO

1. Prep tubing and device
2. Prime lines and filter
3. 500ml saline bag w/ heparin
4. Place two angiocath
5. Pump blood
6. Turn on ozone
7. Procedure time 70-75 min total

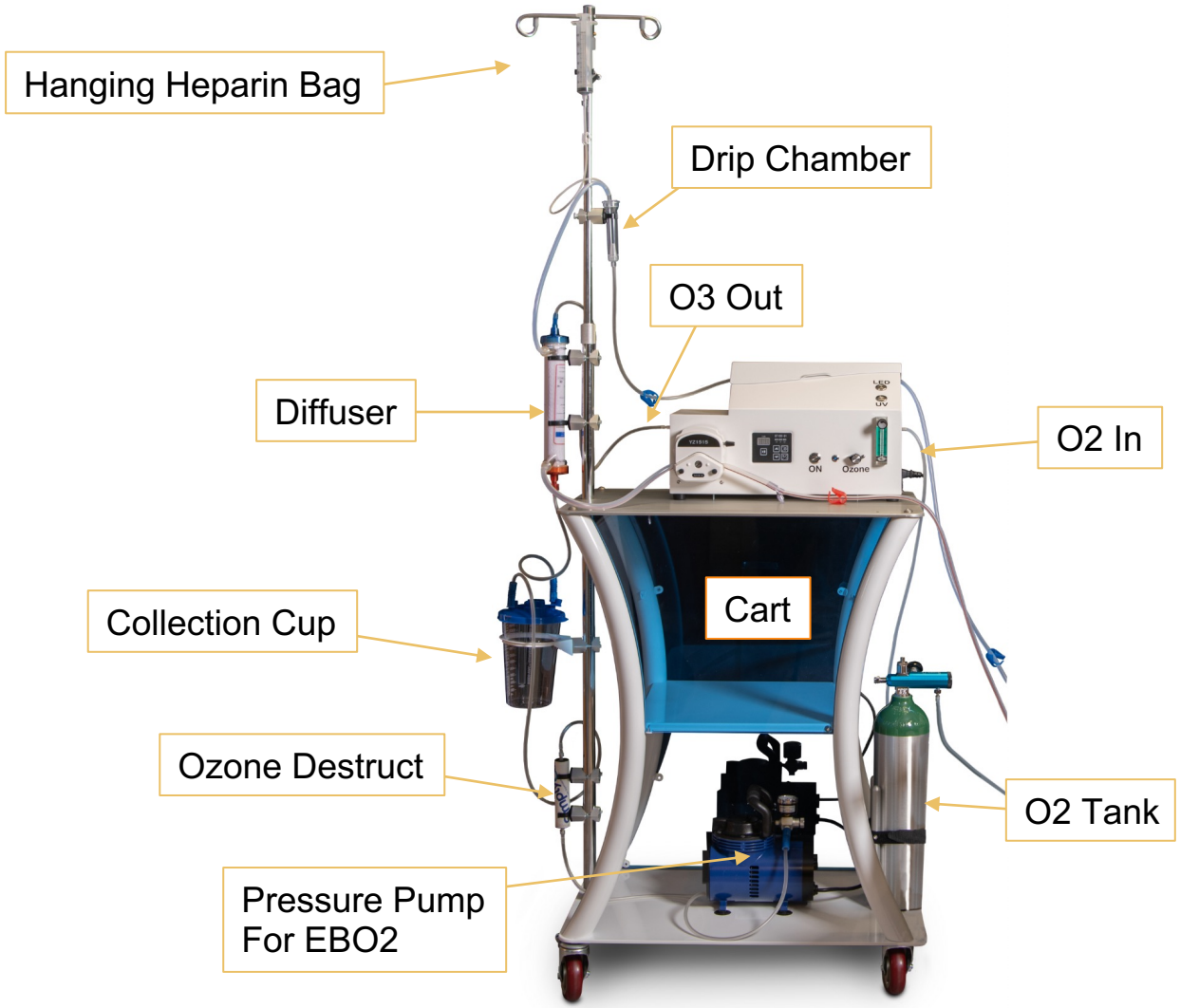
Basic EBOO

- Treats 2L of blood (in 50 minutes)
- 150,000 mcg of ozone
- ~3 mcg/ml (gamma) of ozone

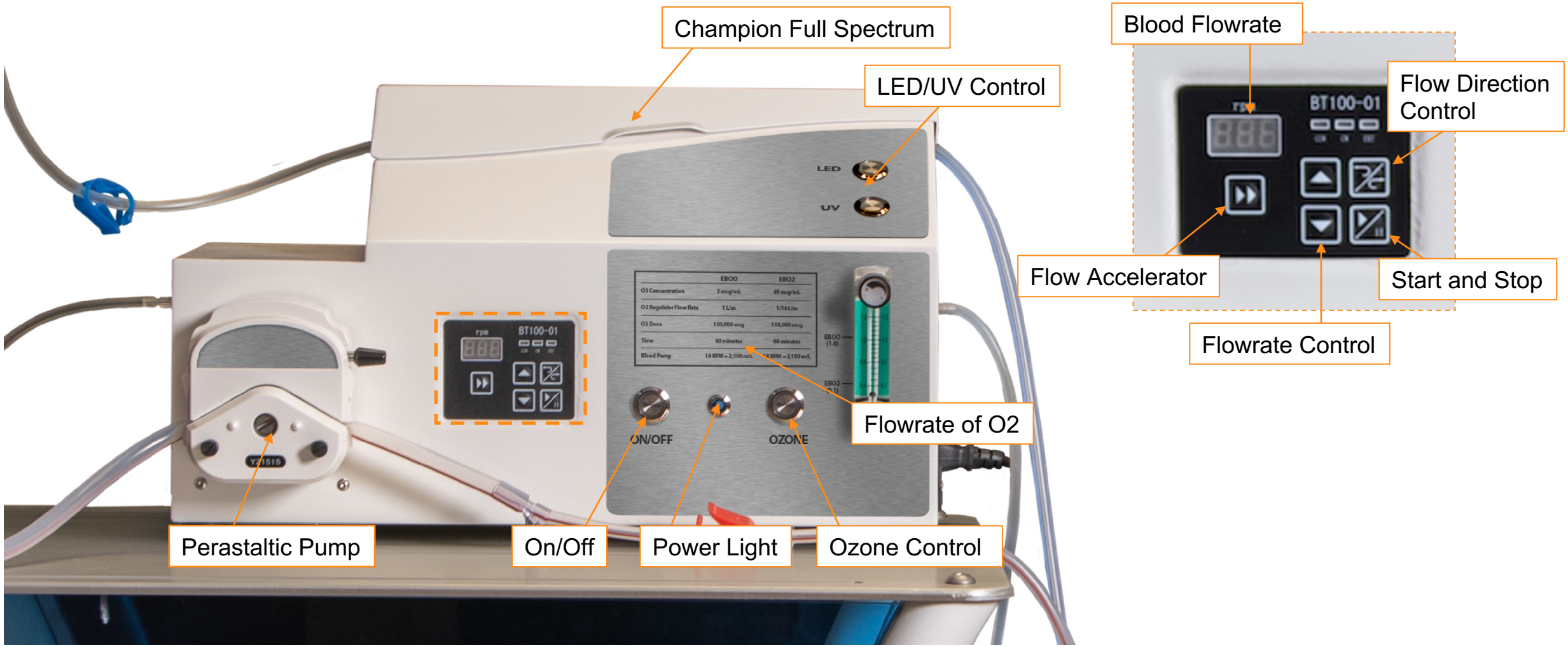
- Two 18-20 gauge catheters placed
- Blood drawn by peristaltic pump at 40ml/min
- Blood and ozone meet in a repurposed dialysis filter
- Blood “waste” or water flows to collection cup
- Unused ozone continues to flow to ozone destruct
- Treated blood flows back to patient

*500ml of saline and 7500 units heparin dripping simultaneously

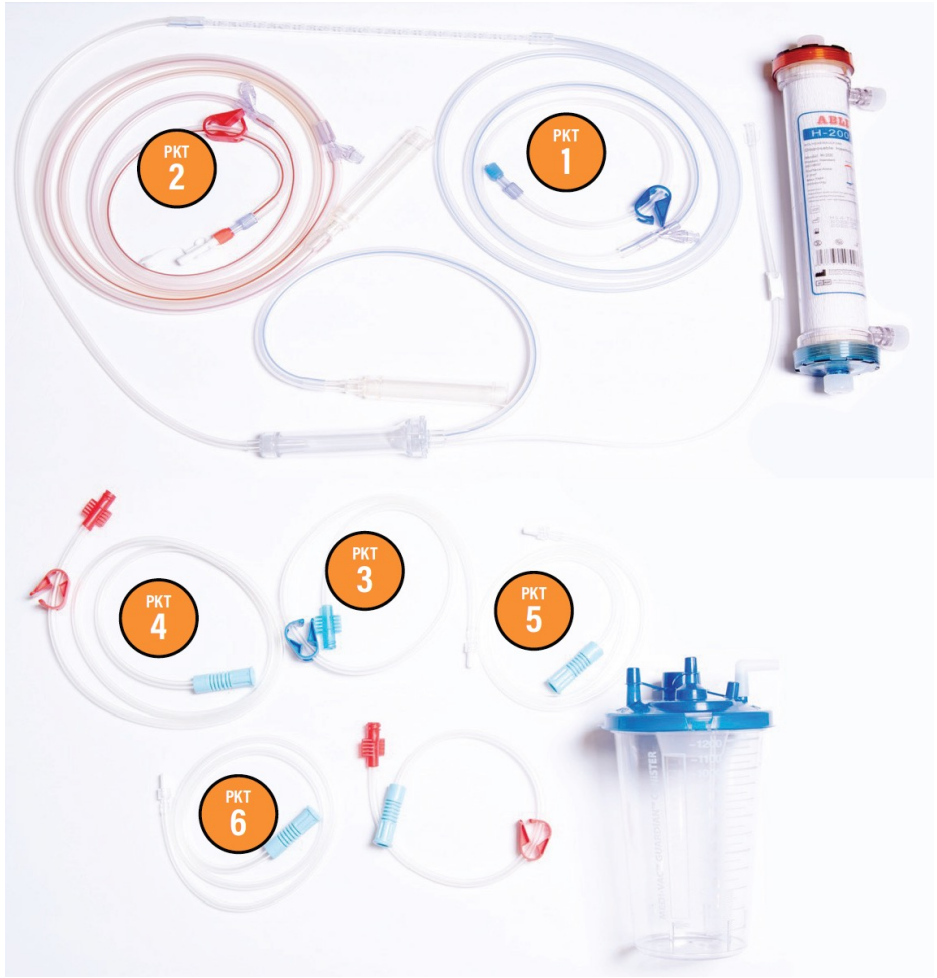
Equipment Description



Equipment Description



Disposables



- **Packet 1:** Tubing is from the top of the filter through the cuvette back to the patient.
- **Packet 2:** Tubing is from the patient through the parstalic pump to the bottom of the filter. This tubing is where heparin is added near the patient draw site.
- **Packet 3:** Tubing from the ozone luer lock outlet (left hand side of machine) to the top of the filter.
- **Packet 4:** Tubing from the bottom of the filter to the collection canister.
- **Packet 5:** Tubing goes from the collection canister to the (luer lock) ozone destruct
- **Packet 6:** Tubing connects on the other side of the ozone destruct to the suction pump.

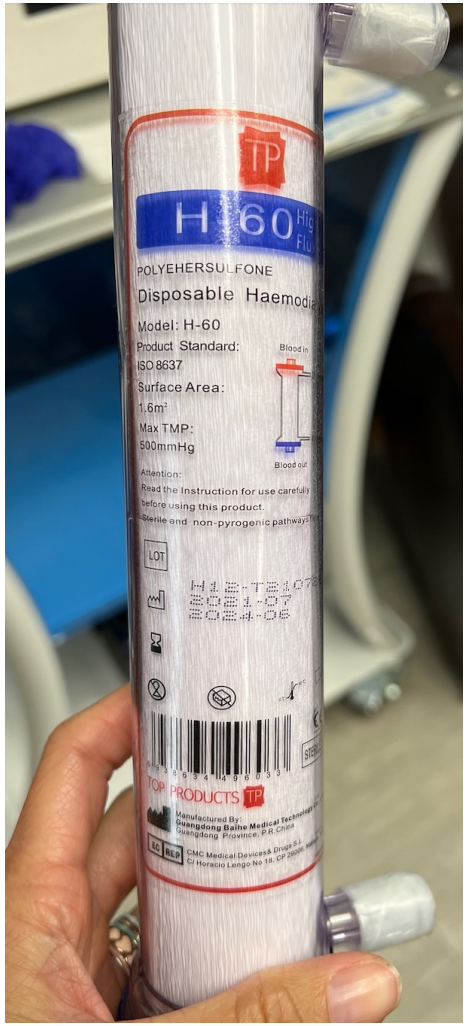
Collection Cup

- Hangs below filter
- Collects cellular water or excess expelled in filter
- Foam
- Unused ozone
- Hooks to ozone destruct

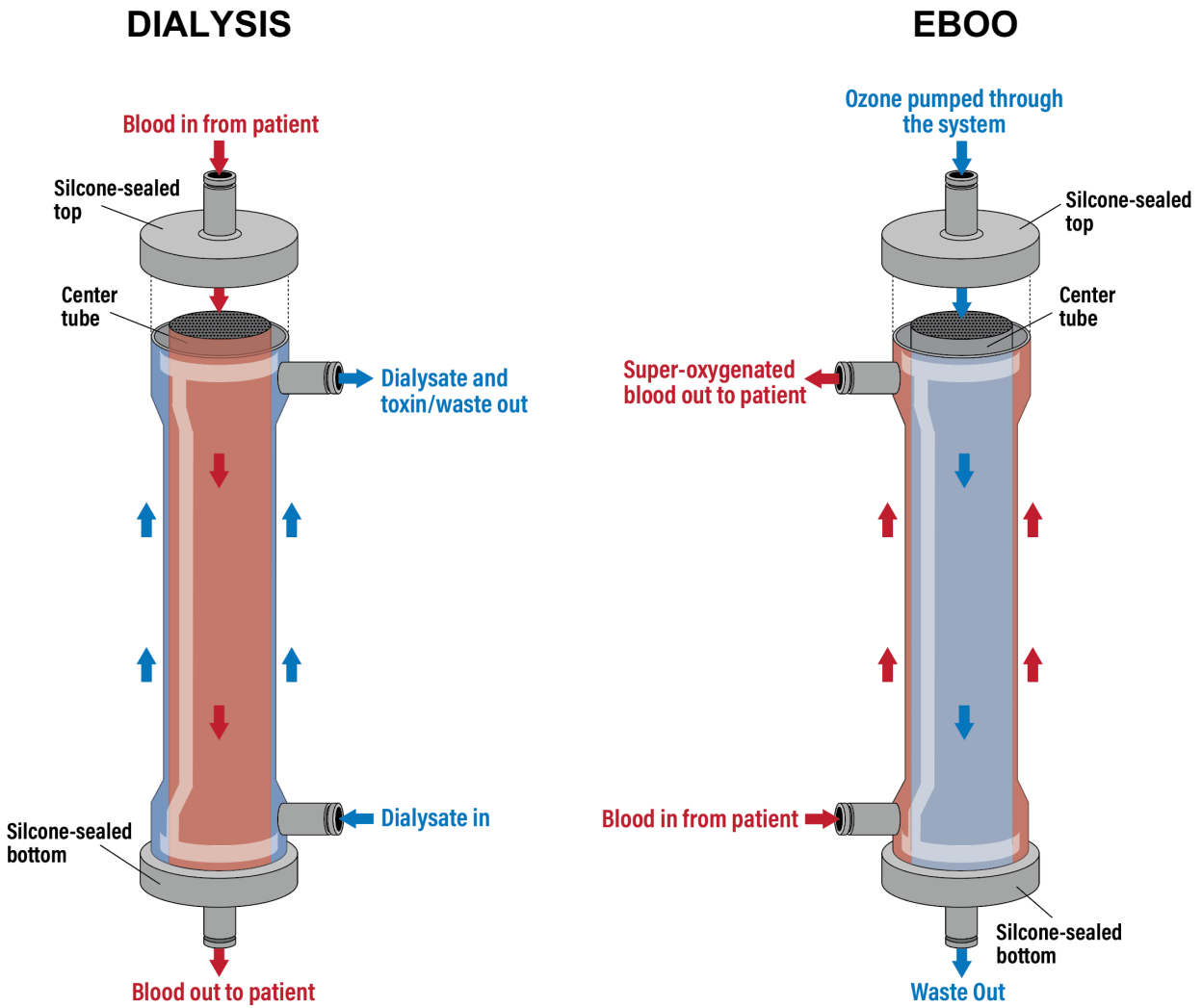
Filter

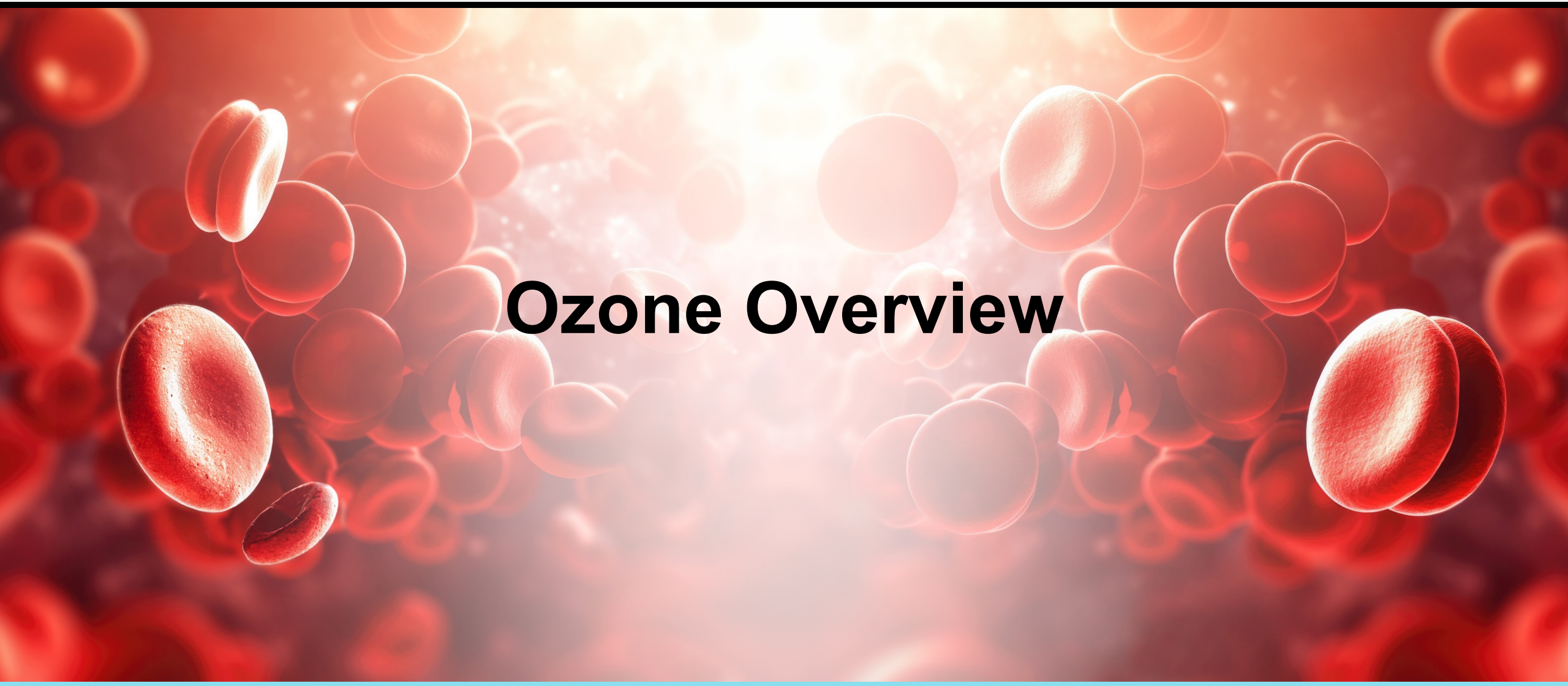
- For now, always dialysis filter, repurposed
- Two types of materials
- Different sizes
- Large surface area of blood meets ozone – most efficient MAH

- Untreated blood enters the side-bottom
- Ozone comes in the top, enters straws
- Treated blood exits the side-top
- Pressurized
- Hangs above collection cup
- Cellular waste drips down to collection cup



Dialysis Versus EBOO Diffusers





Ozone Overview

You Need Basic Ozone Understanding To Do EBOO

1	Go to MedMasters.org
2	Get Basic Ozone/UV Didactics

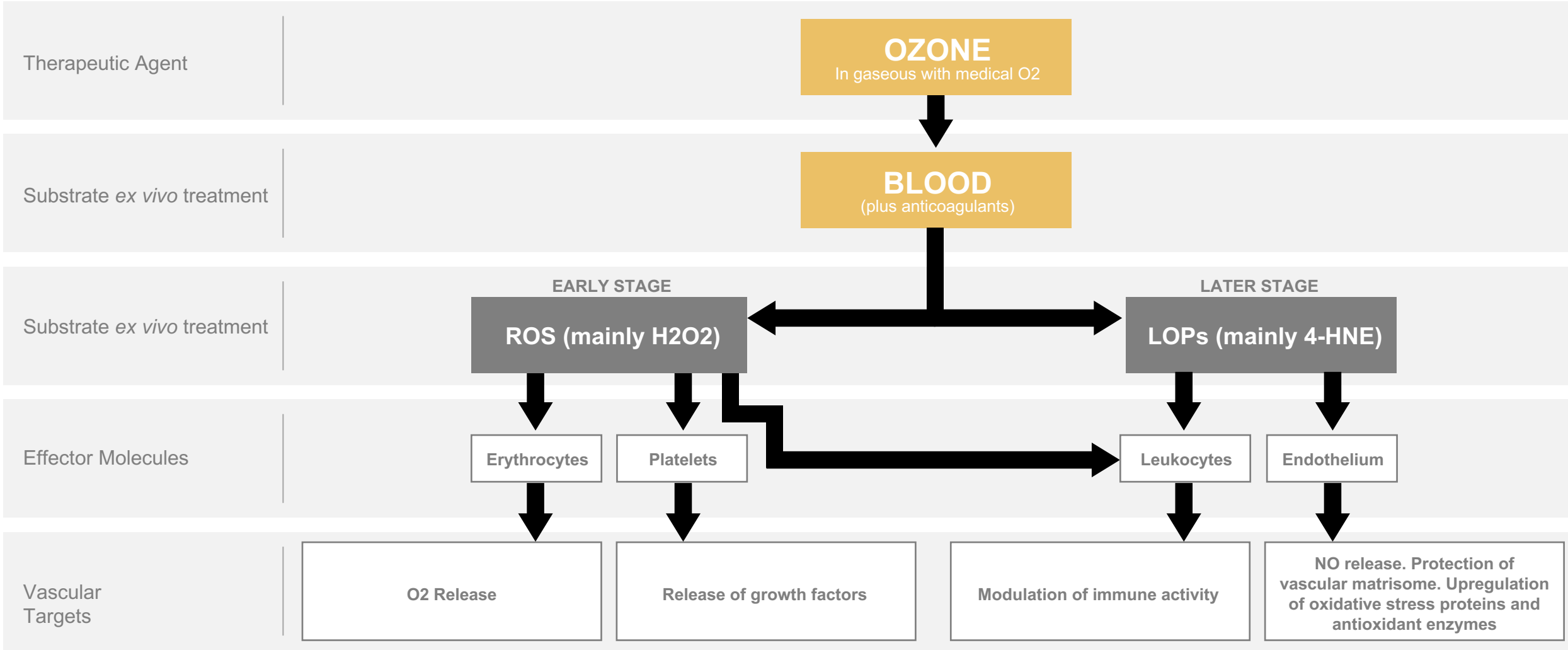
Medical Ozone in the Research by Dr. Velio Bocci

- Instantly reacts with blood products
- Bacterial, fungicidal and virucidal - *indirectly* activates the non-specific defense system
- Analgesic effects by acting on nerve endings in damaged tissue
- Detoxification effects – correction and activation of metabolic processes in the liver and kidney tissues.
- Vasodilator to improve micro and peripheral circulation
- Increases cellular efficiency - Activation of O2 dependent processes – catalyst of aerobic oxidation > mitochondrial activation >cellular respiration > ATP synthesis
- Hemostatic effects (dose dependent) - parenteral administration of low concentrations is characterized by the decrease in thrombocytic and coagulative levels of hemostasis and increase in fibrinolytic activity.

Medical Ozone in the Research by Dr. Velio Bocci

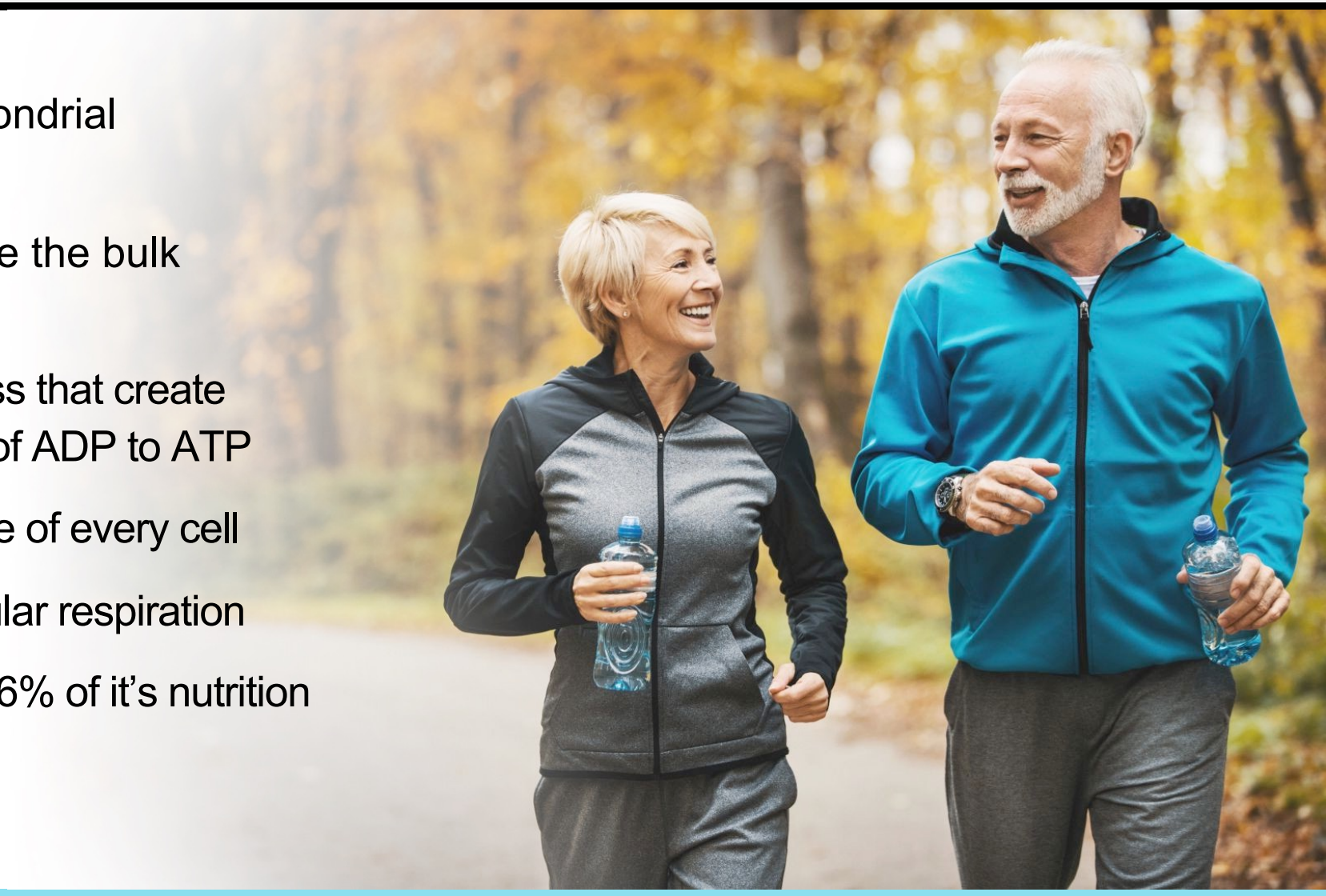
- Immune-modulating effects
  - Low ozone concentrations promote the accumulation of ozonides on the membranes of phagocytic cells –monocytes and macrophages. Due to ozonides these cells stimulate the cytokines synthesis of different classes. Cytokines being biologically active peptides, contribute to the further activation of non-specific defense and, apart from it, they activate cellular and humoral immunity. All together they facilitate the treatment of secondary immune-deficiency.
  - High concentrations produce aggravating effect on the processes of lipid peroxidation in cellular membrane of the same phagocytic cells with the accumulation of the toxic and hard products of lipid peroxidation (malon dealdehyde and Shiff bases), which inhibit cytokines synthesis and thus eliminate the activation of T-helpers lymphocytes, aimed at regulation of immune globulin generation by B-lymphocytes. This effect is used in the management of patients with autoimmune pathology
- Hormetic effect – stress to body that then creates secondary benefit
  - Optimization of pro- and antioxidant systems is regarded as one of the main effects of systemic ozone therapy which is realized through its influence on cellular membranes and bringing to balance the levels of lipid peroxidation products and of antioxidant defense system.

General Aspects of Ozone Therapy



Ozone is Super-charged Oxygen

- Oxygen is essential to mitochondrial function (energy).
- O2 main ingredient req to drive the bulk production of ATP
- Ozone and UV stimulate process that create bioenergy from the conversion of ADP to ATP
- O2 is required in the Krebs cycle of every cell
- O2 is the main receptor for cellular respiration
- The body uses O2 to process 96% of it's nutrition

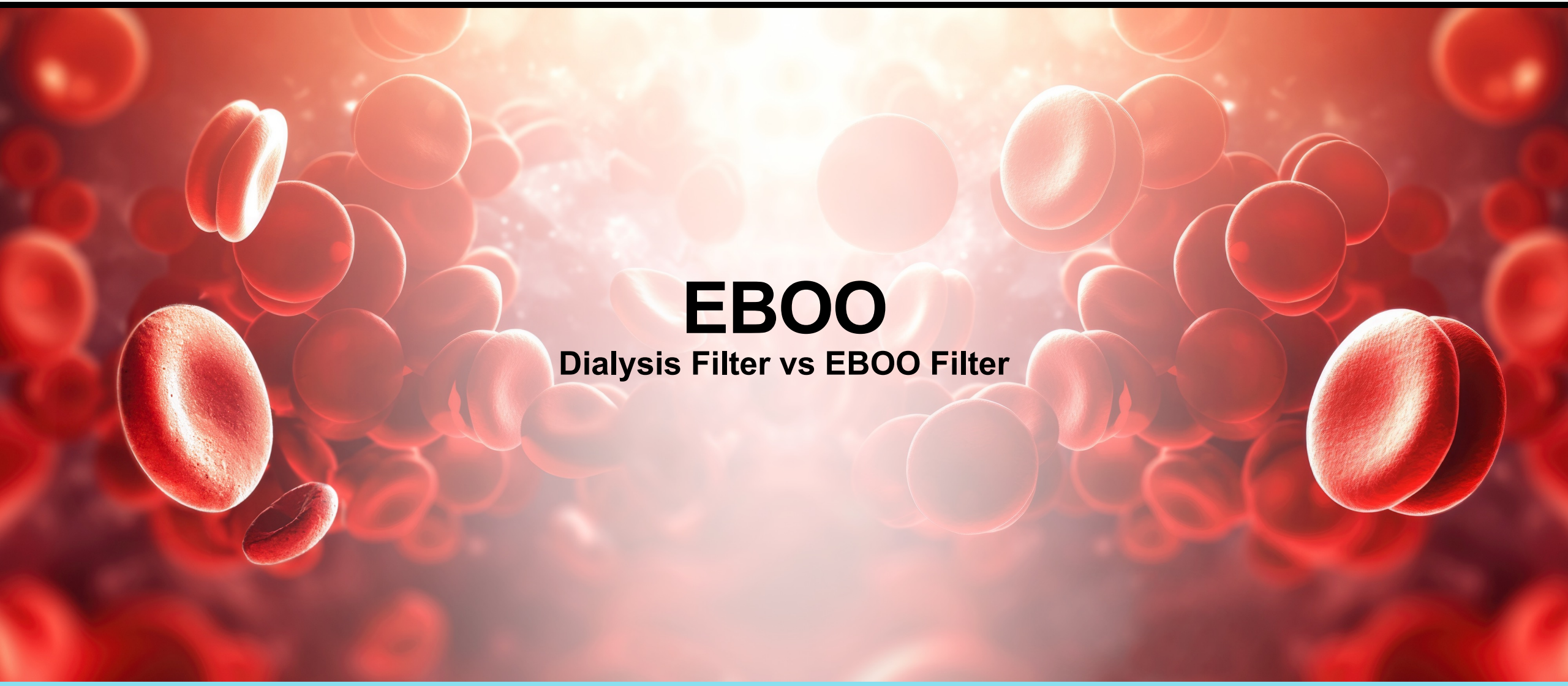


Indications

- Chronic Illnesses
- Chronic Inflammatory Diseases
- COVID
- Cardiovascular and Pulmonary
- Autoimmune
- Circulatory
- Chronic infection
- Mold, Lyme, Viral, Bacterial
- Anti-aging
- Wellness and Optimization

Contraindications

1. All cases with Blood Coagulation Failure
2. Bleeding Organs
3. Thrombocytopenia
4. Hemorrhagic or Apoplectic Stroke
5. Recent Myocardial Infarction
6. Current Alcohol Intoxication
7. Significant G6PD deficiency (favism)/ acute hemolytic anemia
8. Hyperthyroidism if not controlled
9. Leukemia
10. Pregnancy – First trimester only and medical-legal reasons



EBOO

Dialysis Filter vs EBOO Filter

Foundation of EBOO

EBOO is an attempt to change ozone therapy in two ways:

1. It is theorized that if flowing ozone could contact flowing blood that there would be a better dispersal of ozone throughout the body.
2. The ability of the above would allow for a higher dose of ozone to be given in one treatment.

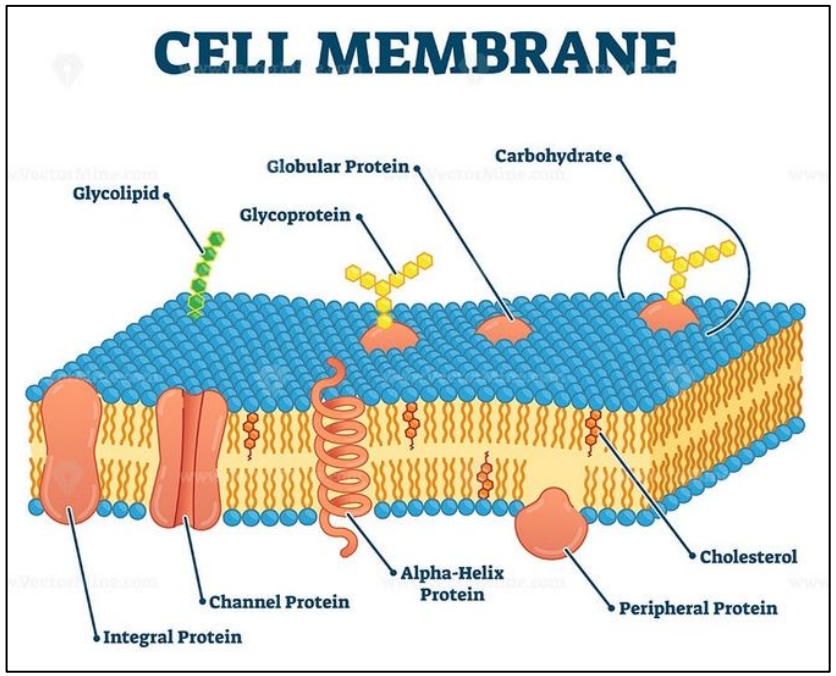
EBOO Requires Understanding

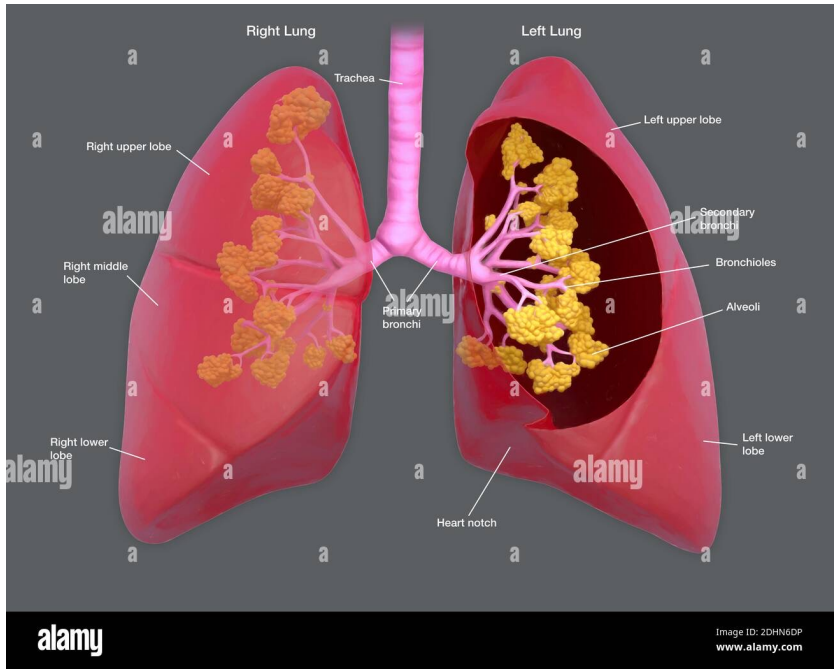
Questions that need to be asked:

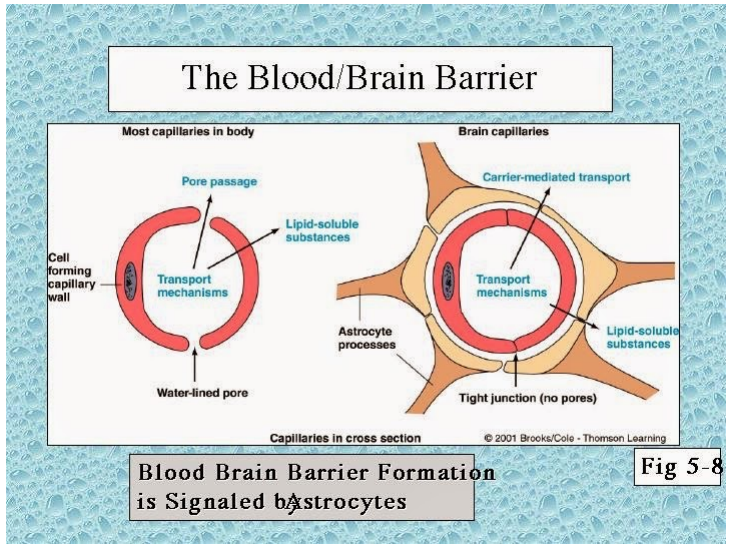
- What is a filter?
- How does normal dialysis work?
- What is diffusion?
- What about the diffusion mechanism within the filtration tubes we call “straws”?
- How does a gas exchanger work?
- How is EBOO different?

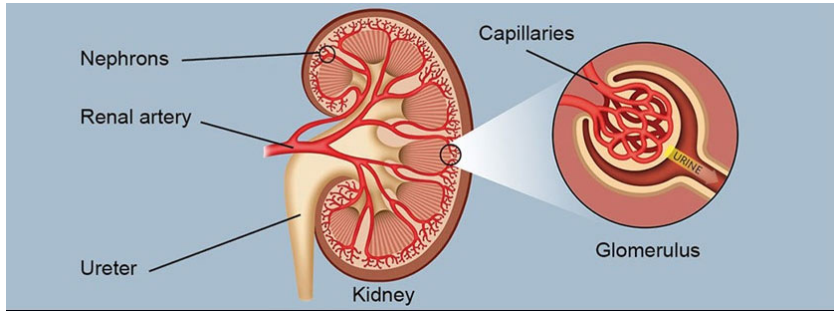
What is a filter?

What is a filter?









What is a filter?

A filter allows a certain size of material to pass and stops those that are too big.

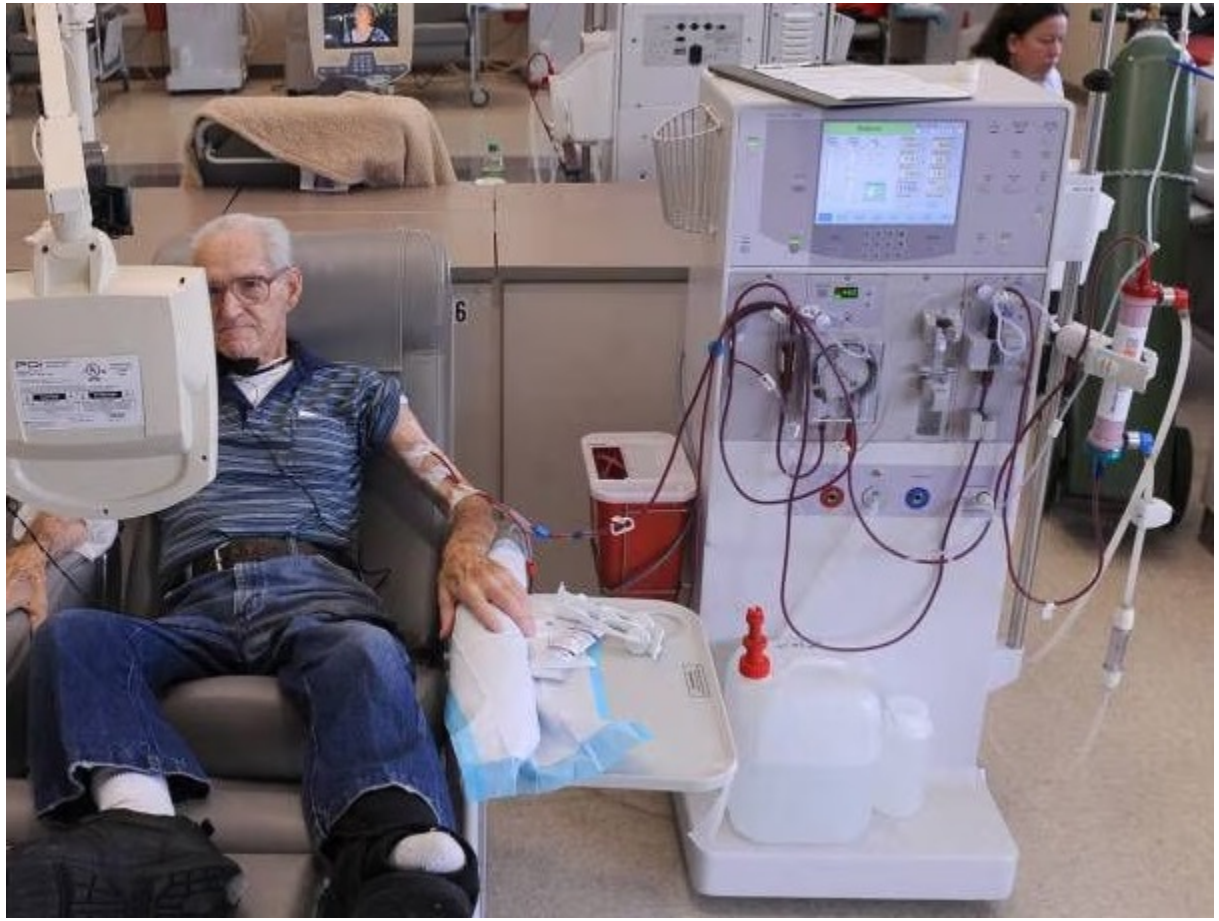
Filters of the body:

- Kidney
- Liver
- Lungs
- Intestinal tract
- Skin
- Lymphatic system

What is Dialysis?

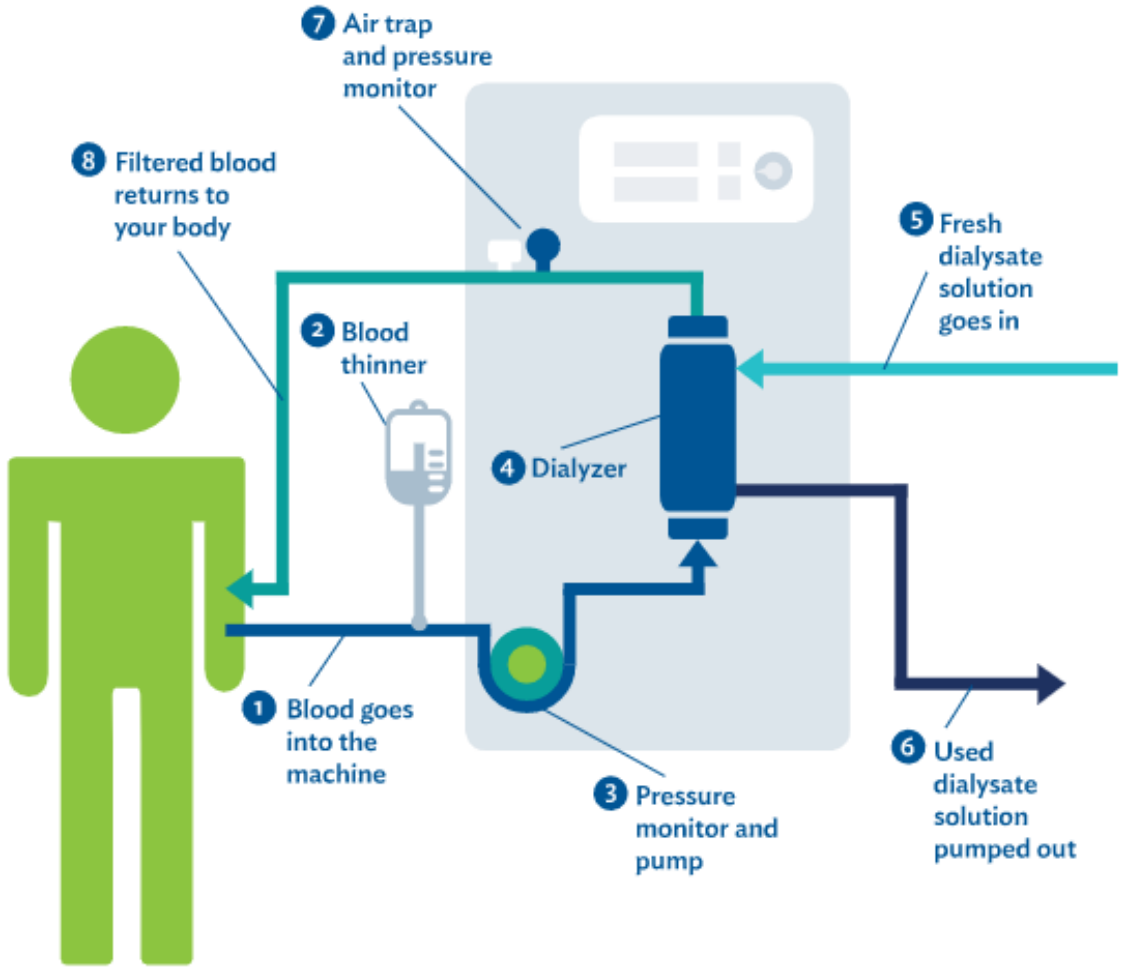
Dialysis is a form of artificial kidney that filters out some unwanted waste products from the blood

It allows a person to live when the kidneys are not working.



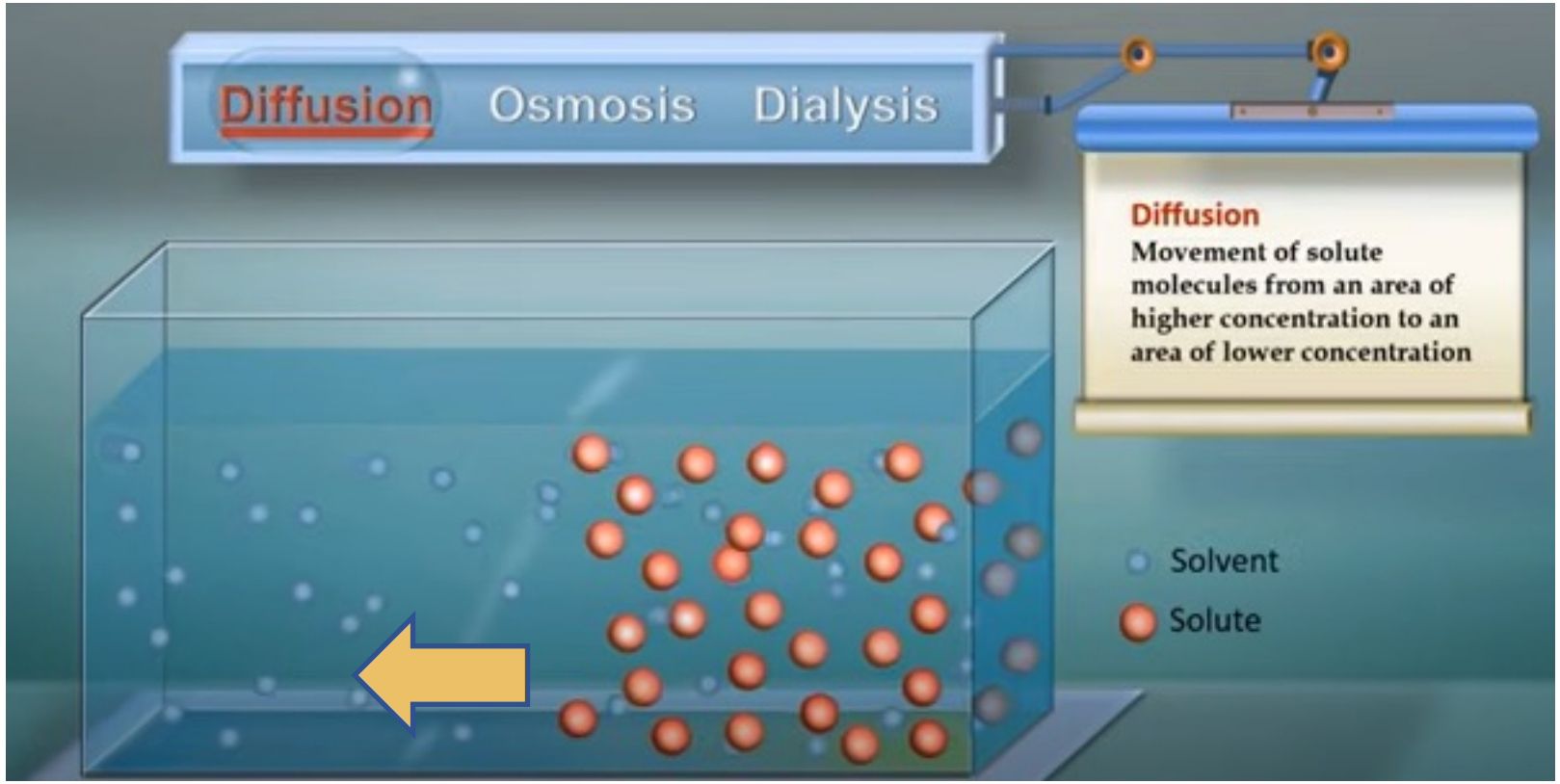
What is Dialysis?

1. Two tubes are connected to the body via a dialysis access which is surgically installed. Blood flows from your body into the machine through one of the tubes.
2. Heparin/saline is added.
3. A pressure monitor and pump work together to keep the flow at the right rate.
4. Your blood enters the dialyzer(filter) where it is filtered.
5. Dialysate solution (made up of water, electrolytes and salt) enters the dialyzer. It draws the waste out of your blood.
6. Used dialysate solution is pumped out of the machine and discarded.
7. Your cleaned blood returns to your body through the second tube attached to your access site.



What is Diffusion?

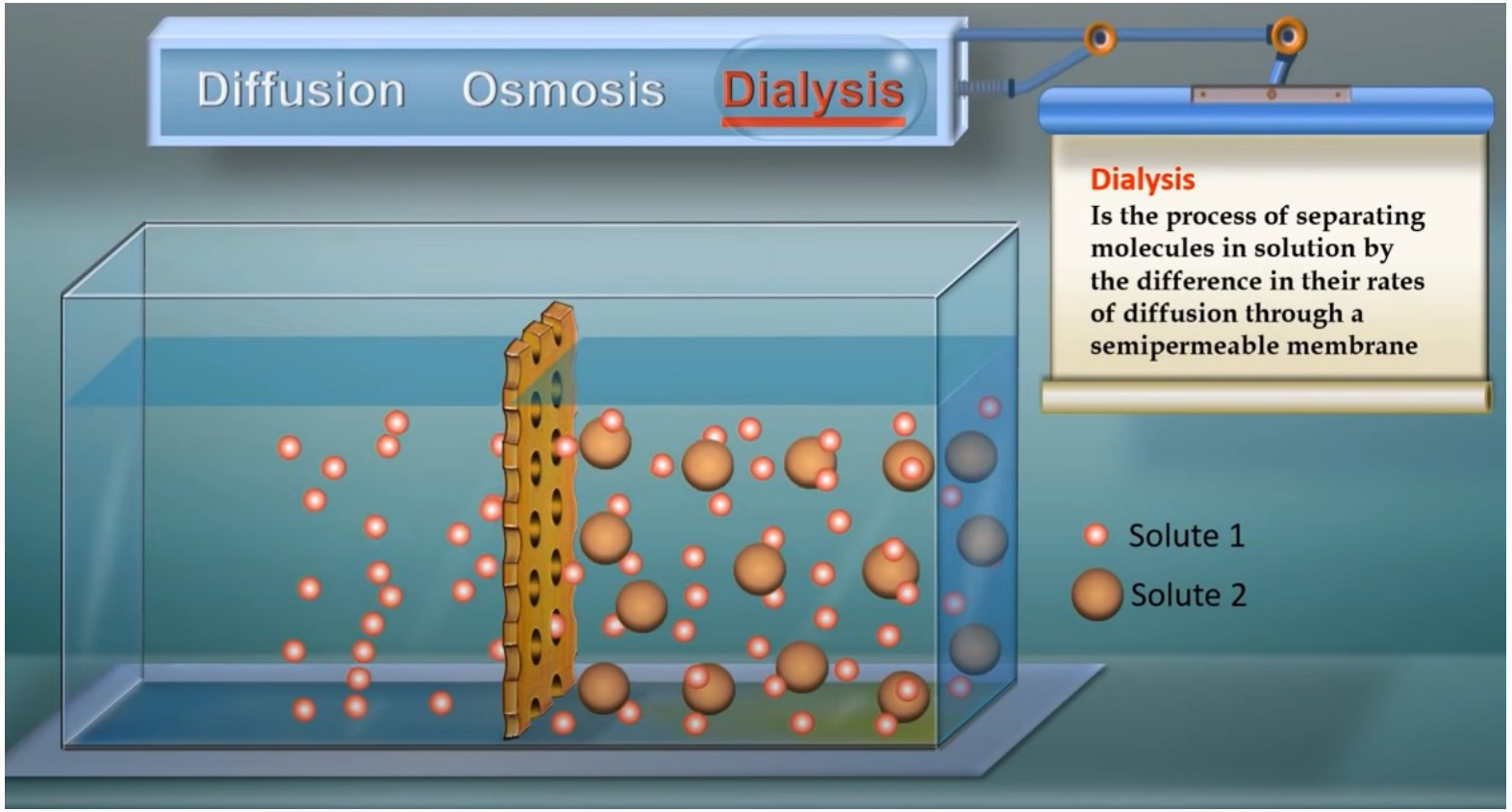
The spontaneous movement of particles from an area of higher concentration to one of a lower concentration.



What is Dialysis?

Dialysis needs a semipermeable membrane.

The membrane allows soluble materials of a small size to pass through



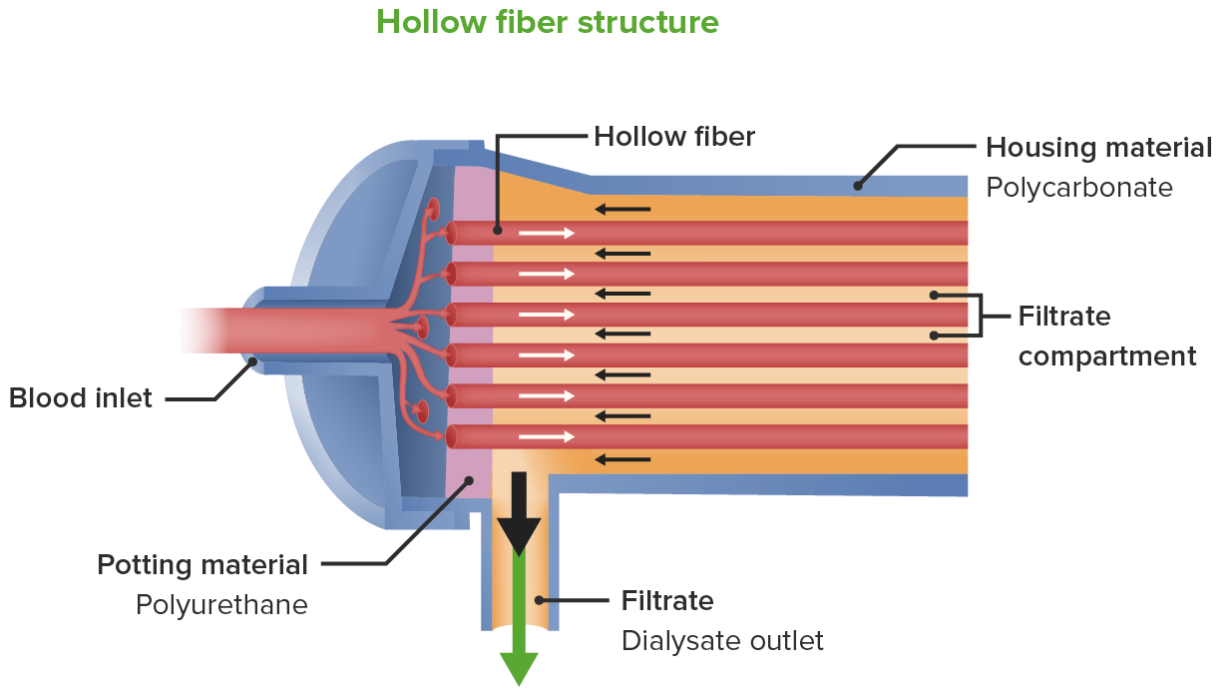
What is the membrane in dialysis filter?

- There are over 10,000 of these “perforated straws” in a dialysis filter giving a lot of surface area.
- They allow blood to flow through the straws
- On the outside of the straws is the dialysate – water, electrolytes and salt.

Inside the Filter

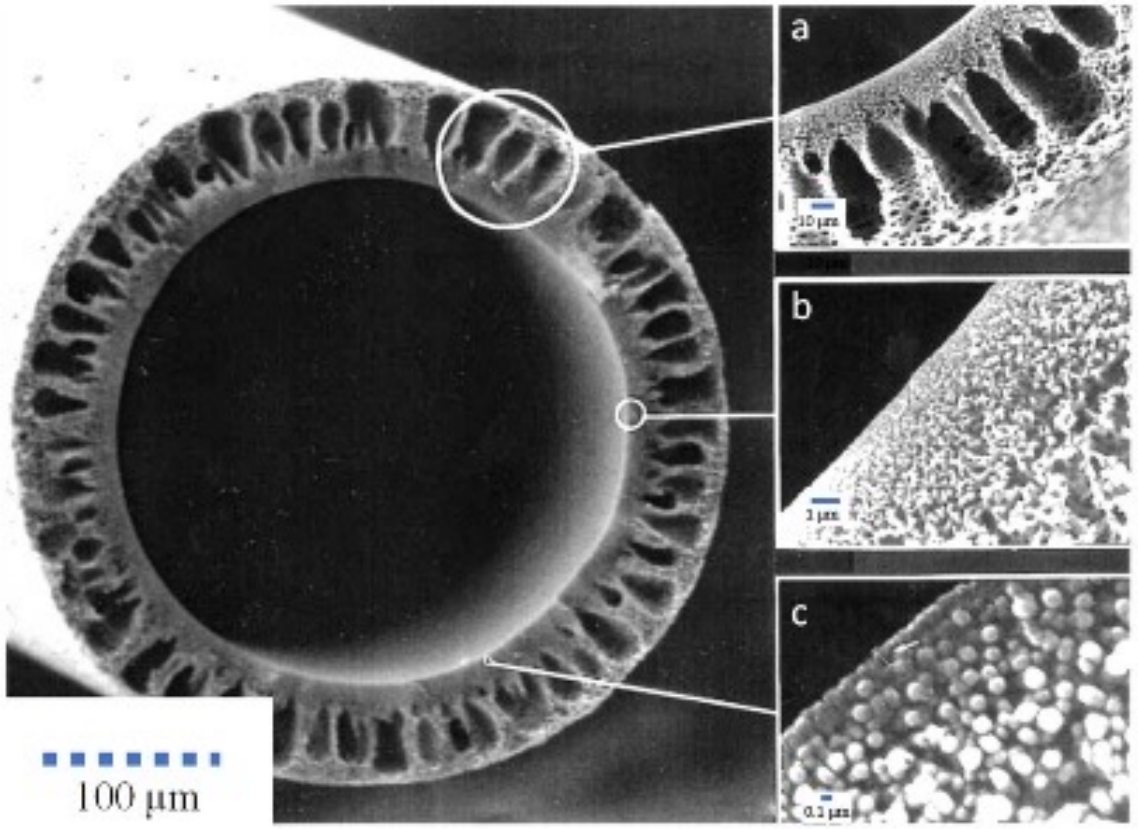
What is the membrane in dialysis?

- There are a number of kinds of synthetic materials that the “straws” are made of: CTA, PES, PS, Cuprophane, PMMA. All are hydrophilic.
- Hydrophilic – they suck up water like a sponge



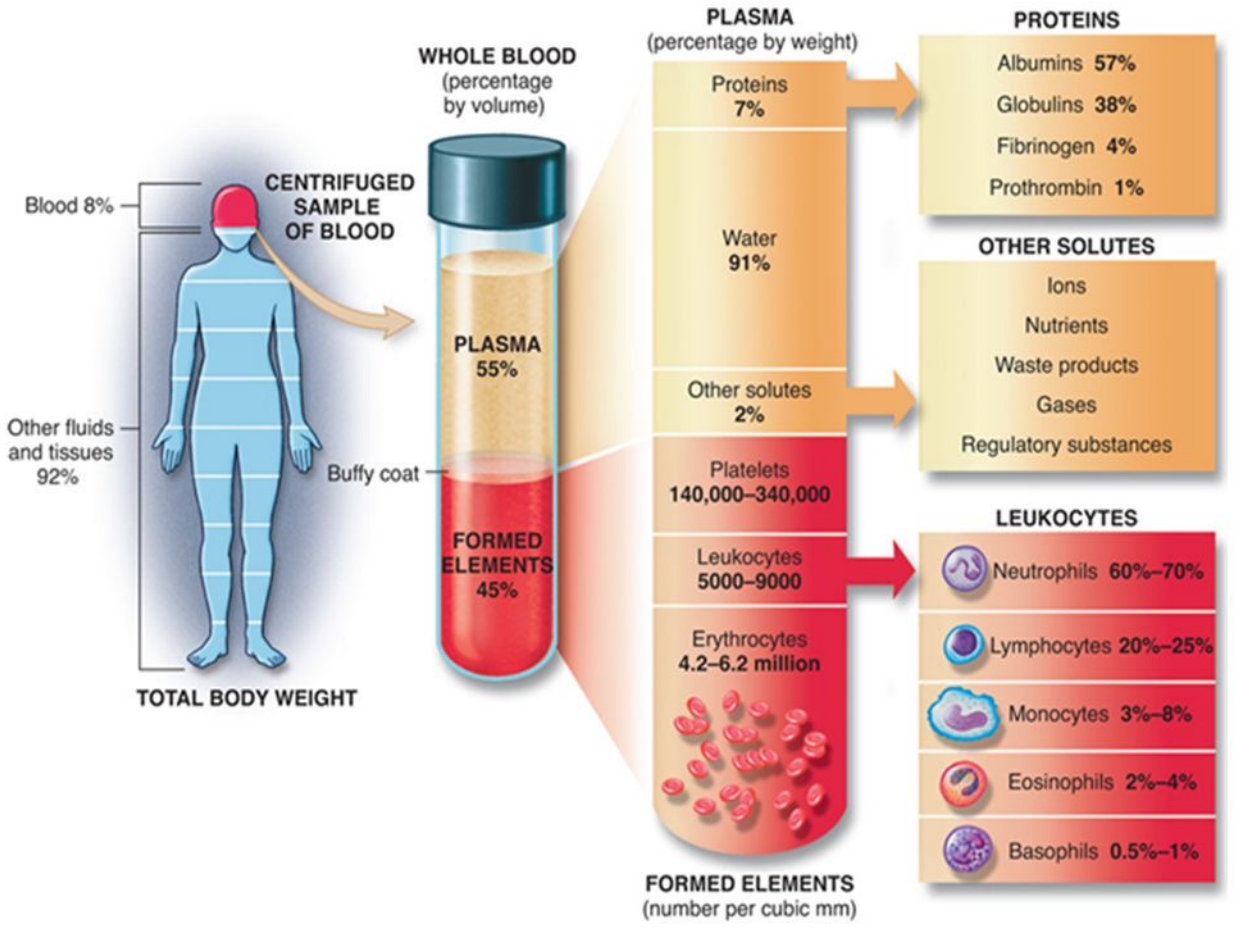
What is the dialysis membrane like?

- Like a hard sponge
- That has very small openings that only allow water and soluble materials to pass



Make up of blood

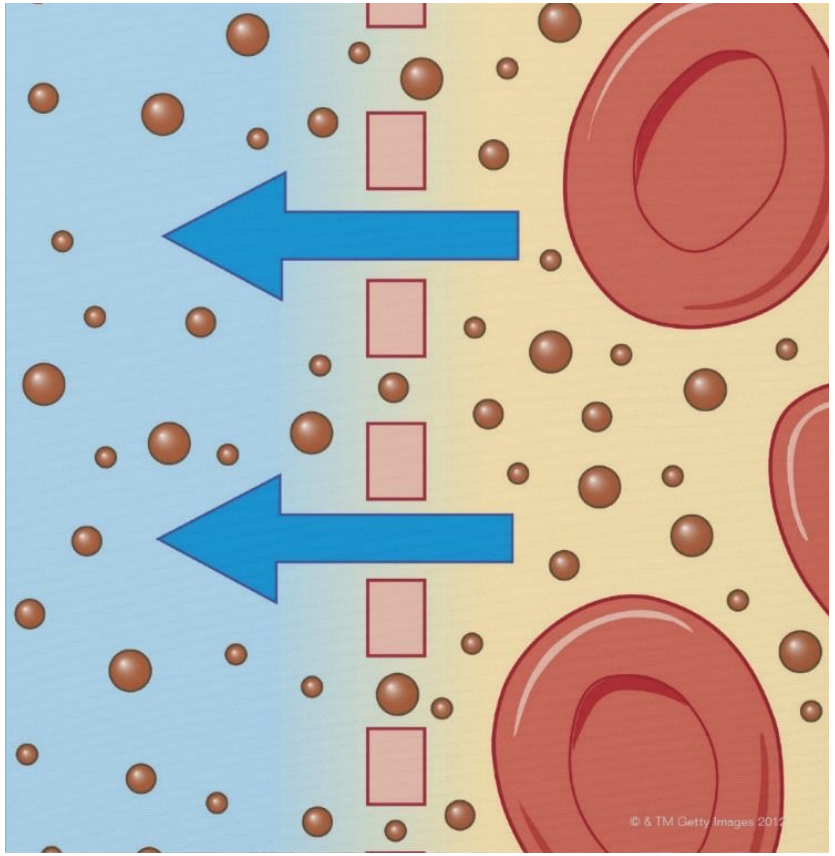
- What are the blood materials traveling through the inside of the tubes?
- 90% of the blood is water



What Passes Through the “Straws?”

What can pass through the “straws” and be disposed of by the dialysate?

- Only water-soluble products
- Potassium
- Urea
- Creatinine
- Phosphates
- Sodium
- Water soluble medications

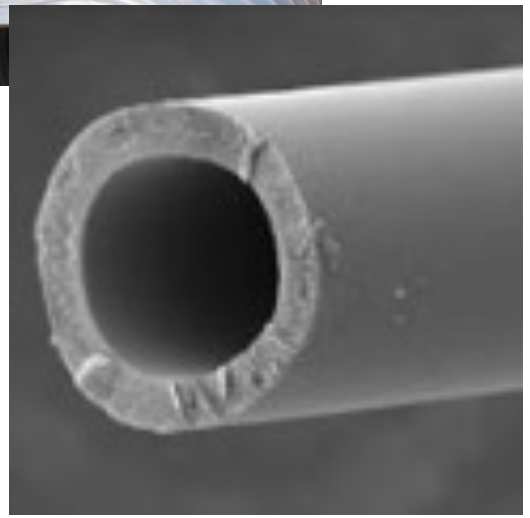


An analogy

- Equate the “straw” to a 3.5 feet in diameter culvert
- The wall of the culvert is 7” thick
- The length of the culvert is 7.5 miles
- The culvert is penetrated by millions of holes that are the size of a 27-gauge needle.

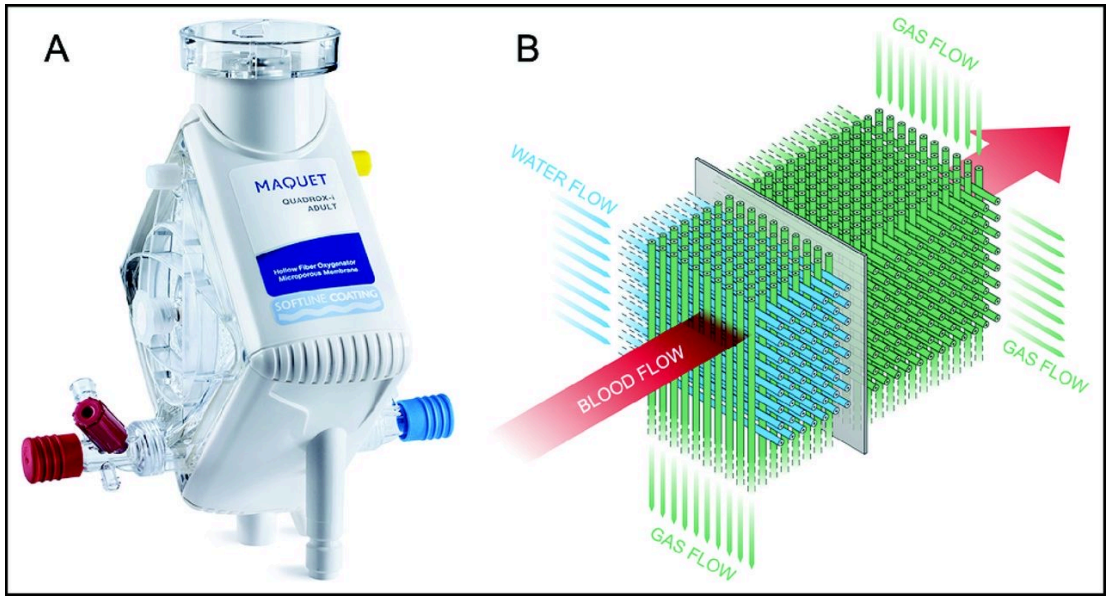
- The blood cells (white and red) are the size of a ping-pong ball 1.5”. 28 of them will fit side by side in the culvert.

- Blood flows downward through the straws as dialysate flows upward around the straws. There is diffusion of soluble waste materials through the “sponge” walls to the dialysate therefore acting as an artificial kidney.



What is an oxygenator or gas exchanger?

- The oxygenator serves as the lung component of coronary bypass surgery. It receives deoxygenated blood from the patient and introduces oxygen and removing carbon dioxide. This process mimics the gas exchange function of the lungs.
- The device has a membrane that allows liquid on one side and gas on the other side and allows for exchange through diffusion.



Bocci's attempt for EBOO

2008 study comparing 4 dialysis filters and a gas exchanger

Artificial Organs

'HOUGHTS AND PROGRESS

Are Dialysis Devices Usable as Ozone Gas Exchangers?

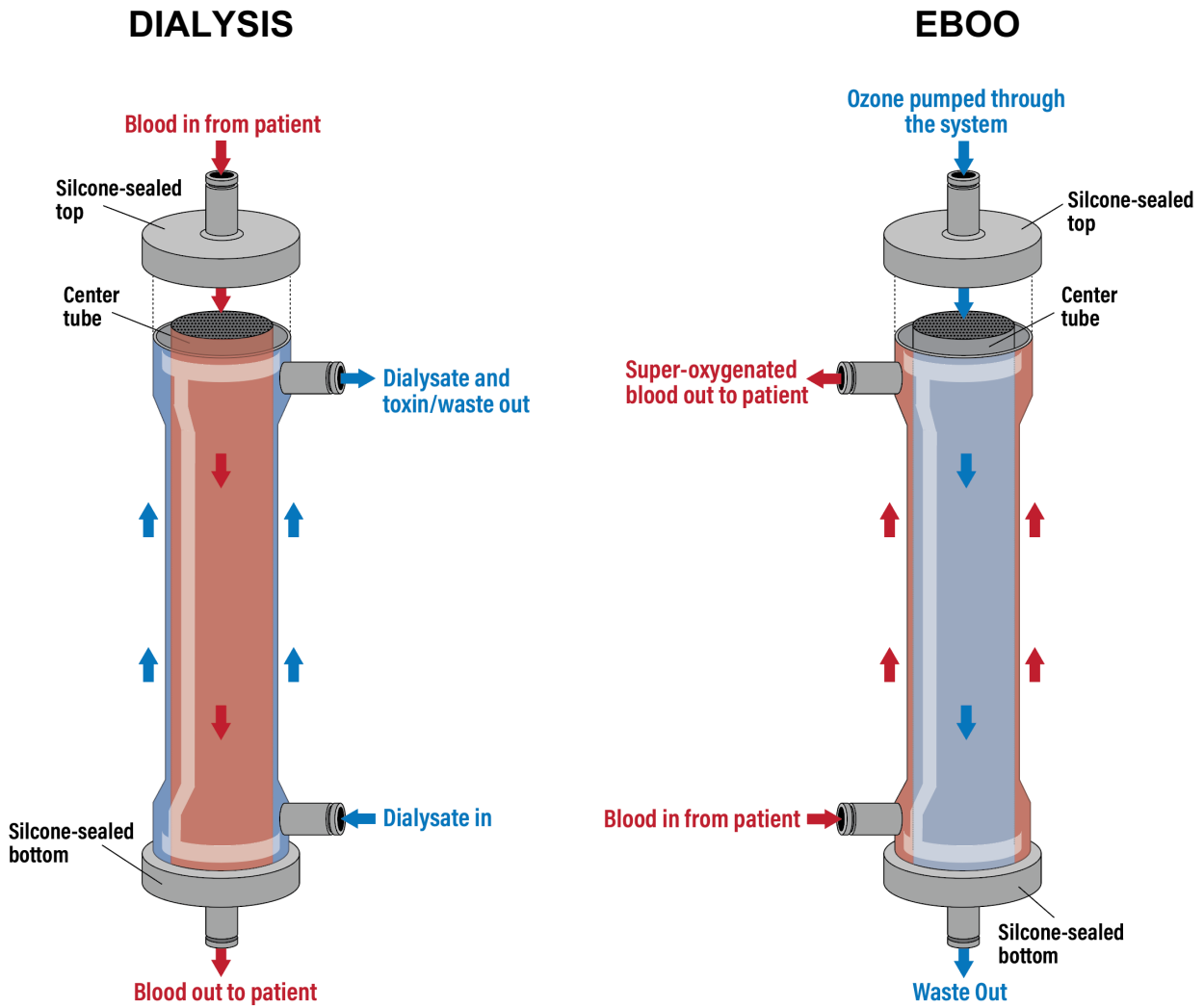
*Valter Travagli, *Iacopo Zanardi, *Alessandro Gabbrielli, †Eugenio Paccagnini, and ‡Velio Bocci
*Dipartimento Farmaco Chimico Tecnologico; †Dipartimento di Biologia Evolutiva; and ‡Dipartimento di Fisiologia, Università degli Studi di Siena, Siena, Italy

Abstract: A study aimed to compare the efficiency of the ozone transfer of four hydrophilic dialysis filters, and one hydrophobic gas-exchange device (GED) has been

So does EBOO work with a dialysis filter?

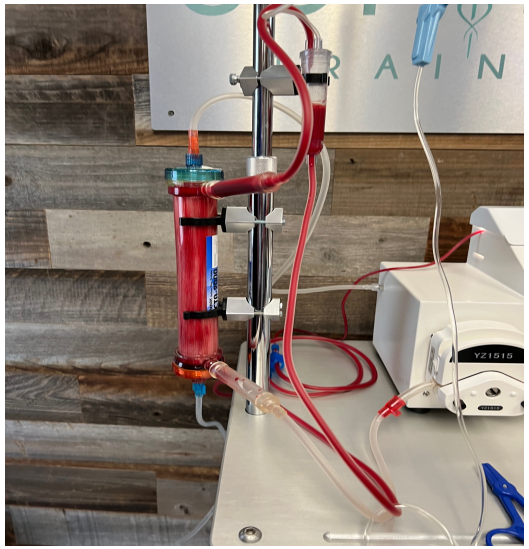
- Rowen estimates that 63% of the ozone goes somewhere.... Is that a problem? What about all the flack about microplastics?
- Bocci called those using EBOO filters “...unscrupulous quacks using dialysis systems exploiting cancer and HIV infected patients with a doubtful and most toxic technique...” (2011 second edition Ozone New Medical Drug)
- Until there is an affordable gas exchanger with all ozone resistant materials the dialysis filter will probably be used.

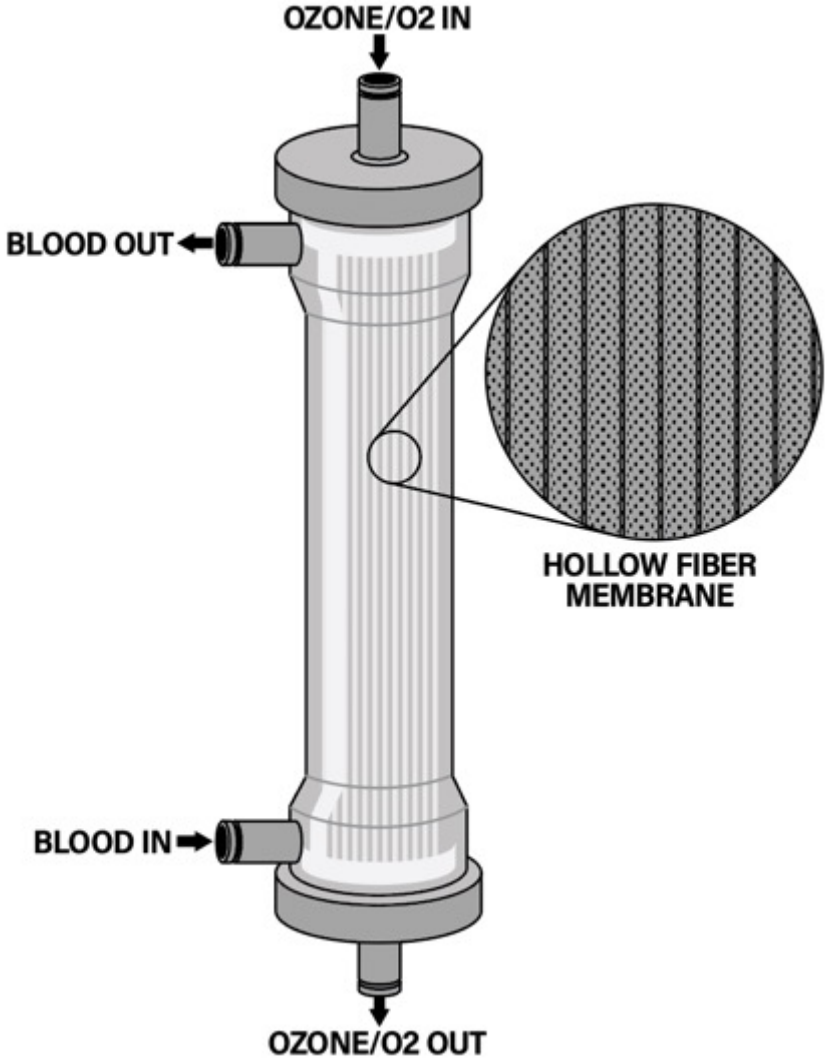
Dialysis Versus EBOO



Tubing and Diffuser Setup

The perforations are so small they **do not** allow red blood cells in. The O2/O3 mixture instead passes from **top to bottom** through the straws therefore diffusing the ozone and oxygen into the blood.





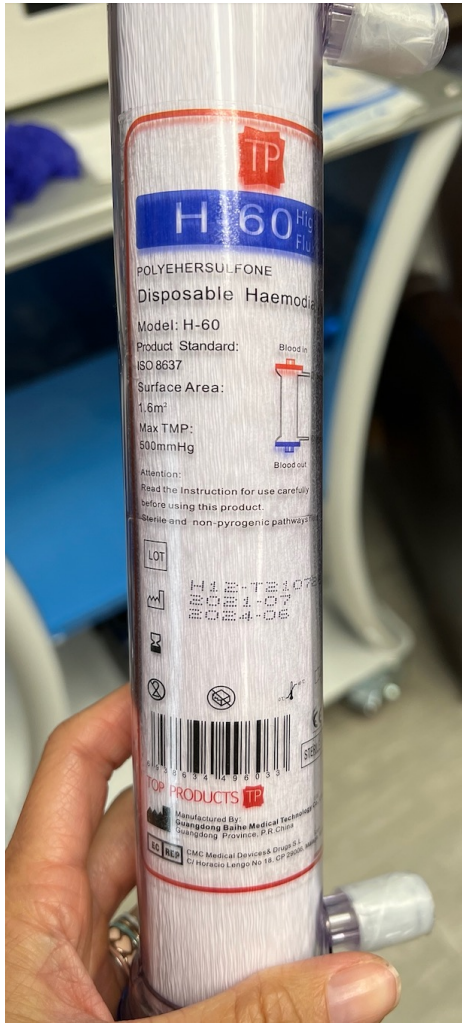
Summary

- EBOO may be the next best ozone therapy available.
- Presenting accurate science to our patients will prevail.
- The current system works well, and absolutely helps patients, even beyond other ozone IV treatments.
- Understanding Bocci and his work is helpful as we develop for the future.
- Attempts are being made to develop a low-cost gas exchanger that will replace the dialysis filter.

What to Expect with Filter, Cup and Peristaltic Pump

Filter

- Should see blood color change from top to bottom
- Some have reported what they call lipids or heavy metals – unverified
- Should see healthy flow of blood from side-bottom tubing or blood draw

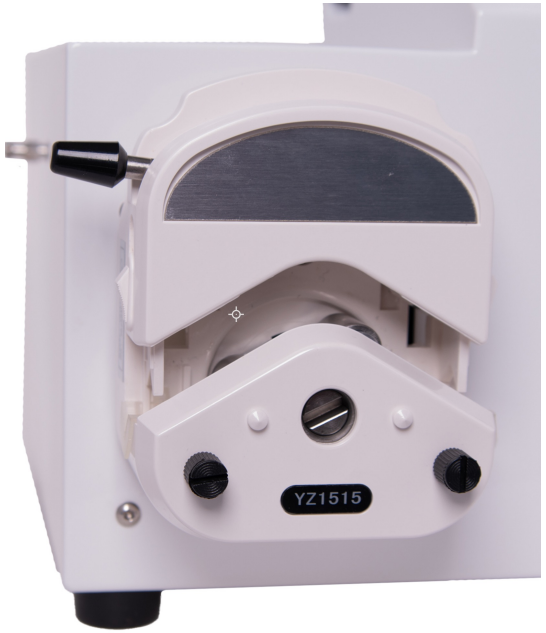


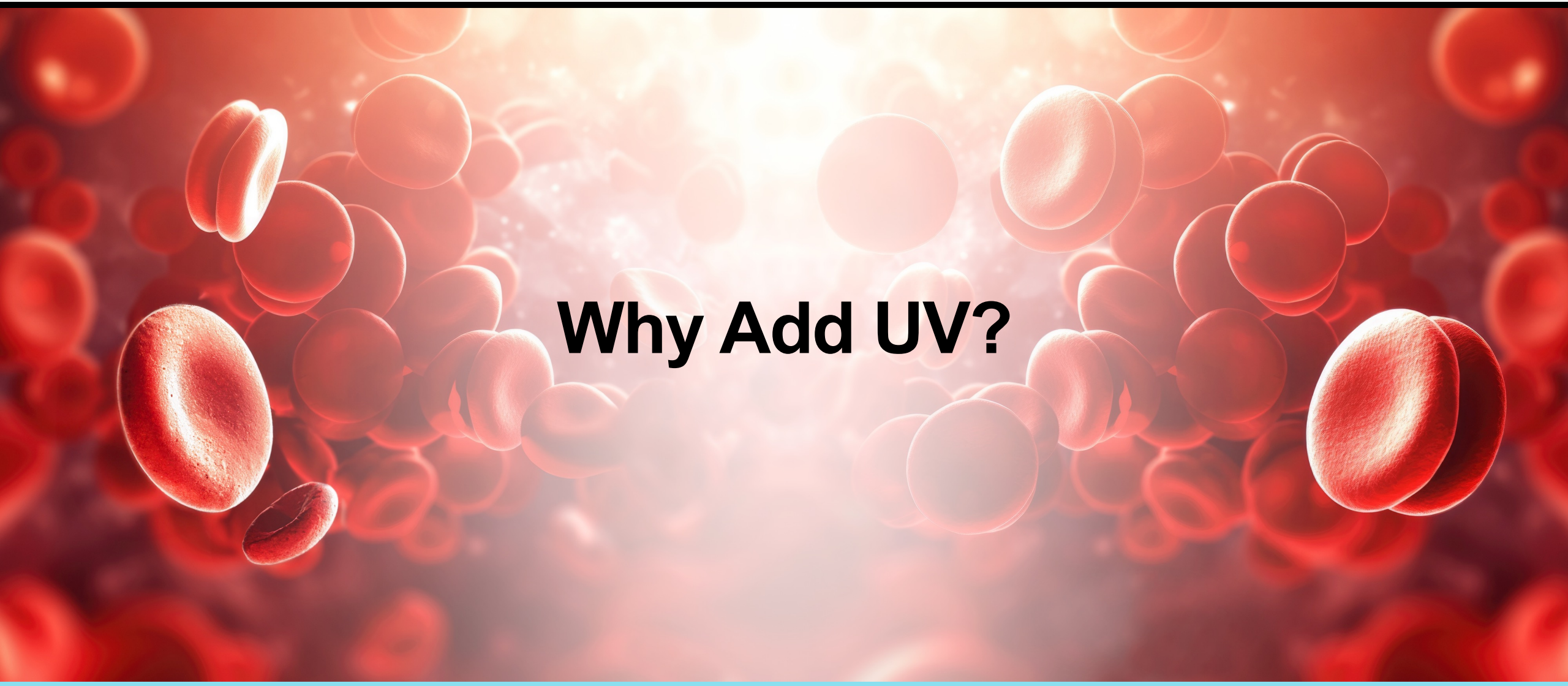
Collection Cup

- Three cases studied originally
- 15-minute increments with comprehensive panel only
- No significant changes recorded although some fluctuation
- EBOO collection cup fluid should be clear
- Varying amounts of fluid:foam
- Varying from tx to tx
- Yellow: likely has erythrocytes and proteins
- Red: LYSING

Peristaltic Pump

1. Draws blood from patient which then pushes blood back to patient
   - RPM = Revolutions per Minute
   - 2.86 ml per revolution
   - 14 RPM = 40ml/min
   - 40ml/min x 50 min = 2000 ml of blood
2. Very sensitive to tubing. Inner and outer diameter of tubing matters (within a fraction of a mm).
3. If it stutters, it is likely having trouble drawing. First check catheter placement. Tubing section and placement may need to be adjusted. Make sure tubing isn't pinched in jaws.
4. Should see blood move through tubing and into filter
5. All of this is mechanical but completely dependent on vein health, catheter placement, arm position, individual cardio health of patient, etc.
6. May adjust RPM based on performance

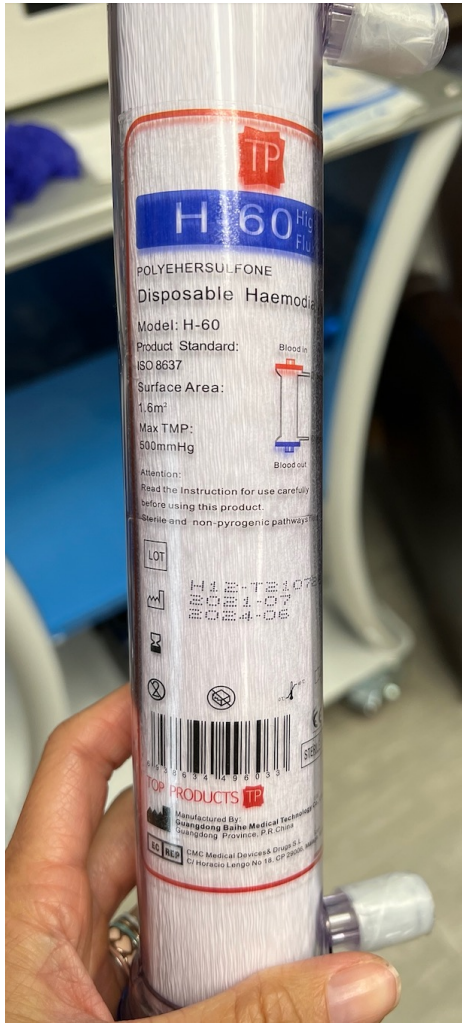



Why Add UV?

Why Add UV?

- SYNERGY
- Each 60-90% effective but increases by up to 30% when used together
- Two therapies in one – more cost/time effective
- Less herxing reported
- Advancement in EBOO
- Set your clinic apart from other EBOO clinics

*Make sure your UV lights and cuvette are effective
-Two vetted devices
-UVA, UVB, UVC, LED, Laser



Ozone and UBI Work Best Together

What does Ozone/UV Combo do?

- Germicidal
- Rheological - flow properties of blood
- Immune modulating
- Analgesic effects
- Supports detox systems/organs
- Oxygenation effects
- Inflammation reduction
- Redox balancing
- Optimization of pro- and anti-oxidant systems
- Vasodilation - improved circulation
- Increased cellular efficiency
- Mitochondrial repair
- ATP increase
- Tissue Repair
- Debris scavenger

What conditions improve with O3UV?

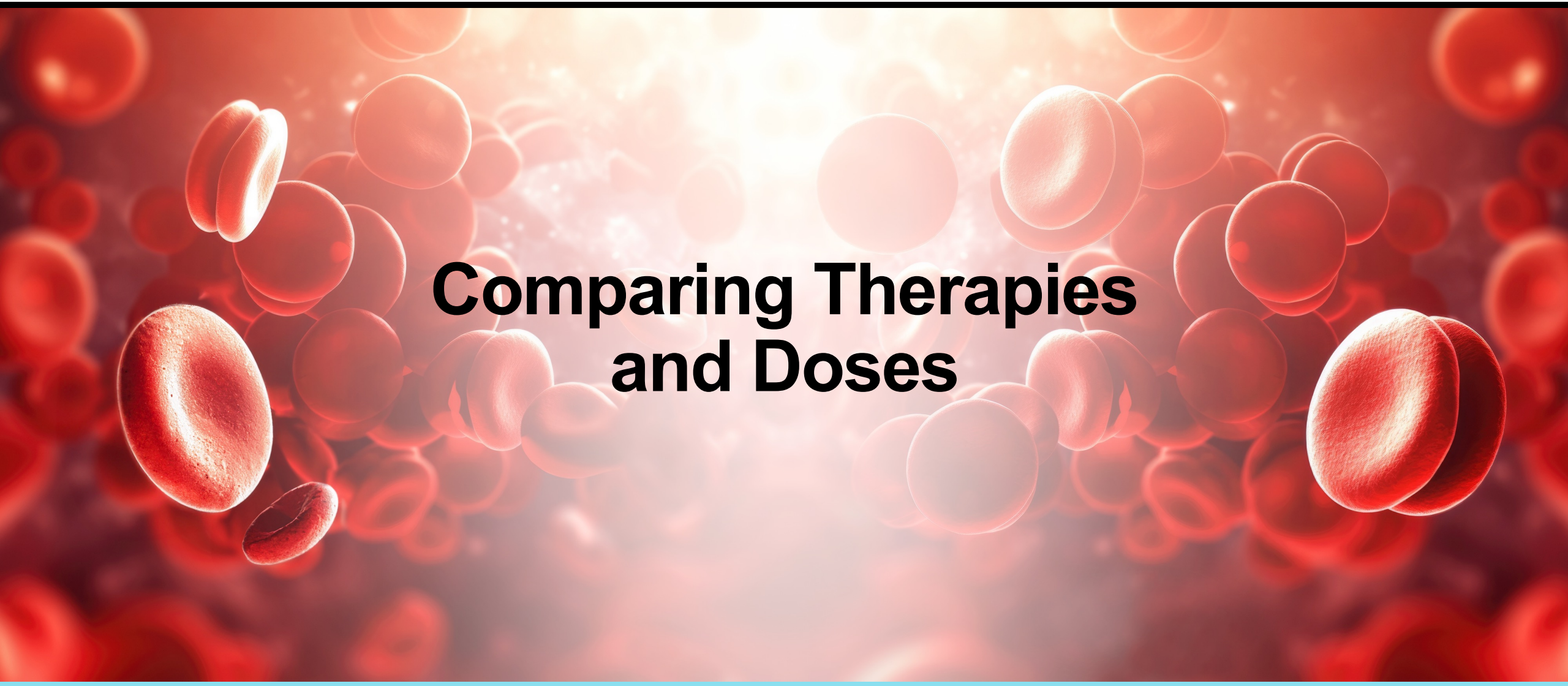
- Cellular respiration and autophagy
- Cardiovascular disorders
- Circulatory disease
- Systemic chronic and acute infections (viral, bacterial, fungal)
- Autoimmune disease
- Mitochondrial disfunction
- O2 Utilization
- Tissue repair
- Digestive/Kidney/Internal
- Mental disorders via microcirculation
- Pulmonary conditions
- OB/GYN
- Pain of all kinds
- Chronic and acute inflammation (localized or systemic)

High Dose UV

Is it okay to expose 2L of blood to UV?

UV Contraindications

1. Photosensitivity
2. Sulfa Drugs



Comparing Therapies and Doses

Ozone Doses Being Used

DOSES CATEGORIZED	
Manual Standard	< 3,000 mcg – 10,000 mcg
Manual Hi-Dose	10,000 mcg – 25,200 mcg
HD Ozone/UV	70,000 mcg – 87,500 mcg
Ten-Pass Ozone	140,000 mcg
Malaysian EBOO	150,000 mcg
Purita EBO2	150,000 mcg
EBOO Full Spectrum	150,000 mcg

High-Dose Ozone Therapies

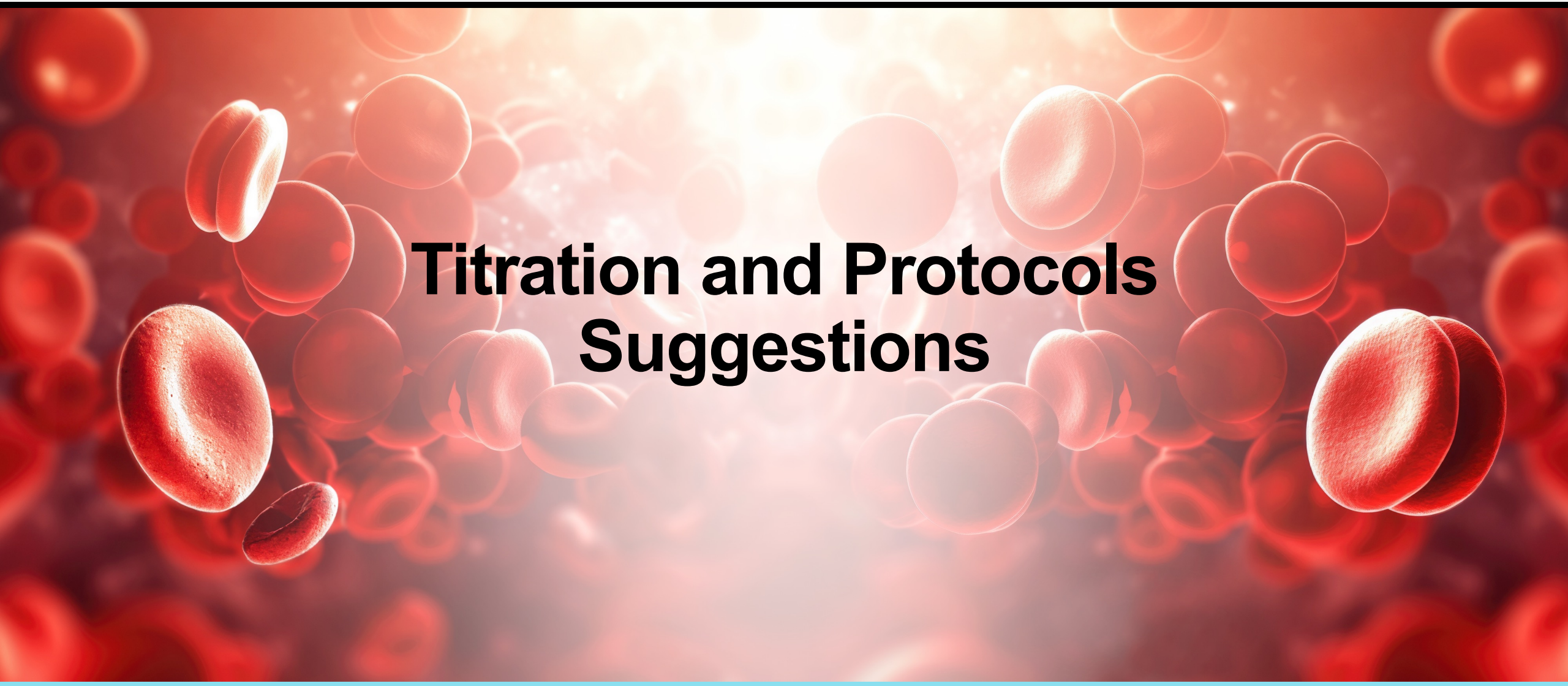
	HI-DOSE	10-PASS	EBOO
Amount of Blood Treated	300mL	2,000mL	2,000mL
Amount of Ozone Introduced	70,000 mcg	140,000 mcg	150,000 mcg
Utilizes UV Light	Yes	No	Yes
Ozone Diffuser (Filter)	No	No	Yes
Treats a Myriad of Condition	Yes	Yes	Yes
Average Number of Treatments for Results	3-5	3-5	1-3
Time to Administer	60 min	60 min	50 min

EBOO Comparison

	TRIGEN/STRATOS	EBO2	EBOO Full Spectrum
Captures Synergy of Ozone and UV	No	No	Yes
Amount of Blood Treated	2,000 mL	2,000 mL	2,000 mL
Dose of Ozone	150,000 mcg	150,000 mcg	150,000 mcg
Concentration of Ozone	3 mcg/mL	40 mcg/mL	Both
Utilizes UV Light	No	Ineffective	UV/Full Spectrum
Blood Diffuser and Collection Cup	Yes	Yes	Yes
Peristaltic Pump	Yes	Yes	Yes
Ozone Decstruct	Yes	Yes	Yes
Cart	No	No	Yes
Custom Tubing	No	No	Yes

Popular Ozone Treatment Economics

	Standard O3UV	Hi-Dose O3UV	Ten-Pass	EBOO/EBO2 (Malaysian/Purita)	EBOO Full Spectrum
Clinic Equipment Investment	$8,000	$13,000	$35,000	$20K - $40K	**$26,000**
Clinic Supply Cost	$45	$60	$100	$100 / $600	**$98**
Patient Fee	$260	$600	$1,500	~$2600	**$1,500**
Staff Time	1 hour	1.5 hours	2 hours	2 hours	**2 hours**



Titration and Protocols Suggestions

EBOO Only Treatment Suggestions

Stage III Patient – Chronic/Ill

- 3 therapies minimum – 1x weekly

Stage II Patient – Walking Sick Person

- 2 therapies minimum – 1x weekly

Stage I Patient – Wellness/Optimization

- 1 therapy as needed

*Use titration policy as part of weekly treatments until full EBOO treatment is administered – then repeat as needed.

*Recommend and commit patients to three initial EBOO (see next slide) then reassess for future recommendations.

EBOO Only Titration Suggestions

Treatment 1

- At least 10,000 mcg of ozone prior to verify compatibility before introducing a high dose with EBOO.
- IF there is a history of “reaction” then repeat ~10,000 mcg before proceeding to EBOO

Treatment 2

- Titrate the patient up to a 25 min EBOO procedure

  25 minutes treating 1L of blood with 75,000 mcg of ozone

Treatment 3 (see supply list for details)

- Titrate up to a 50 min EBOO procedure
  - 50 minutes treating 2L of blood with 150,000 mcg of ozone

EBOO+ Treatment & Titration Suggestions

Treatment 1

- At least 10,000 mcg of ozone prior to verify compatibility before introducing a high dose with EBOO.
- IF there is a history of “reaction” then repeat ~10,000 mcg before proceeding to EBOO

Treatment 2 - Pre-treatment for EBOO

- Myers Cocktail (10-20G IVC) + Glutathione

Treatment 3

- Titrate the patient up to a 25 min procedure
  - 25 minutes treating 1L of blood with 75,000 mcg of ozone

Treatment 4

- “Titrate up to a 50 min” EBOO treatment
  - 50 minutes treating 2L of blood with 150,000 mcg of ozone

How does EBOO work with other IV therapies?

Consider mitochondrial therapies and their role for your patient

- NAD

Consider antioxidative therapies and their role for your patient

- Glut, NAC, > 25G of C (Myers Cocktail), PolyMVA
- Ideally separate antioxidative and oxidative txs w/ a bag of saline at min.

Stack oxidative therapies on the same day

- HDIVC < 25G of C, Methylene Blue, ozone

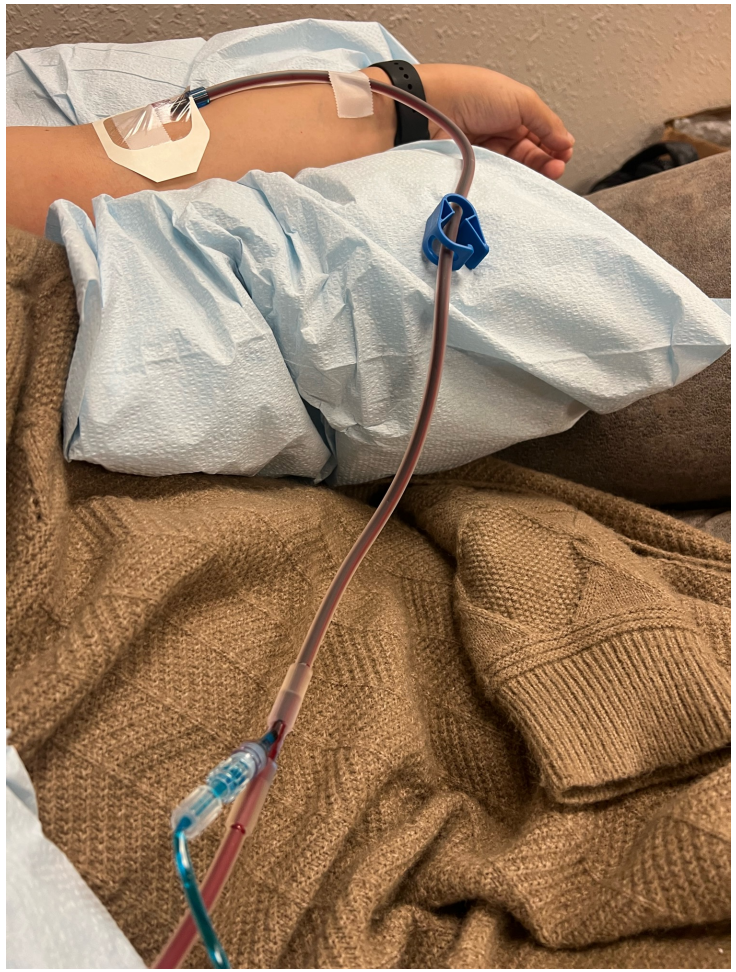
Okay to combine with peptides, Human Cellular Tissue Products (HCTP)

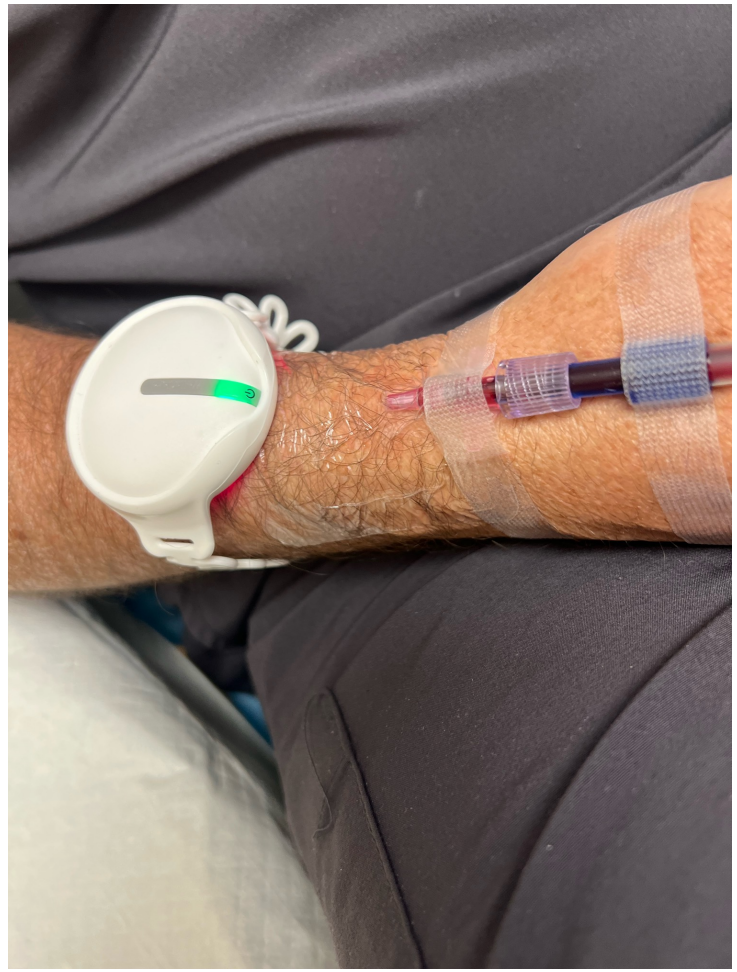
- Prime patient prior with EBOO BEFORE these therapies

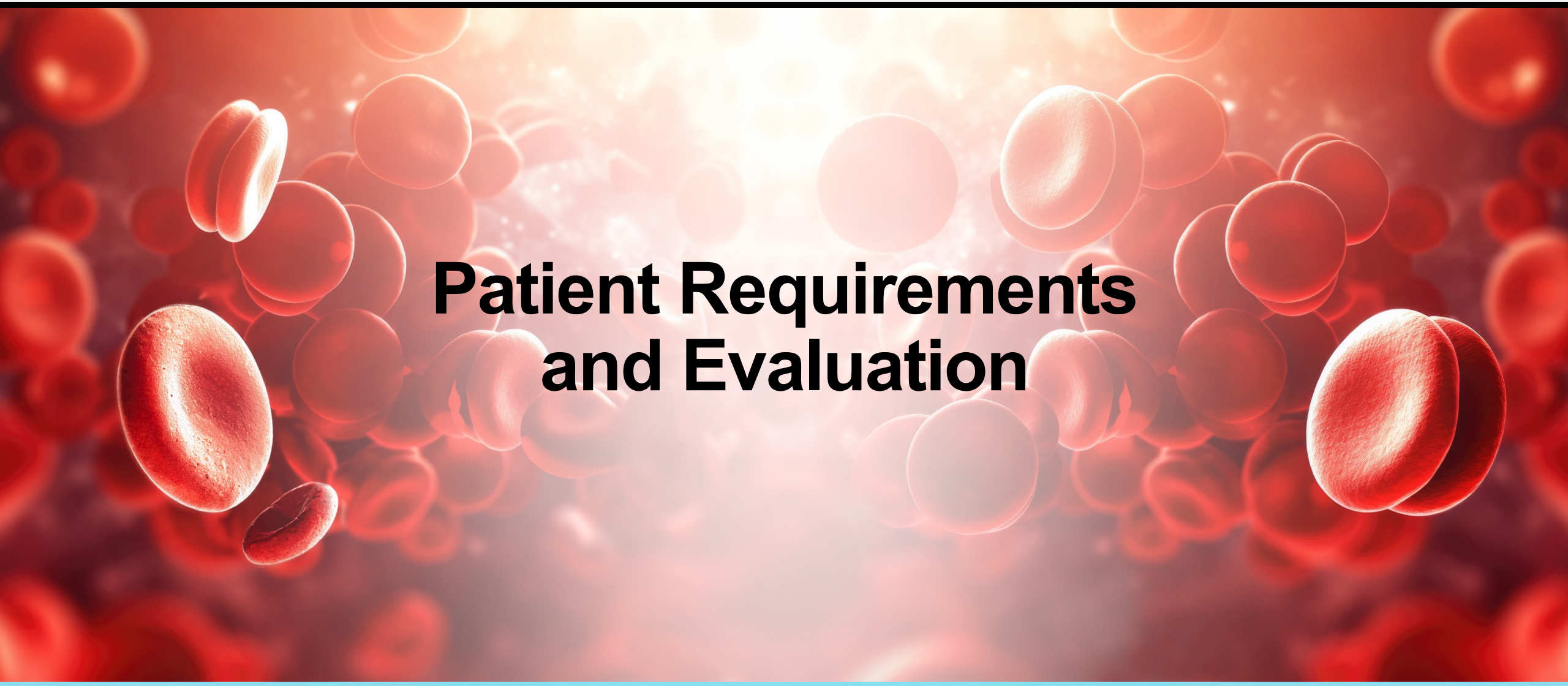
Prep Patient Prior with:

- Glut, Meyers (cofactors to O3), Hydration, B12

Methylene Blue and EBOO Sample







Patient Requirements and Evaluation

Blood Testing

Baseline testing suggested in order to retest and document any changes.

- CBC, CMP, CRP, D-Dimer

Consider the following:

- CRP
- Fibrinogen
- LpPLA2
- MPO
- ESR

Cost will be an issue for some, CRP may be initial starting point

Indications

- Chronic Illnesses
- Chronic Inflammatory Diseases
- COVID
- Cardiovascular and Pulmonary
- Autoimmune
- Circulatory
- Chronic infection
- Mold, Lyme, Viral, Bacterial
- Anti-aging
- Wellness and Optimization

Contraindications

1. All cases with Blood Coagulation Failure
2. Bleeding Organs
3. Thrombocytopenia
4. Hemorrhagic or Apoplectic Stroke
5. Recent Myocardial Infarction
6. Current Alcohol Intoxication
7. Significant G6PD deficiency (favism)/ acute hemolytic anemia
8. Hyperthyroidism if not controlled
9. Leukemia
10. Pregnancy – First trimester only and medical-legal reasons
11. Photosensitivity
12. Sulfa Drugs

Qualifying Your Patient

- Has had reasonable dose of ozone at least once, within a few months prior
- Has two good veins to access
- Has been educated on the procedure
  - Risks/benefits
  - Expectations have been set
  - Signed consent to treat
- Does not have any contraindications
- Has healthy vitals
- No allergies to heparin or other anti-coagulant
- Can tolerate saline or other carrier
- Reasonable blood pressure
- Low O2 OK

Preparing Your Patient

- Eat protein prior to treatment
- Hydrate well
- Oral antioxidants up to two weeks in advance
- Nitric Oxide given three days prior for better vasodilation
- Blood Sugar >110 to start
- B/P Check Pre/Post

Charting Example

EBOO Monitoring Tool

PATIENT NAME : …….. DATE :……

CHIEF COMPLAINT(S):……Allergies_____DOB:_____

PRE-EBOO

BP : …… HEART RATE : …….. GLUCOSE: …… PULSE OX:……..

TIME START : ……

BlUE RETURN LINE LOCATION:…….. RED DRAW LINE) LOCATION:…….

EBOO INFLOW CATHETER GAUGE 18 or 20 EBOO OUTFLOW CATHETER GAUGE 18 or 20

O2 LITERS PER MINUTE FLOW RATE: 1 LPM PUMP SETTINGS: 14 RPM

OZONE START TIME: ……OZONE DOSE ADMINISTERED:……..

OBSERVATIONS: ……..

……

POST-EBOO

END TIME : ……..

NORMAL SALINE : 500 ml + ……

HEPARIN USED : …… ml == Units ……..

BP : …… HEART RATE : …….. GLUCOSE: …… PULSE OX:……..

DISCARD FLUID VOLUME: ……..ml

Notes_____

ADDITIONAL IV THERAPIES:

……

OBSERVATIONS: ……..

……

CLINICIAN: …… ASSISTANT:……

Helpful Resources

Hydrocollator by Chatanooga

- Moist heat
- Weighted pads
- Vasodilation for better vein access as well as during treatment.

Butterfly Ultrasound

- https://www.butterflynetwork.com

EBOO FAQs

1. **What part of the tubing do I set up first?**
   The filter should be set up first. Blue end to the sky; red end to the ground
2. **What is the minimum amount of fluid I need for set up and the 50 minute procedure?**
   You will need a minimum of 500 ml of NS or LR with 7500 units of heparin for set up and the 50 minute procedure. You may need 250 ml NS or LR to flush the blood back to the patient at the end of the procedure.
3. **How do I attach the main red tubing?**
   You will connect one end at the bottom of the filter.
   You will place the larger diameter tubing in the peristaltic pump with the port on the right hand side of the pump.
4. **Where do I connect the heparin line?**
   You will connect the heparin line to the port closest to the pump, not closest to the patient. This is a change from the original instruction. The heparin being placed here helps the pump move the blood through the tubing.
5. **How fast does the heparin need to drip?**
   There is not a set calculation for the speed of the heparin drip. You will need to look at the pulse at the port connection.
   If you cannot see the pulse, the flow is too fast and needs to be decreased.
   If there is blood coming up the heparin line, the flow is too slow and needs to be increased.

6. **What pump setting should I use?**
   The peristaltic pump should be set at 14 RPM (using the larger diameter of the red tubing). It can be adjusted based on the patient's blood flow if needed.
7. **Can I use extension tubing on each access for the procedure?**
   We do not recommend using any extensions for this procedure. We recommend connecting the EBOO tubing directly to the hub of each catheter.
8. **How far in advance of the appointment can I set up the tubing on the EBOO machine?**
   We recommend setting up the tubing before your patient arrives and then prime the tubing when your patient has arrived. We do not recommend setting the tubing up the night before a scheduled appointment. The tubing is sterile and needs to be opened close to the appointment time. Heparin in saline solution is only good for 6 hours.

PRIMING

9. **When do I use the syringe to pull fluid into the chamber?**
   You will pull the fluid into the chamber using the syringe when fluid has passed the chamber about 10 inches or on a 3 second count using the pump or a 5 second count using gravity.
10. **Which IV fluids can be used for EBOO procedure?**
    You can use Normal Saline, Lactated Ringers or D5 for priming and the procedure. DO NOT USE: Sterile Water or ½ saline

PROCEDURE

11. **When do I turn on the ozone?**
    The ozone (and oxygen) should be turned on when the filter is 3⁄4 full with blood.
12. **When do I start the timer?**
    Start the timer when you turn on the oxygen and ozone, when the filter is 3⁄4 full with blood. A full treatment is 50 minutes and gives a dose of 150,000 mcg; a 1⁄2 treatment is 25 minutes with a dose of 75,000 mcg.
13. **When do I turn on the lights?**
    You will turn on the lights at the same time as you turn on the ozone, oxygen and lights (when the filter is 3⁄4 full with blood)
14. **When do I turn on the Oxygen?**
    You will turn on the Oxygen when you need the ozone; when the filter is 3⁄4 full with blood.
15. **What are the oxygen settings for EBOO?**
    The oxygen regulator should be set at 1 liter/minute. This gives an ozone concentration or 3-4 mcg/ml in one arm so long as they are different veins. It is tougher to do both in one arm because you need the tourniquet on. You can access the patient in one arm and one ankle or in two ankles.

DISCONNECTING

16. **What if there is red in the waste container?**
    If there is red in the waste container stop the procedure immediately and troubleshoot. There should not be any red foam or liquid in the waste container.
17. **What does it mean if the drip chamber levels are either rising or falling?**
    The level in the drip chamber should remain fairly constant throughout the procedure.
    - **If the level is rising there is a problem with the return access on the blue line**. Assess and make adjustments to the return access on the patient. As this adjustment is made you should see the level in the drip chamber go down.
    - **If the level in the chamber is falling there is a problem with the draw line.** Assess and make adjustments to the draw access on the patient. The tubing may not be tightly connected to the hub and air may be entering the line. If the chamber is very low you may need to make an adjustment to the chamber using the syringe. NOTE: The system is under pressure at this point, so make that adjustment cautiously.
18. **What happens if the pump starts ‘clicking’ or the tubing starts ‘jumping’?**
    If the pump starts clicking or the tubing starts jumping, there is a problem with the patient access. Assess the access and make any adjustment until the blood is flowing well.

DISCONNECTING (CONT)

19. **What is causing the red tubing to flatten on the right hand side of the pump?**
    If the tubing is flattening out, there is a problem with the draw line. Assess the patient access and make adjustments until the blood is flowing well.
20. **Do I need to leave the tourniquet on during the procedure?**
    Yes, you will need to have a tourniquet on the draw arm while you are drawing blood. Once you stop the draw the tourniquet can be released.
21. **What should I expect to see in the waste container?**
    You should expect to see white foam, clear or yellowish fluid or nothing at all in the waste container. If you see red in the container, stop the procedure immediately. The chemical makeup of the waste has not been determined. Testing is ongoing.
22. **Should I ever be turning off the UV lights?**
    Anytime you pause or stop the blood flow or pump, you should turn off the UV lights. You can turn them off by the button or by lifting the lid of the light.
23. **Where do I access the patient?**
    You can access the patient in 2 different veins. This can be one in each arm, or two
24. **Should I use air or fluid to return the blood back to the patient?**
    You can use either air or fluid to return the blood to the patient once the treatment is complete. Practitioners are taught both ways and your office may have a preference as to one way or the other.

PATIENT CONSIDERATIONS

25. **Does a patient need to have done a hi-dose ozone treatment prior to receiving EBOO?**
    Ideally, a patient would have received a hi-dose treatment prior to EBOO, but it is not necessary. You may want to adjust the treatment to 75,000 mcg (25 minutes) for the first treatment before going up to a full dose at 150,000 mcg. Many healthy patients successfully do a full dose on their first EBOO without any issues.

26. **Can we use the patient's picc or port for one of the accesses?**
    Yes, you can use a picc line or a port for the return line only. Keep in mind that the return line may go slightly slower than the draw line, so the chamber will likely rise throughout the procedure. **Pro tip**: in this case, you may want to start with the drip chamber at a lower level than 1⁄2 as it will rise over the 50 minute procedure. Talk to your trainer about tips and coaching tips if you are using a picc line or port for access.

27. **What are the recommended patient preparations prior to receiving EBOO?**
    The patient needs to have eaten, preferably a meal with protein and should be well hydrated prior to receiving EBOO. The patient should not have consumed alcohol on the day of the procedure.

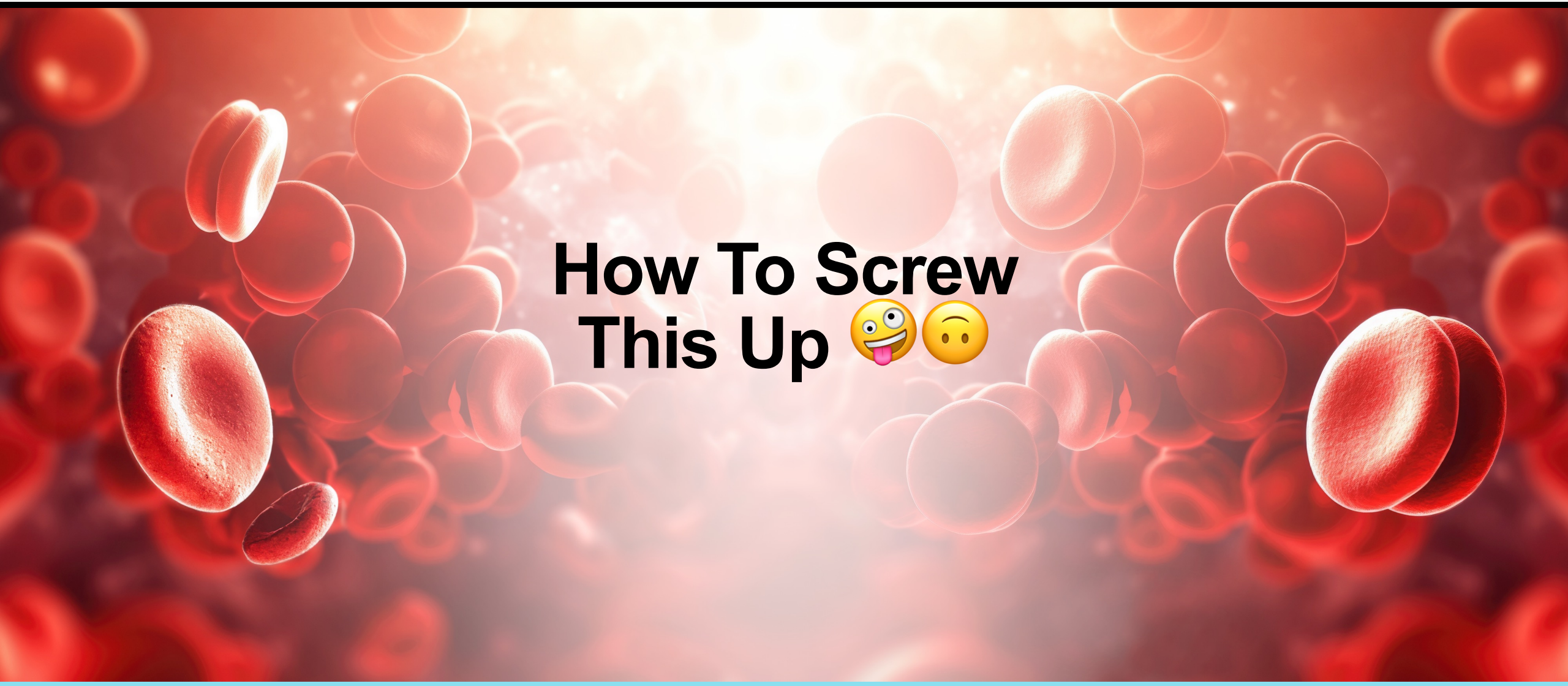
28. **What are the post treatment restrictions or recommendations?**
    The patient should be aware that he or she has received a blood thinner, heparin, and should be cautious of any injury sustained after the treatment (the day of). The patient should be advised not to consume alcohol for at least 24 hours after receiving EBOO treatment.

29. **Where do I go for the latest updates on EBOO?**
    The best place to receive updates on EBOO would be to attend the monthly EBOO Mastermind which is held the 2nd Wednesday of every month at 8 pm EST via Zoom. The Mastermind is a great place to ask questions and share patient outcomes as well.
30. **How do I contact a trainer to answer questions that I have?**
    There are 2 ways to contact one of our trainers.
    Trainers are available live weekly. To schedule a time, go to: MedMasters.org
    The other way to reach a trainer is to send an email with your question to: trainer@medmasters.org

Patient Pricing and Packaging

Suggested Pricing Structure

- Prices ranged nationally and internationally between $900 and $7000.
- We suggest approx. $1500
- Brings the value of 20-30 standard O3UV
- Brings the value of 5-10 high dose O3UV – price at less
- Packages
  - Stage III Patient – Chronically Ill
    - 3 therapies min + 2 more follow-up = 5 total
  - Stage II Patient – Walking Sick Person
    - Same as stage III
  - Stage I Patient – Wellness/Optimization/Maintenance
    - Membership Model


How To Screw
This Up 🤪🙃

Three Areas Where This Can Go Wrong

- Setting proper patient expectations
- Priming
- Procedure

Setting Patient Expectations

Avoid saying “half treatment”

- Replace with the phrase, ”per titration which could be 50 mins”

Patient MUST eat PRIOR

- Check blood sugar before any treatment to avoid the guess work

Say EBOO *Procedure* instead of IV

- I have seen clinics make instruction sheets of pre/post procedure that have been successful

Priming

- You can waste saline by allowing too much saline to pass through the drip chamber before pulling air into the syringe .
- Leaving a line clamped. If you hear any noise outside of running saline, you have something clamped.
- Not labeling your saline bag when you add heparin.

Procedure

- Improper IV Catheter placement – HUGE
- Not connecting the tubing correctly to the IV catheter
- Letting the drip chamber get too low
- Letting the drip chamber get too high
- Turning the oxygen on too soon and it blows the tubing off your oxygen line

Drip Chamber – What It Is Telling You

- Work from least invasive to most
- Change the patient's arm position
- Add heat above the site
- SLOWLY draw the plunger to raise the level in the drip chamber
- Start a new IV access on the patient

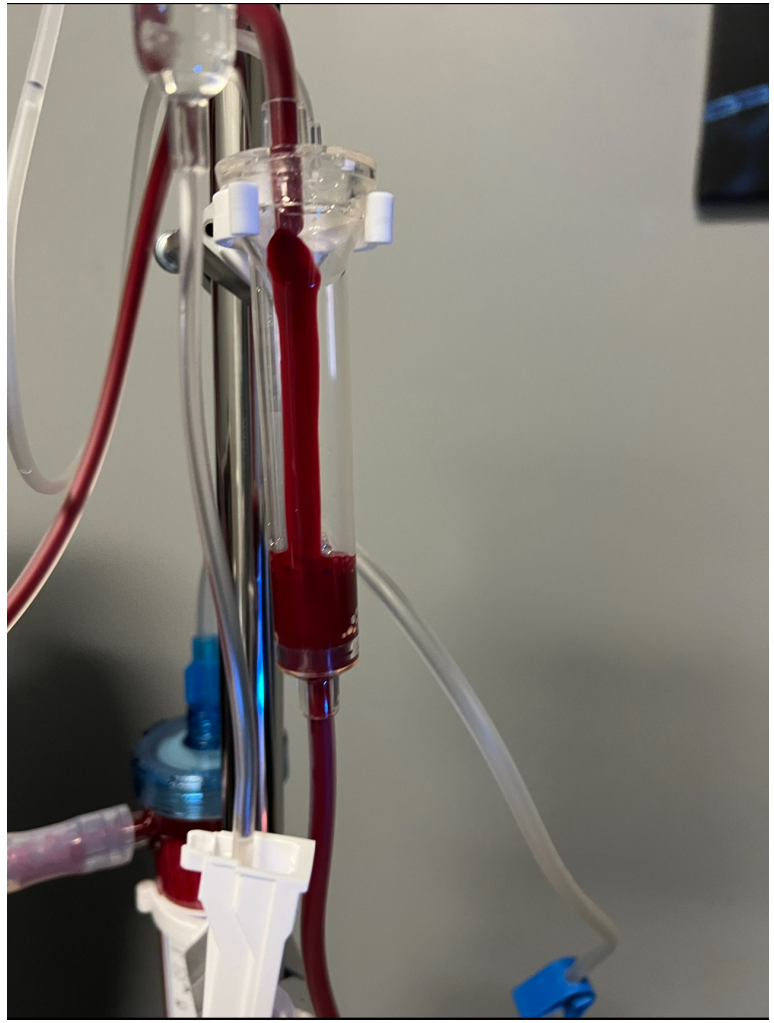
Drip Chamber – What It Is Telling You

- Try to catch this early!
- Work from least invasive to most
- Change the patients arm position
- Start new IV access on the patient
- Red will occur in the collection cup –most likely

Drip Chamber – What It Is Telling You

Why won't the level hold?

- The line going to the syringe is not clamped
- Red to patient line is not clamped
- Filter had a crack in it – one instance out of several hundred procedures



Going through too much saline?

- Do you see a pulse in your hep/saline y-port?
- Dripping too fast – you won't see a pulse at all.
- Dripping too slow - will see blood going back into the IV tubing.

Missing Hypoglycemia Signs on your Patient

- ”Hey my stomach feels funny”
- Excessive yawning
- Sweating
- Flushing
- These can be corrected quickly with juice or a bag of D5W

A Rare Occurrence

- Lower abdominal pain that presents towards the end of the session
- Five patients, all women and had a hx of PCOS, Endometriosis, or Diverticulitis
- All corrected quickly with a LR and D5W

Red Cup

LYSING BLOOD

STOP procedure immediately to assess:

- Accurate analysis of patient
- Proper procedure details (heparin, saline (not SW), etc.)
- Drip chamber is right level
- Good vein access
- Tourniquet placement
- Ozone concentration/ O2 flow

If everything checks out – start a new IV line, IF you decide to continue; it's most likely in the draw process.

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