The Story of Ozone

Dr. Saul Pressman, DCh, LTOH c.

Ozone in Nature

In nature, there is a cycle of oxygen just like there is a cycle of water. Oxygen is released from plants on land and plankton in the sea during photosynthesis. The oxygen is lighter than air and floats upward in the atmosphere. At the 20-30 km region, strong ultraviolet radiation in the 185-200 nanometer wavelength bombards the oxygen and turns some of it into ozone. The ozone created exists as a thin layer in the atmosphere and it blocks out the small portion of the UV spectrum that it absorbs. The great majority of the UV reaches the earth allowing suntanning, which Dr. Michael Carpendale of the San Francisco Veteran's Administration Hospital has noted is useful in a very efficacious therapy developed in the early years of this century.

We hear a great deal about the thinning of the ozone layer in the media, but the facts are otherwise. **Ozone production in the upper atmosphere is dependent on the amount of energy coming from the sun.** During peaks of solar activity, ozone is created at a greater rate. During lulls in the sunspot cycle, the ozone layer is thinner. The lowest level ever measured was in 1962. **At night, on the dark side of the planet, the ozone layer disappears, in a few hours.** The layer is reformed as the sun rises in the morning. There is no ozone over the poles in the winter because there is no sunlight. Ozone is produced constantly in the upper atmosphere as long as the sun is shining, and since ozone is heavier than air, it begins to fall earthward. As it falls, it combines with any pollutant it contacts, cleaning the air – nature's wonderful self-cleaning system. If ozone contacts water vapor as it falls, it forms hydrogen peroxide, a component of rainwater, and the reason why rainwater causes plants to grow better than irrigation.

Ozone is also created by lightning, and the amount produced in an average storm is often triple the allowable limit of .015 PPM as set by the US EPA. This ozone is what gives the air the wonderful fresh smell after a rain, and is of the highest benefit to anyone fortunate enough to be breathing it. Ozone is also created by waterfalls and crashing surf, which accounts for the energetic feeling and calm experienced near these sites. Another way ozone is produced is by photons from the sun breaking apart nitrous oxide, a pollutant formed by the combustion of hydrocarbons in the internal combustion engine. This ozone can accumulate in smog due to temperature inversions and is a lung and eye irritant.

These are the forms of ozone created by natural processes in the atmosphere.

Medical Ozone

1870: The first ozone generators were developed by Werner von Siemens in Germany in 1857, and 1870 saw the first report on ozone being used therapeutically to purify blood, by C. Lender in Germany.
1881: There is evidence of the use of ozone as a disinfectant from 1881, mentioned by Dr. Kellogg in his book on diphtheria.
1893: In October of 1893, the world's first water treatment plant using ozone was installed in Ousbaden, Holland, and today there are over 3000 municipalities around the world that use ozone to clean their water and sewage.
1885: In 1885, the Florida Medical Association published "Ozone" by Dr. Charles J. Kenworth, MD, detailing the use of ozone for therapeutic purposes.
1896: In September 1896, the electrical genius Nikola Tesla patented his first ozone generator, and in 1900, he formed the Tesla Ozone Company. Tesla sold ozone machines to doctors for

medical use, the same thing we are doing 100 years later, with a design based on one of his from the 1920s. We have seen one of these 75 year old generators, and it still works perfectly. Tesla produced ozonated olive oil and sold it to naturopaths, and we do, too.

1898: In 1898, the Institute for Oxygen Therapy was started in Berlin by Thauerkauf and Luth. They injected ozone into animals and bonded ozone to magnesium, producing Homozon.

Beginning in 1898, Dr. Benedict Lust, a German doctor practicing in New York, who was the originator and founder of Naturopathy, wrote many articles and books on ozone.

1902: In 1902, J.H. Clarke's "A Dictionary of Practical Materia Medica," London, describes the successful use of ozonated water in treating anemia, cancer, diabetes, influenza, morphine poisoning, canker sores, strychnine poisoning and whooping cough.

1911: In 1911, "A Working Manual of High Frequency Currents" was published by Dr. Noble Eberhart, MD. Dr. Eberhart was head of the Department of Physiologic Therapeutics at Loyola University. He used ozone to treat tuberculosis, anemia, chlorosis, tinnitus, whooping cough, asthma, bronchitis, hay fever, insomnia, pneumonia, diabetes, gout and syphilis.

1913: In 1913, the Eastern Association for Oxygen Therapy was formed by Dr. Blass and some German associates.

1915: During World War 1, ozone was used to treat wounds, trench foot, gangrene and the effects of poison gas. Dr. Albert Wolff of Berlin also used ozone for colon cancer, cervical cancer and decubitis ulcers in 1915.

1920: In 1920, Dr. Charles Neiswanger, MD, the President of the Chicago Hospital College of Medicine published "Electro Therapeutical Practice." Chapter 32 was entitled " Ozone as a Therapeutic Agent."

1926: In 1926, Dr. Otto Warburg of the Kaiser Institute in Berlin announced that the cause of cancer is lack of oxygen at the cellular level. He received the Nobel Prize for Medicine in 1931 and again in 1944, the only person to ever receive two Nobel Prizes for Medicine. He was also nominated for a third.

1929: In 1929, a book called "Ozone and Its Therapeutic Action" was published in the US listing 114 diseases and how to treat them with ozone. Its authors were the heads of all the leading American hospitals.

1932: The Swiss dentist E.A. Fisch was using ozone in dentistry before 1932, and introduced it to the German surgeon Erwin Payr who used it from that time forward.

1933: In 1933, the American Medical Association, headed up by Dr. Morris Fishbein set out to destroy all medical treatments that were competitive to drug therapy. The suppression of ozone therapy began then, and it continues in the US to this day.

1934: Aubourg and Lacoste were French physicians using ozone insufflation from 1934-1938.

1948: In 1948, Dr. William Turska of Oregon began using ozone, employing a machine of his own design, and in 1951, Dr. Turska wrote the article "Oxidation" which is still relevant today, and is included in our booklet. Dr. Turska pioneered injection of ozone into the portal vein, thereby reaching the liver.

1953: From 1953 onward, German doctor Hans Wolff used ozone in his practice, writing the book "Medical Ozone," and training many doctors in ozone therapy.

1957: In 1957, Dr. J. Hansler patented an ozone generator which has formed the basis of the German expansion of ozone therapy over the last 35 years.

1961: In 1961, Hans Wolff introduced the techniques of major and minor autohemotherapy.

1977: In 1977, Dr. Renate Viebahn provided a technical overview of ozone action in the body.

1979: In 1979, Dr. George Freibott began treating his first AIDS patient with ozone, and in 1980, Dr. Horst Kief also reported success treating AIDS with ozone.

1987: In 1987, Dr. Rilling and Dr. Viebahn published “The Use of Ozone in Medicine,” the standard text on the subject.

1990: In 1990, the Cubans reported on their success in treating glaucoma, conjunctivitis and retinitis pigmentosa with ozone.
1992: In 1992, the Russians revealed their techniques of using ozone bubbled into brine to treat burn victims with astounding results.

Today, after 125 years of usage, ozone therapy is a recognized modality in many nations: Germany, France, Italy, Russia, Romania, Czech Republic, Poland, Hungary, Bulgaria, Israel, Cuba, Japan, Mexico, and ten US states.

Types of Ozone Generators

Oxygen is the only gas that will pick up and hold electrical energy. In doing so, it becomes tremendously active and seeks to combine with all other substances. The list of substances that are inert to ozone is very short, and includes glass, Teflon, Kynar, silicone and gold. Therefore, any ozone generator and auxiliary equipment must be composed of these substances only. There are several different techniques used to produce medical grade ozone, where freedom from contamination is critical.

One type of generator uses an ultraviolet lamp as its source. It produces a very small amount of ozone in a narrow frequency bandwidth of ultraviolet light. Outside of that bandwidth, UV destroys ozone. A UV lamp is unreliable because it is subject to degradation over time, causing uncertainty regarding concentration, and eventually it burns out.

The second method of ozone production is corona discharge, where a tube with a hot cathode is surrounded by a screen anode. The best ones are called dual-dielectric, because they have a layer of glass separating each component from the gas stream. This prevents contamination of the ozone in the best designs, but heat is produced, and heat destroys ozone. To compensate for the loss in concentration, more electricity is used, resulting in more heat, and consequent electrical failure. This produces generators that have short lives.

Lack of durability has always beset the ozone generator industry, and was one of the major reasons for naturopaths mostly abandoning ozone therapy during the Thirties. I have spoken to doctors who have used ozone for three decades and have gone through a half dozen generators in that time, due to the lack of a durable generator, and reliable servicing.

Fortunately, there is a third method of producing clean, medical grade ozone. That method is called cold plasma. It uses two glass rods filled with a noble gas, electrostatic plasma field which turns the oxygen into ozone. Since there is no appreciable current, no heat is produced. Thus the generator will last a very long time, limited only by the quality of the power supply. The original cold plasma ozone generators were invented by Nikola Tesla in the 1920s, and they still work 75 years later.

Ozone Concentration

Medical ozone is produced in varying concentrations. The quantity of ozone in comparison with the quantity of oxygen in the gas stream is called percent concentration. It is measured in micrograms (ug) of ozone per millilitre (or cc) of the mixture. A litre of oxygen weighs 1.4 grams.

Therefore: 0.5% x 1.4 gm = 7 ug/cc 1.0% x 1.4 gm = 14ug/cc 1.5% x 1.4 gm = 21ug/cc 2.0% x 1.4 gm = 28ug/cc 2.5% x 1.4 gm = 35ug/cc 3.0% x 1.4 gm = 42ug/cc 3.5% x 1.4 gm = 49ug/cc 4.0% x 1.4 gm = 56ug/cc 4.5% x 1.4 gm = 63ug/cc 5.0% x 1.4 gm = 70ug/cc

5% or 70 ug/cc is considered to be the upper limit of concentration for internal use of medical ozone.

Dr. Greenberg of the Kief Clinic has shown, in vitro, that at concentrations of 90 ug/cc there was crimping of red blood cells which was definitely harmful. Experiments by F. Sweet et al have shown inhibition of growth in healthy cells at concentrations above 72 ug/cc. If we stay below that level, we will have no problems.

Ozone Therapy is Safest Known Therapy

Ozone has been found to be an extremely safe medical therapy, free from side effects. In a 1980 study done by the German Medical Society for Ozone Therapy, 644 therapists were polled regarding their 384,775 patients, comprising a total of 5,579,238 ozone treatments administered. There were only 40 cases of side effects noted out of this number which represents the incredibly low rate of .000005%, and only four fatalities. Ozone has thus proven to be the safest medical therapy ever devised.

Dosage and Frequency

When it comes to dosage and frequency of administration, there is some difference of opinion. Dr. Carpendale believes that a high concentration is necessary to kick-start the immune system initially, followed by much lower concentrations. He believes that continued high concentrations may be immunosuppressive, based on T-4 cell counts. Other doctors, such as Dr. Turska, recommend initial medium concentration doses, three times per week, followed by twice weekly at lower concentration, followed by weekly injection as long as necessary. Dr. Stan Beyrle recommends injection every four days at medium concentration. Dr. Wang has been giving daily injections at medium concentration, and direct injection into breast tumors. Dr. Freibott recommends very high concentrations at low dosages, with the emphasis on observing the patient's blood saturation. Dr. Rillings classic, “The Use of Ozone in Medicine”, recently reprinted, gives many recommendations on dosage and concentration. There is no evidence that long term treatment on a daily basis has any detrimental effect. Doctors who have used it for decades have only positive results to report. Ozone is blatantly non-toxic. There is no evidence of free radical damage; in fact, ozone is the best free radical scavenger there is.

Ozone also stimulates production of superoxide dismutase, catalase, and glutathione peroxidase, which are the enzymes in the cell wall which protect the cell from free radical damage, so ozone actually helps prevent free radical damage. Dr. Horst Kief of Germany recommends taking Vitamin A and Vitamin E supplements when receiving ozone treatments. It is known that Vitamin C is antagonistic to ozone, and persons taking megadoses of Vitamin C should maintain a 12 hour spread between ingestion and the ozone treatment, although ozone does not break down Vitamin C in the body. This effect of Vitamin C can be used to advantage in intravenous administration. Sometimes a patient will have a lot of coughing caused by ozone outgassing in the lungs from having had a bit too much too fast from the IV. If the coughing continues longer that 30 minutes, it can be stopped by administering 5000 mg of Vitamin C orally. The ozone reaction will end quickly and the patient will be more comfortable and have a better attitude toward the therapy. The rate of injection should be very slow, about 10 cc per minute. Since intravenous injections are 95-98% oxygen and 2-5% ozone gas, some doctors have expressed concern about embolism. However, there is no danger of embolism from injections of oxygen and ozone. Only nitrogen forms a dangerous gas bubble, as when divers get the bends from surfacing too fast. The human body runs perfectly well on 100% oxygen; consider the fighter pilots who breathe 100% oxygen daily for years – they have the highest reflexes, visual acuity and level of general health of any group of humans.

Ozone and Magnets

Doctors have reported that they can enhance ozone therapy by using magnet therapy simultaneously. Permanent magnets can be used with the north pole facing upward, toward the patient, on the underside of the treatment table. Magnets cause a polarization of red blood cells, which have iron in them. The polarization causes red blood cells to unclump and become more flexible, so that they can bend and get through the finest capillaries, improving microcirculation and preventing literally hundreds of diseases. Therefore, there is a synergistic effect between ozone and magnets.

Ozone for Prevention

Ozone is a powerful therapeutic tool for curing disease, but it is equally important for PREVENTION of disease. The hundreds of different diseases named by allopathy are but symptoms of one underlying cause. That cause, as proven by two-time Nobel Prize winner Dr. Otto Warburg, is hypoxia, or oxygen starvation at the cellular level. This is the cause of degenerative disease (arthritis, atherosclerosis, multiple sclerosis, rheumatism, cancer, etc.).

Ozone both treats and prevents most communicable disease as well (mumps, measles, influenza, cholera, tropical fevers, etc.) Regular use of ozone in the home can provide high levels of immunity from most common diseases, and relegate immunization to the dustbin of history. Our present allopathic health system is disintegrating under financial stress, and it can easily be replaced by prevention through use of ozone, supplemented by ozone injection for serious cases, and emergency room hospitals for accident victims. This system will be far less expensive than our present system, where 95% of our health dollar is spent in the last year of life, trying to undo a lifetime of toxic buildup.

Ozone and Water in the Body

The human body is 2/3 water. Of that, 90% is lymph and 10% is blood. The cell functions by burning sugar in oxygen to provide energy. The waste products are carbon dioxide and water. If there is insufficient oxygen at the cellular level, the burn will be incomplete, and carbon monoxide and lactic acid will be formed. The body cannot easily rid itself of monoxide; it prevents hemoglobin from picking up fresh oxygen, and the body temperature is lowered. The lactic acid will build up in the system, clogging the nerve pathways, eventually calcifying and causing degeneration. More oxygen is required to come in and oxidize these toxins, but if it is not available, they build up. The blood will carry a heavy load of sludge, and toxins will be deposited in the fat. The water that composes the body gets dirtier and dirtier. Disease is the result. This is where ozone shines – in eliminating toxicity from the body. Ozone taken on a daily basis will, over time, clean all the fluid of the body, safely. Ozone has been used to clean water for large cities for over 100 years. The water engineers have a value that they use to measure the effectiveness of ozone in cleaning water. This is the CT value. It is a product of concentration x time. (CxT)

Data Has Been Overlooked by Doctors

This information has been overlooked by the medical fraternity. The time that ozone is in contact with human tissue is of great importance. Ozone therapy has only considered concentration and total volume of ozone, and has ignored the time factor. Also overlooked is the body weight of the patient, which must be given due consideration. When doing rectal insufflation, if the concentration is 30 ug/cc, and the length of time of exposure is 2 minutes, the CT value will be 30 x 2 = 60. If

however, the exposure time is 5 minutes, the CT will be 30 x 5 = 150. A higher CT value is a more desirable figure, because more oxidation work can be done.

In order to be able to lengthen the time of exposure, it is necessary to have a very low flow rate. The ozone industry has generally rated its equipment with a flow rate of 1/2 litre/minute. However, by using a regulator producing a flow rate of 1/32 of a litre per minute, it is possible to get exposure times of 30 minutes. Since ozone concentration is inversely proportional to flow rate, the lowest flow produces the highest concentration. For example, at 1/32 litre/minute, our Model 2040 generator produces 50 ug/cc. Rectal insufflation for 30 minutes will produce a CT value of 50 x 30 = 1500. It is clear that there is an advantage to low flow rate insufflation, and the low flow rate prevents the problems of cramping or colon distension. There is also the added benefit of very low oxygen usage. Remember that oxygen by itself does not produce the therapeutic effects of ozone. The patient often needs to have a series of colonics before beginning insufflation, and an enema before each insufflation. The patient taking rectal insufflation needs to take a quality acidophilus.

Ozonated Water

For prevention, a major benefit can be derived from regularly drinking ozonated water. Water is a fascinating substance, and we all take it for granted. Chemically it is considered to be an oxygen atom bound with two hydrogen atoms. The bond angle between the two hydrogen atoms is known to be variable, depending on the amount of energy in the molecule. Research has shown that water whose bond angle is 101 degrees is 'dead' water, bereft of life-giving energy. When water is distilled the bond angle expands to 120 degrees upon evaporation, but collapses to 101 degrees upon condensation, and is therefore dead. A bond angle of 103 degrees corresponds to average water. A bond angle of 106 degrees produces activated, energized water, and is attainable by placing a magnet, north pole inward, against the water container. The highest energy obtainable in liquid water is a bond angle of 109.5 degrees, and this is attainable only by ozonating water at 4 degrees C. Ozone will not stay in water for very long, even at 4 degrees C. To hold the ozone in the water over long periods, it is necessary to add a few drops of Concentrace, which is a solution of trace minerals from the Great Salt Lake with the sodium, cadmium, copper and lead removed. The ozone hangs on to the minerals without oxidizing them and remains available over many months. In general, unmineralized water should not be consumed. Drink water that has gone through reverse osmosis, carbon filtering, and is then ozonated.

There are some contaminants that will pass through R/O and carbon, such as fluorine. Ozonating the water removes all such contaminants and energizes the water until the bond angle reaches 109.5 degrees. Ozonate water for 15 minutes per litre, about five minutes per glass.

Ozonating the Lymph

Women have an advantage, in that vaginal insufflation requires no preparation, and can be administered for very long periods of time, hours in fact. The gas will usually find its way into the uterus, out the Fallopian tubes, and then into the abdominal cavity. Liver problems and pelvic inflammatory disease (PID) can be addressed in this way. This is also a good way of getting ozone into the lymph system. For men, cleaning the lymph system is not as easy, and requires use of a body suit or a steam cabinet. The body suit is a less than popular aesthetic experience. The Saunette steam cabinet, however, is a pleasurable experience. Because of the moist heat, the pores are open, and the capillaries are dilated. The ozone enters and oxidizes toxins in the fat, the lymph and the blood. The skin is the largest organ of elimination. The person sweats the oxidized toxins back out, avoiding the dump of toxins to the liver and colon which can bring on the symptoms of toxic

shock overload. Instead, the person emerges from the steam cabinet feeling extremely relaxed and mellow, and ready for bed. This is an ideal way of counteracting the stress of the day.

Breathing Ozone

Ozone is safe to breathe when it is bubbled through extra virgin olive oil. This is an excellent therapy for asthma and bronchitis and pneumonia, especially when combined with magnetic therapy. Breathing of ozone has been practiced in North America for over 90 years. When ozone is bubbled through olive oil continuously for weeks, the oil starts to change. First it loses its color, then it begins to foam, and eventually it becomes a gel, although the oil is not oxidized. If it is kept refrigerated at 40 degrees F, this gel will hold on to its ozone for more than ten years.

This gel applied to the skin has many uses: on cuts, scrapes and burns; insect bites, diaper rash, eczema, impetigo, herpes, etc. When massaged vigorously into the body by a trained therapist over time it has enabled multiple sclerosis patients to regain the use of their limbs. Ozonated gel is 95% as active as ozone gas. The ozonated gel liquefies as soon as it reaches skin temperature. It is an excellent lubricant for intercourse and provides more protection the highly-touted condom for the prevention of disease, due to the bactericidal, virucidal and fungicidal action of ozone. It is an excellent product for your pet as well.

What does Ozone Do?

Ozone: inactivates viruses, bacteria, yeast, fungus and protozoa, stimulates the immune system cleans arteries and veins, improves circulation, purifies the blood and lymph, normalizes hormone and enzyme production, reduces inflammation, reduces pain, calms the nerves, stops bleeding, prevents shock, prevents stroke damage, reduces cardiac arrhythmia, improves brain function and memory, oxidizes toxins, allowing their excretion, chelates heavy metals; it works well in conjunction with EDTA prevents and reverses degenerative diseases, prevents and treats communicable diseases prevents and eliminates auto-immune diseases.

How Does Ozone Work?

1. Inactivation of bacteria, viruses, fungi, yeast and protozoa:

Ozone disrupts the integrity of the bacterial cell envelope through oxidation of the phospholipids and lipoproteins. In fungi, ozone inhibits cell growth at certain stages. With viruses, the ozone damages the viral capsid and disrupts the reproductive cycle by disrupting the virus-to-cell contact with peroxidation. The weak enzyme coatings on cells which make them vulnerable to invasion by viruses make them susceptible to oxidation and elimination from the body, which then replaces them with healthy cells.

2. Enhancement of circulation:

In circulatory disease, a clumping of red blood cells hinders blood flow through the small capillaries and decreases oxygen absorption due to reduced surface area. Ozone reduces or eliminates clumping and red cell flexibility is restored, along with oxygen carrying ability. Oxygenation of the tissues increases as the arterial partial pressure increases and viscosity decreases. Ozone also oxidizes the plaque in arteries, allowing the removal of the breakdown products, unclogging the blood vessels.

3. Stimulation of oxygen metabolism:

Ozone causes an increase in the red blood cell glycolysis rate. This leads to the stimulation of 2,3-diphosphoglycerate (2,3-DPG) which leads to an increase in the amount of oxygen released to the tissues. There is a stimulation of the production of the enzymes which act as free radical scavengers and cell wall protectors: glutathione peroxidase, catalase, and superoxide dismutase. Ozone activates the Krebs cycle by enhancing oxidative carboxylation of pyruvate, stimulating production of ATP. Ozone also causes a significant reduction in NADH and helps to oxidize cytochrome C. Prostacyclin, a vasodilator, is also induced by ozone.

4. Formation of peroxides:

Ozone reacts with the unsaturated fatty acids of the lipid layer in cellular membranes, forming hydro peroxides. There is a synergistic effect with cellular- formed H_2O_2. Lipid peroxidation products include alkoxyl and peroxyl radicals, singlet oxygen, ozonides, carbonides, carbonyls, alkanes and alkenes.

5. Dissolution of malignant tumors:

Ozone inhibits tumor metabolism. In addition, ozone oxidizes the outer lipid layer of malignant cells and destroys them through cell lysis (break-down). Phagocytes produce H_2O_2 and hydroxyl to kill bacteria and viruses. The generation of hydroxyl by killer cells is critical to their cytotoxic capability. Ozone stimulates conversion of L- arginine to citrulline, nitrite and nitrate by phagocytes, acting on tumors.

Collateral Therapies

Ozone is not a drug and it is not a magic bullet. It is a therapeutic tool of great power which can aid the body in regaining health. However, in the end, it is the immune system that has to do the work of healing the body. Therefore, the immune system must be functioning.

The immune system is controlled by the midbrain, the limbic system, through the thymus. The limbic system also controls the emotions. If the emotions are disrupted, the immune system is suppressed or shut down.

Recent research by Dr. Glen Rein of the Heartmath Institute has shown that the thymus, the general of the army of the immune system, is regulated by sympathetic resonance with the heartbeat. By measuring the regularity of the heartbeat with an electrocardiogram, Dr. Rein was able to show that irregular heartbeat, as caused by emotional upset, produced erratic thymus function, which suppressed the immune system. Dr. Rein also found that it was possible to train people to control their heartbeat and raise their level of immune function.

Since ozone has a well-known calming and analgesic effect, perhaps ozone therapy causing restoration of heartbeat regularity has a role to play in enhancing the immune system, along with interleukin-2 stimulation. Ozone is already used as a treatment for heart arhythmia.

Therefore, prolonged use of ozone would enhance the immune system by contributing to a calm, even heartbeat, produced by a well-oxygenated heart pumping clean bright red blood through plaque-free arteries. A holistic approach should include work on the psyche, exercise, and nutrition, as well as ozone. By using ozone in the Sonnet steam cabinet, the patient can be easily placed in a calm and relaxed state of mind, which facilitates the unearthing of deep-seated emotional problems

by a skilled therapist. The resolution of such problems often has a greater importance in the reattainment of health than all other therapies. In addition, oxidized toxins are sweated out through the skin, rather than dumped to the liver, which is important in preventing toxic shock in patients whose liver function is poor. Exercise is also an important adjunct to ozone therapy, and is not to be overlooked. The lymph system contains 90% of the water in the body and must be cleaned. Since the lymph system has no pump like the heart, the lymph tends to become toxified and sluggish. The use of a rebounder followed by the steam cabinet will go a long way towards cleaning the lymph.

Nutritional supplementation needs to include organic sulphur, which is critical for the production of many essential amino acids, such as glutathione for respiration and methionine for liver function. Organic sulphur is essential for the maintenance of youthful, flexible cells. Since it is difficult to obtain in our diets, the best sources are bluegreen algae, wheatgrass juice and aloe vera. Research over 20 years has shown that aging is also related to declining production of the hormone DHEA. If the hormone is taken directly, the body halts production, resulting in a dependency. However, if the precursor, which is extracted from the wild yam plant, is ingested, the body increases its production of DHEA without developing a dependency.

The combination of ozone, exercise, nutrition, aloe vera and yam plant extract should ensure greater vitality and fewer degenerative diseases in our aging population as we approach the next century, at an affordable cost.