

Oxygen Healing Therapies : For Optimum Health & Vitality Bio-Oxidative Therapies for Treating

MEDICAL OZONE

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.

There is evidence of the use of ozone as a disinfectant from 1881, mentioned by Dr. Kellogg in his book on diphtheria. 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. In 1885, the Florida Medical Association published "Ozone" by Dr. Charles J. Kenworth, MD, detailing the use of ozone for therapeutic purposes. 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. 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 Naturopathy, wrote many articles and books on ozone. 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. 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.

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

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 decubitus ulcers in 1915.

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." 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. 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.

In 1933, the American Medical Association, headed up by Dr. Simmons 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.

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.

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

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.

>From 1953 onward, German doctor Hans Wolff used ozone in his practice, writing the book "Medical Ozone," and training many doctors in ozone therapy. 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. Today over 7000 German doctors use ozone therapy daily. In 1961, Hans Wolff introduced the

techniques of major and minor autohaemotherapy. In 1977, Dr. Renate Viebahn provided a technical overview of ozone action in the body. 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. In 1987, Dr. Rilling and Dr. Viebahn published "The Use of Ozone in Medicine," the standard text on the subject. In 1990, the Cubans reported on their success in treating glaucoma, conjunctivitis and retinitis pigmentosa with ozone.

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 in five US states.

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 ml (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 .000007%, 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

outgasing in the lungs from having had a bit too much too fast from the IV. If the coughing continues for 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 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 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 consists of 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 $30 \times 2 = 60$. If however, the exposure time is 5 minutes, the CT will be $30 \times 5 = 150$. 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 $50 \times 30 = 1500$. 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 quality acidophilous.

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 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 Concentrate, 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 than the highly-touted condom for the prevention of disease, due to the bactericidal, viral 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. Prostacyline, 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 peroxy 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 arrhythmia. 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. This precursor has now become available as Emprise Plus and as Diosin. 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.

THE CAUSE AND PREVENTION OF CANCER

Saul Pressman

We now understand the chemical mechanisms of respiration and fermentation at the cellular level. And due to the work of Dr. Otto Warburg, since 1926 we have known that when a cell is deprived of oxygen, down to about 40% of normal, its respiration is irreversibly damaged. This damage causes the cell to begin to ferment sugar anaerobically producing carbon monoxide and lactic acid, and only 1/6 of the energy of normal cellular aerobic oxidation. The cell loses its governor on growth and begins to grow wildly - - what we call cancer.

This oxygen deficiency, or hypoxia, can be caused by many factors. Some poison may reach the cell and prevent oxygen uptake, or the excretory duct of a gland may become plugged up, as in breast cancer being caused by lymph gland plugging. But the end result is the same. As soon as the oxygen level to the cell is reduced, if the cell does not die, cancer will result. Frequent small doses of respiratory poisons are therefore more dangerous than a single large dose, where there is the chance that the cells will be killed rather than become cancerous.

All carcinogens impair cellular respiration. The word carcinogen is an empty word. The continual search for more carcinogenic substances is an utter waste of time and money, because this obscures the true cause of cancer, which is the oxygen starvation of the cell. It also prevents the treatment of cancer, because of misunderstanding the cause.

To destroy cancer, what is required is the introduction of massive amounts of oxygen at the cellular level. This can be done by ingesting magnesium peroxide or introducing ozone. These two treatments have been in use for over 75 years, with excellent success. They must be taken in sufficient quantities to flood the cells with oxygen, killing the cells which are now operating anaerobically. We have recently seen people using ozone with rectal insufflation who have had mixed results. This is due to the bowel being compacted over the years with fecal material trapped in the folds. In these cases, the ozone is merely reacting with this old material, some of which may have been held there for ten or twenty years, and providing no benefit to the body.

This points out the necessity for undergoing a thorough cleansing of the large intestine by a qualified colon therapist before beginning rectal insufflation. Also, it is necessary to take the ozone in as many different ways as possible, in order that the cells become flooded with oxygen. It is not sufficient to take just a small amount to kill an active cancer. For breast cancer, direct injection into the tumor is possible. For liver cancer, injection into the portal vein, as developed by Dr. William Turska, is necessary. For other cancers, injection in the arm is usually employed.

Another effect we have observed is that there is a cycle of activity to the effectiveness of ozone. As near as we can tell, the cycle is linked to the phases of the moon. The moon governs the tides of the earth and the emotions of mankind. Since the emotions are directly linked to the immune system, the healing process would seem to be influenced by our faithful heavenly partner. Ozone also has the ability to prevent cancer. If sufficient oxygen is provided to the cells so that they never drop below 40%, they will stay healthy, barring any chemical or radiation poisoning. It is as simple, and as difficult, as that. Many people today are using ozone generators to keep their cellular oxygen levels high, to prevent disease. Ozone may be taken into the body in many ways. You can drink ozonated water, introduce it into the ear, or you can step into a body suit after a hot shower and allow ozone to come in through the skin. Ozone can be taken with rectal or vaginal insufflation. People often ask whether they will have to continue to take ozone for the rest of their life. We say that if you want to eliminate toxins from your body every day and prevent your cells from being deprived of oxygen and thus turning anaerobic, then taking ozone daily is a small price to pay. As previously said, when a cell is not receiving enough oxygen, it begins to ferment sugar and produce lactic acid.

This lactic acid accumulates in the tissues and causes many problems. To remove it, it is necessary to do deep muscle massage, with ozonated olive oil, perhaps followed by ozone with a body suit or in the Saunette. This will oxidize the lactic acid and allow it to be eliminated from the body. We hear a great deal about cholesterol and clogging of the arteries, and there are a number of diets aimed at reducing the intake of dietary cholesterol. However, cholesterol is produced by the body as a natural lubricant, and new research shows that dietary cholesterol intake is not directly related to cholesterol levels. The problem is apparently caused by chlorine reacting with the cholesterol and causing it to coagulate on the walls of the arteries, forming plaque. The sources of chlorine are many, but the major ones are the drinking water supply and the salt in food. We have been told to lower our intake of sodium, but chlorine seems to be a worse culprit, especially in atherosclerosis, heart disease and high blood pressure. When ozone is ingested over time, it scours out the arteries by oxidizing the plaque, cleaning the system so blood can flow properly. Ozone also reduces the clumping of red blood cells, enabling them to pick up oxygen in the lungs, and increasing their flexibility, which is crucial to microcirculation through the fine capillaries.

SUPEROXYGENATION FOR HEALTH

Oxygen is the most vital element required for human life and it is the key to good health. We can survive without water for a week and go without food for a month, but we can only live a few minutes without oxygen. Oxygen is the life-giving, life-sustaining element. All body activities require oxygen. Through oxidation, the body generates heat and energy from its fuel, and disposes of wastes and microbes. Our bodies are two-thirds water. Of that water, ten per cent is blood and ninety per cent is lymph. Since the water in our bodies is itself 8/9 oxygen by weight, we are therefore composed of over 50% oxygen. The best way to optimize health is to oxygenate every cell in our body. The more oxygen we have in our system, the more energy we produce, and the more efficiently we can eliminate wastes. Good health is dependent on the production, maintenance and flow of energy, which is produced by the oxidation of sugar. Oxidation is central to metabolism, circulation, respiration, digestion, assimilation and elimination. Oxygen purifies the blood, keeping it free of cellular waste buildup. Sufficient oxygen allows the body to rebuild itself and maintain the immune system. Healthy cells require sugar, amino acids, minerals, hormones, enzymes and oxygen.

The Cause of Cancer

The link between insufficient oxygen and disease has been firmly established. Insufficient oxygen can result in anything from mild fatigue to life-threatening disease. Dr. Otto Warburg was awarded the Nobel Prize in 1931 and again in 1944 for discovering the cause of cancer. He said, "Cancer has only one prime cause. The prime cause of cancer is the replacement of normal oxygen respiration of body cells by an anaerobic (oxygen-less) cell respiration." Once the level of oxygen available to a cell drops below 60% of normal, the cell is forced to switch to an inferior method of energy production --

fermentation. The cell can never be returned to the proper oxidation system, and loses its governor on replication. It begins to reproduce copies of itself wildly, a condition we call cancer. Dr. Warburg pointed out that any substance that deprived a cell of oxygen was a carcinogen, if the cell was not killed outright. He stated in 1966 that it was useless to search out new carcinogens, because the result of each one was the same, cellular deprivation of oxygen. He further stated that the incessant search for new carcinogens was counter-productive because it obscured the prime cause, lack of oxygen, and prevented appropriate treatment.

Confirmation of Dr. Warburg's Work

The National Cancer Institute endorsed Dr. Warburg's findings in 1952. This research was continued by Dr. Harry Goldbatt, who published his findings in the Journal of Experimental Medicine in 1953. His research confirmed that lack of oxygen plays the major role in causing cells to become cancerous. Dr. Albert Wahl said, "Disease is due to a deficiency in the oxidation process of the body, leading to an accumulation of toxins. These toxins are ordinarily burned in normal oxidation." Dr. Wendell Hendricks of the Hendricks Research Foundation wrote: "Cancer is a condition within the body where the oxidation has become so depleted that the body cells have degenerated beyond control. The body is so overloaded with toxins that it sets up a tumor mass to harbor these poisons and remove them from general activity within the body." Dr. Hendricks further states, "The true cause of allergy is a lowered oxidation process within the body, causing the body to be sensitive to substances entering. Only when the oxidative mechanism is restored to a higher state of efficiency can the sensitivity be eliminated." Dr. Stephen Levine stated, "Hypoxia, or the lack of oxygen in the tissues, is the fundamental cause of all degenerative diseases."

Dr. Norman McVea said, "When the body has sufficient oxygen, it is able to properly eliminate toxic wastes from the system. Natural immunity is enhanced when the system is not burdened with a heavy buildup of toxins."

In the August 22, 1980 edition of the scientific journal "SCIENCE," Vol. 209, there was a report written by DR. Michael Carpendale entitled: "Ozone Selectivity Inhibits Growth of Human Cancer Cells." It stated, in part, "The growth of human cancer cells from lung, breast and uterine cancers was selectively inhibited in a dose-dependent manner by ozone at 0.3 to .8 parts per million of ozone in ambient air during eight days of culture. Human lung diploid fibro-blasts served as non-cancerous control cells. The presence of ozone at 0.3 to 0.5 parts per million inhibited cancer cell growth at 40 and 60% respectively. The non-cancerous lung cells were unaffected at these levels. Exposure to ozone at 0.8 parts per million inhibited cancer cell growth more than 90% and control cell growth less than 50%. Evidently the mechanisms for defense against ozone damage are impaired in human cancer cells."

The evidence from these doctors' research is conclusive. Oxygen plays the primary role in health and well-being. It is important to note that fear, worry and depression all interfere with free breathing and thus reduce oxygen uptake.

Achieving Superoxygenation

How can we ensure that our bodies are sufficiently oxygenated to eliminate toxins and prevent or cure disease? Scientific studies have proven repeatedly that medical ozone, properly introduced into the body in repeated applications, removes accumulated toxins and inactivates viruses, bacteria, fungi, yeast, protozoa and carcinomas in disease cells. All harmful bacteria and viruses are anaerobic and cannot thrive in an oxygen-rich atmosphere.

What is Ozone?

Chemically, ozone is oxygen with an extra molecule added. Electrically, ozone is oxygen with a higher energy level. It is unstable and highly reactive.

There is a cycle of oxygen just as there is a cycle of water. Oxygen is released in photosynthesis by land plants and ocean phytoplankton (mostly diatoms), and rises up in the atmosphere about 25-30 miles, where it is energized by a part of the ultraviolet spectrum of energy from the sun, producing ozone. Ozone is heavier than air and begins to descend. It immediately attaches itself to airborne particles if it contacts them, oxidizing them, cleaning the air. If it encounters water vapor, it can attach

itself to it, forming hydrogen peroxide. Rain and snow both contain hydrogen peroxide naturally. That is why plants grow better from rain water than from irrigation.

At ground level, ozone attaches itself to all pollutants, oxidizing them and cleaning the air. It has been incorrectly blamed for smog. Ozone is present in smog only transiently at around 25 parts per hundred million.

Carbon monoxide is present in smog at about 3000 parts per hundred million, and hydrocarbons at about 100 parts per hundred million. Smog is produced by the photoelectric effect of the sun's rays acting on carbon monoxide and nitrogen dioxide in the atmosphere, which are the end products when hydrocarbons are burned.

Ozone cannot be produced in the internal combustion engine because the hydrocarbon fuel quenches the spark gap. The ozone that exists in the atmosphere is produced by nature and it is attracted to pollutants because of opposite charge -- it attempts to oxidize them and clean the air. The problem is one of too little ozone to complete the job, not too much.

Ozone is also created near the ground by lightning. The fresh smell in the air after a thunderstorm is ozone. The amount of ozone created in an average thunderstorm is about three times the safe limit according to US EPA regulations.

Hydrogen Peroxide Hydrogen peroxide, the partner to ozone, is more properly called oxygen water, since it is water with an extra oxygen molecule. It is found in rain and snow; the water at Lourdes; in fresh fruit and vegetables; and in colostrum, the first milk that a mother produces, where it provides a defense against infection until the baby's own immune system develops and is able to produce its own hydrogen peroxide. In the body's immune defense, hydrogen peroxide is released by T-cells to destroy invading bacteria, viruses and fungi. Blood platelets release hydrogen peroxide on encountering particulates in blood. Hydrogen peroxide is formed in the body by microbodies called peroxisomes, which combine water with oxygen, if sufficient oxygen is available. The importance of a high level of oxygenation is obvious.

In the large intestine, acidophilus lactobacillus produces hydrogen peroxide which keeps the ever-present candida yeast from multiplying out of control. When candida spreads out of the intestine, it escapes the natural control system and can gain a foothold in the organs of the body, causing what is called chronic fatigue syndrome and allergic hypersensitivity. Bathing in hydrogen peroxide is the best way to get it into the body, and is inexpensive. The recommended rate is 8 oz. of 35% food grade hydrogen peroxide in a tub of unchlorinated water, soaking 30 minutes. Up to 3% hydrogen peroxide can be made by bubbling ozone through cold water for a period of time. The medical uses of hydrogen peroxide were pioneered in this century by Dr. Edward Carl Rosenow who did research and treatment at the Mayo Clinic for 60 years, and who wrote many papers on the medical uses of hydrogen peroxide. Used together, ozone and hydrogen peroxide offer the world a bright and healthy future in the coming century.

Diseased Cells

What distinguishes diseased cells from healthy ones?

All cells derive their energy from glucose, but healthy cells burn glucose in oxygen by oxidation, while unhealthy cells ferment glucose anaerobically, producing large amounts of lactic acid. Fermentation produces only 1/6 the energy of oxidation, so cancer cells are perpetually starving for energy, and consequently have huge appetites for sugar. This wasteful metabolism becomes self-sustaining and dominant unless the oxygen level is sharply increased. Healthy cells which have sufficient oxygen and nutrients manufacture an enzyme coating around them that protects them from invasion. These enzymes are catalase, reductase, superoxide dismutase and glutathione peroxidase. So long as a cell maintains this enzyme coating around itself, it is safe from invasion by viruses, and ozone cannot harm it. Oxygen-starved cells are unable to produce enough enzymes to fortify their cell wall and are thus more vulnerable to invasion by the always-present viruses. Disease microbes have no enzyme coating. When ozone is introduced into the area, it attacks microbes without a coating and diseased cells with deficient cell wall enzymes. It oxidizes them, allowing them to be cleared from the body.

Free Radicals

Free radicals are atoms with unpaired electrons, a natural occurrence in biochemical reactions. There could be no chemical reactions and thus no life without free radicals. The properties of free radicals vary widely. Some are toxic to all living cells, others only to the most vulnerable cells. Singlet oxygen

is highly reactive beneficial free radical that acts as a scavenger of other harmful free radicals. The oxygen combines with them to render them harmless, thereby protecting cells from damage. The so-called anti-oxidant enzymes are gaining in popularity as nutritional supplements due to vigorous promotion. They are not anti-oxidant at all, but rather free radical scavengers and enzyme enhancers. They have been shown to help protect marginally healthy cells from general free radical damage. Superoxide-dismutase in particular has helped reduce a variety of disorders; normally it is among the body's most plentiful enzymes. In any case, it does not address the cause of the problem: oxygen starvation at the cellular level, which causes the cells to be too weak to make the enzyme coatings that protect them.

Finally, the psychological consequences of convincing people that oxygen is detrimental to health when it is the most important requirement for life have not been addressed in any way. The limbic system, or midbrain, controls both the emotions and the immune system. We must never engender fear with inaccurate statements regarding health, as is so often done by the media with their periodic waves of 'carcinogen panic.' As Dr. Warburg stated clearly in 196, this approach is detrimental to public health.

Repeated treatments with ozone are required because viruses and bacteria seem to be more susceptible at different stages of their growth cycle. Ozone lasts in the body for only a very short period of time, oxidizing toxins, before turning back into oxygen, so it must be reintroduced repeatedly over a period of weeks or months. Medical ozone is completely safe and non-toxic to humans when generated by proper non-contaminating equipment and administered with proper protocols. It has been shown to be completely safe even when a dosage many times greater than the proposed human dosage is administered.

OZONE AND FREE RADICALS W. Forest

Free radicals are atoms or molecules with unpaired electrons, an unavoidable occurrence in biochemical reactions. There could be no life without free radicals. However, some free radicals are dangerous. The properties of free radicals vary widely. Some are toxic to all living cells, others only to the most vulnerable cells. Singlet oxygen O_1 is a highly reactive free radical that acts as a scavenger of other free radicals. The oxygen reacts with them to render them harmless, thereby protecting cells from damage. Healthy cells have an enzyme coating around them that protects them from the action of oxygen. These enzymes are catalase, reductase, super-oxide dismutase and glutathione peroxidase. Disease microbes have no such coating and are therefore destroyed by oxygen. By this elegant mechanism, ozone distinguishes between friends and foes and attacks only invading pathogens, and cells that have been damaged and infected, thereby losing their coating. The so-called anti-oxidant enzymes are gaining in popularity as nutritional supplements. They have been shown to help protect marginally healthy cells from general free radical damage. Superoxide-dismutase in particular has helped reduce a variety of disorders; normally it is among the body's most plentiful enzymes. However, prolonged use of supplements could tend to atrophy the internal biochemical processes that would normally be making those enzymes. In any case, it does not address the cause of the problem, which is oxygen starvation at the cellular level, which causes the cells to be too weak to make the enzymes that protect them.

FREE RADICALS, OZONE AND ANTIOXIDANTS Dr. Horst Kief

First of all to the problem of oxygen radicals and antioxidants

As with everything on our planet, both oxygen and antioxidants have two sides the positive and the negative. On one side, free radicals will age us quicker, on the other side, without them we have no immune system. It is not well known that oxygen is bound to our hemoglobin as a superoxide anion, so the oxygen in our breathing process is already there as a radical.

Its the same with antioxidants. Antioxidants are often prescribed to be taken along with the use of ozone. These are not simply opposites that cancel each other out, but rather, a thoughtful optimization, since most antioxidants have very specific tasks. Vitamin E is active at the cell membrane. Vitamin C is itself a radical that can speed the electron flow through oxidation.

If ozone is taken for a long time at a high dose, it is wise to take Vitamin A as a preventive measure to prevent the lack of A and the problems associated with it.

In summary, both effects have their function and their place in a symbiotic relationship.

FREE RADICAL PATHOLOGY Excerpted from "Chelation Therapy"

From the beginning of time, man has searched for a way to regain youth and retard aging. Countless cures, remedies and potions have come along, each promising to be the real thing. Medical doctors have searched for an answer as to why people age and why the degenerative diseases take such a toll. The free radical theory attempts to explain these problems.

It is believed that man's maximum lifespan depends primarily on genetics. Whether or not the lifespan is fulfilled is believed to be dependent on the damage that free radicals cause to DNA, leading to degenerative diseases such as diabetes, arthritis, atherosclerosis, Parkinson's and Alzheimer's.

Humans are composed of 60 trillion highly specialized cells. These cells vary a great deal in structure and in the functions they perform. Free radicals are produced in our cells due to normal respiration and assimilation of sugar. Atoms normally contain an even number of paired electrons. During chemical reactions, electrons become unpaired momentarily, allowing the reaction to occur. If for some reason, an electron becomes separated, it will cause an imbalance and become a free radical. This unbalanced free radical can damage cells that do not have sufficient enzyme coatings. These enzyme coatings are formed by catalase, reductase, glutathione peroxidase and superoxide dismutase. In healthy cells, these enzymes prevent cell damage from free radicals. When cellular health declines, free radicals are able to attack and cause damage. It is believed that degenerative disease is caused by this type of action.

We can limit the damage caused by free radicals by arming ourselves with free radical scavengers. Some of these scavengers are Vitamin E, Vitamin C, Vitamin A and beta carotene, and selenium.

THE FREE RADICAL THEORY Dr. Deepak Chopra

In the mid-1950s, Dr. Denham Harman of the University of Nebraska theorized that free radicals are an important cause of aging at the cellular level. This is believed to happen through a process called cross-linkage, a chemical reaction that locks up the outer atomic shells of collagen.

The cause of cross-linkage is thought to be the tendency of free radicals to bind indiscriminately with many vital molecules in the body, including DNA. Cross-linkage is only one example of the damage free radicals can inflict. They can also split up molecules, garble information in cells, clog cell membranes, promote cancerous mutations, and impair the function of the mitochondria (the energy factories inside each cell). Free radicals will attack almost any molecule; the extent of the damage they do is so wide that the free radical theory of aging has grown in popularity with each passing decade. Paradoxically, free radicals are necessary to life. A free radical is really a temporary stopping-point leading from one stable molecule to another. The normal life-span of such unstable particles is thousandths of a second; millions of these fleeting molecules are emitted in every cell as it burns sugar with life-giving oxygen. Why does the body produce free radicals? They are the natural product of any chemical reaction and they fit into the body's overall balance. White blood cells use free radicals in hydrogen peroxide to destroy invading bacteria and viruses. In that role, the free radical's tendency to latch onto anything in sight saves your life daily. To protect itself from any damage, every cell produces enzymes to neutralize free radicals. These free radical scavengers include superoxide dismutase and catalase. In recent times, people have been urged to take large amounts of free radical scavengers in order to minimize cell damage. However, the eminent Japanese medical investigator Dr. Yukie Niwa, himself a staunch proponent of the free radical theory, has demonstrated in the laboratory that dosing a culture of cells with these products does little to decrease free radical production. It would be still less effective for a person to swallow these scavengers, as most would be nullified by digestive juices long before they got to the cells they were meant to protect. The whole life extension enterprise misses the point. The damage caused by free radicals is secondary, not causal. In its normal state, the body controls free radicals as a matter of course. Your body is not blindly fighting for its life against "bad" chemicals; such a notion is far too simplistic. If you could view a cell as it produces its myriad free radicals and myriad scavengers at the same time, you would see the two floating around in the same environment, not like loose cannons, but closely monitored and controlled by the cell. Both are kept in balance and used as the cell requires a serene harmony. It has not been shown that older people have necessarily higher levels of free radicals in their cells or lower

levels of scavengers. Free radical damage is but on type of imbalance that can occur at the cellular level. If the body's generative powers are at optimum, disorder and chaos do not attack a cell. One of the ways to maintain the body's state of generative health is through exercise, providing a good supply of oxygen to the cells. By actually building muscle late in life, older people can significantly rejuvenate their whole physiology, reversing the metabolic decline we have come to see as normal. Physical fitness is also intimately linked to one's general well-being and attitude.

OXIDATION: THE KEY TO CANCER AND DEGENERATIVE DISEASE -Dr. George A. Freibott

"Even for cancer, there is only one prime cause. Summarized in a few words, the prime cause of cancer is the replacement of the respiration of oxygen on normal body cells by a fermentation of sugar." - Dr. Otto Warburg, the recipient of the Nobel Prize in Medicine, in 1931 and again in 1944.

Oxidation - What does the word oxidation mean? Of late, much has been spoken of ozone, oxygen, oxidation, oxidative therapies and aerobics. What do these have in common? What are the mysterious properties that result in such phenomenal healing assistance to the body?

Oxidation is defined as the ability of oxygen to combine with other substances forming water and gases. In the body, the process of oxidation occurs repeatedly. Without this process taking place, life would cease very, very quickly. We take oxygen, through our respiratory exchanges, and dispose of body effete, also referred to as 'toxins.' Our blood has the function of picking up oxygen from the lungs, transporting it, and disposing of toxins. This, in combination with several other metabolic functions, is oxidation.

Oxygen, the most crucial element to our health and lives, is vastly being depleted: Pollution, whether internal or environmental, is the robber. Often today we hear of the 'toxic free radicals' and the free radical theory of disease causation. Yet, without free radicals the body ceases to exist. Oxygen and ozone break down to unpaired, freely bonding electron sub-units able to combine with other free radicals. These new compounds can then be excreted. The common belief today is "Free radicals are bad, nasty, harmful to the human body." Do not be fooled! Free radicals are necessary to the functioning and nutrition of the human organism. It is the excessive proliferation of free radicals that are unnecessary to metabolic function and nutrition that are often harmful to the human organism. Why are we now discussing free radicals? Because free radicals are either a boon or a bane to the state of health and homeostasis. Without the free radical oxygen, also known as O¹ or nascent oxygen, 'nasty, destructive' free radicals cannot be efficiently eliminated by the body. The nascent free radical oxygen seeks out and combines with toxic free radicals. These destructive free radicals have accumulated due to the absence of healthy 'free radical' oxygen. This absence has hindered the whole oxidative cycle of our aerobic bodies.

The ingestion of ozone and magnesium peroxide raise the level of oxygen in the body, and contribute to improved health through improved oxidation.

OXIDATION Dr. William Turska, 1951

Health is dependent almost entirely upon a pure, healthy blood and general humoral circulation. Every organ, nerve, tissue and cell depends on vital blood and humoral fluid for nourishment and elimination of wastes. When these vital fluids are impaired, the system begins a general degeneration and alteration from the norm. The object of respiration is to bring atmospheric oxygen in close relationship with the hemoglobin of the blood and permit the interchange of oxygen with carbon dioxide, thus eliminating this end product of oxidation along with other products in minute quantities.

In the process of respiration, waste products are exposed to the action of oxygen and they are combusted, producing body heat. In the living organism, heat is continually being generated through the chemical action of oxygen upon carbon. When the blood receives sufficient oxygen to unite with the carbon, carbon dioxide is formed, which is in a suitable state to be eliminated. The process of oxidation is complete, the body temperature is maintained at normal, the organs perform their functions properly and the system is in a condition to resist the influence of microbes.

When, however, an insufficient amount of oxygen is received by the blood, carbon is incompletely burned, and carbon monoxide is produced. Through its poisonous influence, the system becomes debilitated, or 'run down.' Carbon monoxide is an irritant to the nervous system, it attaches to the hemoglobin in red blood cells, and it interferes with organ functions. The body temperature is reduced below normal which renders the system incapable of resisting the influence of various bacteria, viruses and yeast. Disease is the result. Subnormal temperatures indicate under-oxidation, or

hypoxia. The under oxidized person will present a host of symptoms: headache, backache, insomnia, vertigo, constipation, asthenia, anemia, and non-specific gastro-intestinal upsets. Under-oxidation renders the system susceptible to a multiplicity of disorders, which will worsen and become chronic over time. Scientists long ago recognized the great oxidizing and antiseptic properties of ozone, but owing to its irritating effects and toxic properties when used in raw form, it was abandoned from the therapeutic calendar except in a few instances. The therapeutic abilities of ozone were in evidence, but the manner of application would not allow reliable results. With modern equipment and protocols, ozone is now able to be used to great therapeutic effect. It has been found that ozone potentiates hormones, botanicals, vitamins and many drugs by an amount ranging from 10 - 100%. In addition, it has been demonstrated that ozone treatment of milk completely eliminates any harmful bacteria without having to resort to pasteurization, which destroys beneficial enzymes.

OZONE THERAPY Fritz Schellander

Medical ozone therapy is quite new to Britain and only practiced by a very few doctors. It is used only somewhat more in the US, but in Europe, especially Germany, more than 7,000 doctors use it daily. The different modes of action of ozone on a living organism are now well understood and involve the production of peroxides. The peroxides are responsible for the remarkable bacterial and fungicidal effects of ozone. The virus inactivation is enhanced by a peroxide intolerance of weakened infected cells. Normal cells are protected from the effects of ozone by enzymes in the cell wall - glutathione peroxidase, catalase and superoxide dismutase. Ozone stimulates the production of these enzymes, thus enhancing the cell wall resistance to invasion.

In addition, ozone has been shown to have a measurable benefit on the uptake and utilization of oxygen through improved glycolysis in red blood cells through the abolition of harmful red blood cell stacking. In addition, ozone stimulates and activates mitochondrial respiration and metabolic pathways.

All mammalian tissues depend for their survival and health on an adequate oxygen uptake and therefore ozone would benefit every person through optimizing tissue oxygenation. Thus ozone has a preventative as well as remedial role. The application for prevention would include increasing longevity, enhancing performance, rejuvenating seniors, optimizing the healing of wounds, and stimulating immunity.

Ozone's therapeutic remedial uses are extensive and growing daily. All bacterial, viral and fungal infections are eliminated by ozone therapy. Heart disease, angina, arteriosclerosis, gangrene, senile dementia, ulcers, varicose veins, arthritis, ankylosing spondylitis, diabetes, all forms of cancer, Parkinson's disease, inflammatory bowel disease, immune deficiency, allergies and asthma are just a few of the conditions that are regularly treated with ozone.

Ozone combines extremely well with intravenous chelation therapy which is used to treat arterial disease and heavy metal toxicity.

The therapeutic use of ozone has an excellent safety record and no toxic effects have been observed from clinical use. The use of ozone as a healing adjunct is well established and is being vigorously pursued by many scientists and clinicians. The benefits are predictable and without side effects. As technology advances, undoubtedly new techniques will enlarge the scope of the effective use of this versatile modality.

OZONE: ITS THERAPEUTIC ACTION

A widely used remedy is just starting to be used here in the United States. This remedy is so powerful, so efficient in what it does, that it may reform the practice of medicine. The substance is ozone! It is antibacterial, antiviral and kills protozoa. It works by releasing oxygen into the blood stream when applied externally, intravenously, rectally or vaginally.

In 1740 Schonbein discovered ozone, although he did not know or understand its structure. The discovery was enlarged upon in 1891 with the determination of the ozone molecular formula.

Observation soon revealed that ozone reacted with and destroyed bacteria and other organisms.

During the first World War, the application of ozone to war wounds served primarily as a disinfectant.

In 1934 the dentist E.A. Fische and the surgeon Erwin Payr found that ozone saturated water was a great bactericide and began using it. This usage slowed temporarily because the ozone would quickly destroy the rubber tubing it flowed through. The arrival of Teflon and poly-vinyl tubing overcame this inconvenience.

Today the largest commercial use of ozone is in the purification of water. Both the FDA and EPA certify ozone as destroying 99.9992% of all pathogenic germs, while oxidizing (destroying) 99.9992% of all pollutants in the water at the same time.

Ozone (O₃) is an allotropic form of oxygen: it is oxygen in its most active state; it therefore means a more generous supply of oxygen, the life giver.

Through the action of the flashes of lightning, and the photochemical reaction of the UV light of the sun on atmospheric oxygen, nature produces ozone for the purpose of purifying the air, and to destroy all organic decay upon which disease germs and bacteria thrive. Like oxygen, ozone is a healthful gas. It has, however, much greater oxidizing, antiseptic and germicidal power and for this reason is being used with great success for the relief of various diseases. Recently, the FDA and EPA have been telling the public that ozone is poisonous, and detrimental to the body. This is not so! For years physicians around the world have used ozone for bringing palliative and curative results to many, many individuals. Ozone is one of the most energetic and useful agents known to science. Its therapeutic action is due to oxygenation of the blood by the loose molecule (free radical) of oxygen in the O₃ compound. It is carried to the various organs and tissues of the body and absorbed, thus oxidizing the waste products, and facilitating their elimination. In other words, ozone increases the metabolism without the expenditure of vital energy and special stress should be delayed on the fact that ozone is a NATURAL remedy.

In the process of respiration waste products are exposed to the action of the oxygen of the air, and they are burned up very much as if they were put into a stove, thereby producing body heat. In the living body, heat, whether tangible or not, is continually being generated through the chemical action of carbon and oxygen.

When the blood receives sufficient oxygen to unite with the carbon, carbon dioxide (CO₂) is formed, which is in a suitable state to be eliminated. The process of oxidation is complete, the body temperature maintained at normal (98.6 ° F), the organs perform their functions properly and the system is in a condition to resist the toxic influences of microbes, environment and mankind's excesses.

When, however, an insufficient amount of oxygen is received by the blood, carbon monoxide (CO) is formed, which is NOT readily eliminated, and through its poisonous influences, trouble begins. Carbon monoxide is a DE-oxidizer. It acts as an irritant to the organs, the body temperature is reduced below normal and the system is rendered incapable of resisting the toxic influences of various bacteria, viruses and environmental toxins, and disease is the result. So prevalent is subnormal temperature among people who are called 'run down.' that nine out of ten of them will show a subnormal temperature by actual thermometer test.

There have been several reasons given for subnormal temperatures in recent years: they range from 'thyroid insufficiency' to 'hypothalamus disorders.' These explanations are correct, but only to a degree. The CAUSE of the problem is low and inadequate oxidation. Therefore the thyroid, hypothalamus, or endocrine organs (given as the cause) are hindered in their normal metabolic function and the sub-normal temperature is the result. The correct way to counteract this situation is to give a substance that will restore the oxidative process.

The clinical thermometer is the best means of determining the existence of underoxidation and should be used routinely. The temperature of one who is underoxidized will be found to run from a fraction to several degrees below normal.

The underoxidized and subnormal temperature person will present one or more of the following symptoms: headache, dizziness, insomnia, constipation, faint-feeling, loss of appetite, palpitation of the heart, liver and kidney problems, menstrual problems, cold hands and feet, anemia, gastrointestinal problems, chlorosis, etc., all of which are due to an insufficient blood supply.

The symptoms or conditions that rise from a subnormal temperature are not necessarily in proportion to the degree of subnormal temperature. A person showing a fractional part of one degree of subnormal temperature may present as severe problems or conditions of disease as one who is several degrees below normal.

A sufficiency of oxygen for the blood means better blood, better circulation, better assimilation, better equilibrium of body temperature, better vasomotor activity, better digestion, better elimination of waste products, less chance of auto-intoxication or toxemia, and less chance of infection and disease. After careful analytical investigation of disease, it has been demonstrated:

1. That one of the most common important conditions that the person is called upon to correct is weakness produced by an impoverished or diminished blood supply.
2. That under-oxidation produces bad health primarily because of an insufficient supply of oxygen that makes certain the formation of carbon monoxide, which is at once a de-oxidizer, a hemoglobin

destroyer and an irritant poison devitalizing the blood and paving the way for a multiplicity of acute troubles, many of which run into chronic illness.

It has been suggested that a subnormal temperature may be a normal condition with some people. This deduction can be disproved by placing anyone with a subnormal temperature under active influence of ozone and the temperature can be made to rise back to normal.

Almost all forms of nervous, functional, respiratory and blood disorders can be successfully corrected by oxidation restoration. The effects are perfectly natural, the nerves being left calm and toned with a feeling of buoyancy and exhilaration. It stimulates the vasomotor system through the nerve centers, which fact is clearly shown in the increased redness of the skin, a feeling of warmth in the whole body, and waste products being more freely eliminated. The ozone treatment shows that poor oxidation is the cause of many disorders, by reason of the fact that when the temperature is brought up to normal, the problems disappear.

Another aspect of ozone therapy that is understood by almost nobody in the medical community is the ability of ozone to oxidize almost instantly anything of a plant physiology. This is paramount importance when you consider the work of the great German biochemist Dr. Otto Warburg. He discovered the cause of cancer in 1923 and received his first Nobel Prize in 1931 for doing so. Dr. Warburg demonstrated that when the level of oxygen available to the cell drops below 40% of normal, the cell, in order to survive, begins to ferment the sugar anaerobically. The regulatory mechanisms on cell replication are shut off, and the cell begins to make copies of itself wildly. The growth of cancer cells is supported by fermentation which can be initiated only in the relative absence of oxygen. Ever since Warburg's discovery, researchers have been attempting to stop the fermentation process through drugs, radiation and surgery, which in some cases, has been temporarily successful. Although the National Cancer Institute verified Warburg's theories in the 1950's, very little work has been done to determine the causes of the lack of oxygen in our cells. We must determine ways of getting more oxygen to all of our cells to prevent the initiation of the fermentation process.

It is unfortunate that up till now the U.S. authorities have been painfully slow in their investigation of the beneficial uses of ozone. The Sixth World Ozone Conference held in Washington D.C. during May, 1982, produced many astounding papers on the medical uses of ozone. They ran the full gamut of topics from cancer to herpes to rheumatoid arthritis, written by the world's recognized specialists in their fields. These papers concluded that:

1. Ozone removes unwanted bacteria and viruses from the blood, the same way it does with water.
2. The possibility of becoming infected with hepatitis, HIV virus, syphilis or other infectious diseases through blood transfusion could be eliminated by the use of ozone.
3. Ozone is highly effective in peripheral vascular disease.
4. Ozone is effective in cardiovascular and cerebrovascular disease, arteriosclerosis and hypercholesterolemia, and promptly restores circulation, relieves angina pain and improves brain function.
5. With ozone cancerous tumors, lymphomas and leukemia may be eliminated without the use of surgery, radiation or chemotherapy.
6. Ozone is highly effective for all forms of rheumatoid and arthritis collagen diseases.
7. Ozone is very effective for allergies of all types.
8. Ozone improves multiple sclerosis, and other neurological diseases, senility, as well as in Parkinson's disease.
9. External use of ozone is very effective in treating burns, acne, leg ulcers, open cuts and wounds, eczema, fungus and other skin disorders.
10. Rectal insufflation with ozone is effective for proctitis, colitis, prostatitis and fissure; vaginal insufflation is effective for candidiasis and other yeast infections, trichomoniasis and other forms of vaginitis; bladder insufflation is effective for cystitis and bladder fistulas, as well as cancer.
11. AIDS, herpes, hepatitis, mononucleosis, and cirrhosis of the liver have been successfully treated with ozone.
12. The application of ozone is virtually painless, has no adverse side effects and is extremely cost-effective for both physicians and patients.
13. As of 1994, sixteen countries allow the use of ozone therapy. In a study from Germany, of all the millions of treatments, there have only been four deaths reported, with only 40 persons having side effects.

Most people are puzzled as to why something with this potential has not been used in the United States before now. In order to understand this, one has to examine how medicine has evolved over the past 100 years on two continents; Europe and America. In the late 1800's, the way medicine was practiced in both areas was very similar, though quite diverse. Doctors on both continents were taught many different techniques of healing including herbal medicine, potions, manipulations, diets,

purges, colonics, as well as drugs, and surgery. These physicians practiced holistic medicine in its original form.

The divergence began in the United States with the discovery of insulin and penicillin in the 1930's. In close conjunction with the rise in power of the drug companies is the ever increasing policing of all medical therapies by the FDA along with the development of the health insurance system. Today's American doctors get practically no training in therapies other than drugs or surgery and are discouraged from practicing any alternative therapies. On the other hand the European system nurtured diversity in which pharmaceutical development, as well as alternative treatments, were encouraged. This is how ozone, as a medical treatment, was allowed to develop in Europe, but did not find fertile ground in the United States, after 1933. Ozone is not patentable. Thus, there is no money to be made in its research and development as a treatment since it cannot be protected. Money is what makes things happen in the United States, thus ozone hasn't happened. However, with the development of the AIDS crisis over the last decade, many physicians in this country have been prompted to study the work done by clinicians in Germany and attempt to duplicate their results. The FDA has actively persecuted doctors who have used ozone therapy. In spite of this, there is a growing network of physicians who have been using this efficacious therapy.

BETTER BLOOD STERILIZATION WITH OZONE

From: Supply and Services Canada R&D Bulletin - Science and Technology No.234, September 1992

Ozone may soon be used to destroy viruses in donated blood, thanks to researchers at the Department of National Defense (DND) and the Canadian Red Cross (CRCS). Under a \$300,000 contract with the Surgeon General Branch of DND's National Defense Headquarters, researchers from the National Reference Laboratory of the CRCS are investigating two ozone sterilization technologies to confirm their reported efficacy in deactivating a variety of potential viral contaminants of blood, including HIV-1 and hepatitis. "If the Canadian military is operating in an underdeveloped part of the world and is cut off from its supplies, we may have to resort to local blood sources," says Major Brian Crowell, Health Services Research Coordinator at DND. "We're looking for a sterilization technique that can be taken to the field, put together on the tailboard of a truck or in a tent, and used to sterilize donated blood quickly and effectively." Once developed, such a sterilization technique would have applications beyond the military. Dr. Peter Gill, Director of the CRCS' National Reference Laboratory, says ozone sterilization technology could be used in disasters to aid civilian populations. Researchers are investigating two methods of sterilizing blood with ozone have been patented by Medizone and Mueller Medical.

These ozone sterilization methods are easy to operate, quickly to perform and cheap. Researchers will also investigate ways to combine ozone sterilization and filtration techniques. There are no known adverse or toxic effects of ozone sterilization. In Europe in 1986, the University of Bonn investigated over 350,000 cases where ozone was used therapeutically and found virtually no side effects of ozone therapy when properly administered. Results from Bethesda Naval Hospital in Maryland indicate that ozone seems to destroy only infected cells, deactivating them and the viruses in them, all without creating toxicity problems. "The products of this research have worldwide applications," says DND's Capt. Shannon. "Ozone sounds almost too good to be true. We're trying not to be over-enthusiastic, but the data so far is very compelling."

Are Worry-Free Transfusions Just a Whiff of Ozone Away? Albert C. Baggs, BSc.

From Medical Science News, Canadian Medical Assoc; April 1993 Scientists in Canada and the United States are investigating the use of ozone to destroy the human immunodeficiency virus (HIV), the hepatitis and herpes viruses and other infectious agents in the blood used for transfusion. The studies were endorsed by medical circles of the North Atlantic Treaty Organization (NATO) because of a concern that viral pandemics have compromised the ability of world banks to meet urgent and heavy military demands. NATO's fears are justified. The World Health Organization (WHO) recently estimated that more than 200 million people are long-term carriers of hepatitis B virus and that about 13 million people are infected with known HIV strains. The spread of HIV is being impelled by socioeconomic factors and a worldwide recession. As HIV spreads, an increase in the rejection rate of blood donors, now exceeding 30%, must be expected. Laboratories in Canada, the United States

and other countries have evidence that sterilization with ozone is feasible. In a brief to the NATO Blood Committee, the Surgeon General of the Canadian Armed Forces reported on Canadian findings that a three minute ozonisation of serum spiked with one million HIV-1 particles per cc would achieve 100% viral inactivation. It was also found that the procedure would destroy several other lipid-encapsulated viruses, including simian immunodeficiency virus (SIV) and various other animal strains.

Canadian interest in the technique stems from early German successes in the 1950s, and from in-vitro studies with ozone by Captain Michael E. Shannon, a scientist in the Department of National Defense. His experiments led to a pilot study using ozone-treated blood in a volunteer group of 24 patients with AIDS at the Ottawa General Hospital (approved by the Health Protection Branch and the hospital's ethics committee). The Canadian experiments with HIV and other virus's gas-exchange technology from Mueller Medical International Inc. (Oakville, Ont.) with help from Medizone International Inc. (New York). Two teams of U.S. virologists have used comparable equipment to confirm the Canadian results. Red blood cells showed no impairment in either study. Ozone has long been used to destroy bacteria in municipal water supplies. Its efficacy is partly attributed to the oxidation of unsaturated bonds in the phospholipid and lipoprotein architecture of bacteria, viruses and infected cells. The oxidation generates hydro-peroxides, which are transformed to peroxy and hydroxyl radicals and to other reactive species, including aldehydes. Peroxyl radicals attack proteins, and hydroxyl radicals induce disruptive structural changes in cell membranes. Virus-infected cells are unable to withstand the oxidation due to deficient cell wall enzymes. Thus, at even low ozone concentrations, infective agents can be destroyed selectively without damage to healthy tissue. Several other mechanisms have been postulated for the destruction of HIV: inactivation of viral reverse transcriptase, which would otherwise take over host interference with the ability of the HIV envelope glycoprotein gp 120 to bind to the lymphocyte receptor CD4. To prove these concepts, a pilot study was undertaken. It was a collaborative effort between scientists at the Department of National Health and Welfare, the Department of National Defense, the Canadian Animal Disease Research institute and Cornell University, Ithaca, NY. It addressed the fundamental question: Will whole blood experimentally contaminated with a highly virulent strain of simian immunodeficiency virus (SIV) produce immunodeficiency disease in primates if the blood is treated with ozone before transfusion? The answer came back loud and clear: Ozone protected all simian subjects from infection by cleaning all viruses from the blood. The systematic use of ozone in the treatment of AIDS could not only reduce the virus load, but also possibly revitalize the immune system. Several German and Italian studies have shown that ozone enhances the production of interleukin-2 and interferon- γ . Findings at laboratories in North America and Europe have demonstrated that ozone has remarkable potency against disease factors in blood products. Blood approved for transfusion must be certified to be free of viral and bacterial contaminants, and ozone appears to fill the requirements. The preliminary findings of Captain Shannon indicate that concentrations of ozone as low as 20 $\mu\text{g}/\text{cc}$ may be perfectly effective.

THE IMPORTANCE OF OXYGEN Dr. Robert E. Willner MD PhD.

Virtually every patient's room in a modern hospital is equipped for the administration of oxygen. Every emergency room is required by law to have the same equipment. Deep breathing exercises are prescribed for patients with lung problems and for persons recovering from surgery. The narrow applications of these techniques are very unfortunate. They should be routine for every person. The average person takes their respiration for granted. There are large Eastern religions who incorporate consciousness of breathing as an important teaching in their religious instruction. Indians refer to "prana" as a wonderful substance that God has provided for a healthy life. It seems certain that prana is ozone.

Deep breathing exercises carry greater importance today than ever before, because of the lowered amount of oxygen in the air in our cities. The effect of gradual oxygen deprivation on metabolism is devastating and leads to a greater production, and an inadequate processing, of the toxic wastes that our bodies produce daily. One of the consequences of a lowered oxygen supply is the elevation of uric acid in the body. This causes a wide variety of metabolic problems.

The most common disease associated with a uric acid disorder is gout and it is primarily due to an inability to fully process meat protein. However, almost every system of the body is detrimentally affected. The formation of kidney stones and gall bladder stones, the blocking of circulation, and the

destruction of joints by the formation of crystalline deposits are just a few of the serious problems that arise.

There are hundreds of known biochemical reactions in the body that utilize oxygen. Acute deprivation of oxygen (hypoxia) leads to a rapid death; we are simply getting there more slowly. The impairment of oxidative processes is directly related to the development and progress of cancer.

The use of ozone in the treatment of cancer addresses the problem of cellular hypoxia, or oxygen starvation, and has wide systemic effects. The efficacy of this treatment has been proven over the last fifty years in Germany.

THE HEALING CRISIS - excerpt from 'Alive' magazine

A healing crisis is in effect when the body is in the process of eliminating toxins. Reactions may be mild or they may be severe. One should expect this and work toward it. The body's inherent desire is perfect health and we have the ability to earn our way back to that state. To do so, the body must go through an elimination process called the healing crisis.

A healing crisis results when all body systems work in concert to eliminate waste products and set the stage for regeneration. Old tissues are replaced with new, and stored toxins are eliminated. A cleansing, purifying process is underway and stored wastes are more easily removed. Sometimes there is pain of greater intensity than the lower level of chronic problem gives, but it is usually of short duration.

The crisis will usually bring about past conditions in reverse order to the original problem. People often forget the diseases or injuries they have had in the past, but are usually reminded during a healing crisis. Reactions may include skin eruptions, nausea, headache, sleepiness, fatigue, diarrhea, a cold, ear infections, boils, or any other way the body uses to eliminate toxins. The crisis usually lasts three days, but if the energy of the patient is low, it may last for a week or more. The body needs juices, and especially water, preferably ozonated, to help carry off the toxins. This is a time for rest - mental as well as physical rest.

One crisis is not always enough for a complete cure. The person in a chronic state, who has gone through many disease processes in life, must go through these processes again. Often the crisis will come after one feels his very best, setting the stage for the action. Most people feel an energy boost the first few days. Then toxins are dumped into the blood stream for elimination by way of the liver, kidneys, spleen, skin, bladder and colon. Listen to your body and go as slowly as your body needs to so that your cleansing is gradual and comfortable.

With a more serious condition there may be many small crises to go through before the final one is possible. Everything must be considered and given its proper place in the build-up to a healing crisis. One should expect it and work towards it. Then the goal of optimum health can be achieved.

INTERESTING MEDICAL OZONE FACTS Dr. H.E. Sartori, MD

Ozone has been used in Germany since the 1950's to disinfect donated blood and has been found effective in eliminating transmission of hepatitis, syphilis, and most recently, HIV.

The most common method of ozone administration in Germany has been major autohaemotherapy. However, intravenous ozone therapy has been used since the early 1980s.

The main advantages of intravenous are:

1. Precise dosage.
2. Consistently better results compared with autohaemotherapy. Direct IV application produces much better results and requires fewer applications. This is particularly apparent in patients with lung cancer, allergies, and AIDS.
3. Prompt elimination of any allergic components contributing to cancer formation and virtually all other degenerative diseases, all vascular diseases, immune diseases, and allergies of all types. This effect is much more consistent than with autohaemotherapy. The same applies to removal of viruses, bacteria, and fungi that may also be adjunctive factors for cancer and other degenerative diseases. Direct intravenous ozone consistently removes unwanted antibodies from the bloodstream.
4. Clean application of the ozone with simple syringes without the requirement of using disposable bottles and other equipment that could be contaminated with HIV.

When ozone is injected into the blood stream, it immediately starts to react with any available type of oxidizable substrate, most notably the lipids of the cell membrane. Lipid peroxidation products of ozone include alkoxyl and peroxy radicals, singlet oxygen, hydrogen peroxide (peroxide burst is the

mechanism by which viruses, bacteria, and fungi are killed by macrophages and microphages), oxonides, carbonyls, alkanes and alkenes.

If all the different reactants are taken into consideration, there may be products formed in minute ("homeopathic") amounts under conditions of considerable turbulence, simulating homeopathic "succession," the vigorous shaking used in classic homeopathy to "potentiate" the remedy. This brings about a healing crisis. After the healing crisis is brought about by the ozone administration, these conditions are resolved (analogous to the effects of homeopathic remedies) and people reach a new level of well-being. Particularly impressive is this effect in all chronic allergies, asthma, hay fever, brain allergies, and in chronic fatigue syndrome.

A. MEDICAL OZONE APPLICATIONS FOR AIDS

Ozone is the most important modality in the comprehensive treatment plan necessary for successful treatment of AIDS. In conjunction with neuro-associated conditioning, a complete nutritional program, advanced micro current therapy, herbal immune-stimulation, and a total lifestyle rehabilitation program, ozone has been proven effective in reversing AIDS, even in terminal patients.

The main ozone effects in AIDS patients are:

- The reversal of any unresolved pathogenic process that may contribute to immune deficiency.
- The effective killing of all viruses, bacteria, fungi, and protozoa involved in AIDS.
- The stimulation of depressed immunity and the alleviation of excessive immune reactions.
- The elimination of any allergic component and all HIV antibodies.
- The elimination of malignant tumors.
- The elimination of toxins, fatigue and prostration, along with a general revitalization.

B. OZONE AND THE MAIN MANIFESTATION OF AIDS

- Ozone promptly reverses AIDS-related opportunist infections including pulmonary infections such as pneumocystis carinii pneumonia, pulmonary toxoplasmosis, bronchopulmonary candidiasis, pulmonary cryptococcosis, pulmonary and disseminated histoplasmosis, mycobacterium avium complex, cytomegalovirus and herpes simplex, pneumonia, tuberculosis, nocardiosis, pyogenic bacterial pneumonia, and lymphoid interstitial pneumonia.

- Ozone assists in reversing opportunist malignancies such as non-Hodgkins lymphoma (especially if pulmonary), hepatomas, and T-cell leukemia and lymphadenopathy associated virus.

- Ozone has proven to be highly effective in reversing progressive multifocal leukoencephalopathy, indistinguishable on MRI and neuro-diagnostically from herpes varicella-zoster viral lesions also seen in AIDS patients.

- Ozone effectively reverses any allergic factors contributing to immunodepression low T-cell count, especially low CD4 counts. After ozone treatments, there are frequently prompt increases of the CD4 cell count, rapid decreases of HIV antibodies, and normalization of most blood parameters within a few months.

- Vaginal ozone applications are very effective for sustained debilitating vaginal candidiasis of female AIDS patients. Ozone is part of the treatment program for aggressive cervical cancers often seen in female AIDS patients, as well as candida.

- Ozone eliminates viral and bacterial contaminants from blood products such as syphilis, Hepatitis B and C, HIV, HTLV-1, HTLV-2, Colorado tick fever, as well as babesiosis, malaria, leishmaniasis, trypanosomiasis, and toxoplasmosis.

- Ozone is the most effective treatment for viral infections such as mycoplasmydial, chlamydial, and rickettsial infections without any of the long-term side effects of antibiotics.

- Ozone is effective against arbovirus infections, all forms of encephalitis, dengue hemorrhagic fever and shock syndrome, yellow fever, jaundice hematemesis, oliguria with proteinuria, Congo- Crimean hemorrhagic fever, Omsk hemorrhagic fever, Kyasnur Forest disease, and arthropod-borne viral fevers, such as Dengue fever, Rift Valley fever, and Colorado tick fever.

- Ozone is effective against arenaviral diseases such as Lassa fever, Argentine and Bolivian hemorrhagic fevers and lymphocytic choriomeningitis.
- Ozone is also highly effective against respiratory viral infections from influenza, parainfluenza, respiratory syncytial virus, rhinovirus, adenovirus, coronavirus, as well as against measles, mumps and rubella.
- Ozone is effective in viral infections in immunocompromised patients such as herpes simplex 1 and 2, cytomegalovirus, Epstein-Barr virus, varicella pneumonia, herpes zoster, Guillain-Barre syndrome, Ramsay-Hunt syndrome, Bell palsy, colitis, transverse myelitis and mononucleosis.
- Ozone is effective in minimizing complications of enteroviral infections such as poliomyelitis, aseptic meningitis, rabies, myocarditis/pericarditis and myalgia.
- Viral diarrheas caused by rotavirus, Norwalk agent, astrovirus, and corona virus respond well to rectal ozone applications
- Chlamydia, pneumonia of all types, endometritis, epididymitis, salpingitis, proctitis, conjunctivitis, urethritis, pyelonephritis and mycoplasma infections respond well to systemic and local ozone applications.
- Ozone is effective for the treatment of Rocky Mountain Spotted Fever, typhus, ehrlichiosis and trench fever.
- Ozone is the treatment of choice for all types of acute or chronic allergies including asthma, sinusitis, and rhinitis.
- Ozone is an effective treatment for urticaria, angioderma, hypotension, bronchospasm, uterine spasm, anaphylactic shock, and reactions to stinging insects.
- Ozone treats hemolytic anemia, thrombopenic purpura, leukopenia, pemphigus, pemphigoid, myasthenia gravis, hyperthyroidism, pernicious anemia, and renal disease.
- Ozone works against rheumatoid arthritis, lupus, polyarteritis, cryoglobulinemia, pneumonitis, aspergillosis, and glomerulonephritis.
- Contact dermatitis and granulomas of all types are effectively treated with ozone.
- Ozone is effective against Hashimoto thyroiditis, SLE, Goodpasture syndrome, Graves disease, RA, Addison Disease, angitis, panniculitis, polyarteritis, and Wegener granulomatosis.
- Ozone combined with shark cartilage, herbal treatments and lifestyle therapy produces prompt regression of cancer tumors and impressive long-term cure rates in most cancer patients. Ozone acts by both destroying the tumor directly and by stimulating the depressed immune system. Specifically, ozone enhances the formation and function of T-lymphocytes, the production of cytokines, such as interleukin, interferon, tumornecrosis factor, lymphotoxin, granulocyte and macrophage colony-stimulating factors and cytokine synthesis inhibitory factor. Interleukin-2 is the most important T-cell driven lymphokine. Ozone may also sensitize lymphocytes to become tumor infiltrating lymphocytes.
- Ozone is a great detoxifier, oxidatively destroying tar, soot and oil in the lungs, benzene, vinyl chloride and other hydrocarbons that are carcinogenic.
- Ozone is effective in alleviating adverse effects from conventional cancer treatment with radiation, chemotherapy and of surgery complications, such as immunodepression and wound infection.
- Ozone is particularly effective against bacterial pneumonias, fungal infections, coccidioidomycosis, candidiasis, cryptococcosis, pulmonary aspergillus, septicemia and zygomycosis.
- Other bacterial disease that ozone has been found effective on include: leptospirosis, listeriosis, brucellosis, arthralgia, lymphadenopathy, meningitis, paravertebral abscess, all hepatitis, orchitis, epididymitis uveitis, cellulitis, vasculitis, tularemia, tetanus, botulism, food poisoning, enteritis,

myonecrosis, anthrax, Lyme disease, melioidosis, salmonella enteric fever, relapsing fever, meningococcal infection, E.coli Bartonellosis, meningococcosis, hemophilus, pneumococcus, and echovirus.

- Protozoal infections for which ozone is effective include giardiasis, cryptosporidiosis, malaria, trypanosomiasis, pneumo-cystosis, naegleria, acanthamoeba meningoencephalitis, and visceral leishmaniasis.

- Ozone insufflated rectally is the most effective treatment for inflammatory bowel disease, ulcerative colitis, Crohn's disease, pancolitis, amebiasis, procto-sigmoiditis, intestinal tuberculosis, diverticulitis, fistulas, fissures and abscesses, irritable bowel syndrome and hemorrhoids.

- Rectal and systemic ozone is the most effective treatment for liver disease of all types including hepatitis, hepatocellular cancer, cholestatic syndromes and cirrhosis of the liver.

- Ozone is especially indicated for rheumatoid arthritis, systemic lupus erythematosus, scleroderma, polymyositis, ankylosing spondylitis, osteo-arthritis, Reiter syndrome, psoriasis, synovitis, gout, chondrocalcinosis, pyrophosphate arthropathy, calcific peri-arthritis, calcific tendinitis, and calcinosis.

- Ozone is a highly effective adjunct to EDTA chelation therapy. It is useful in ischemic heart disease, angina, myocardial infection and ischemic arrhythmia, and cardiomyopathy. Ozone helps to eliminate any drugs, alcohol or environmental toxins that may contribute to heart or vascular disease. It has produced dramatic improvements in peripheral vascular disease, and relieved claudication, ischemic cramps and ischemic ulcers. Ozone with EDTA has produced excellent results in cerebrovascular insufficiency, fibromuscular dysplasia, lupus erythematosus, polyarteritis, nodosa, granulomatous angiitis,

Takayasu arteritis, meningovascular syphilis, intracranial arterial occlusions, Alzheimer's disease and senile dementia, and cerebral atrophy.

- Ozone is an excellent therapy for varicose veins, especially if associated with pain, fatigue, cramps of the calf muscles, stasis syndrome with pigmentation, eczema, subcutaneous induration, and varicose ulcers.

- Ozone is an effective treatment for multiple sclerosis, optic neuritis, encephalomyelitis, amyotrophic lateral sclerosis (ALS), Parkinson's disease, essential tremor, tardive dyskinesia, dystonia, supranuclear palsy, striatonigral degeneration, Tourette syndrome and Huntington's chorea.

- Ozone is helpful in improving the circulation in optic neuritis, ischemic optic neuropathy orbital cellulitis, cavernous sinus thrombosis, uveitis, vascular retinopathies, senile macular degeneration, papillitis, herpes zoster ophthalmicus, toxic amblyopia, glioma, malignant melanoma, otitis media, mastoiditis, otosclerosis, Meniere disease, acute vestibulopathy, herpes zoster oticus, and all peripheral poly-neuropathies.

- Ozone oxidatively destroys chlorinated and nonchlorinated hydro-carbons and alicyclic compounds and thus helps eliminate most drugs, alcohol and all manmade environmental toxins that contribute to human disease.

- Ozone is indicated for the topical treatment of dermatological disorders such as herpes simplex and zoster, warts and molluscum contagiosum, impetigo, ecthyma, epidermal necrolysis, erysipelas, folliculitis, furuncles, carbuncles, tinea, candidiasis, scabies, pediculosis, cutaneous larva migrans, acne, rosacea, psoriasis, lichen planus, erythema multiforme, pemphigoid, bullous pemphigus, dermatitis herpetiformis, morbilliform, ichthyosis vulgaris, epidermolytic keratosis, lamellar ichthyosis, basalomas and spinaliomas, stasis dermatitis, stasis ulcers decubitus ulcers, and healing of fistulas, and burns of all types.

- Ozone helps minimize the effects of radiation treatment/poisoning, such as decreased libido, amenorrhea, anemia, leukopenia, thrombopenia, skin cancers, osteosarcoma, pneumonitis, pericarditis, myocarditis and myopathy.

DO NOT BE DECEIVED! AIDS AND CANCER ARE CURABLE!

Dr. George Freibott, ND, MD

Friends, pay attention to the following: If you are deceived into believing that there is no cure for AIDS or cancer and are suffering from or have loved ones who are suffering from these dreaded diseases, the following may be of extreme help in reducing or even arresting suffering. Check out the following extracts. These are not, I repeat NOT, from any unrecognized sources or journals but from highly-respected individuals and institutions! The Government with the FDA, AMA and even the press, is being negligent of the welfare of our fellow human beings. Do not fall prey to their negligence and the lack of recognition of their own data! Rise up from the doldrums of apathy and unbelief! Our ignorance and lack of heed to the laws of Mother Nature and our personal insensitivity has caused these problems. Demand utilization now of these scientifically, time-tested, safe, non-toxic, harmless and lifesaving compounds. Demand this from your Government officials, health and welfare and welfare institutions, doctors, colleges of research and the press, now. Check out the extracts below. The following dictation is from BLOOD, the Journal of the American Society of Hematology, Vol. 78, No.7, October 1, 1991: "Inactivation of Human Immunodeficiency Virus Type 1 by Ozone in Vitro" By Keith H. Wells, Joseph Latino, Jerrie Gavalchin, and Bernard J. Polesz. "A device was designed to deliver a constant source of given concentration of ozone fluids containing Human Immunodeficiency Virus Type 1 (HIV-1). Ozone was found to inactivate HIV-1 in a dose-dependent manner. Greater than 11 log inactivation was achieved within 2 hours at a concentration of 1,200 ppm ozone. Similar concentrations of ozone had minimal effect on factor VIII activity in both plasma and immunoaffinity-purified preparations of factor VIII treated for the same time period. The data indicate that the antiviral effects of ozone include viral particle disruption, reverse transcriptase inactivation, and/or a perturbation of the ability of the virus to bind to its receptor on target cells. Ozone treatment offers promise as a means to inactivate human retroviruses in human body fluids and blood product preparations." Copyright 1991 by the American Society of Hematology. The following dictation is from the respected scientific journal SCIENCE, Vol. 209, August 22, 1980: "Ozone Selectively Inhibits Growth of Human Cancer Cells" Abstract: "The growth of human cancer cells from lung, breast, and uterine tumors was selectively inhibited in a dose-dependent manner by ozone at 0.3 to 0.8 part per million of ozone in ambient air during 8 days of culture. Human lung diploid fibro-blasts serve as non-cancerous control cells. The presence of ozone at 0.3 to 0.5 part per million inhibited cancer cells' growth 40 and 60 percent, respectively. The non-cancerous lung cells were unaffected at these levels. Exposure to ozone at 0.8 part per million inhibited cancer cells' growth more than 90 percent and control cell growth less than 50 percent. Evidently, the mechanisms for defense against ozone damage are impaired in human cancer cells."

THE HISTORY OF MEDICAL OZONE IN THE TREATMENT OF AIDS Dr. John Pittman MD

The following is a summation of exciting occurrences in the field of innovative medicine, and particularly in the treatment of AIDS, due to its powerful oxidizing effect. Ozone is an energized form of oxygen with extra electrons present, which spontaneously disperse from the molecule as soon as they are produced.

Ozone blasts holes through the membranes of viruses, bacteria, yeast and abnormal tissue cells.

One of the early uses of ozone was in America in the 1930's, when it was found to be effective in treating various types of inflammatory bowel disorders, such as ulcerative colitis, Krohn's disease and chronic bacterial diarrhea. In this procedure, ozone gas is delivered into the rectum through a catheter tip, where it is absorbed through the lining of the colon.

German researchers have been leaders in the development of ozone technology. In the Fifties, they developed a technique for treating blood with ozone called 'major autohaemotherapy.' In this procedure, about 300 cc's of blood is taken from a vein into a vacuum bottle. Ozone is then bubbled through the blood, after which the blood is reinfused. In this procedure, ozone destroys any virus particles in the blood. It is also absorbed into the plasma and after reinfusion, disperses throughout the body.

Another technique for using ozone is direct infusion, in which the ozone gas is injected directly into the vein. This has the advantage of being more precise in terms of dosage delivered, as well as allowing administration of higher concentrations.

Other techniques include direct application to the skin through the use of ozone water baths and steam cabinets.

Through diligent research, the Germans were able to determine that ozone was incredibly effective in destroying such infections as hepatitis, Epstein-Barr virus, herpes, cytomegalovirus and HIV. With the realization that HIV was susceptible to ozone, the Germans began using the autohaemotherapy technique to treat AIDS patients as soon as this was a recognized disease.

There have been numerous anecdotes about the German's success with ozone, and many physicians in this country have been using it with great success. Until recently, neither the government institutions nor private corporations have sponsored any rigid clinical ozone studies. There appears to be a built-in bias against the development of therapies such as ozone, because it is a non-patentable gas. Our pharmaceutical industry has developed based on the ability to patent synthetic drugs that can be sold at a profit, and thus recoup the initial investment expense. This has resulted in a system which supports drug development by this method and has discouraged the development of simple, inexpensive or non-patentable substances.

Nevertheless, numerous physicians have used ozone successfully, risking sanctions by federal and state authorities, as this is not a FDA approved treatment.

In 1986 a company was formed with the purpose of developing ozone technology for medical use in the treatment of HIV infection. This company, named Medizone Inc. was formed by Terrance McGrath. Mr. McGrath founded Medizone with the purpose of declaring ozone as a drug, and proceeding with the development of this drug just as any other pharmaceutical company. He assembled a research team of experts in hematology and the biochemistry of oxidative substances, and began to go through the laborious process that the FDA requires for a new drug development. One of the factors the FDA would require in the development of any new drug was the ability to deliver a precise quantity at a given concentration. In this case, it would be necessary to know the exact amount of ozone being produced by the machine as well as that being absorbed by the blood in order to determine the proper dosage. Mr. McGrath's research team developed a device to deliver ozone through a thin filter membrane to blood that has been drawn from the body. This allows a precise regulation of the quality of ozone being delivered and absorbed by the blood.

Upon development of this patented device, Medizone was able to sell stock to raise money for the laboratory studies and animal toxicity trials that were necessary before FDA would give approval for human studies with ozone. They have cooperated with the FDA and have produced very good research data which has been published in peer review journals.

The most recent data was found in the article 'Blood, The Journal of Hematology' in October of 1991. It was a report on a study done in Syracuse, New York, which proved that ozone will inactivate HIV in vitro (in the laboratory, outside the body.) In this case, blood that was infected with the virus was treated by ozone using Medizone's device and then was studied afterward for any trace of viral particles. Following the publication of this research, it was expected that the FDA would grant Medizone approval to begin Phase 1 of human clinical trials. However, the FDA came back to Medizone with the requirement that they conduct large animal toxicity studies using an animal with blood volume comparable to that of humans in order to determine if there is any toxic effect. The study that has been developed will use large pigs, will cost a considerable amount of money, and will add more time to the procedure for approval. At the time of this writing, Medizone still intends to move forward with this study while attempting to receive early approval for a human trial.

The government has become more receptive to the idea of innovative medicine by establishing the Office of Alternative Medicine at the National Institute of Health. Senator Tom Harkin of Iowa has been instrumental in establishing this office. The Senator has family members who have experienced the improvements using natural and alternative therapies, thus he has been a valuable proponent of these treatments.

Through the action of Senator Harkin, other members of Congress, and public pressure, the Senate Appropriations Committee set aside two million dollars for the establishment of this office in February of 1992. They have yet to look at ozone.

I am very excited to announce that we have opened the North Carolina Bio-Oxidative Health Center in August 1004. We are located in the Blue Ridge Plaza, a medical office building near Rex Hospital in Raleigh, NC. This center is the outgrowth of several projects in which I have been involved over the past five years as part of my ongoing research of ozone and detoxification therapies in the treatment of immune system disorders.

I voluntarily closed my office in Raleigh in 1992 to comply with an order from the NC Board of Medical Examiners that I cease using ozone in my medical practice because it was considered non-conventional and was not in common usage by other doctors within the state. Since then, through the actions of many individuals and patients' rights groups, the law has been changed so that a physician cannot have his license revoked for using experimental or non-conventional therapies.

North Carolina is now the fifth state in the country with a freedom of medicine law which allows physicians to choose those therapies they feel will benefit their patients the most and gives the patients the ability to choose the kind of medical care they feel is best for them.

IMMUNIZATION AND OZONE Saul Pressman

It was the work of Louis Pasteur, Edward Jenner, Rudolph Virchow, Robert Koch, Paul Ehrlich and Emil von Behring that brought about the theory of wide-spread immunization, based upon the idea of producing antibodies in the blood to 'help out' the body's immune system to identify and attack 'invading germs.' Through the work of Antoine Bechamp, William F. Koch, Royal Rife, Gunther Enderlein, Carl Edward Rosenow, Otto Warburg and Gaston Naessens, the original assumptions underlying this theory regarding the body's immune system have now been shown to be erroneous.

The so-called 'bad' bacteria and viruses that modern medicine fights with its huge arsenal of pharmaceutical drugs are in reality the germs of life. These germs of life live in symbiosis with the nutritive medium that constitutes our body, allowing it to be built up and later decomposed, to be metamorphosed and recreated. These germs are pleomorphic shapeshifters who are controlled by the medium in which they live. Germs are not something separate, isolated, unfriendly and coming from without, but are rather the foundation for all life. Without germs, there is no life. Their number is infinite. Their function is varied. Germs can change shape, join together, separate again and return to their primordial condition. Viruses, bacteria and fungi are various developmental forms of germs. The nutritive medium on which the germs thrive determines the type of development they will undergo. Early in this century, Dr. Carl Edward Rosenow of the Mayo Biological Laboratories began a series of experiments in which he took distinctive bacterial strains from a number of disease sources and placed them in one culture of uniform media. In time, the distinctive strains all changed and became one uniform class. By repeatedly changing cultures, he could individually modify bacterial strains, making harmless ones 'pathogenic,' and in turn reverse the process. He concluded that the critical factor controlling the nature of the bacteria was the food and environment they lived on. These discoveries were first published in 1914 in the Journal of Infectious Diseases.

Rosenow's work was corroborated and expanded upon about two decades later by Royal R. Rife, developer of the Universal Microscope, with a resolution of 150,000 power. This precision instrument made live bacteria and viruses visible.

Rife showed that by altering the environment and food supply, friendly bacteria, such as colon bacillus, could be converted into the 'pathogenic' bacteria known as typhoid. Rife was able to observe that the viral agent associated with certain forms of cancer could in time be modified into harmless bacillus coli, and the process reversed. Rife stated that it was the unbalanced cell metabolism of the human body that in actuality produced the disease. He believed that if the human body was perfectly balanced, it was susceptible to no disease.

This work closely paralleled Alexis Carrel's earlier research at the Rockefeller Institute where he was able to control the rates and levels of infectious disease mortality among mice by altering the diet.

Researcher Rene Dubos reaffirmed these findings and suggested that virulence is an ecological problem: that is a problem of the state of internal cleanliness.

It is known that children who cannot produce antibodies in their blood (agammaglobulinemia) nevertheless recover from diseases such as measles and still have long-term immunity. People with no antibodies have been found who are extremely resistant to diseases, while other people have developed diseases to which they already had high levels of antibodies.

Official U.S. military records show that highly immunized personnel manifest a mortality rate from diphtheria four times higher than of unvaccinated civilians.

It is now clear that the body needs no 'help' of the sort provided by immunization; that antibodies in the blood stream are not required to protect the body; and that immunization can cause immune suppression, permanent nervous system damage, and growth stunting. There is also strong evidence that immunization can actually cause the diseases it was meant to prevent. This view has gained support from the writing of a report commissioned by the Canadian International Development Agency (CIDA) from Dr. Raymond Obomsawin in 1992.

In his detailed report, Dr. Obomsawin found that the idea of induced immunity was an illusion founded on: -discredited scientific theories; -the refusal to examine contrary data; -the lack of proper follow-up assessment of immunized children - and poor statistical methods.

The positive impact of immunization on public health has never, repeat NEVER, been substantiated in any unbiased study. Immunized people have repeatedly fallen ill to the disease they were

supposedly vaccinated against, and epidemics are statistically MORE numerous in more widely vaccinated groups (studies in Gambia, Brazil and Taiwan). Estimates by 'experts' on the degree and severity of adverse reactions have been woefully wrong and serious damage and even fatalities have gone unreported, preventing a true assessment of the value of immunization.

Repeatedly, statistics and reports have been manipulated in an attempt to show the effectiveness of vaccination. The best known case involves the famous Salk polio vaccine. This massive program is held up as a shining example of the effectiveness of vaccination, yet the statistical evidence shows that polio was on its natural cyclic downturn at the time of introduction of the vaccine in 1956. In one of the rare double blind tests ever done on a vaccine, the group receiving it had 200 cases of polio reported, while the control group had none. Polio disappeared in Europe in the mid-Fifties about the same time as in America, yet there was no program of mass-vaccination there.

Some scientists are now postulating that full vaccination irreparably weakens the child's immune system. These same scientists theorize that mass inoculation is responsible for the widespread escalation of auto-immune, degenerative and allergic conditions amongst those subjected to vaccination as children. A further disturbing trend is the increasing coercion placed upon parents to force them to have their children subjected to this massive invasion of their bodies. The weight of state sanctions against parents is unconscionable, especially when the true dangers of immunization have now been laid bare in this report.

Now that we know that vaccination offers no protection against disease we are left with the question of what disease, how to present it and how to treat it.

The Cause of Disease

The human body is 2/3 water, 10% of it in the blood and 90% in the lymph. If toxins are allowed to build up in the system, the water gets 'dirty.' If the blood pH varies from 7.3 then the beneficial microbes that are necessary in the body begin to change their form, and disease results.

To maintain a clean system, it is necessary to have a proper diet, one that produces a blood pH that is neither too alkaline (bacteria problems) or too acid (cancer problems). And it is necessary to have sufficient oxygen in the system to allow cellular respiration to be efficient and allow complete oxidation, preventing the production of carbon monoxide which the body cannot expel.

Each cell burns sugar (carbohydrates) in oxygen to make its fuel. The carbon-hydrogen bond is cleaved, and the oxygen bonds with the hydrogen, forming H₂O (water) and CO₂ (carbon dioxide). If there is insufficient oxygen available, CO (carbon monoxide) is formed instead of CO₂, excessive lactic acid is formed and the blood is made more acid. If this oxygen deprivation (hypoxia) continues long enough, the cell will no longer be able to sustain the process of oxidation and it will be forced to ferment its sugar anaerobically in order to survive. This process turns off the governor on cell replication and therefore wild growth can begin. Ungoverned cell growth is called cancer.

Circulation of clean, oxygen-carrying blood is a basic requirement for optimum health, and this can be achieved by bringing ozone into the body. The least expensive way of doing that would be to live on a mountain far from the cities and breathe deeply - - the recipe for an Eastern master.

Failing that, we can use an ozone generator to create ozone from pure oxygen and bring that into the body in any one of a dozen ways in order to oxidize toxins and oxygenate the cells. Ozone works at the basic level of all important bodily functions - respiration, digestion, assimilation, elimination and immunity. And this is the answer to the question of what we substitute for the worthless and dangerous vaccination programs.

It is imperative that the red blood cells be kept free-floating and not unclumped, so that they can carry the proper amount of oxygen. Ingestion of ozone keeps red blood cells from clumping and therefore keeps circulation of the optimum level necessary for good health.

If people were to have reliable and inexpensive ozone generators in their homes, they could purify their water, their air and their bodies. If adequate nutrition and sanitation were maintained, diseases of all types could be prevented. The role of the hospital would be reduced to an extension of the emergency room for accident victims. The role of the pharmaceutical company with its noxious potions would disappear, and the level of general health would rise to new heights.

INFECTION THEORIES CONTRASTED

GERM THEORY

1. Disease arises from micro-organisms originating outside the body.
2. Micro-organisms should be guarded against and destroyed to prevent disease.
3. The appearance and function of specific microorganisms is constant.
4. Every disease is associated with a particular microorganism
5. Micro-organisms are primary causal agents.
6. Disease is inevitable and can 'strike' anybody
7. To prevent and cure diseases, it is necessary to 'build defenses' and to destroy pathogenic micro-organisms.

TOXICITY THEORY

1. The susceptibility to disease arises from conditions within the cells of the body.
2. Micro-organisms are beneficial and life-sustaining if the body is kept clean from toxins.
3. The appearance and function of specific micro-organisms micro-organisms changes when the host organism is injured, either mechanically, biochemically, or emotionally.
4. Every disease is associated with a particular condition.
5. Micro-organisms become associated with disease only when the cells become toxified.
6. Disease arises from conditions of increased toxicity.
7. Preventing or curing disease consists of cleaning toxicity from the body in a way that does no harm.

CONTEMPORARY OZONE APPLICATIONS Kurt Donsbach

In order to appreciate ozone one must first understand fully the critical role oxygen plays in human life. Oxygen is by far the most important necessity of human life. It performs hundreds of tasks in the body, but the two most important are energy production and detoxification.

The production of energy in the body is accomplished by the combination of glucose with oxygen, producing ATP. The body makes an amount of ATP equivalent to your body weight every 24 hours. If you make 10% less ATP than normal, you will feel tired and sluggish. If ATP production falls too far, you will deteriorate rapidly, and die. Energy is life and the production of energy in the body depends upon oxygen.

The second important function of oxygen is to combine with metabolic waste products to allow their elimination from the body. This process is called the oxidation reduction cycle. When insufficient oxygen is available, the detoxification process slows down, wastes pile up, circulation becomes sluggish, oxygen is prevented from reaching the cells and disease results. Thus, we can see that oxygen is essential to these two vital phases of life.

Since oxygen is the most critical requirement for life, the ingestion of substances that increase the level of oxygen in the body are the most beneficial to optimum health. The best sources of oxygen are ozone, hydrogen peroxide and magnesium peroxide.

Ozone treatment is safe because healthy cells are surrounded by an enzyme coating, which ozone does not penetrate. Bacteria and viruses have no such coatings and are oxidized on contact by ozone. Ozone also promotes the production of glutathione peroxidase, catalase, reductase and super-oxide dismutase which are the enzymes forming the cell wall coating and therefore cellular immunity is enhanced.

Ozone also has a measurable benefit on the uptake and utilization of oxygen through improved glycolysis in red blood cells, reduction of clumping of red blood cells and the stimulation of mitochondrial respiration. This improved cellular respiration is invaluable in preventing cancer. Cancer begins when a normal cell cannot get enough oxygen. If the level of oxygen available falls below 40%, in order to survive, the cell will begin to ferment sugar instead of burn it. This process is irreversible, and results in an energy output only 1/6 as great as oxidation. The cell then lacks the energy to manufacture a proper enzyme coating around itself. The governor on cell replication is switched off, and the cell can begin to make copies of itself wildly.

This uncontrolled cell replication is called cancer.

When ozone is introduced into the area, it immediately attacks the unhealthy cells because they lack a proper enzyme coating. Healthy cells are untouched. If sufficient ozone is administered over time, the tumor will be dissolved.

The applications of medical ozone include performance enhancement, increased longevity, accelerated wound healing, dentistry, heart disease, all infections, treatment of all gastro-enteric diseases, immune stimulation, treatment of all cancers, and gerontology. Ozone also combines well with intravenous chelation therapy which is used to treat arterial disease or heavy metal toxicity. Chelation therapy works quite slowly through a number of infusions, and adding ozone can speed this process up.

Ozone provides an immediate oxygen boost to heart tissue which can noticeably reduce the incidence of angina. It also improves brain function, because the brain uses over 15% of all the oxygen in the body.

Through the development of modern equipment, home usage of ozone therapy has become practical. Rectal and vaginal insufflation, combined with use of a body suit or bag, drinking of ozonated water and breathing ozone bubbled through olive oil, are established protocols for home usage.

The naso-pharyngeal area is often the site of chronic minor infections which become acute in cycles. Chronic sinusitis is probably one of the most common maladies of today. The introduction of ozone into the ear canals can be of great benefit in reducing such chronic infections. At first, just do it for a few minutes.

Another method of getting ozone into the body is with use of a closed, one-person sauna. Since the pores will be open in the moist heat, ozone can be absorbed slowly and safely in large amounts through the skin. This method prevents the great fatigue of toxic shock sometimes encountered with other methods, because the oxidized toxins are sweated out through the skin rather than being dumped to the liver. This technique is particularly effective for bed sores, ulcers, non-healing wounds and burns.

Medical doctors in Europe have recognized the beneficial effects of ozone for over 80 years. German doctors have developed many different methods of administering ozone. Medical ozone therapy is quite new to Britain and Canada, and only practiced by a few doctors.

It is even less available in the US due to active persecution by the FDA. But in Germany, over 7000 doctors give ozone therapy daily. The medical use of ozone has an excellent safety record and no toxic side effects have been observed in millions of treatments over nearly 100 years.

The use of ozone for medical therapy is well-established and is being vigorously pursued by many clinicians. As technology develops, new techniques will emerge that will enlarge the scope of the effective use of this healing modality.

MSM - METHYL SULFONYL METHANE - Saul Pressman

MSM is extracted from DMSO by the process of adding another oxygen molecule to it so that it separates the dimethyl solvent from the sulphur. The sulphur left after this process is a biologically active sulphur, and it is the active ingredient in DMSO.

DMSO is a byproduct of the timber industry. At one time Crown Zellerbach attempted to get rid of this 'waste' by spraying it on dirt roads to compact the earth. This caused problems, because animals of every description would come and lick it all up. The deer would lick six inch potholes in the road. Dr. Stanley Jacob of the Oregon Health Sciences University observed this and later identified this substance as DMSO, a healing penetrant that instantly soaks in through the skin and reduces pain. Eventually, Dr. Jacob discovered that the active healing agent in DMSO is MSM.

MSM, the sulphur-bearing amino acid, is available to the cell and creates a flexible bond. Cells with insufficient MSM lose their ability to flex. A wrinkle is caused by cells that have lost their ability to flex. Sulphur has a vital relationship with protein, since sulphur is found in the amino acids methionine, cystine and cysteine. The sulphur-bearing amino acids are absolutely essential to health. Sulphur acts as an activator with all the B Vitamins, thiamin, biotin, Vitamin C and pantothenic acid. Sulphur aids the liver in bile secretion and helps maintain the overall body balance between acidity and alkalinity. Sulphur plays a role in carbohydrate metabolism, which is significant for controlling hypoglycemia and diabetes. The lack of biological sulphur in the body results in low insulin production. Sulphur is a component of insulin, which is secreted by the pancreas for metabolizing carbohydrates. Sulphur keeps hair, nails and skin healthy. In addition, sulphur plays an important part in cell respiration and assimilation. MSM is therefore essential and is thus found in all living organisms.

Medical research has proven that a minimal concentration of MSM is critical to function and structure, and that the concentration drops as time passes, directly contributing to aging. There has been extensive medical testing over the last ten years on the use of MSM in the diet. Some diseases

considered irreversible, such as emphysema, have been overcome through use of supplemental MSM. Other diseases treated with excellent results are: pyorrhea, skin burns and scars, eczema, psoriasis, dandruff, loss of hair, PMS, diabetes, hyperactivity, constipation, parasites arthritis, carpal tunnel syndrome, candida, chronic fatigue syndrome, Epstein-Barr and low energy. MSM helps with the oxygenation of cells and free radical scavenging, and is thus anti-aging.

MSM occurs in fresh fruit and vegetables, raw milk, wheat grass juice and aloe vera. There is no toxic dose, and the body will excrete un-needed MSM.

Because it helps in the production of methionine, a basic liver enzyme, MSM is very important to proper digestion and assimilation of food. The liver cannot do its job of regulating enzymes and metering sugar and filtering out toxins properly without MSM. It is of little use to increase dosages of vitamins and minerals if they will just be excreted. Daily supplementation with MSM will ensure proper absorption of all nutrients, with the corresponding betterment of health.

METHYLENE BLUE

Methylene blue is a blue dye used for staining tissue samples for viewing under a microscope. It is a methyl donor with the ability to cleave carbon monoxide off from hemoglobin. When the body is poorly oxygenated, the sugar that is burned in oxygen by the cell for energy burns poorly, producing carbon monoxide, instead of carbon dioxide. Monoxide has a great affinity for the iron in hemoglobin, and the hemoglobin is unable to shed it in the lungs, and so must leave without a fresh supply of oxygen. This can produce the condition known as methemoglobin anemia. People over the age of fifty almost always have some methemoglobin in their blood.

Driving in heavy traffic with the vents open can also cause a buildup of carbon monoxide in the blood. In addition, a faulty gas furnace or a smoky fireplace can also cause the ingestion of carbon monoxide.

Carbon monoxide in the system acidifies the blood, irritates the organs and causes a lowering of body temperature, which microbes of all types prefer. The body's way of dealing with bacteria and viruses is to shut off the intake of food and raise the body temperature, which we call a fever, in order to 'burn out the bugs.'

For many years, methylene blue has been used to treat cyanosis, a slight cyanide poisoning sometimes caused by handling blueprints.

By taking methylene blue, 5 drops in a glass of water before bed, we can eliminate carbon monoxide from our blood in a few short weeks. Methylene blue is safe and non-toxic. Its only side effect is to temporarily turn the tongue blue, and to make the urine green. It rarely needs to be repeated more than once a year.

FLAX OIL & OZONE

The concept of increasing blood levels of oxygen by ozone and hydrogen peroxide therapies has great merit. However, getting an increase of oxygen does not guarantee an increase of oxygen on the cellular level where it is needed most for cancer treatments and other disorders.

An increase in cellular utilization oxygen is achieved by increasing dietary omega 3 oils. (Flax oil is nature's richest source of omega 3 oil containing over 60%.) These omega 3 oils are incorporated into each cell membrane as a building block. There they play the important role of attracting oxygen out of the blood to be utilized by the cell. This effect is a polar attraction. (It is the same reason omega 3 oils are used in fast-drying paints because they attract oxygen.)

Two to three teaspoons of flax oil daily will meet your daily needs. Flax oil naturally contains the free radical scavengers vitamin E and beta carotene which are important factors in any healing process. Flax oil also benefits the cardiovascular system, skin problems and inflammatory conditions such as arthritis and colitis. Flax oil is a wonderful food but should never be cooked. It can be put on potatoes, vegetables and soups in place of butter or on salads as a dressing.

One must avoid margarines, hydrogenated fats, refined vegetable oils as these contain harmful trans-fats which interfere with omega 3 absorption and oxygen utilization.

HYDROGEN PEROXIDE Walter Grotz

Oxygen is the most abundant element on the surface of the earth. It comprises 45.6% of the earth's crust and 20.95% of dry air. It is the most vital and necessary element for the survival of life. Without oxygen, you can live only a few minutes.

Through his research efforts, Dr. Edward Carl Rosenow (1875 - 1966) worked out the causes of some 35 diseases and was the author of 450 medical papers. Dr. Rosenow developed a technique by which microorganisms in the body could be eliminated or controlled. His basic tenet was that in every body are millions of microorganisms, which adapt to the habitat they are in. He felt that the wastes and secretions of these microorganisms contributed to many degenerative diseases.

In this belief, he agreed with the thinking of other medical scientists such as Bechamp, Rife, Enderlein, and Gaston Naessens. Dr. Rosenow experimented with the use of hydrogen peroxide to reduce these microorganisms.

Hydrogen peroxide was first reported by the French chemist Louis-Jacques Thenard in 1818, who named it 'eau oxygene' or oxygen water. It is found in traces in rain and snow (McGraw-Hill Encyclopedia of Science & Technology, 5th Edition, p.747). In 1863 Meissner proved its presence in the rain water collected during thunderstorms and this has since been corroborated by others (Journal of the American Medical Association, Vol x No. 9, March 3, 1880. It gets into our rain and snow from atmosphere ozone descending from above coming into contact with water vapor. From 1880 to 1904, Charles Marchand published 18 books on the subject of hydrogen peroxide and ozone.

An article on the intravenous injection of hydrogen peroxide appeared in The Lancet of February 21, 1920 (Influenzal Pneumonia: The Intravenous Injection of Hydrogen Peroxide).

An article on external use appeared in Hautzart 12:425, September 1961, Germany (On a Simple and Painless Treatment of Warts).

Since 1966, there have been over 600 medical articles published about hydrogen peroxide. They do not all concern humans, and they are not all positive

In 1983, there were over 100 articles published on the subject of hydrogen peroxide.

The Food & Drug Administration in Federal Regulation Vol. 46 No 6, January 9, 1981, gave the food industry the green light to use hydrogen peroxide in the packaging process. The FDA has further ruled that hydrogen peroxide can be used in the processing of cheese and cheese products, eggs and egg products, and as an antimicrobial agent in whey processing. They have also allowed it to be used in cleaning and healing mouth injuries. Hydrogen peroxide is now being used intravenously and intraarterially by a number of American doctors. The International Bio-Oxidative Medicine Foundation (P.O. Box 13205, Oklahoma City, OK 73113) is supporting clinical research in this area.

Hydrogen peroxide is found in fresh fruit and vegetables, some of it coming from rain, and some of it manufactured in the process of photosynthesis (General Biochemistry, Furton & Sommonds, p.338). Eating fruits and vegetables raw ensures that we get this hydrogen peroxide into our bodies, along with valuable enzymes. Mother's milk contains a good amount of hydrogen peroxide, and colostrum contains even more. The spring water of Lourdes, famous for its healing powers, has a very high content of naturally occurring hydrogen peroxide.

Hydrogen peroxide is used in milk in 45 countries around the world, removing the need for refrigeration.

An article on the 'aseptic' process for milk can be found in "Trailer Life," November 1981, p51-52. Many people have found benefit in drinking diluted amounts of hydrogen peroxide, but it can be nauseating and cause stomach upset. It is better to bathe in it, putting 8 ounces of 35% food grade H₂O₂ in a tub of warm, chlorine-free water and soaking for 25-30 minutes.

- Alternatively, you could spray the body after a shower with 3% hydrogen peroxide, avoiding the eyes and hair.

- Spray vegetables and fruits with a 3% solution of H₂O₂ and then rinse, to remove pesticides.

- In the dishwasher, add 2 oz. of 3% to the regular washing formula.

- In the wash machine, add 8 oz. of 3% to the wash in place of bleach.

- As a mouthwash, gargle with 3% H₂O₂, and then rinse.

- Use baking soda and 3% H₂O₂ to make a paste for brushing teeth.

- As a douche, add 2 tablespoons of 3% to a quart of distilled water.

- For an enema, add 2 tablespoons of 3% to a quart of distilled water.

To make a 3% solution, mix 11 oz. of distilled water with 1 oz. of 35% hydrogen peroxide.

Always be careful when handling 35% food grade, and keep it away from children. If you spill some, wash the area with water to dilute it. If you get it on your skin, rinse under running water. The skin will temporarily turn white, but no permanent harm is done.

SO YOU'RE THINKING ABOUT TRYING OZONE David Sterling

So you're thinking about trying ozone therapy! It is important to know what you are getting yourself into. Ozone is not a silver bullet. Ozone is part of a whole lifestyle change. If you don't think that you can commit yourself to change, then don't. Change requires time, effort and patience. It is not something that will come and go in a matter of months. The basic premise is that you are cleaning out the toxic wastes that your body has been storing which are providing an environment that encourages growth of pathogens and suppresses the immune system. It will take time and effort to clean up the situation.

What are you trying to accomplish in doing ozone therapy? Take a moment and analyze your life. What types of food do you eat? Do you smoke and drink? Are you taking any drugs, either prescription or non-prescription? Have you had chemotherapy or radiation or metal poisoning in your lifetime? These are all factors to be considered.

The body is 2/3 water. How dirty this water is depends on how you have run your life. The more junk food you've eaten; the more you've smoked and drank; the more drugs you've put into your body; the more toxic you are.

The more toxic you are, the longer it will take ozone to do its job. You are going to have to make some lifestyle changes. The healthier you eat, the better off you are going to be. You should consider eliminating meat from your diet, and switch to vegetarianism, gradually. Care must be taken to ensure a balanced diet. There are many good books on the subject at this site's book store. Remember that the blood pH should be maintained at about 7.3 - 7.4.

Juicing is a great way to get nutrients. Try to get a juicer which uses the pulp as well, because half of the nutrients are in the pulp. Try and buy local organic produce when possible, to avoid the pesticides used on imported produce. Make sure you wash all fruits and vegetables prior to eating/juicing them. A 3% solution of food grade hydrogen peroxide and pure water is great for this purpose.

If you smoke and drink, you should stop. If you are a non-prescription drug user, you should stop. You should examine which prescribed drugs you are on as well. If you are taking AZT or DDI, this will not be compatible with ozone therapy, because the ozone will attack the drug and be used up before it can do the work on stored toxins.

Antibiotics are also bad for your system. Over a period of time, they depress the immune system and destroy beneficial bacteria. You will find the ozone itself will act as an antibiotic while enhancing your immune system.

You must also stop burning the candle at both ends. The body needs its proper rest periods. If you're not prepared to institute these changes, then don't attempt ozone.

What water do you drink and bathe in? Both should be as pure as possible. Do not drink tap water. Either buy bottled water cleaned with ozone, or purchase a reverse osmosis unit. You should attach a good filter to your shower head to eliminate chlorine from your shower/bathing water. Seeing that the skin breathes, it is not a good idea to be ingesting the chlorine that is used to sterilize the public water supplies. You may want to try 35% food grade peroxide as an inexpensive start to oxygenating your system. You can take it internally (for dosage schedule, refer to Ed Mc Cabe's book "Oxygen Therapies"), but it is best to bathe in it (8 oz. in a tub of warm unchlorinated water, soak 30 minutes). If you have decided ozone is the way to go, there are some things you should think about. A good set-up will cost you about \$2,500. This includes the price of an ozone generator, an oxygen regulator, and the purchase of an oxygen tank. After the initial outlay, you can expect to go through about \$30 worth of oxygen per month. For IV injections, you must use oxygen from a tank only. For other treatments, such as rectal insufflations, you can get away with using as oxygen concentrator, although they are expensive to buy.

The more serious the disease, the more aggressive you have to be with the ozone therapy. There are many accepted ways to introduce ozone into the body. Some of these include: drinking ozonated water; ozone body bagging; rectal insufflations; vaginal insufflation; and direct IV injection into a vein. For the first few months, you will have to set aside time for yourself to do the ozone therapy. As said before, ozone is not a silver bullet. It takes a lot of work and dedication. At first, you can expect to spend AT LEAST a couple of hours a day doing ozone. If you decide to attempt direct IV injections,

how do you plan to facilitate this? Do you have someone qualified to do this for you, or are you going to attempt to do this yourself? Self-injection is not easy, and requires practice. It will take you at least a week to perfect this. You can expect to have bruised arms before you get it right. Remember that you will be doing as injection a day for several weeks.

You must also be prepared to perform some sort of colonic (enema) process to clean your colon. As the body detoxifies, you must ensure that your colon is kept clean so that the toxins are eliminated and not reabsorbed. If you are considering rectal insufflations, you must clean yourself out (using an colonic/enema) prior to using the ozone, each and every time. For some, this is not a pleasant thought, but it is a necessity in rectal insufflation.

Do not expect to feel good for a while. As ozone starts to do it's job, you may experience one or more of the following: unusual fatigue; fever; night sweats; diarrhea; nausea. Ozone will generally force toxins out of the body the way they were put in. The more toxic your body is, the stronger these reactions will be. This initial detoxification process could last from several weeks to several months. Do not despair, you will eventually feel better. You can expect to see results, but only if you're committed to the program.

It will not be easy, but you will see results. After the initial detoxification, you will have to go on a maintenance program. This will also be dependent on the individual person. Ozone may always be a part of your new healthy lifestyle, protecting you from toxic buildup and resultant disease in the future

PROTOCOLS OF OZONE ADMINISTRATION AND OZONE EQUIPMENT

There are twenty-two methods of administering medical ozone:

In the clinic:

1. autohaemotherapy 2. intravenous injection 3. intraarterial injection 4. direct injection into a tumor 5. intracutaneous (blistering) 6. intramuscular 7. subcutaneous 8. uterine insufflation 9. bladder insufflation 10. sub-atmospheric bagging 11. dental use of ozonate water.

In the home or the clinic:

12. rectal insufflation 13. vaginal insufflation 14. drinking water 15. in the ear 16. ozonated water enema 17. breathing through olive oil 18. deep lymphatic massage with ozonated olive oil 19. ozonate bath with sea salt 20. body suit 21. steam cabinet 22. external limb bagging

OZONE HAS BEEN USED TO TREAT

Acariasis Cryptosporidiosis, Ischemic optic neuropathy, Proctitis Acne Cystitis Krohn's disease, Prostate enlargement, Acrodermatitis Cytomegalovirus, Kyanasur Forest disease, Prurigo, Acute otitis media, Cutaneous larva migrans, Landry syndrome, Psoriasis, Acute vestibulopathy, Dengue fever, Lassa fever, Pulmonary toxiplasis, Addisons disease, Dermatitis, Leishmaniasis, Pyoderma, Adenocarcinoma, Diabetes, Leptospirosis, Rabies, Adenovirus, Diverticulitis, Leukemia, Radiculoneuritis, Adrenalitis, Echovirus, Leukoencephalopathy, Relapsing fever, AIDS, Eczema, Leukopenia, Reynold's syndrome, Alopecia Ehrlichiosis, Listeriosis, Reynaud's disease, ALS (Lou Gehrig disease), Encephalitis, Lupus erythematosus, Rheumatoid arthritis, Alzheimer's disease, Encephalomyelitis, Lyme disease, Rhinitis, Amebiasis, Endocarditis, Lymphocytic choriomeningitis, Rift Valley fever, Amenorrhea, Endometritis, Lymphogranuloma, Rubella, Amyloidosis, Endophthalmitis, Lymphoid pneumonia, Rubella, Amyloidosis, Endophthalmitis, Lymphoid pneumonia, Salmonella, Anal fissures Enteric fever, Lymphoma, Salpingitis, Anemia, Enteritis necroticans, Malaria Scabies, Angina, Environmental hypersensitivity, Mastoiditis, Scleroderma, Angiodema, Epidermoid carcinoma, Measles,

Senile dementia, Ankylosing spondylitis, Epidermolitic keratosis, Melanoma, Senile macular degeneration, Anthrax, Epididymitis, Melioidosis, Sennutsu fever, Aphthous stomatitis, Epidermophytosis, Meniere disease, Septicemia, Arterial occlusion, Epstein-Barr virus, Migraine, Shingles, Arteriosclerosis, Erysipelas, Molluscum ecthyma, Shock, Arthritis, Erythema migrans, Mononucleosis, Sickle cell anemia, Arthrosis, Flavivirus, Morbilloform, Sinusitis, Asthma, Folliculitis,

Mumps, Skin burns, Athlete's foot, Food poisoning, Multiple sclerosis, Spinalioma, Babesiosis, Fulminant varicella, Myalgia, Staphylococcus, Bacterial pneumonia, Furuncle, Myasthenia gravis, Stomatitis, Bartonellosis, Gangrene, Mycobacterium avium complex, Stiatonigral degeneration, Basalinoma, Genital warts, Myocarditis, Stroke, Bell palsy, Giardiasis, Mycosis, Syphilis, Bornholm myalgia, Glaucoma, Myelitis, Tardive dyskinesia, Botulism, Glioma, Myonecrosis, T.cruzi, Bronchitis, Glomerular membrane disease, Myositis, Tendinitis, Bronchopulmonary aspergillus, Glomerulonephritis, Neurodermatitis, Tetanus, Bronchospasm, Goodpasture syndrome, Neutropenia colitis, Tinea versicolor, Brucellosis, Gout Ocular trachoma, Tinnitus, Bullous pemphigus, Graves disease, Optic nerve dysfunction, Thoracic zygomycosis, Burkitt lymphoma, Guillan-Barre syndrome, Optic neuritis, Thrombopenic purpura, Cancer of all types, Hairy leukoplakia, Oral erythema, Thrombophlebitis, Candidiasis, Heart arrhythmia, Orbital cellulitis, Thyroiditis, Carbuncles, Heart disease, Orchitis, Togavirus, Cavernous sinus thrombosis, Hematoma, Osteomyelitis, Tourette syndrome, Cellulitis, Hemorrhage, Osteoporosis, Toxic amblyopia, Cerebral atrophy, Hemorrhagic fever, Osteosarcoma, Toxoplasmosis, Cerebro vascular accident, Hemorrhoids, Otosclerosis, Traveller's diarrhea, Chagas disease, Hemolytic anemia, Pancreatitis, Trench fever, Chicken pox, Hepatitis, Panniculitis, Trypanosomiasis, Chlamydia, Herpes of all types, Papillitis, Tuberculosis, Cholecystitis, Histoplasmosis, Parainfluenza, Tularemia, Chronic pain, HIV, HTLV, Parkinson's disease, Ulcers, Chronic pulmonary disease, Hypercholesterolemia, Pediculosis Urethritis, Cirrhosis of the liver, Hypotension, Pelvic inflammatory disease, Urticaria, Coccidiomycosis, Hypersensitivity, Pemphigoid, Uterine spasm, Colitis, Hyperthyroidism, Pernicious anemia, Uveitis, Colorado tick fever, Huntingdon chorea, Poliomyelitis, Varicose veins, Conjunctivitis, Ichthyosis, Polyarteritis, Varicella pneumonia, Contact dermatitis, Ileitis Polyoma virus, Vascular retinopathy, Coronavirus, Impetigo, Poor circulation, Vasculitis, Cryoglobulinemia, Influenza, Postpartum fever, Warts, Cryptococcosis, Intravascular coagulation, Pneumocytosis, Wegener granulomatosis, Pneumonia.

OZONE AND ITS USES IN MEDICAL THERAPY

Ozone therapy is one of the most powerful and versatile therapies known today. Extensive medical research on ozone therapy has been done primarily in Europe. Through its mechanism of action, ozone has beneficial effects on every part of the body. The effects include:

1. Inactivation of bacteria, viruses and fungi: Ozone disrupts the integrity of the cell envelope through peroxidation 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 interrupting the virus-to-cell contact with peroxidation. Cells previously infected by viruses are more susceptible to destruction by the peroxide produced through ozonolysis, because they have weak enzyme coatings.

2. Enhancement of circulation: In circulatory disease, a clumping of red blood cells hinders blood flow and decreases oxygen absorption due to reduced surface area. There is a decrease in red blood cell flexibility which prevents them travelling down the tiniest capillaries, and blood viscosity increases. With ozone therapy, clumping is reduced or eliminated and 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 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 which shifts the oxyhemoglobin disassociation curve to the right. This leads to an increase in the amount of oxygen released to the surrounding 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 decarboxylation of pyruvate, stimulating production of ATP. Ozone also causes a significant reduction in HADH and helps oxidize cytochromes.

4. Dissolution of malignant tumors: Malignant cells have an increased rate of glycolysis which leads to the production of more lactate. With ozone therapy, there is a significant decrease in lactate production, showing that the metabolism is being inhibited. Tumor cells have a peroxide intolerance due to insufficient peroxidase and catalase. Ozone is thus able to oxidize the outer lipid layer of malignant cells and destroy them through cell lysis.

5. Activation of the Immune system: Ozone stimulates the production of interferon and interleukin in the body. From this there is a cascade of subsequent immunological reactions.

6. Formation of peroxides: Ozone reacts with the unsaturated fatty acids of the lipid layer in cellular membranes, forming hydro peroxides. Lipid peroxidation products include peroxy radicals, vital for killer cell action.

Oxygen plays a vital role in maintaining health in the body. Oxygen and sugar are the primary nutrients that each cell requires to generate energy for all its life functions. These functions include the transport of molecules, synthesis of all chemical compounds and mechanical work such as muscle contraction. Thousands of these reactions are occurring at all times. These reactions are what allow the heart to pump blood, the immune system to fight infection, the gastrointestinal tract to digest food, and the nervous system to process information.

Oxygen is also an important structural component of the organic compounds used by the body as essential nutrients, such as vitamins and fatty acids. Oxygen also has an important role in removing waste products from the system. As people age, their bodies extract oxygen and transport it to the cells less efficiently. The cumulative effect of this lack of oxygenation is a decrease in the flow of vital nutrients to the tissue, the impairment of the thousands of chemical reactions necessary and the subsequent appearance of deficiency diseases. Thus an abundance of oxygen creates health and well being and a deficiency of oxygen contributes to illness.

OZONE APPLICATIONS Brad Hunter, P.Eng.

Ozone is triatomic oxygen. As a gas it is blue; both liquid ozone (-112 C) and solid ozone (-193 C) are a deep blue color. It is this blue ozone in the atmosphere that causes the sky to be blue. At altitudes from 25-30 km. ozone is created by a portion of the sun's ultraviolet spectrum. It exists as a gas in concentrations of 10-20 parts per million. (ppm). In these concentrations, ozone is a powerful absorber of a narrow portion of the sun's ultraviolet radiation. At ground level, ozone exists in a greatly diluted state and is always present in minute quantities (.001-.003 ppm) which we breathe in. It does not become an irritant until levels above .1 ppm are exceeded for over eight hours. Below those levels there have never been any permanent detrimental effects from inhaling it. Ozone is created naturally by crashing surf, whitewater rapids, and lightning storms. Recently, ozone has come to public attention as an alleged pollutant in smog.

In order to measure hydrocarbon air pollution, an index is required. High levels of hydrocarbons have a corresponding ozone level (since the ozone is attracted to the pollutants), so by measuring the ozone, scientists can measure indirectly how bad the pollution is. What is not mentioned is that the ozone molecule lasts for a maximum of 20 minutes as it busily eats up the hydrocarbon pollution by oxidizing it. Carbon monoxide, benzene, chlorides, sulphur and many other pollutants are swiftly oxidized on contact by ozone, thus cleaning the air. Ozone has long been internationally recognized as the most powerful oxidant next to hydroxyl, which is a mixture of ozone with hydrogen peroxide. Ozone is used in over 30 different industries as an industrial oxidizer and sterilant. Existing applications include: synthetic fibers, chemicals, jet lubricants, air scrubbing for clean rooms, treatment of industrial wastes, potable water treatment, bottling plants, sewage treatment, aquaculture, aquarium sanitation, food preservation, sterilization of containers, deodorization, pulpwood bleaching, metal extraction, etc. Ozone's most well known use is in water treatment as a primary stage disinfectant because of its bactericidal and viricidal efficacy. Both the EPA and the FDA acknowledge ozone's ability to oxidize 99.9992% of all waterborne pathogens. Ozone has been used for human health since 1860, and is presently employed in over 16 countries. Its widest use is in Germany, where over 7000 doctors have treated more than 12,000,000 people since WW II. In the United States, the FDA has not allowed testing of ozone, and has actively persecuted physicians who use it. Nevertheless, more and more doctors are turning to ozone therapy as a crucial tool for the treatment of serious diseases. In five states, Alaska, Washington, Colorado, North Carolina and New York, physicians are now able to employ any therapeutic technique including ozone without fear of persecution. In Dr. H.E. Sartori's recent book, the multiple uses of ozone for human health, dentistry, animal health and industrial uses are well covered.

There are three technologies utilized for the generation of ozone: Ultraviolet light, Corona discharge, and Cold plasma.

1. Ultraviolet light in the 180-190 nanometer wavelength generates ozone from ambient without producing nitrous oxide compounds. But, UV cannot generate the concentrations necessary for health or industrial applications, even with oxygen feed. Typically, UV systems produce only 1-3 ug/ml, sufficient only for air purification and cleaning of water in small quantities.

2. Corona discharge generates high concentrations of ozone, up to 140 ug/ml, required for industrial applications. If it is properly engineered and used in conjunction with an air dryer, it may be used with ambient air. It is the most cost effective way to produce large quantities of ozone, but reliability is always a problem. An improved variation is called dualdielectric, used for medical purposes, but long term reliability is again problematic.

3. Cold plasma is a technique invented by Nikola Tesla whereby noble gases are enclosed in a glass vacuum tube and high voltage is applied. This is where the future lies for medical applications, because a clean flow of 50 ug/ml is obtainable from this technology with very long term reliability. The original Testaire medical machines of 1920s still operate perfectly today.

Different uses of ozone require different concentrations to obtain desired results. UV generated ozone is adequate for small pools, but larger pools, water parks and municipal water treatment require corona discharge to generate large quantities of ozone. It is important to deal with people who are familiar with the specific applications of ozone in order that systems are designed to address the problem of each individual installation.

Water engineers use a value called CT (concentration x time) to measure the amount of work done by an oxidant. It is important to consider the time factor when using ozone, especially when there is a large amount of undesirable material to be oxidized. Insufficient time of contact or too low a concentration will produce incomplete results.

HEALING OZONE Phoebe Chow, ND (Alive magazine #156 Oct./95)

Healthy cells need oxygen. Most infections occur because of the invasion of anaerobes that do not thrive in an oxygen-rich environment. Deprivation of oxygen to the body, for example through polluted air, sedentary lifestyle or junk food diet which requires a lot of oxygenation for elimination, encourages anaerobic microbes to proliferate. Over-growth of harmful microbes will lead to breakdown of enzymatic reactions, overload of metabolic wastes and ultimately cell death. Under similar anaerobic conditions, cells tend to mutate to more primitive life forms, turning from aerobic to anaerobic respiration for energy synthesis.

Nobel prize winner Dr. Otto Warburg in 1923 demonstrated that the primary cause of cancer is the replacement of oxygen in the respiration chemistry of normal cells by the fermentation of sugar. The growth of cancer cells is a fermentation process which can be initiated only in the relative absence of oxygen. Ozone is one of nature's most powerful oxidants. It is used in water purification and sewage treatment and is now being applied medically in Europe to treat everything from wounds and colitis to cancer, stroke and AIDS. Yes, the same ozone in the atmospheric layer that is responsible for shielding off ultra-violet light from the sun and oxidizing the pollutants in the air can be produced from medical oxygen via electrical discharge. It is administered as an ozone/oxygen (O_3/O_2) gas mixture. According to the dosage and concentration range, medical ozone is a pharmaceutical agent that exerts specific properties and a well-defined range of efficacy.

Properties of Medical Ozone

At the higher range of concentration (three and a half to five per cent ozone in a ozone/oxygen mixture) ozone exhibits a strong germicidal effect by oxidative destruction. The oxidative power of ozone has proven to be effective in destroying lipid-enveloped viruses such as Epstein-Barr, herpes, cytomegalovirus and viruses that cause hepatitis. One recent study indicates that ozone treatment was 97 to 100 per cent effective in destroying HIV in vitro (in a test tube). (Journal of American Society of Hematology, October 1, 1992) At concentrations below approximately three and a half per cent, the three main restitutive properties of ozone can be observed by its oxidative influence on the oxygen metabolism, the induction of specific enzymes and the activation of immunocompetent cells. It is these systemic influences of ozone that cause it to be such a potent therapeutic tool, because most

of the diseases affecting humans today can be traced to diminishing levels of oxygen and a compromised immune system.

Ozone Improves Oxygen Metabolism

Ozone improves the delivery of oxygen to hypoxic tissues, as well as reactivating the oxygen metabolism of cells. The mechanisms of these systemic actions involve both direct and indirect processes.

Ozone directly changes the electric charges of the erythrocyte membrane increasing the flexibility and plasticity of the erythrocytes, thus enhancing the flow properties of the blood and the transport of oxygen to the cells and tissues. This is especially applicable in arterial occlusion disease whereby "pile of coins" erythrocyte formation is typical. The indirect mechanism consists of ozonolysis, i.e. the ionizing reaction of ozone with the unsaturated fatty acids in the cellular membrane producing peroxides.

It must be pointed out that ozone behaves as an ion, not a free radical under normal physiological blood pH and therefore no radical chain reaction occurs to cause oxidative damages. The reaction activates the enzyme 2,3-Diphosphoglycerate (2,3-DPG) in hemoglobin to release oxygen. This is of particular importance to diabetics in which 2,3-DPG is depressed.

Ozone induces specific Enzymes The formation of short-lived peroxides at the membrane are injected into the cell and are removed by the enzyme glutathione peroxidase. Therefore, it is recommended to supplement with vitamin E, N-acetyl-cysteine and selenium during ozone therapy to support the glutathione detoxification system. In addition, the enhancement of the glycolysis enzymatic pathway results in an increase in adenosine triphosphate production (energy currency of the cell). This is significant in the management of stroke and burns. The elevation of adenosine triphosphate synthesis will decrease perifocal edema formed in the injured site minimizing tissue necrosis and subsequent scarring. But this is effective only when ozone is administered within the first 24 to 48 hours. In Germany, many ambulances are equipped with ozone and it is injected intravenously in patients who have just suffered stroke.

Ozone Activates Immune System

It is well documented that ozone can activate monocyte and lymphocytes, and induce the production of an array of cytokines such as interleukin, interferon, tumor-necrosis factor. (The Journal of International Medical Research 1994) Its ability to elicit endogenous production of cytokines and its lack of toxicity make ozone an indispensable therapeutic modality since today's most devastating diseases are characterized by immunodepression such as chronic viral diseases, cancer and AIDS. Of course, restoration of the immune system depends on a total approach of detoxification, lifestyle modification and supportive therapies.

Means Of Administration

There are several ways to administer ozone, depending upon the condition being treated. Autohaemotherapy, which involves bland treatment ex vivo of blood with ozone and prompt reinfusion into the donor, is the most popular procedure among German physicians. Other methods include direct infusion of a gaseous ozone/oxygen mixture either intravenously, or intra-arterially (particularly in critical limbs ischemia). It has been proven that even direct delivery of ozone into the blood vessels has very low risk factors. No air which contains nitrogen ever enters the body, so an air embolus cannot occur. Colorectal insufflation of ozone/oxygen, much like an enema, has been used to treat colitis, fistula and colon cancer. Ozone is also excellent for topical treatment of infected wounds, ulcers and burns, especially those that are difficult to heal.

Therapeutic Indication

The modern development of ozone application in medicine began in the 1950's in Europe and gradually spread throughout Europe to Australia, Israel, Cuba, Brazil and Columbia. As far back as WW I, ozone was used medically to treat wounds and other infections. Over 5000 physicians worldwide routinely use ozone in their medical practice. I have personally used ozone in my own practice and found it to be an effective therapy. When it is incorporated into a holistic approach of cleansing

there is virtually no known side effect of ozone treatment if it is applied properly. However, since ozone therapy is dose-dependent, it should be administered with supervision. Specific therapeutic applications of ozone include the treatment of vascular disease such as stroke, obstructive arteriopathy, venous insufficiency, cancer, acute and chronic viral disease, ulcers, infected wounds, gangrenes, burns, inflammatory bowel disease such as Crohn's disease, ulcerative colitis and spinal disc problems. It is also used in dentistry as a disinfectant and in pediatrics for the treatment of viral and bacterial infections of the intestines. In geriatrics, its principal indication is in circulatory disorders. In particular the increase of oxygen supply to the brain is of great benefit. Ozone, with all its miraculous properties and accompanied by its lack of toxicity, is undoubtedly an important tool in medicine. It is an unusual double-edged sword. It defends the body via its stimulation of the immune system and at the same time it improves oxygenation and metabolism. I do believe that ozone deserves a place in the management of health and disease. It is up to us, patients and physicians, to demand access to this wonderful healing substance.

Dr. Chow practises in Vancouver B.C., Canada

The growth of ozone therapy in America is impeded by companies whose interests are threatened by this powerful medical tool. Those doctors who decide to try it confirm the lack of toxicity and benefits.

Bibliography:

Oxygen Healing Therapies : For Optimum Health & Vitality Bio-Oxidative Therapies for Treating

Immune Disorders : Candida, Cancer, Heart, Skin, Circul by Nathaniel Altman, Charles H. Farr

Oxygen Therapies : A New Way of Approaching Disease (Energy Publications Alternatives , No Oti)

by Ed McCabe, Betsy Bullard (Illustrator)

Hydrogen Peroxide : Medical Miracle by William Campbell, M.D. Douglass, William E. Campbell

Oxygen Healing Therapies: For Optimum Health and Vitality by Nathaniel Altman