

## OZONE THERAPY

### Issam Merdan

MB, ChB, FICMS, CABS, Professor of Surgery, Department of Surgery. Head of Department of Physiology, College of Medicine, University of Basrah, IRAQ.

Ozone therapy is a term that describes a number of different practices in which oxygen, ozone, or hydrogen peroxide are administered via gas or water to kill disease microorganisms, improve cellular function, and promote the healing of damaged tissues. The rationale behind bio-oxidative therapies, as they are sometimes known, is the concept that as long as the body's needs for antioxidants are met, the use of certain oxidative substances will stimulate the movement of oxygen atoms from the bloodstream to the cells. With higher levels of oxygen in the tissues, bacteria and viruses are killed along with defective tissue cells. The healthy cells survive and multiply more rapidly. The result is a stronger immune system.

Ozone itself is a form of oxygen, O<sub>3</sub>, produced when ultraviolet light or an electric spark passes through air or oxygen. It is a toxic gas that creates free radicals, the opposite of what antioxidant vitamins do. Oxidation, however, is good when it occurs in harmful foreign organisms that have invaded the body. Ozone inactivates many disease bacteria and viruses.

### History of ozone therapy

Ozone has been used since 1856 to disinfect operating rooms in European hospitals, and since 1860 to purify the water supplies of several large German cities. Ozone was not, however, used to treat patients until 1915, when a German doctor named Albert Wolff began to use it to treat skin diseases. During World War I, the German Army used ozone to treat wounds and anaerobic infections. In the 1950s, several German physicians used ozone to treat cancer alongside mainstream therapeutic methods. It is estimated that as of the late 1990s, about 8,000 practitioners in Germany were using ozone in their practices. This figure includes medical doctors as well as naturopaths and homeopaths.

### Proposed use and scientific evaluation

Ozone therapy consists of the introduction of ozone into the body via various methods, usually involving mixing of the ozone with various gases and liquids and injecting this into the body, including the vagina, rectum, intramuscular, subcutaneously, or intravenously. This therapy has been proposed for use in various diseases, including cancer, AIDS, multiple sclerosis, arthritis, heart disease and Alzheimer's dementia. One proposed mechanism for its use in treating cancer comes from the proposed theory that cancer does not thrive or grow in a high-oxygen environment, and the ozone therapy will increase oxygen in the body and therefore help treat the cancer. There is no evidence to support this theory. For treatment of HIV/AIDS, although ozone deactivates the viral particles outside the body, there is no evidence of benefits to living patients.

Summarizing the substantial and growing body of study results showing deleterious health effects of breathing ozone, in 1976, and restated in 2006, the United States Food and Drug Administration (FDA) reflects the scientific consensus that ozone is a toxic gas which has, as yet, no demonstrated safe medical application in specific, adjunctive, or preventive therapy. One possible reason, noted by the FDA, is that in order for ozone

### 100 benefits of ozone therapy

Ozone prevent	Ozone improve & enhance	Ozone stop
Premature aging	Circulation	All cancer cells
Irregular heart beat	Minerals absorption	<b>Ozone detoxify</b>
Lyme disease	Digestion	Lymph system
Cardiac arrhythmia	Vitamins uptake	Every cell in the body
Nerve related disease	Amino acid utilization	<b>Ozone release</b>
Cold and flue	Mood	Tension & stress
Angina	Brain function	<b>Ozone is</b>
Fever blisters	Mental stability	Liver cleanser
Shingles	Temperament	Build & tones muscle
Epistien barr virus	Heart function	Overcome bodily weakness
Allergies	Mental quickness	Decomposes plaque
Cluster and tension headach	<b>Ozone energize</b>	Cleanses mucus
Sudden and heart attack	All cells in your body	Heightens alertness
Tumours and cysts	<b>Ozone fight</b>	Lightens the heart workload
Arthritis	Infection	Destroys harmful microorganism
Constipation	Herpes	Helps supplement & medication
Gangrene	Emphysema	Increase cellular vitality
Asthma, sinusitis, bronchitis	Lung disorders	Ignites carbohydrate
Elzhiemer	Fibromyalgia	Disperses heavy metal toxicity
Gastroenteric disorders	Bronchail problem	Strengthens immune system
Multiple sclerosis	<b>Ozone kill</b>	<b>Ozone boost</b>
Strockes	Parasite(amoeba&fungi)	Energy levels
Degenerative disease	Virus	Blood booster
<b>Ozone compat</b>	Bacteria	<b>Ozone oxidize</b>
Depression and anxaity	Candidia	Poison in the body
Chronic fatigue & tiredness	Worms	Morbific material
<b>Ozone relieve</b>	Bad colonic bacteria	Pollution
muscle ache and pain	<b>Ozone purify</b>	<b>Ozone clear out</b>
Arthritis (all)	Skin (acne, eczema, psoriasis,dry skin)	Brain fog
Angina	Blood	Dirty fluids from the body
<b>Ozone neutralize &amp; eliminate</b>	Lymph system	<b>Ozone calm</b>
Chronic hostility	<b>Ozone speed up</b>	Nerve
Enviromental toxicity	Healing of wound	temperament
Acid stomach	Athletic recovery	
Lactic acid	Recovery rate after hospitalization	<b>Ozone oxygenate</b>
<b>Ozone correct</b>		Pancrease
Dizziness	<b>Ozone burn</b>	Spleen
Faulty metabolism	Fat	Heamoglobine
Memory loss	Excess sugar	Lung, heart and kidneys
Blood pressure		

to be effective as a germicide, it must be present in a concentration far greater than can be safely tolerated by man or other animals.

It is also noted that cinema projectionists who were exposed to excessive levels of ozone as a byproduct of the carbon arc lamps used in the projectors developed what was known as "Projectionists Lung". Ozone caused a deterioration of the lower lung membranes.

A 1999 review concluded that "In the age of molecular medicine it is a real 'act of faith' to believe that ozone therapy might be a valid therapeutic option, but the history of medicine teaches us we should not disregard any possibility. A review article published in 2001 found that knowledge regarding the potential benefit and harm of ozone in cancer patients is insufficient. Therefore, it did not recommend it as an alternative form of treatment for cancer patients.

Ozone has been suggested for use in dentistry, but the existing evidence does not support its use. One review found tentative evidence that ozone injection is an effective treatment for herniated discs. There is some controversy about its use by athletes in an attempt to increase performance.

### **How does ozone work?**

#### **1. Inactivation of bacteria, viruses, fungi, yeasts and protozoa**

Ozone has been shown to destroy the outer shell of most micro-organisms, thereby penetrating the cell membrane and altering the DNA. Sophisticated organisms such as human cells have enzymes that can restabilise disrupted DNA, whereas primitive organisms do not have this protective capability. This is another mechanism by which ozone selectively targets disease causing micro-organisms, and spares healthy cells.

Repeated treatments of ozone therapy are usually needed, because certain viruses and fungi are more susceptible at certain stages of their development. Some micro-organisms are much more resistant than others, and will require more treatment. The viruses that contain lipids are more sensitive to deactivation by ozone - Herpes, Mumps, Measles, Influenza, Rabies, HIV and the Chronic Fatigue producing viruses: Epstein Barr, Coxsackie and Cytomegalovirus.

#### **2. Stimulation of oxygen metabolism**

Ozone causes increased metabolism inside the red blood cells [increased 2,3-DPG], which releases more oxygen to the tissues. Ozone also stimulates the production of enzymes, which act as cell wall protectors and scavengers of free radicals. It enhances energy production in the cells by complex biochemical reactions.

#### **3. Formation of peroxides**

When ozone is introduced into the body, it is broken down into free radical agents called peroxides. These have beneficial effects because they are attracted to weakened or diseased cells and react with lipids [fats] in the cell membrane. The enzymes in the healthy, intact cell wall prevent penetration by these peroxides. Thus the peroxides in ozone selectively attack only those cells which contain parasites, viruses etc, or are weakened by cancer or toxins.

#### **4. Enhancement of circulation**

In circulatory disease, a clumping of red blood cells hinders blood flow through the small capillaries and decreases oxygen uptake by the red blood cells due to reduced surface area. Ozone reduces or eliminates clumping, and restores flexibility thereby increasing oxygen carrying capacity. Improved viscosity of the blood also leads to better oxygenation of the tissues.

Ozone oxidises the plaque in arteries, which unclogs and frees up the circulation. A vasodilator, Prostacycline, is also produced by ozone, which dilates the arteries.

#### **5. Dissolution of tumours**

Ozone inhibits cancer cell metabolism. In addition, ozone oxidizes the outer lipid layer of cancer cells, thus destroying them.

#### **6. Activation of the immune system**

Optimal administration of medical ozone causes an increase in the production of interferon and interleukins, which launch an entire cascade of immunological reactions.

#### **7. Effect on medicines**

The potency of any medicine taken concurrently with ozone treatment is greatly increased. The unpleasant side effects of toxic, but necessary, medications such as chemotherapy can be greatly minimized by ozone therapy.

### **Safety**

Much of the concern related to ozone therapy revolves around the safety of blood ozonation. It is well established that when inhaled by mammals, ozone reacts with compounds in tissues lining the lungs and triggers a cascade of pathological effects. When infused into human blood, ozone produces reactive oxygen species (ROS) or free radicals, an over-abundance of which is known to cause oxidative stress and cell damage, and is implicated in the progression of some degenerative diseases. High levels of inhaled ozone are known to be toxic, though single-dose inhalation of lower levels is not. Serious complications reported from the use of this therapy include the development of hepatitis.

### **Are there any precautions to observe?**

To prevent any unwanted oxidative effects, it is best to take a good anti-oxidant combination while undergoing intravenous ozone therapy.

### **Ozone therapy is contraindicated in the following:**

Recent heart attack, pregnancy, recent internal bleeding, hyperthyroidism, thrombopaenia, alcoholic intoxication. Patients with a history of pneumothorax, chest surgery, emphysema, middle ear surgery, uncontrolled high fevers, upper respiratory infections, seizures, or disorders of the red blood cells.

### **Side effects**

Typical side effects of oxygen or ozone therapy can include elevated blood pressure and ear pressure similar to that experienced while flying. Side effects may also include headache, numbness in the fingers, temporary changes in the lens of the eye, and seizures.

### **How is it administered?**

#### **1. Intravenous therapy**

An intravenous line is inserted into a vein, and 100ml of blood is drawn into a sterile vacuum flask. 100ml of medical ozone is also inserted into the flask and when the two are rapidly mixed together, the blood turns a bright cherry red. This ozonated blood is now highly charged with oxygenating power, and fed back into the same vein. The whole procedure takes about 30 minutes.

#### **2. Vaginal or rectal insufflations**

Ozone is introduced into the vagina or rectum by means of a catheter.

### 3. Autohaemotherapy

10 ml blood is withdrawn by syringe, mixed with ozone, and injected back into a deep muscle.

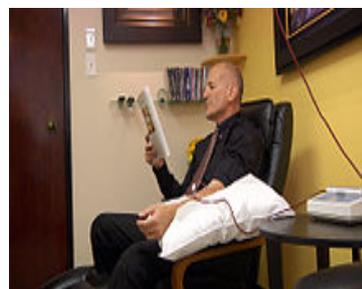
### 4. External limb bagging

A limb is covered with an airtight bag and ozone is introduced into the bag for 30-40 minutes.

### 5. Ozonated olive or linseed oil

Ozone is bubbled through the oil continuously for 7 days. The resulting cream is very effective as a topical application in a wide variety of skin conditions like fungal infections, insect bites, acne, and skin problems.

**6. Ozonated water:** Ozone is bubbled through water that is used to cleanse wounds, burns, and skin infections, or to treat the mouth after dental surgery.



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