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Benefits of Ozone Surprise Researchers, Consumers

Much-maligned ozone can rid your home or office of modern pollution that can be more dangerous than outside air.
By Ron Rendleman

Most folks know ozone by name, especially since the upper atmosphere's protective ozone layer began disappearing. But a lot of misinformation, conjured up to further private agendas, would have you believe ozone is the bad guy of ground-level pollution.

True, ozone is present in smog, partly because the processes that create pollution also create ozone. When sunlight strikes industrial or automotive pollution, oxygen atoms are stripped from the pollutant molecules and form peroxy radicals - like nitrous oxide, nitric acid, sulphur dioxide and carbon monoxide. At the same time the freed oxygen atoms bond with the free oxygen in the air and form ozone. The more pollution, the more ozone.

But demonizing ozone is like blaming the fireman for the fire. Without ozone, pollution would render cities uninhabitable.

Nature creates tremendous amounts of ozone each day with the help of ultraviolet rays of the sun or electrical discharges of thunderstorms that neutralize many biological problems like bacteria, viruses, mold or chemical out-gassing, and to some extent, man-made pollution. Take a walk after a thunderstorm and notice the clean smell in the air - that's ozone at work.

So what exactly is ozone? It's stable oxygen O2 that has picked up an extra atom of oxygen and becomes O3. Scientists call it activated oxygen. At 20-plus miles above Earth, the ozone layer plays a crucial geophysical role in protecting people from excessive solar UV radiation.

Discovered in the 1840s, it wasn't until 1906 that the first ozone water purification facility was built in France. Today there are over 2,000 similar plants worldwide. Recently Los Angeles built the largest ozone purification plant in the world. The city chose ozone over chlorine because the latter has a bad health record.

Chlorine has been found to cause various illnesses, from nose and eye irritation to possibly even cancer. A few years ago more than 100 people living in Milwaukee died, and over 400,000 became ill in one cryptosporidium outbreak that chlorine failed to control.

The fact that ozone is a powerful air disinfectant is undisputed. Twin City Testing Labs in Minnesota demonstrated a steady decline in live strains of infectious micro-organisms in four hours with as little as .05 ppm of ozone. These germs incubating in dirty air ducts could be projected to be completely eliminated in 24 hours from the lab's data. It has been argued that the same

disinfecting action takes place in the human sinus cavities where invading microbes first take hold.

Many people, especially the elderly, will retreat in doors, thinking they can avoid toxins from city air pollution, or if they are informed, from the products of chemtrails spewed out in recent years at 25,000 feet by tanker planes. But they may not be escaping at all.

As far back as 1989, the Environmental Protection Agency told Congress in hearings that indoor pollution is one of the nation's most important environmental health problems. They found that most homes have airborne concentrations of hazardous and toxic chemicals two to five times higher than outdoors. In a five-year study, many homes even had pollution levels 70 times higher inside than outside! Today's building methods and codes and the demand for energy conservation have created super-insulated airtight indoor spaces. Lower heating and cooling costs result, but natural air cleaning agents like ozone stay outside while pollution is trapped inside.

Two noted scientists, Drs. Gurbermskill and Dmitriev. found that air conditioning in office buildings caused workers to complain of headaches, weakness and oxygen deprivation that led to illness, and that colds, rheumatism and cardiovascular disorders significantly in creased with conditioned air even in the absence of typical indoor air pollution.

The average home today contains more chemicals than were found in a typical chemistry lab at the turn of the century, much of it stored under kitchen and bathroom sinks - from bug sprays to detergents to oven cleaners. Most poisonings happen over a long period of time by daily exposure to toxins that enter the body through mouth or skin, and significantly, through breathing air loaded with chemical out-gassing.

In a study conducted over a 15-year period, women who worked at home had a 54 percent higher death rate from cancer than women who worked away from home. The reason? Daily exposure to hazardous chemicals in ordinary household products.

What are just some of the toxins the EPA and other researchers found in inside air?

Benzene from paint, new carpet, new drapes and upholstery
Ammonia in tobacco smoke and cleaning supplies
Chloroform from paint, new carpet, new drapes and upholstery
Formaldehyde from tobacco smoke, plywood, cabinets, furniture, particleboard, office dividers, new carpet, new drapes, wallpaper, etc.
Sulphur dioxide, cyanide, and carbon monoxide from tobacco smoke
Trichlorethylene from paints, glues, furniture and wallpaper
Carbon tetrachloride from paints, new drapes, new carpet and cleaning supplies
Nitrogen dioxide from stoves, furnaces
Radon gas entering through foundations

Pollen from plants and trees
Mold spores from moisture and bacteria
Dust mites from dust and bacteria
Bacteria from all areas of the home

Exposure to these chemicals resulted in: headaches, memory loss, slow poisoning pulmonary irritation, fatigue, drowsiness, eye, skin and nasal irritation, dizziness, depression, respiratory irritation, gynaecological problems, shortness of breath, cancer and bronchial constriction.

For the first time in history, it's safer to be in the wilderness than in your own home.

It's alarming that indoor air has become so contaminate, especially when children are considered. Physiologically, they are more vulnerable to toxic vapours be cause of their higher metabolic rate. They breathe in more than twice as much oxygen (and therefore toxins) relative to body size than adults. They are more active, which increases their breathing rate and they play close to the floor where heavier pollutants settle. Modern school buildings that are shut tight have the same problems.

These findings are not comforting. But there is good news: a few years ago some astute scientists reasoned that just as nature uses ozone to protect life on Earth, it might be possible to produce ozone electronically for indoor protection against polluted air and water. Small portable generators were designed to decontaminate a whole house.

The inventors were surprised to discover that ozone would remove, in hours, and sometimes minutes, very tough odour problems like smoke damage from fire, pet smells and stale tobacco odours often found in public places.

Practically overnight, the $430 billion food industry began using ozone to protect produce from spoiling in transport by sanitizing packaging materials or adding to water to wash food. Meat packers found placing an ozone machine in a cooler kept meat fresher much longer.

Myron James, Technology Center Manager, said: "Ozone is very efficient in killing pathogens and spoilage organisms, and its use by the food industry will be welcomed as another tool to ensure the production of safe and wholesome foods."

Far from being a "bad guy," properly used ozone is a great remedy, even a Godsend perhaps, for modern society's ever-increasing contaminated air and water.™

What is Ozone?

Ozone is a marvel of Nature. In the upper atmosphere Ozone protects our planet from harmful ultraviolet radiation. Closer to Earth, Ozone purifies and sanitizes the air we breathe, the water we drink, and food we eat. Long used

in medical therapies, Ozone has shown remarkable antibacterial, anti-viral, and anti-fungal activity.

As a gas it is highly mobile and can dilute into the air, flow over surfaces and seep into fabrics and crevices. Ozone, is a unique molecule that seeks out and destroys the organic molecules that form much of the indoor pollutants. Whether the pollutants are from biological or chemical sources, Ozone rapidly oxidizes them by first reverting itself to O2 (oxygen) and then depositing the third Oxygen atom on the offending pollutant. This process very effectively deodorises, disinfects, and destroys many of the pathogens and fumes that poison the indoor air.

Ozone (O3) is an unstable form of Oxygen (O2) and has a total of three atoms, unlike stable Oxygen that has only two atoms.

In Nature, Ozone is formed by the sun's ultraviolet rays and the high energy electrical discharges that happen during lightning storms.

Ozone can also be reproduced scientifically in safe, controlled quantities.

Ozone continuously applied in slightly elevated concentrations is an extremely effective, safe, and economical method of reducing common household bacteria, fungi, molds, mildew, and viruses on surfaces in our rooms, kitchens, bathrooms, and in the air we breathe. By oxidizing the byproducts of decay, Ozone rapidly eliminates the allergens from dust mites and other arthropods. Ozone can also eliminate harmful chemical gases that are emitted from plywood, carpet, glue, paint, many indoor cleaners, etc. Ozone's powerful oxidizing action quickly reduces trapped chemical residues to harmless byproducts.

Is Ozone Safe?

If ozone was not safe, we would not be able to go outside and breathe the air, especially during sunshine, a thunderstorm, lightning, or after the rain. The fact is, when used responsibly, ozone is very safe just like oxygen and very beneficial to our planet and all of us that live here. To prove this obvious fact, many scientific studies have been done by experts on ozone, and all confirm the safety and beneficial aspects of ozone over and over again.

Here is what some doctors say about ozone:

"Recent authoritative investigations have established that pure Ozone is Non-toxic even in concentrations as great as 20 or 50 parts per millilitres of air."
- Clark Thorp, Ph.D., MD

"Pure Ozone is not poisonous in any sense of the word as is breaks down in contact with the mucous membrane, and only Oxygen remains."
- A. Hill, MD

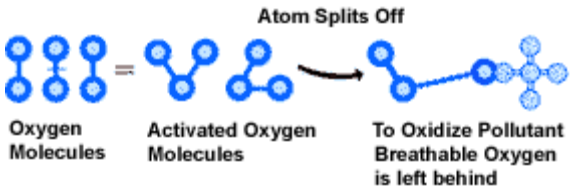
"Ozone is absolutely harmless when used correctly. We have demonstrated this over a period of many years in patients of all ages."
- F. B. Carpenter, MD

What are some of the uses of Ozone?

Ozone is now known to be natures most powerful disinfectant and oxidant and can even kill microbial contaminates like E-coli, Candida, Listeria, Staph, Salmonella, Giardia and Cryptosporidium more effectively than dangerous conventional disinfectants like chlorine or bleach. In fact, ozone kills E-coli more than 3,000 times faster than chlorine.

When ozone is created, it seeps into crevices, carpets, drapes, furniture, under beds, in closets, on countertop surfaces and other places where normal air currents are minimal or even non-existent.

When the extra oxygen atom splits off from the ozone molecule, two things happen: disinfection and oxidation. This happens as these atoms quickly destroy the bacteria, mold, mildew and odour as soon as they come into contact. The end result is clean breathable oxygen.



Air Purification, Water Purification, Deodorisation, and Food Sanitation

Whether it's harmful fumes, chemical gases, odours, or any other scented air pollutant, ozone destroys virtually all airborne and water type pollutants!

Where are ozone type purifiers used?

Ozone type air purifiers have been used safely for years in homes as well as by professional restoration companies to remove fire and flood odours. They are also found in some major hotel chains, they use them to convert smoking rooms to non-smoking rooms. Ozone type air purifiers are rapidly becoming the popular choice for indoor air purification. These advanced type air purifiers are great for use in your home, office, basement or any other area you wish to purify and/or sanitize not just the air, but also surfaces throughout indoor environments.

Here's what some experts say about Ozone?

"The trouble is that one soon gets used to bad air, and bad odours are not apt to be noticed after a while; but the fact remains that pure air is more wholesome than contaminated air. In our regular daily life, it is almost an impossibility to provide for fresh air. No amount of ventilation, not even an unbearable draft, will be capable of keeping a room or a place in good

condition, unless one takes recourse in ventilating with ozonized air. Removal of bad odours by means of air flushing is an absolute impossibility, and yet they should be removed. That is where ozone comes in. The method of purifying the air by ozone has the advantage of being fully reliable, very efficient and inexpensive."

Authority: A. Vosmaer, Ph.D.,
London, England Electrical and Chemical Engineer In
"Ozone, its Manufacture, Properties and Uses"

"Ozone destroys virtually all odours that are present. It does not merely mask them. The destruction of odours is impossible when air is circulated only, or when oxygen is used. This fact has been proven in cold storage warehouses, where all kinds and any food products are stored. Odours are not present regardless how strong they might be, or where they may originate, if only low concentrations of Ozone is used."

- ***E. W. Reisbeck. M. E.,***
Ozone Research Authority,
In "Air Conditioning and Ozone Facts"

"As a deodorant for odours and stenches of organic origin, ozone has long proven effective and we can only confirm this general opinion."
- Dr. Philip Drinker,
School of Public Health, Harvard University

"Ozone destroys organic odours. Ozone is a deodorizer of powerful stenches, such as from garbage incineration and fat rendering. When the odours from chimneys cause public nuisance, Ozone has big commercial usefulness."
- Milton J. Rosenaw, MD,
In "Preventive Medicine and Hygiene"

"The effect of Ozone was thought in the past to be a masking action, but more recently the tendency is to hold that it is purely an oxidizing process. Most odours encountered in ventilation problems result from hydrocarbon compounds suspended in the atmosphere in minute quantities as the result of human or animal respiration and from various organic processes. These hydrocarbons are immediately oxidized upon coming in contact with ozone, the resulting products being water and carbon dioxide, both odourless. This process is effective in completely removing the scent of odours, if the reaction is complete, which requires that the Ozone be in such a manner as to insure its even distribution throughout the air.
- Editorial In "Heating and Ventilation Magazine"

"...In sales, cooler, fresh and sweet air at times would be a distinct selling advantage. OZONE seems to offer this solution, in the meat packing plant. In fact, it is being widely used in cold storage plants to correct the very situation objectionable in the meat packing plant."

- ***In "Refrigeration and Air Conditioning"***

"Unpleasant odors are not masked or covered up, but are literally destroyed. The results in an ordinary room are almost immediate. Where clean, fresh air is desirable, this machine has a definite contribution to make to the Medical World.

- George A. Johnstone, MD,
Medical Director of Behrens Memorial Hospital Glendale, California

"When Ozone comes in contact with dead organic matter, oxidation immediately takes place with destruction of the organic matter. In this, it is powerful in removing odors."

- Dr. J. C. Olson

Is Ozone really effective in killing bacteria in air and water?

Ozone is an extremely effective, safe, and economical method of reducing common household bacteria, fungi, molds, mildew, and viruses. Scientific studies have proven this fact once and for all.

"Ozone owes its fame to its remarkable power of killing bacteria. That is why the world should look upon ozone as a gift to mankind. No matter how much bacteria there may be, direct application of ozone by Nature, or direct application of ozone reproduced in controlled environment will destroy any kind of bacteria, in any amount."

- ***A. Vosmaer, Ph.D.***

"Experiments with cholera and typhus bacteria are rather awkward to be carried out in a private plant, handling, say a million gallons of water per day, and the firm Siemens and Halske were very fortunate to find the Prussian State officials willing and ready to test the matter. Dr. Ohlmueller and Dr. Prall published results of their finding regarding the action of Ozone on bacteria. The experimental series covered the effect of Ozone on pure water infected with 16,000 cholera, at another time with 30,000 to 40,000 typhus, and another time with 20,000 to 40,000 coli bacteria. The result was absolute sterility after treatment. The next step was to see the result on infected ordinary river water carrying over 4,000 bacteria. After treatment with Ozone, some 5 or 6 were left over and those were harmless."
- A. Vosmaer, Ph.D.

"Ozone in the air in minute quantity of only 1 part per million retards the growth of bacteria and molds."

- ***E. Howlett, ME***

"Ozone is a powerful germicidal. Its high germicidal activity is doubtless due to its oxidizing power."
- ***E. K. Rideal, Ph.D.***

"Ozone generators have been installed in many homes, and that super-oxygen is particularly destructive to all microbes and at the same time it makes inert the dangerous dust with its bacteria laden tenants."
- W. E. Anghinbaugh, MD

"One part Ozone in 2 million p. solution renders the virus polyomelitis inactive within 2 minutes compared with the double amount of chlorine using 3 hours."
- D. F. Kessel, MD

Can Ozone be classified as a therapeutic substance?

The remarkable capability of Ozone has interested doctors and hygienists for a long time. Therapeutic employment of Ozone is based on two modes of action. One is the action of the pure oxidation itself, the other, the action of the oxygen created by the oxidation, which in its status nascendi shows peculiar qualities.

"Ozone is exceedingly valuable from a therapeutic standpoint. It gives better and prompter relief than any other medication."
- A. Caille, MD

"If I could have only one remedy, I would prefer to take my chances with Ozone."
- Noble M. Eberhard, MD

"To group one, belong the employment of ozone by infectious diseases, especially by tubercular diseases. The fact that Ozone infiltrates through the pores of the skin can be proved in a double way through chemical physio treatments. Tests have been made in taking 1 cc. blood from the patient before giving him a 20 minute physical treatment with Ozone. Another 1 cc. of blood was taken afterwards. The result of the investigation showed by each of the persons tested an increase of healthy oxygen in their veins. In concluding, we can say that Ozone, in contact with the skin, is breaking down into molecular oxygen, and through perspiration enters into the inner tissue. The tissues are oversaturated and the Ozone diffuses into the veins. After the treatment, the increase in the different cases was 15, 17, 20, and 25% more oxygen in comparison with the original contents. This increase in oxygen in the tissues and veins leads forcibly to the complete oxidation of all organic acids, and by the expulsion of the carbonic acid, according to the law of the action of quantities to the complete deacidification, and therefore, to a spontaneous reduction of breathing frequency. These physiological verifications established Dr. Sehdens practical verified therapeutic results with many forms of diseases."
- ***Th. Kunzemann, MD***

"Ozone has a direct influence on the blood itself. It has been proved that patients treated both by injection and orally, rapidly increase their number of red corpuscles, some blood tests showing an increase of 50% in a months treatment."
- S. Barker, M.P.S.

"I have before me 32 complete records and reports of reputable physicians who treated various diseases with olive or cod liver oil heavily charged with OZONE. By this method the oxygen content of olive and cod liver oil used for treatment was increased 8.53 per cent. In some cases the cod liver oil used for treatment was charged with Ozone until its gravity of 0.925 was increased to 1,000. Among the cases treated with this oil were tuberculosis, anemia, lung trouble, Bright's disease, abscesses, pneumonia and influenza, and as far as the records show, these cases were discharged as cured."
- E. W. Riesbeck, ME

"Like many other treatments, the reason for so many wonderful achievements derived from this simple aid, Ozone, is that it consists of nothing more nor less than activated oxygen. We all know that Oxygen is positively necessary to the existence of not only animal life, but of plant life as well. As a consequence, nobody can deny that activated oxygen must be very essential, not only as a preventive of disease, but also a great aid in the supplemental treatment of ailments of all characters. I am very much impressed with the use of Ozone. We definitely are on the threshold of another medicament which seems to be a specific in many diseases."
- ***O. M. Justice, MD***

Statistic: In five years that Ozone has been used in the public schools of St. Louis, Tuberculosis cases have been reduced by 50%. Also other diseases have been materially reduced.

"Ozone would save thousands of lives every year if homes and schools were equipped with apparatus for the circulation of Ozone."
- E. S. Hallett. ME

IMPORTANCE OF OZONE

In a series of studies published in a Journal Priroda (1976) the Russian Department of Health established a number of important facts concerning the use of ozone in closed indoor environments.

They established that air loses its basic "freshness" quality merely by being drawn into air conditioning and heating systems with as much as 90% reduction of the ozone and ion levels. They established that the effect of the loss of these elements could cause the occupants to complain of headaches, weakness, and a general poor feeling and sick building syndrome. As a part of the study, they found that after five months of testing with both a test group and a control group that a feeling of well being returned to those exposed to a

level of 15 ppb of ozone, and that at these same levels they were able to observe increased immune potential, higher oxygen content in the blood, improved blood pressure reading, and the reduction of many of the stress characteristics associated with working in modern office environments.

They found that by reactivating the air, by the injection of ozone to raise the level to a mere 15 ppb, the overall effect was similar to that of taking an outdoor walk of 2 hours during the day. In studies by the Institute of Child and Adolescent Hygiene, it was concluded that injection of ozone into the air of schools raising the level to 15 ppb had very positive effects on the students. In these tests, 69% of the students exposed to these levels of ozone decreased the time required to complete tasks requiring high levels of concentration. In addition, it was found that favourable changes in the functions of external respiration, increases in mental reserve capacities, and overall increases in general state of health and mental efficiency were observed.