

# Healthy Breathing & Negative Ions

<http://www.monumentalmassage.com/healthtips.php?articleid=34>

Ions are charged particles in the air that are formed in nature when enough energy acts upon a molecule such as carbon dioxide, oxygen, water, or nitrogen to eject an electron from the molecule leaving a positively charged Ion. The displaced electron attaches itself to a nearby molecule, which then becomes a negatively charged Ion. It is the negative Ion of oxygen that affects us the most.



Better air improves your health, energy, and mood. A roomful of negative ions can make you feel magically refreshed. Negative ions may be vitamins of the air!

Positive ions, on the other hand, can lead to human distress--aching joints, wheezing, crankiness, apathy, fatigue, depression, and moroseness. A barrage of positive ions prompt murder and suicide.

Date: 04/28/02 Source: Breathe IN Breathe OUT

## Why are Negative Ions So Healthy?

[http://www.totse.com/en/fringe/life\\_extension/negion.html](http://www.totse.com/en/fringe/life_extension/negion.html)

Lenard (1915) found that when water is atomized (e.g. on impact of a water droplet), negative and positive charges are SEPARATED. Molecules which are torn from the surface of the water bear a NEGATIVE charge (small negative ions) whereas large drops or the entire mass of water are POSITIVE.

This provided an unexpected explanation for the refreshing, invigorating effect of residences close to a waterfall or spring, or even after rain.

Some of these reactions which IMPROVE WELL-BEING and physical and mental capacity have since become known.

- 1) Negative ions ACCELERATE the OXIDATIVE DEGRADATION of serotonin whereas POSITIVE ions have the opposite action and INACTIVATE the ENZYMES which BREAK DOWN SEROTONIN.
- 2) An INCREASE in the serotonin level (5-hydroxytryptamine) PRODUCES
  - a) tachycardia,
  - b) a rise in blood pressure,
  - c) bronchospasm going as far as ASTHMA ATTACK,
  - d) increased INTESTINAL PERISTALSIS (contractions and dilations of the intestines to move the contents onwards),
  - e) increased SENSITIVITY to pain,
  - f) increased AGGRESSION.
- 3) A DECREASE in the serotonin level is CALMING and INCREASES DEFENSES AGAINST INFECTION (as proven with influenza 'the flu').
- 4) Negative ions produce an INCREASE in hemoglobin/oxygen affinity so that the partial oxygen pressure in the blood rises but the partial carbon dioxide pressure DECREASES. This results in REDUCED RESPIRATORY RATE and ENHANCES the METABOLISM of water-soluble vitamins.

In addition, negative ions produce an INCREASE in pH and, in particular, an INCREASE in the SECRETORY performance of the MUCOSA with an INCREASE in CILIARY MOVEMENT in the airways.

According to the studies of Fleischer and Pantlitschko, negative ions probably also IMPROVE BLOOD FLOW by increasing the release of proteolytic enzymes with fibrinolytic activity.

Wordens studied the adrenals of golden hamsters kept under the same experimental conditions. The adrenals of animals treated with POSITIVE ions weighed 33% LESS than the adrenals of animals treated with normal respiratory air.

On the other hand, the weight of the adrenals from golden hamsters treated with NEGATIVE ions was 29% HIGHER. Olivereau found a 30% ENLARGEMENT of adrenals in rats after 20 days of treatment with NEGATIVE ions. This finding suggests that the ability of the adrenals to produce glucocorticoids is REDUCED by POSITIVE ions and INCREASED by NEGATIVE ions. Considerable INCREASE in VITAL CAPACITY were observed by M.A. Vytchikova and A. Minkh in 1959, with the maintenance of blood sugar and blood oxygen levels.

Thus, in a group of 9 sports students, Minkh found that ergometer endurance was INCREASED by 260% in 32 days compared with a normal control group following the INHALATION for 15 minutes DAILY of air enriched with 1.5 million NEGATIVE small ions per centimeter. Even before the 1976 Olympics, air ionization in the sleeping quarters of team members was used to improve performance in sports centres in the USSR and the GDR [M. Jokl, Prague].

Studies by Altmann in 1975 clearly show that the performance of school children can, for example, be CONSIDERABLY INCREASED by changing the electrical conditions of the rooms. Comparable effects have also been achieved by the use of IONIZED AIR.

According to the latest information in the fields of medicine, biology and meteorology, it can be definitively established that atmospheric ions have a biological effect. Atmospheric electrical factors are a component of our environment and we humans are clearly affected by ELECTRO-IONIC MICROCLIMATES to a far greater extent than previously imagined.

This finding acquires particular significance since, as a result of artificial air conditioning (e.g. atmospheric pollution, buildings, air conditioning units, heating, electrical installations, plastics), civilized man spends 50-100% of his time in an UNNATURALLY CHARGED ELECTROCLIMATE. In cities, in closed rooms and in cars, etc., the proportion of small negative ions in the atmosphere is markedly reduced compared with undisturbed nature.

An atmosphere with an EXCESS of NEGATIVE ions, such as frequently arise under open sky, usually INDUCES a complete VEGETATIVE TURN-AROUND within twenty days.

In the curative phase of this total turn-around, the vegetative nervous system is normally RESTORED and the course of infectious diseases is essentially ATTENUATED (weakened) and (healing is) ACCELERATED.

# Headlines: **Negative Ions May Fight Cancer**

Daily Yomiuri Newspaper, Tokyo

Publish date 9/25/03

**Negative ions can eliminate some cancer-causing substances by producing antioxidants in humans, according to scientists.**

**The new theory was established in research led by Kenji Tazawa, a professor at Toyama Medical and Pharmaceutical University, and Noboru Horiguchi, a private hospital director from Sakaide, Kagawa Prefecture.**

**The results of their research are to be reported to the Japanese Cancer Association at its general meeting in Nagoya, which begins Thursday.**

**Negative ions have long been known for their ability to refresh people. According to Horiuchi, if you stay in a room rich in negative ions, an antioxidant known as ubiquinol will form in your body. Ubiquinol destroys highly reactive molecules and ions that have been transformed from oxygen, he said, adding that such molecules and ions are called active oxygen by scientists.**

**Active oxygen can injure the proteins in cells, thereby setting in motion the process that leads to the growth of cancer, he said. But ubiquinol in effect binds with active oxygen before the oxygen can bind with proteins. As a result, active oxygen is rendered harmless, he said.**

**In their experiment, Tazawa, Horiguchi and their colleagues set up two rooms. One room was furnished with a negative ion generator. The other had no such machine.**

**In the negative ion room, the generator was set to produce 27,000 ions per cubic centimeter to a distance of three meters from the generator. This density is about 27 times the density of ions commonly found.**

**The researchers picked 11 athletes to test because athletes tend to have an increased amount of active oxygen in their bodies. Five of the 11 slept in the ion-filled room for six nights, while the other six spent the same nights in the ordinary room. Samples of blood and urine were collected from each athlete on the last day. The researchers found that the athletes in the negative ion room produced five times more ubiquinol than those who stayed in the other room.**

**This phenomenon indicates that negative ions can capture active oxygen and nullify its harmful effects, the researchers said.**

# Ozone

**From:** [leonbates@earthlink.net](mailto:leonbates@earthlink.net)

Julie McCluie and Dave Balsler, have explained why Nikken chose to avoid Ozone generation in our new unit. Ozone is used by other air units and it does work for some functions, however, the question is it's safety for our health.

Those who use Ozone in their units claim it is safe. But other people disagree, so it's confusing. A web site I found explains more about that controversy. You may also find it informative and it may explain more why Nikken chose NOT to use Ozone. Just click on this web site: [www.miamiferret.org/fhc/ozone.htm](http://www.miamiferret.org/fhc/ozone.htm)

I had heard someone say the negative ions generated in our unit were only on the Turbo (high) speed setting. Since the unit automatically goes to low speed when the air has been cleaned (until pollutants are sensed), it sounded like the negative ions were not generated at low speed. This is where the unit will operate much of the time after that air is clean. So... I e-mailed that question to Julie.

She replied: Hi Leon, The negative ions are generated on every single speed. You will get more negative ions produced when it is on the higher speeds, Hope this helps Julie

Leon and Ruth

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From: [goodvibes@5pillars.com](mailto:goodvibes@5pillars.com)

What is ozone?

Ozone is a gas that occurs both in the Earth's upper atmosphere and at ground level. Ozone can be "good" or "bad" for your health and the environment, depending on its location in the atmosphere.

How Can Ozone Be Both Good and Bad?

Ozone occurs in two layers of the atmosphere. The layer closest to the Earth's surface is the troposphere. Here, ground-level or "bad" ozone is an air pollutant that is harmful to breathe and it damages crops, trees and other vegetation. It is a main ingredient of urban smog. The troposphere generally extends to a level about 6 miles up, where it meets the second layer, the stratosphere. The stratosphere or "good" ozone layer extends upward from about 6 to 30 miles and protects life on Earth from the sun's harmful ultraviolet (UV) rays.

What is Happening to the "Good" Ozone Layer?

Ozone is produced naturally in the stratosphere. But this "good" ozone is gradually being destroyed by man-made chemicals referred to as ozone-depleting substances (ODS), including chlorofluorocarbons (CFCs), hydrochlorofluorocarbons (HCFCs), halons, methyl bromide, carbon tetrachloride, and methyl chloroform. These substances were formerly used and sometimes still are used in coolants, foaming agents, fire extinguishers, solvents, pesticides, and aerosol propellants. Once released into the air these ozone-depleting substances degrade very slowly. In fact, they can remain intact for years as they move through the troposphere until they reach the stratosphere. There they are broken down by the intensity of the sun's UV rays and release chlorine and bromine molecules, which destroy the "good" ozone. Scientists estimate that one chlorine atom can destroy 100,000 "good" ozone molecules.

Even though we have reduced or eliminated the use of many ODSs, their use in the past can still affect the protective ozone layer. Research indicates that depletion of the "good" ozone layer is being reduced worldwide. Thinning of the protective ozone layer can be observed using satellite measurements, particularly over the Polar Regions.

How Does the Depletion of "Good" Ozone Affect Human Health and the Environment?

Ozone depletion can cause increased amounts of UV radiation to reach the Earth which can lead to more cases of skin cancer, cataracts, and impaired immune systems. Overexposure to UV is believed to be contributing to the increase in melanoma, the most fatal of all skin cancers. Since 1990, the risk of developing melanoma has more than doubled.

UV can also damage sensitive crops, such as soybeans, and reduce crop yields. Some scientists suggest that marine phytoplankton, which are the base of the ocean food chain, are already under stress from UV radiation. This stress could have adverse consequences for human food supplies from the oceans.

#### What is Being Done About the Depletion of "Good" Ozone?

The United States, along with over 180 other countries, recognized the threats posed by ozone depletion and in 1987 adopted a treaty called the Montreal Protocol to phase out the production and use of ozone-depleting substances.

EPA has established regulations to phase out ozone-depleting chemicals in the United States. Warning labels must be placed on all products containing CFCs or similar substances and nonessential uses of ozone-depleting products are prohibited. Releases into the air of refrigerants used in car and home air conditioning units and appliances are also prohibited. Some substitutes to ozone-depleting products have been produced and others are being developed. If the United States and other countries stop producing ozone-depleting substances, natural ozone production should return the ozone layer to normal levels by about 2050.

#### What Causes "Bad" Ozone?

Ground-level or "bad" ozone is not emitted directly into the air, but is created by chemical reactions between oxides of nitrogen (NO<sub>x</sub>) and volatile organic compounds (VOC) in the presence of sunlight. Emissions from industrial facilities and electric utilities, motor vehicle exhaust, gasoline vapors, and chemical solvents are some of the major sources of NO<sub>x</sub> and VOC.

At ground level, ozone is a harmful pollutant. Ozone pollution is a concern during the summer months because strong sunlight and hot weather result in harmful ozone concentrations in the air we breathe. Many urban and suburban areas throughout the United States have high levels of "bad" ozone. But many rural areas of the country are also subject to high ozone levels as winds carry emissions hundreds of miles away from their original sources.

#### How Does "Bad" Ozone Affect Human Health and the Environment?

Breathing ozone can trigger a variety of health problems including chest pain, coughing, throat irritation, and congestion. It can worsen bronchitis, emphysema, and asthma. "Bad" ozone also can reduce lung function and inflame the linings of the lungs. Repeated exposure may permanently scar lung tissue.

Healthy people also experience difficulty breathing when exposed to ozone pollution. Because ozone forms in hot weather, anyone who spends time outdoors in the summer may be affected, particularly children, outdoor workers and people exercising. Millions of Americans live in areas where the national ozone health standards are exceeded.

Ground-level or "bad" ozone also damages vegetation and ecosystems. It leads to reduced agricultural crop and commercial forest yields, reduced growth and survivability of tree seedlings, and increased susceptibility to diseases, pests and other stresses such as harsh weather. In the United States alone, ground-level ozone is responsible for an estimated \$500 million in reduced crop production each year. Ground-level ozone also damages the foliage of trees and other plants, affecting the landscape of cities, national parks and forests, and recreation areas.

#### What Is Being Done About "Bad" Ozone?

Under the Clean Air Act, EPA has set protective health-based standards for ozone in the air we breathe. EPA, state, and cities have instituted a variety of multi-faceted programs to meet these health-based standards. Throughout the country, additional programs are being put into place to cut NO<sub>x</sub> and VOC

emissions from vehicles, industrial facilities, and electric utilities. Programs are also aimed at reducing pollution by reformulating fuels and consumer/commercial products, such as paints and chemical solvents that contain VOC. Voluntary programs also encourage communities to adopt practices, such as carpooling, to reduce harmful emissions.

We live with ozone every day. It can protect life on earth or harm it, but we have the power to influence ozone's impact by the way we live.

#### High-Altitude "Good" Ozone

Protect yourself against sunburn. When the UV Index is "high" or "very high": Limit outdoor activities between 10 am and 4 pm, when the sun is most intense. Twenty minutes before going outside, liberally apply a broad-spectrum sunscreen with a Sun Protection Factor (SPF) of at least 15. Reapply every two hours or after swimming or sweating. For UV Index forecasts, check local media reports or visit: [www.epa.gov/sunwise/uvindex.html](http://www.epa.gov/sunwise/uvindex.html)

Use approved refrigerants in air conditioning and refrigeration equipment. Make sure technicians that work on your car or home air conditioners or refrigerator are certified to recover the refrigerant. Repair leaky air conditioning units before refilling them.

#### Ground-Level "Bad" Ozone

Check the air quality forecast in your area. At times when the Air Quality Index (AQI) is forecast to be unhealthy, limit physical exertion outdoors. In many places, ozone peaks in mid-afternoon to early evening. Change the time of day of strenuous outdoor activity to avoid these hours, or reduce the intensity of the activity. For AQI forecasts, check your local media reports or visit: [www.epa.gov/airnow](http://www.epa.gov/airnow)

Help your local electric utilities reduce ozone air pollution by conserving energy at home and the office. Consider setting your thermostat a little higher in the summer. Participate in your local utilities' load-sharing and energy conservation programs.

Reduce air pollution from cars, trucks, gas-powered lawn and garden equipment, boats and other engines by keeping equipment properly tuned and maintained. During the summer, fill your gas tank during the cooler evening hours and be careful not to spill gasoline. Reduce driving, carpool, use public transportation, walk, or bicycle to reduce ozone pollution, especially on hot summer days.

Use household and garden chemicals wisely. Use low VOC paints and solvents. And be sure to read labels for proper use and disposal.

For air program information, contact your Regional EPA Office: ...or visit EPA's website at [www.epa.gov/air](http://www.epa.gov/air) about the cover... TOP: The "good" ozone layer in the stratosphere protects life on Earth from the Sun's harmful ultraviolet (UV) rays. MIDDLE: Antarctic Ozone Thinning-shown in blue and purple, extended out over 16 million square miles or about the same size as North America (2001 NASA satellite image). BOTTOM: "Bad" ozone at ground-level is harmful to breathe and damages crops, trees, and other vegetation.

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**From:** [homebiz@5pillars.com](mailto:homebiz@5pillars.com)

The ozone created by the sun occurs predominately in the stratosphere. In the stratosphere it is not just beneficial, it is essential -- it protects us from the majority of the sun's harmful ultraviolet radiation. (The average person never enters the stratosphere.) However, the ozone that is created as a byproduct of burning of fossil fuels (and certain other devices -- such as "cleaners") is a known carcinogen and should be avoided.

Gene Thomas  
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# Scientific Benefits of Negative Ions Improve Asthma and Other Respiratory Conditions

<http://www.nefful.info/research.htm>

"There is nothing subjective about a bawling baby" Brazilian hospitals now commonly use negative ion generators to treat breathing problems, after a test involving 36 children with asthmatic allergies. In each case, the problem was consistent or crippling. During the treatment, only one of them suffered an asthma attack. Afterward, no attacks were suffered by any of the children that sustained regular negative ion therapy (Soyka, 1991).

In 1966, a hospital in Jerusalem conducted a study involving 38 babies, between the ages of two and twelve months, with about the same degree of respiratory problems. The babies were separated into two groups of nineteen. One group was treated with nothing but a negative ion electronic air cleaner, while the second group was administered the standard treatment, which included drugs and antibiotics with side effects. The babies in the group treated with the negative ion air purifier were cured of asthma and bronchitis much more quickly than those in the control group. The babies in the negative ion group were also found to be less prone to rebound attacks. Less scientifically, doctors found that the babies treated by negative ion-enriched air didn't cry as often or as loudly. But as Fred Soyka, the author of *The Ion Effect* puts it, "there is nothing subjective about a bawling baby" (Soyka, 1991).

## "Monotonous Regularity"

In 1975, an East German doctor, who had by then treated more than 11,000 individuals with various respiratory conditions with a negative ion electronic air cleaner, said that his patients reported with "monotonous regularity" that the therapy had worked. (Soyka, 1991).

In the early 1960s, Dr. A. P. Wehner used negative ion generators to treat over 1,000 patients in the U. S. suffering from various respiratory ills, such as bronchial asthma, pulmonary emphysema, laryngitis, bronchitis, dry hacking cough, upper respiratory tract infection, and allergies. He reported that the symptoms completely disappeared in 30.3% of the cases, improved significantly in 42.3% of the cases, showed some improvement in 20% of the cases, and showed no signs of improvement in 7.4% of the cases (Wehner, 1962).

In Britain, two Oxford University statisticians conducted a study among victims of asthma, bronchitis, and hay fever. The sample was randomly selected from a list of people who had purchased a negative ion air purifier. Through interviews, they found that 18 of 24 asthmatics, 13 of 17 bronchitis sufferers, 11 of 12 hay fever victims, and 6 of 10 suffering from nasal catarrh, reported that the product had noticeably improved their condition. A few even reported that it cured their condition (Soyka, 1991).

When a negative is better than a positive

Positive ions, which occur in high levels in many indoor environments, inhibit the body's ability to prevent pollutants and contaminants from entering the vulnerable areas of the respiratory tract. However, an overdose of negative ions has proven to provide counteraction to this effect (Kreuger, 1974; Soyka, 1991; Tchijewski, 1960).

U.S. Dept. of Agriculture

A recent study by the U.S. Dept. of Agriculture found that ionizing a room led to 52% less dust in the air, and 95% less bacteria in the air (since many of the pollutants found in the air reside on floating dust particles).

Agriculture Research Service (of USDA)

The Agriculture Research Service of the U.S. Dept. of Agriculture tested the effectiveness of ionizers for removing dust in a poultry hatchery. The dust level is very high in such an environment. In this study, the use of an ionizer resulted in dust removal efficiencies that averaged between 81.1 and 92.2%. The airborne transmission of salmonella (to the eggs) was also significantly reduced as a result.

See Link: <http://www.nalusda.gov/ttic/tektran/data/000008/54/0000085456.html>

Journal of Hygiene

Scientists showed that ionization reduced bacterial levels in burns and plastic surgery units by over 96% after a two week period, which results in much better and more rapid healing of patients.

Journal of Applied Microbiology

The use of negative ions was even found by scientists to reduce the presence of airborne viruses by about 40%. A study featured in the 1987 issue also showed the negative ions are free from any adverse side effects.

### **Negative ions are needed in order to take in oxygen.**

Russian scientist, Dr. A. L. Tchijewsky, tried raising mice, rats, guinea pigs, and rabbits in totally de-ionized air. Almost all of them died within two weeks due to an inability to utilize oxygen properly (Tchijewski, 1960).

Tchijewsky's colleague, Dr. D. A. Lapitsky, tried raising small animals in air completely devoid of oxygen. He added only negative ions to the air as they were about to die from asphyxiation. At which point, their respiration frequency drastically increased, as they began to sit up and run around the chamber (Tchijewski, 1960).

Former NASA scientist James B. Beal, who came across the negative ion problem while studying the type of environment needed in space capsules, wrote: "The human race was developed in ionized air. Nature used the ions in developing our biological processes." In other words, people have been designed to function properly in an environment that contains certain level of ionization (Soyka, 1991).

Fred Soyka, author of "The Ion Effect" reports that based on the 5,000 plus scientific documents that have been published regarding negative ion studies, all support the conclusion that an overload of negative ions seems to be beneficial (Soyka, 1991).

### **Negative ions counteract the effects of smoking.**

High levels of negative ions neutralize the effect that tobacco smoke has on the cilia. Cilia are the microscopic hairs located in the trachea that move rapidly back and forth to prevent pollutants and toxins from traveling into the vulnerable areas of the respiratory tract. The faster the cilia move, the more effective they are. However, tobacco smoke slows down the ciliary beat, diminishing the body's ability to keep cancer-causing pollutants from entering the depths of the respiratory tract. Tests have shown though, that adding high levels of negative ions to the air accelerates the ciliary beat to normal levels (Soyka, 1991).

Negative ions help prevent respiratory-related illnesses.

"I hope I'm in group one." In a study conducted in a Swiss textile mill, negative ionizers were placed in two, 60' by 60' rooms, each containing 22 employees. In one room, the negative ion electronic air cleaner was turned on during the course of the study. In the other room, the negative ion air purifier was permanently turned off, although the employees in this room were led to believe they were working in a room enriched by negative ions. During this six-month study, a total of 22 sick days were lost by employees working in the room in which the negative ionizer was operating. In the room where the machine was not operating, a total of 64 days were lost to sickness. During a month-long flu epidemic, the first group lost a total of 3 days to sickness, while the second group lost a total of 40 days to sickness (Stark, 1971).

In a test involving a Swiss bank office, one group of 309 worked in a negative ion-treated environment. A second group of 362 worked in an untreated environment. Over the next several months, for every day lost to respiratory illness (cold, flu, laryngitis, etc.) in group one, 16 days were lost to respiratory illness in group two (Soyka, 1991).

In a Surrey University study at the Norwich Union Insurance Group headquarters, eight negative ion generators were placed in the computer and data preparation section. Before the test, the research team spent a month compiling incident rates for complaints of sickness and headaches. During the test in which the negative ion air purification systems were in operation, incidents of sickness and headaches were reduced by 78%. After testing was completed, the Norwich Union opted to keep the negative ion electronic air cleaners (Soyka, 1991).

Negative ions help prevent migraine headaches.

Migraine headaches originate when an overload of serotonin causes the diameter of blood vessels leading to the brain to dilate, and get wider in the brain. Consequently, blood flow increases, and pain receptors in the vessels are stretched, which leads to the excruciating pain associated with a migraine headache (Borne, 1998; others). In numerous tests and studies though, negative ion treatment has proven to prevent the overproduction of serotonin, and therefore the subsequent migraine headaches (Kreuger, 1957; Soyka, 1991; Sulman, 1974).

Negative ions are a natural anti-depressant. . . . and without the side effects!

In a study conducted by Columbia University, 25 people with SAD (Seasonal Affective Depression) sat in front of a negative ion air purifier for a half hour every morning for a month. Half the subjects were given a low level of negative ions, and the other half a high level. The higher level of negative ion treatment proved to be as effective against SAD as antidepressants, such as Prozac and Zolof, and without the side effects of these drugs (Finley, 1996).

Positive ions, which are found in abundance in most indoor environments, cause an overproduction of serotonin. Serotonin is a neurotransmitter that helps the body deal with mental, emotional, and physiological stress. An overproduction initially causes hyperactivity, which rapidly leads to anxiety, and in some cases depression. Negative ion treatment has proven to be successful in reducing the overproduction of serotonin, and therefore successful in alleviating depression in some cases (Kreuger, 1957).

Negative Ions Help Combat Fatigue.

In 1957, a study published in the Journal of General Physiology concluded that negative ions reduce the overproduction of serotonin, a neurohormone that leads to exhaustion, among other things, when overproduced (Kreuger, 1957).

Negative Ions Enhance Mental Performance and Concentration.

The Alpha wave rhythms say it all. In 1969, Dr. Sulman, head of the department of Applied Pharmacology at Hebrew University in Jerusalem at the time, brought in groups of people to spend some time in a room low in negative ions, and also in a room that contained an "overdose" of negative ions. While in each room, subjects were given word, figure, and symbol tests. They scored "significantly higher" on these tests when they were in the negative ion-enriched room. Plus, while in the negative ion room, they showed (via the electroencephalogram) a slower, stronger pulse rate of Alpha waves from the brain. Alpha wave rhythms are a measure of the brain's activity and health. A slow, strong Alpha wave pulse rate indicates healthiness, calmness, and heightened alertness. When the subjects were in the negative ion-deficient room, they showed signs of irritability and fatigue in addition to lower test performance (Sulman, 1974).

In the study conducted by Surrey University at the Norwich Union Insurance Group headquarters, the employees in the computer and data preparation section that were exposed to high levels of negative ions showed a 28% increase in overall task performance. The more difficult the task, the more dramatic the improvement tended to be (Soyka, 1991).

In 1972 in Geneva, statistics showed that whenever there was a drastic change in the weather, and a consequent drop in the negative ion concentration in the air, traffic accident rates rose by more than 50% (Soyka, 1991).

Negative ions enhance physical performance.

After World War II, the Russians extensively studied the relationship between negative ions and physical performance. A team of doctors, psychologists, and physicists observed and measured the performance of Olympic athletes in various conditions of negative ions levels. In each test of physical performance, the group that trained in facilities, and stayed in quarters high in negative ion concentration showed tremendous improvements in performance in comparison to the control group (Minkh, 1961).

In 1969, French researcher found that the overproduction of the neurohormone serotonin caused sleeplessness and nightmares. In using a negative ion electronic air cleaner to treat a group of people experiencing sleeping problems as a result of serotonin overproduction, he found that most of them were able to sleep better (Soyka, 1991).

Negative ions aid in the treatment of burn patients.

In 1959, Dr. Kornbleuh treated a group of 138 burn victims at Northeastern General Hospital with negatively ionized air. Within this group, 57.3% suffered significantly less pain and discomfort, while healing more quickly and thoroughly. Only 22.5% of the control group (the group of burn victims treated through conventional methods rather than negative ionization) experienced similar improvements in the same time frame. Statistically, the odds are 1,000 to 1 that these results were coincidental. This study, along with other follow up tests, were evidence enough for the hospital, which subsequently equipped its postoperative wards with negative ion generators. The effectiveness of negative ion treatment in these tests are likely a result of the extraordinary ability of negative ions to remove pollutants from the air, resulting in reduced infection and irritation of burn wounds (Kornbleuh, 1959).

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