



WellSpring Products, LLC Austin, TX 888-836-0019

## Scientific Study Summaries of Negative Ions in Air

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A note on ionization of water vs. ionization of air: The ionSpa and similar devices use electrolysis of water to create negative ions which are highly concentrated in a salted bath and compelled by osmosis into the tissue and blood. Air ionizers use electrolysis of air to create negative ions which are then released into the air before being absorbed into the lungs. Despite the great inefficiency of air ionization, the benefits are apparent in these studies and are presumably magnified with the greater concentrations found in ion spas.

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### Negative ions improve asthma and other respiratory conditions

#### *“Effect of Negative Air Ion Treatment on Blood Serotonin in Weather Sensitive Patients”*

Positive air ionization elicited by hot dry desert wind spells (Sharav) was found to correlate with blood serotonin in 20 weather sensitive patients increasing from 14-20 mg% to 21-29 mg%. Exposure of 12 of these patients to artificial negative air ionization during 3-6 hours brought blood serotonin back to normal values of 15-20 m% (p,0.001-0.005), while in the 8 control patients, who did not receive the ionising treatment, there remained a high of 21-31 m%. The 12 treated patients had received during 3-6 hours from a grounded ionizer (Modulon) a negative ion load ranging between  $2.5 \times 10^5 = 2.5 \times 10^4$  ions/cm<sup>3</sup>/s.

Thus, it can be concluded that increased concentration of positive ions in the air increases blood serotonin levels, whereas negative air ionization neutralizes the effect of positive air ionization and reduces blood serotonin levels to normal values.

#### *“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 **negative ions**, 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 ions** 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*).

### *You gotta like these odds*

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*).

### *It's all in the numbers*

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*).

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## Reduce and/or destroy bacteria, viruses and other microbes

### *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.

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

### *"Please, we're dying here!"*

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*).

### ***Don't travel to space without `em***

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*).

### ***The more the better***

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*).

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## **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*).

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## **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*).

### ***"We liked them so much . . ."***

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*).

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## 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*).

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## 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 Zoloft, and without the side effects of these drugs (*Finley, 1996*).

### *Negative ions for a positive attitude*

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*).

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## 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*).

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## 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*).

### *The more difficult the better*

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*).

### ***Driving mad***

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*).

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## **Negative ions enhance physical performance.**

### ***The Ion Olympics***

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*).

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## **Negative Ions help us to sleep better.**

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*).

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## **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 negated 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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