Positive and Negative Ions

Nikola Tesla (July 10, 1856 – c. January 7, 1943) was a Serbian-American inventor, physicist, mechanical engineer and electrical engineer. Tesla is recognized among the most accomplished scientists of the late 19th and early 20th century. His patents and theoretical work form the basis of modern alternating current electric power (AC) systems, including the polyphase power distribution system and AC motor, with which he helped usher in the Second Industrial Revolution.

Tesla experimented with electromagnetic flux and studied the earth's gravitational field. During his research he discovered that the ionization of the atmosphere would alter when it was charged by radio wave transmissions in the low frequency range of 10 to 80 hertz. Tesla also discovered that he could cause both positive and negative ionization of the atmosphere by manipulating the radio frequency. Further studies indicated that with positive ionization, people and animals became tired and lethargic and with negative ionization the effect was one of feeling active and energetic.

Ions are floating in the air around us all of the time and have either negative or positive charges. Changes in their concentrations or in the ratio of positively to negatively charged molecules can have remarkable effects on plants and animals. It is known in science that ion depletion is the source of a wide range of human health problems, both mental and physical.

These air ions are important to you because if they have a high proportion of negative ions in the clusters you will feel lively, uplifted and enthusiastic. Too many positive ions in the clusters will have you feeling depressed, lethargic and full of aches, pains and complaints.

It is estimated that there are normally 1,500 to 4,000 ions per cubic centimeter. Negative ions are exceedingly mobile and the Earth's surface has a negative charge; therefore, negative ions are repelled from the Earth. This repulsion creates a normal ratio of positive to negative ions in the range of twelve to ten. Normally, more positive than negative ions exist.

Negative ions are exceedingly beneficial for a person's metabolism as a means of enhancing human behavior. They act in a complex mechanism to bring about hormone and biochemical reactions in the body and brain. It is impossible to get an overdose of negative ions, which act like pure water in washing away dirty poisons. Generally, the more negative ions you are exposed to, the better and more uplifted you feel.

Positive ions or the lack of negative ions may cause serotonin hyperfunction syndrome or "irritation syndrome" and it involves sleeplessness, irritability, tension, migraine, nausea, heart palpitations, hot flashes with sweating or chills, tremor and dizziness. The elderly become depressed, apathetic and extremely fatigued.

Human mood disorders (depressions) are effectively treated with drugs which specifically block the re-uptake of serotonin into the presynaptic axon terminal, for example fluoxetine (Prozac) and Zoloft. This suggests that positive ions may play a part in this condition and the condition may be safely treated with negative ion therapy.

Just as good benefits are provided by immersing yourself in negative ions, bad effects come from breathing air with a high density of positive ions. Before a storm the positive ion concentration becomes more than three times the amount of negative ions. If the barometer is falling in anticipation of a storm, brace yourself. Adults, children, and animals alike react testily to such bad weather, for ahead is the kind of day that may leave you most prone to illness or accident, stupid mistakes and irrational anger. Simply, positive ions are responsible. The full moon increases positive ion ratios, which accounts for the strange and aggressive behavior noted by police and medical services. Studies show that 75% of the population is noticeably and adversely

affected by positive ion ratios, while increased negative ions tend to have a calming influence on these same people.

There is an impressive amount of evidence that connects low barometric pressure before storms with erratic behavior. This is a time where the positive ions in the air outnumber the negative ions by a ratio of over three to one. More suicide attempts take place, greater numbers and more serious accidents occur on the highways and in factories, and an elevated incidence of fainting spells seem to beset people. An analysis of the records of some 2000 public school students showed that their "conduct" marks sagged noticeably before a storm.

Positive ion air encourages increased physical discomforts ranging from headaches and nausea to the familiar rheumatic twinges that precede storms. Even the healing rate of wounds has been known to slow up, while the risk of infection accelerates. Tension and depression are certainly more common.

Conversely, negative ion air - when the weather is quite comfortable - not only stimulates morale but actually relieves certain chronic diseases. Experiments with negative ionization have shown marked improvement for sufferers from high blood pressure, asthma, and hay fever.

Many psychiatrists agree that positive ionization contributes to the cracking of "fringe personalities," and sets off some mental conditions. On summer “dog days”, when the positive ion index climbs, more neurotics slip across into pathological psychosis than at other times. The incidence of sex crimes rises, as do all categories of property and personal crimes. Increased incidence of violence, road rage, theft, bank robberies, and shoplifting become serious commercial and cultural problems.

How Air Ions Act On The Whole Person

Have you ever wondered why you feel irritable, jumpy, have aching corns, headaches, and seem overly anxious during that time just before a storm? A lack of negative ions and an excess of positive ions are the culprits. The storm's onset produces an ion imbalance in the air before rain falls or snow settles down.

When relatively too many positive ions are present in the air before a storm, the positive charge is transferred in the air you breathe from your lungs to the blood, causing the blood platelets to release a hormone that quite strongly affects your moods, your joints and other physiological functions in your body. Some people exhibit arthritic symptoms. The weather really does affect your routine. The following is a description of how air ions act on the whole person; you being that person.

During fair weather the atmospheric conditions cause charged air ions to migrate, producing a flow of current. Humans have evolved outdoors immersed in this electric current, and scientists now believe that the current flow enhances various processes within our body, even to the cellular level. The same appears to be true even on the level of plants. People who work out-of-doors are at a distinct health advantage over those who are deskbound or labor inside factories.

The human body possesses a positive field, and a coupling or resonance between it and the Earth's field takes place. Such a resonance between systems brings about transference of energy and perhaps accounts for some of the "charging" effects of being outdoors during fair weather.

Studies have shown, not coincidentally, that the natural oscillation frequency of a stable atmosphere (think blue skies), seven to ten hertz (cycles per second), is the same as our brain's alpha state, our most relaxed yet alert state of being. This natural field oscillation, coupling with your own brain waves, enhances your alertness and improves your reaction time.

On the other hand, the three to five hertz waves produced by inclement weather activity were shown to cause a decrease in human reaction time. Slow reaction time may be dangerous under certain circumstances. This lengthened time that it takes for a driver to respond to an emergency situation, for example, produces a 31 - 41 percent increase in traffic accidents, quite measurable by the National Safely Council.

Much of the waste products of cell renewal are expelled through the skin. A positive electrostatic field around us draws these surplus waste ions away from the body, permitting rapid and unhampered renewal of all cells. This effect contributes to your general well-being.

When oxygen is absorbed via the lung alveolus, the ionized molecules are taken up like the normal oxygen molecules and pass into the blood corpuscles. The red blood corpuscle, whose hemoglobin is oxygenated by the air during respiration, receives also the ionized oxygen. The negative charge is carried throughout the body, whereas the positive charge may attack the blood platelets (thrombosis) which in sensitive patients releases the irritating hormone, serotonin.

Serotonin release produces dryness, burning and itching of the nose, nasal obstruction, headaches, dry, scratchy throat, difficulty in swallowing, dry lips, dizziness, difficulty in breathing, and itching of the eyes. Negative ions do not produce this unpleasant serotonin syndrome; they act directly on the respiratory enzyme, cytochrome oxidase, and promote cell respiration.

All the tracheal changes attributed to positive air ions can be duplicated by the intravenous injection of serotonin. These effects can be reversed by treatment with negative air ions.

On the basis of these facts, it seems reasonable to postulate that positive air ions are 'serotonin releasers' and that a local accumulation of serotonin in the trachea is the immediate cause of the positive ion effect.

Negative air ions reverse positive ion effects by speeding up the rate at which serotonin oxydase is oxidized. Like other oxydase systems, monoamine oxydase is thought to consist of dehydrogenase linked to a respiratory chain reaction which may include cytochromes of flavones. Positive ionization of blood increased its serotonin release significantly.

With every breath, air ions are carried into your respiratory tract to be transferred across the lungs into the bloodstream where they are taken up by the thrombocytes. If they enter as part of molecules of oxygen, the negative ions or positive ions are transported by your red blood cells. Positive ions cause thrombocytes to release the allergy producing hormone serotonin (5-HT). Serotonin acts as a bronchial constrictor and slows the clearing action of the cilia thus allowing the mucus to thicken. If you are one of those many hay fever sufferers or have some other respiratory problem you'll find that serotonin greatly aggravates your condition. There is less clearing of allergens and pollutants from your respiratory tract than from the lungs of others.

It is this powerful and versatile neuro-hormone, serotonin, which is responsible for many of the unpleasant symptoms exhibited by persons breathing positively ionized, air. Some, particularly elderly people, may experience difficulty in breathing; asthmatics wheeze, rheumatic people feel their joints ache and in general, sleeplessness or insomnia, irritability and tension are increased. Hair and skin have an 'electric charge.' Migraine patients suffer with nausea and vomiting, and optical disturbances. Heart cases complain of palpitations, heart pain and oppression. Women before the age of menopause complain of hot flashes with sweats or chills. Hay fever patients get bad attacks of rhinitis with conjunctivitis, though this may not be the real hay fever season. Giddiness, tremor, and balance disturbances may appear, as well as diarrhea and a constant desire to urinate.

All this happens from stimulation of serotonin secretion by your being exposed to air containing

high densities of positive ions. Since negative ions are able to reverse the effects of positive ions by speeding up the rate at which serotonin is oxidized by stimulating the action of monoamine oxidase, it makes sense to stay in touch with quantities of negative ions whenever possible. As you will soon learn, this is done by employing negative ion generators and/or the application of negative hydrogen ions in liquid.

In general, exposure to negatively ionized air has been shown to increase oxygenation of the lungs, increased vital capacity, and enhanced celiac activity. All types of beneficial responses take place as a result of friendly negative ions.

With an increase of negative ions you will experience a normalization of the activities of the endocrine glands, which plays an important role in reducing the effects of stress.

A shift occurs in your body's indicators of the blood acid-base balance toward alkalinity. Your pH (potential of hydrogen) should be 7.5 on the 1 to 14 pH scale. Health resides there.

A sedating and pain relieving effect is experienced if you have undergone surgery or suffered burns.

Brain wave studies show an increase in brain amplitude with better thinking ability, a shift of alpha activity to the frontal area of the brain for better conceptual ability, and a higher synchronization of the right and left brain hemispheres for a more even balance of the personality.

Your body better undertakes the metabolism of vitamins and shows an increase in both static and dynamic work capacity and endurance. All this, in part, contributing to better overall mental and physical health.