



Scientific Studies using ionized air on different life forms.

•Scientists at the University of California grew barley, oats, lettuce and peas in an atmosphere drastically reduced in ionization and found that growth was stunted and the plants diseased. When the experiment was repeated in air carrying more than double the normal number of negative ions, it produced accelerated growth.

•In Russia, scientists tried to raise small animals - mice, rats, guinea pigs, rabbits - in air with no ions at all. They all died within a few days.

•Dr Felix Sulman, head of the Applied Pharmacology department at Jerusalem University, conducted experiments with positive and negative ions on a cross-section of people. (his subjects were two groups of men and women between twenty and sixty-five) When left for about an hour in a room that contained an overdose of positive ions they became irritable and fatigued. Yet the same people confined for the same period of time, in air containing an overdose of negative ions, showed a pattern of brainwaves that suggested increased alertness and relaxation. He tested their alertness and work capacity by various means. All of them scored significantly higher, during and immediately after, their exposure to increased levels of negative ions.

•Dr Sulman also undertook a study of "weather sensitive" volunteers and showed that, during the time of the Sharav winds, their bodies would produce up to ten times their normal level of serotonin - a hormone associated with stress. He found that, in effect, they were being poisoned by their own serotonin, causing migraines, hot flushes, irritability, pains around the heart, difficulty in breathing and a worsening of bronchial complaints, anxiety and irrational tension. Also a slowing of reactions was observed. Interestingly, it was discovered that in many people, the body's initial response to positive ions is to produce adrenaline and noradrenaline - the "fight or flight" hormones - which produces short-term euphoria but eventually leads to a condition of exhaustion. (It is this condition that is thought to affect insects and animals into restless activity as the positive ions build up before a storm.) The research also showed that exposure to positive ions can trigger an over-production of histamine, which most people will immediately recognise as the body chemical that aggravates allergies. Statistically it was found that 25% of the population are quite strongly affected by levels of ions in the air. Of the remainder, 50% are affected considerably, although 25% do not appear sensitive at all.

•A great deal of research was also carried out by Dr. Albert Krueger in California - One of his first discoveries was that a surprisingly small amount of negative ions could kill and take out of the air, the types of bacteria that cause colds, influenza and respiratory infections. He then went on to keep large groups of mice in various concentrations of ions, some positive, some negative and some in normal balance. In 1960 a scientific paper was published on the results. The conclusions were almost identical to those of Dr. Sulman. An excess of positive ions led to overproduction of serotonin which initially created hyperactivity, leading to exhaustion, anxiety and depression. He also found that an excess of negative ions appeared to have a calming effect, and a reducing of serotonin levels in the brain. (Negative ions were actually substituted for a pharmaceutical tranquilizer on one occasion - with

identical results). The series of experiments were then extended to include rats, guinea pigs and rabbits as well as insects and plants. The results consistently supported the original findings. On one occasion, mice were kept in a sealed container until the oxygen was almost used up and they were on the verge of suffocation. The remaining air was negatively ionized - and the mice revived!

- In a major 16-week trial conducted by Surrey University at the Norwich Union Insurance Group's headquarters, eight negative ion generators were fitted in the computer and data preparation section, the typing area and the motor underwriting department. Before the tests got under way, the University team spent a month compiling incidence rates of complaints of sickness and headaches. The experiments were "double-blind"-so that neither the staff nor the researchers knew whether the ionizers were on or off at any given time. The most dramatic results were in the air-conditioned areas, the incidence of headaches in the computer room being reduced by 78 per cent during the midnight to 08.30 shift. Norwich Union was sufficiently convinced to decide to keep the ionizers, and order another ten ceiling-mounted models, giving them 20,000 sq ft of ionized office space

- Part of Surrey University's experiments concerned concentration ability and the studies showed that negative ionization could improve task performance by as much as 28 per cent. In general, the more difficult the task, the more improvement could be accomplished by negative ions.

- At the University of Pennsylvania's Graduate Hospital and at Northeastern and Frankford hospitals in Philadelphia. Dr. Kornbluh and his associates administered negative ion treatments to hundreds of patients suffering from hay fever or bronchial asthma. Of the total, 63 percent experienced partial to total relief.

- Effective Pain-Killer. In Philadelphia Dr. Kornbluh studied brain-wave patterns and found evidence that negative ions tranquilised persons in severe pain. Burn cases at Northeastern were immediately put in a windowless, ion-conditioned room. In ten minutes, usually, the pain was gone. Morphine, customarily administered in such cases, was never necessary. Patients were left in the room for 30 minutes with the treatment repeated three times every 14 hours. In 85 percent of the cases no pain-deadening narcotics were needed. Northeastern's Dr. Robert McGowan reported "Negative ions make burns dry out faster and heal faster with less scarring."

- Following this success in burn therapy, Dr. Kornbluh, Dr. J.R. Minehart, Northeastern's chief surgeon, and his associate Dr. T.A. David tried negative ions in relief of deep, post-operative pain. During an eight-month test period they exposed 138 patients to negative ions on the first and second days after surgery. Dr. Kornbluh announced the results at a London congress of bioclimatologists: In 79 cases (57 per-cent of the total), negative ions eliminated or drastically reduced pain.

- Experiments by Dr. Albert P. Krueger and Dr. Richard F Smith at the University of California have shown how ionization affects those sensitive to air-borne allergens: Our bronchial tubes and trachea, or windpipe, are lined with tiny hair filaments called cilia. The cilia normally maintain a whip-like motion of about 900 beats a minute. Together with mucus, they keep our air passages free of dust and pollen. Krueger and Smith exposed tracheal tissue to negative ions and found the ciliary beat was speeded up to 1200 a minute and that mucus flow was increased. Doses of positive ions produced the opposite effect: The ciliary beat slowed to 600 a minute or less and the flow of mucus dropped.

- Doctor's Krueger and Smith also discovered that cigarette smoke slows down the cilia, impairing their ability to clear foreign, and possibly carcinogenic (cancer-inducing), substances from the lungs. While positive ions worsened this condition, negative ions were found to reverse the effects of the smoke.