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HYPOTHESIS

A clinical case-based hypothesis: secretory IgA operates as an electronic transistor controlling the selection or rejection of molecules in the absorption process in the lumen of gastrointestinal tract

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Abstract: There is a clinical correlation between (1) an allergic patient's ability to resist the development of symptoms that would have resulted from an allergenic challenge, (2) the magnitude of geomagnetism at a geographic site, and (3) the amount of solar energy falling on that site. It is suggested that the digestive membrane has an electronic gatekeeper that "decides" electronically which molecules to allow or not allow to pass on to the absorptive surface. The unique bipolar structure of secretory immunoglobulin A (IgA), having a central secretory piece and the resultant unique electronic function of this polarized molecule, allows it to function as an electronic transistor, producing an electronic gatekeeper in the form of an electronic sieve.

Keywords: geomagnetism, atmospheric negative ions, electronic transistor, secretory IgA, food allergies, autoimmunity

Introduction

It is of interest that no one has ever explained how the gastrointestinal membrane selects – from the multitudinous molecular particles presented to it – which molecules to absorb and which molecules to reject.

Scientists are subliminally aware that there is an unexplained secret behind this mysterious gastrointestinal absorption-rejection process. We are offered an explanation of how the process works by some vague allusion to an immunological process whose mechanism of action is never actually explained. If this secret were uncovered, what would be the consequences? (1) it would help explain why food allergy develops (and sometimes disappears), and (2) it could inspire research in, and subsequent development of, an electronic method for preventing the malabsorption from the gastrointestinal lumen of undesirable molecules (allergens such as food, inhalant, microbes, including autoimmune-engendering microbial antigens and toxins).

Over the years, this author has observed instances in which patients' allergies improved, or became worse, without any apparent relationship to conventional medically accepted causes, but rather improved or exacerbated solely due to the patients' geographic location. Later it was deduced that atmospheric conditions and resultant local concentration of ambient atmospheric negative ions were principal operative factors contributing to the allergic status of these patients.

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The gastrointestinal mechanism responsible for sorting molecules that were to be absorbed or rejected appeared to be related to the subject of electronics. The sorting process could be explained by the existence of an electronic sieve created via a massing of electronically enabled secretory immunoglobulin A (IgA) molecules, each acting as an electronic transistor. This electronic transistor function of secretory IgA can be achieved because of its bipolar structure and unique mid-secretory piece.

The following "curious" clinical observations that led to these conclusions are presented in the chronological order in which they were encountered so that the reader can experience the journey that led to these idiosyncratic statements. This is an account of a clinician in private practice using only the anamnestic resources and maps available to any practicing physician. These observations are just a sampling of the many similar cases that were observed in the unfolding of this medical detective story. It is hoped that these observations will attract the interest of laboratory-based scientists having the resources to do more formal scientific measurements and investigations.

Materials

Types of maps used

Four types of maps were used. Three were obtained from the United States Geological Survey (USGS) and one was an ordinary road map.

The first type of map was a USGS color aeromagnetic map of the Earth's geomagnetic anomalies in the contiguous USA. This map shows, by color code, different areas having varying degrees of relative geomagnetism. The relative magnitudes of geomagnetism are compared via color-coding; the magenta-red part of the spectrum is used to designate the higher relative geomagnetism, and the other end of the spectrum, blue-violet, designates the lower relative geomagnetism. The colors in between signify intermediate relative geomagnetism. The map does not show topographical features, but it does show the outline of states, which enables one to line up and match areas by using transparent overlay Mylar maps. In order to relate the magnitude of the aeromagnetic anomalies indicated on the map to specific, known geographic points, it was necessary to have the combined benefit of using both aeromagnetic and outline maps, hence the value of using transparent overlays.

The second type of map was a USGS state outline map. A state outline map has only the outlines of the borders of the states and a number of locations, all in black and white; there are no contours, elevations, etc. The designated locations were used for lining up matching points with aeromagnetic maps.

The third type of map was a USGS quadrangle map, showing contours, elevations, roadways, and structures as well as various other types of information.

The fourth type of map was an ordinary road map.

The latter three maps were appropriately enlarged or reduced in size and were transferred to transparent Mylar so that overlays precisely matched the color aeromagnetic map.

Specifications for the field-free room (Faraday cage)

The room was an all-welded radio frequency (RF) shielded room. The walls were composed of 10-gauge (0.14 inch thick) steel plates that were welded together. The room achieved a shielding of both electric and magnetic fields as follows:

- Electric field: 120 db attenuation from 200 Hz to 10 GHz. There was a relatively minor drop-off at either end of the spectrum.
- Magnetic field: At 100 Hz, there was a 35 db attenuation. At the other end of the spectrum, 2,000 Hz, there was a 120 db attenuation.

This kind of room is called a field-free room or Faraday cage and was designed to be protective against all forms of exogenous radiation. Such a specialized room existed at a nearby electronic research facility. The room was designed to be field-free in having concealed metal sheets in the walls, ceiling, floor, and door. The metal sheets were covered by ordinary construction material both outside and inside, so that the room looked like any other room, and its special nature was visually indiscernible.

Case studies

Roxbury effect

Roxbury, NY, USA, is a small town in the Catskill Mountains. It is about 40 miles northwest of Kingston, NY, a small city in the Hudson River Valley. Kingston is approximately 100 miles north of New York City and 50 miles south of Albany, the state capital. The Hudson River Valley runs directly south from Albany to New York City.

The first case involved a young woman who lived in Kingston. She presented for treatment of atopic dermatitis, an erythematous and eczematous condition of her hands. Investigation revealed that she was sensitive to foods in the yeast-fungi family, ie, baker's yeast (in bread), brewer's yeast (in alcoholic beverages and vinegar), and fungi (in

certain cheeses). If she avoided these foods, used a topical steroid cream, and wore gloves while she washed dishes, she was able to keep her hands in a reasonable degree of health. Any minor deviation from the above regimen produced an exacerbation of her condition. Subsequently, it was revealed that when she visited her father in Roxbury, where he ran a gasoline station, she was able to eat any food in any quantity. She was able to disregard all protocol regarding avoidance of contact with irritating substances. She stopped using the topical steroid cream and was even able to work in her father's gasoline station, where she was exposed to irritating contactants and solvents. Despite this complete disregard of protocol, her hands improved while she was working in Roxbury. After investigating and discounting the possibility that some inhalant allergen was present in Kingston and not present in Roxbury, an opinion was formulated that there was a mechanism operative outside of the currently accepted, conventional medical purview.

A similar case further added to the mystery: this case involved an asthmatic child who lived in Catskill, NY, a small city in the Hudson River Valley 20 miles north of Kingston, 30 miles south of Albany, and about 35 miles east of Roxbury. Investigation revealed that the patient was allergic to cow's milk. When cow's milk was discontinued while the patient was in Catskill, the asthma disappeared. No other medication was required. Every time the patient consumed cow's milk, he would develop asthma.

Subsequently, it was discovered that when the patient visited his grandparents in Roxbury, he could consume as much cow's milk as he desired, and no asthma developed. The mother also volunteered that the child's brother had a similar asthmatic problem and received similar beneficial results when visiting the grandparents. The possibilities of inhalant and psychological factors were investigated and discounted. Again it appeared that some puzzling, mysterious mechanism outside currently accepted conventional medical knowledge was operative. Discovering the explanation behind the secret of this mystery became compelling and, admittedly, an obsession.

A subsequent case involved a young woman who worked and lived in the area of Margaretville, NY, a small town in the Catskill Mountains just 8 miles southwest of Roxbury and 35 miles northwest of Kingston. She presented for treatment of a severe case of generalized atopic dermatitis. An investigation by means of the rare foods elimination diet technique, followed by deliberate sequential, provocative test feedings confirmed that she was allergic to a number of foods. When ingestion of these foods was discontinued, she improved. The addition of any of these foods exacerbated her condition. During this investigation, she decided to spend more time in the Roxbury area, where she would live for extended periods. When she stayed in the Roxbury area, just 8 miles away from her home in the Margaretville area, her eczema improved, and she was able to eat the foods that in the Margaretville area would precipitate her problem. When she moved back to the Margaretville area, her condition recrudesced and she could not tolerate these foods. She could discern changes in the amount of pruritus simply due to difference in her geographical location, ie, less pruritus in the Roxbury area and more pruritus in the Margaretville area. She was able to observe this effect independent of being inside or outside of various buildings, thus discounting the effect of indoor pollution.

In consideration of the proximity of Roxbury to Margaretville (8 miles), and when occupational and environmental factors (inhalants, contactants, etc) in both of these locations were discounted, it became apparent that there was some critical difference between these two close locations that was affecting the patient, despite the fact that the vegetation and climate were identical – all of which further contradicted conventional medical wisdom and added yet more mystery to the diagnostic journey.

Earth's magnetism effect

An investigation using the USGS color aeromagnetic anomaly map of the contiguous United States, together with transparent overlay maps, revealed that portions of the Roxbury area had higher geomagnetism than portions of the Margaretville area, the Kingston area, or the Catskill area.

In addressing Earth's magnetism, consider another case, which involved a young woman with asthma who worked in Albany but lived in Catskill (remember that Catskill is 30 miles directly south of Albany). The New York State Thruway runs parallel to the Hudson River directly north from Catskill to Albany, with markers at each mile, making the thruway a kind of giant yardstick with mile-spaced markers that can be utilized for precisely locating the geographic site of an event that takes place on the ground and exactly correlating this site with a precise location on a map. This patient's asthma was found to be due to a variety of ingestants. When these troublesome ingestants were removed, she became asymptomatic, and all her medications could be discontinued. In fact, she felt so well with the elimination of the allergenic foods that she resumed eating a specific brand and type of cookie that had previously given her severe asthma; however,

now her response to the ingestion of this single allergen was only mild asthma. An experiment was devised to utilize her reactivity to this cookie as a rough indicator system; she was asked to eat the cookie in Catskill just before she drove north to Albany to work. She subsequently reported that each time after she ate this cookie in the morning in Catskill, developed slight asthma in Catskill, and drove north on the thruway to work, her asthma would disappear at the area of the same mile marker on the New York State Thruway. On the other hand, if she did the reverse and ate the cookie in Albany, she would not get asthma while in Albany. However, at the same above-mentioned area on the New York State Thruway, while driving home, south from work, she would experience mild asthma. An investigation using the methods described earlier revealed that this point (the distinct mile marker) was in the general vicinity of the divide between the higher geomagnetic properties north of this border and the lower geomagnetic properties south of this border. Thus, it appeared that the higher the geomagnetic properties of the area, the more resistant the patient was to known allergens. This finding was consistent with observations vis-à-vis the Roxbury episodes.

Once this location on the thruway was discerned, other patients with similar sensitivities were asked to repeat this experiment, ie, drive north and then south along this section of the thruway while being provoked by a known allergen. The findings of improvement north of this location and exacerbation south of this location were duplicated on many occasions. (The patients were not told what to expect from this experiment or where the dividing line was until they had completed the experiment.)

Another case involved a husband and wife who lived in Kingston, NY. The husband had atopic dermatitis of his hands, mainly due to a hypersensitivity to cow's milk. Avoidance of cow's milk produced an improvement in his hands, and ingestion of cow's milk or cow's milk products while in Kingston produced an exacerbation of his dermatitis. His wife had a severe case of asthma due to a variety of ingestants and inhalants; avoidance of all offending substances produced an improvement in her asthma. The couple agreed to make observations regarding the relationship of their symptoms to various geographical locations and to test foods and observe reactions at different geographical locations. They were not informed about previous geomagnetic observations or what to expect.

They first went to Roxbury, where they stayed for 1 day. In Roxbury, they both experienced some moderate improvement of their symptoms. They then went to Binghamton, NY, a city about 70 miles southwest of Roxbury, where they experienced even greater improvement; the husband's hands improved so much that after 4 days in Binghamton he was able to ingest cows milk, and yet his hands continued to improve the longer he stayed there. His wife's asthma almost cleared in Binghamton, and she was able to tolerate some allergenic foods without experiencing symptoms; other foods, however, produced a mild to moderate exacerbation of her asthma but not the severe reaction previously experienced.

When both patients returned to Kingston, all symptoms due to food intolerances quickly returned; there was no residual benefit. The possible effect of environmental inhalant factors at all these locations was investigated and discounted. Of significant interest was that both patients agreed that, although Roxbury was better than Kingston, Binghamton was significantly better than both places; thus a gradient had been observed in regard to resistance to the development of symptoms due to an allergenic insult vis-à-vis geographic location: Binghamton > Roxbury > Kingston. When the geomagnetic map with overlay maps was examined to compare the relative geomagnetic strengths of Binghamton with those of Roxbury and Kingston, it was found that the same gradient levels of geomagnetism existed: Binghamton > Roxbury > Kingston.

Another observation regarding Binghamton concerned a patient who was a student at a college there, but who lived in New Paltz, NY. New Paltz is a small town in the Hudson River Valley 20 miles south of Kingston and approximately 100 miles east of Binghamton. The patient was asthmatic and, spontaneously, in the course of conversation about geographic effects, reported that she always felt better in Binghamton. She knew for years that whenever she traveled west to east (from Binghamton to New Paltz), at a specific area in the journey (around the town of Roscoe, NY) her asthma would return. Her asthma would clear at the same place when traveling from east to west on her return trip to Binghamton. The geomagnetism of Binghamton is higher than that of New Paltz. The geomagnetism west of Roscoe is higher than east of Roscoe. Once again, another observation was made that higher geomagnetism is more salubrious to an asthmatic than lower geomagnetism.

Sunset effect and the seashore effect

Although these observations exhibited a correlation between geomagnetic properties of the Earth and a person's ability to resist an allergenic assault, there were still some unexplained influencing factors operative other than geomagnetism:

atmospheric conditions (cloudy or sunny day), high or low barometric pressure, day versus night.

It was not until a patient vacationing on Fire Island, NY, excitedly telephoned that another piece in this puzzle fell into place. Fire Island is a thin, long, barrier island that runs parallel to the south shore of Long Island, NY. The patient had multiple known food allergies, and he scrupulously avoided offending foods. He excitedly reported that he was on Fire Island, and he was able to eat pizza without difficulty. (Many of the ingredients in pizza were known allergens for this patient). He reported that when the sun set, his symptoms would return (as he put it, he would "crash with the sunset"), but he would remain asymptomatic until that time. This "sunset effect" and "seashore effect" (vide infra) were observed to varying degrees with other patients when these parameters were duplicated, ie, a sensitive patient eating known allergenic foods at the salubrious seashore.

An increase in ambient atmospheric negative air ions clinically appears to have a salubrious effect on a patient's ability to successfully deal with a challenge from a known food allergen.

Faraday cage effect

It was conjectured that atmospheric negative ions caused by solar energy in the form of solar wind (particles) and solar waves impinging on the Earth's atmosphere were somehow salubrious for these patients. An experiment was designed to see what would happen if the reverse were true, ie, if sensitive patients were deprived of the conjectured beneficial solar particles, solar waves, and resultant negative ions.

Two allergically sensitive patients volunteered to be placed in the field-free room (Faraday cage). Within minutes after entering the room, both individuals experienced weakness and severe fatigue. These symptoms were similar to their allergic reactions to certain foods. Of particular interest was that leaving the room, within minutes of the onset of symptoms, did not immediately reverse these reactions. After leaving the room, both patients experienced weakness in gradually abating degrees over a 4–5 day period, the same time that it takes some allergic reactions to food to dissipate. The field-free room experiment was not repeated because of ethical considerations.

A review of the literature revealed that other Faraday cage experiments had been done involving a variety of organisms (bacteria, plants, and animals) and adverse effects were also documented.[1,2]

A summary of all the effects and observations were compiled and are shown in Table 1.

Discussion

On review of these patients' histories,it appeared that there were at least two major factors involved in the apparent differences of allergic reactivity due to changes in geographic location: (1) the amount of magnetism (the local geomagnetic intensity) and (2) the amount of negative ions (the amount of sunlight-solar wind and ultraviolet light, resulting in the amount of ambient atmospheric negative ions at that site). It is the solar wind and ultraviolet light impinging on atmospheric molecules that ionize them.

These results added further evidence that ambient solar energy with resultant ambient negative atmospheric ions act as an energy source that drove some critical internal mechanism. It was as if the energy of the sun was being absorbed in a kind of electronic "alimentation" that provided free energy to reverse entropy and allow for the accumulation of properly sized particles on one side of the digestive membrane, thus allowing secretory IgA to be a kind of Maxwell's demon. Was this an evolutionary mechanism that animals developed to capture free solar energy just as plants developed photosynthesis as their mechanism for capturing free solar energy? It was suspected that secretory IgA was such a device that enabled this energy-capturing process to take place by acting as an electronic transistor.

In regard to other cases and as a general overview of the subject, the best biological indicators for these observations

Table 1 Summary of observations in chronological order

Event	Observation
Roxbury effect	Food allergies inexplicably, temporarily disappear only while the patient was physically in the town of Roxbury – only to return when the patient left.
Geomagnetic effect	Food allergies improved when the patient was physically in an area of high geomagnetism – the higher the geomagnetism, the better the result.
Sunset effect	Very sensitive patients were able to discern that their food allergies improved when the sun was out (increased ambient negative ions), and they would "crash" (as they put it) at sunset (decreased ambient negative air ions).
Seashore effect	A. Sensitive patients felt better regarding their food allergies at the seashore; the longer they stayed at the seashore (in the summer) the more improvement was observed. B. Sensitive patients felt better when the breeze was from the ocean (increased negative atmospheric ions) and only somewhat improved, but not as much, when there was a land breeze (comparatively less negative atmospheric ions).
Faraday cage effect	This is the opposite of the above: reduction in atmospheric negative ions by blocking the effect of the solar wind (thus resulting in zero or near-zero ambient negative atmospheric ions).

were asthmatic patients because the changes were more apparent and much quicker in regard to the objective observation of wheezing. Other patients who were very sensitive in other respects, especially dermatologically, also proved to be a valuable source of information, although the symptoms were more subtle and were slower to appear or disappear.[7–10]

A relatively uncomplicated and quick method of experimentation was simply to have a slightly allergically provoked patient observe any change in symptoms as he or she drove along a designated road that traversed a boundary between a higher and a lower area of geomagnetism. If the patient was sensitive enough and if it was a sunny day, the patient was generally able to tell at which point the asthma either improved or worsened. The lines that indicated where the magnetic anomalies changed were known to the investigator; the patient was not told of these lines or their location (or much more about the experiment) until it was over. If the patient drove through the border of a magnetic anomaly in one direction and then returned in the opposite direction, the patient would be able to observe changes in symptoms. These changes were most apparent on bright, sunny days. On overcast days, the observations were not clear-cut. No changes were noted at night. This was a confirmation of the original New York State Thruway experiment and was repeated on at least a dozen occasions. Experiments were done using a variety of magnets with patients who were already using magnets for one reason or another. The presence of magnets next to patients did not benefit their allergic conditions.

The concentration of ambient atmospheric negative air ions is a function of the amount of solar energy (via solar wind and ultraviolet light) falling within a geographical area. The concentration of ambient atmospheric negative air ions increases during daylight hours and with an ocean breeze (in contrast to a lesser concentration of ambient atmospheric negative ions at night and with a land breeze). Ambient atmospheric negative air ions are salubrious.[1–6]

Does the action of secretory IgA produce an electronic sieve?

The second part of this article is an attempt to account electronically for the clinical observations described in the first part of this article by viewing secretory IgA as an electronic transistor.

How does a transistor work?

An electronic rectifier is a semiconductor that permits only one-way conductance of electrons. A transistor can be considered as a type of rectifier that contains a "sandwich" of a pair of semiconductors separated in the middle by a different semiconductor. The transistor accomplishes modulated one-way passage of electrons by means of the semiconductor in the middle, which acts as a one-way variable gate for electrons. The conductivity of the gate (middle piece) can be varied by a separate source of energy applied to it in a modulated fashion so as to allow for a modulated flow of electrons in a unidirectional fashion.

An organic molecule having a sandwich configuration can act as a transistor

Organic molecules that act as transistors and rectifiers have been described.[11] Organic transistor molecules have two parts separated by a central connecting piece called the sigma piece, thus forming a sandwich. The sigma piece has the property of acting as a one-way electronic valve (rectification device) to the flow of electrons between the two parts of the sandwich. Modulation of the one-way flow of electrons is accomplished by applying modulated energy to the sigma piece.

Secretory IgA has a similar sandwich configuration, ie, it is an organic molecule that has two parts (the two serum IgA molecules) joined by a central connecting piece (the secretory piece). It is conjectured that secretory IgA acts in a similar electronic fashion as the above-described organic transistor. If the central secretory piece of secretory IgA is an analog for the central sigma piece of the organic molecule, and if it similarly allows for a modulated unidirectional flow of electrons, then secretory IgA would be an electronic transistor with a resultant electronically polarized dipolar state. The modulation could be accomplished by some outside source of energy (solar particles, solar waves, atmospheric negative ions) in the vicinity of the secretory piece. The ultimate source of this energy is, of course, the sun; thus, the presence or absence of sunlight would explain the sunset effect.

The greater amount of geomagnetism at a given geographic site appears to attract more solar energy to that site than to a site with lesser geomagnetism, thus providing a greater concentration of solar wind and, hence, a greater concentration of resultant atmospheric negative ions (similar to the aurora borealis effect at the north pole due to the solar wind concentrating at the denser Earth's magnetism found there). This greater energy applied to the secretory piece would result in greater polarization of the secretory IgA molecule and greater efficiency of operation.

The secretory IgA molecule might also be "frequency specific," ie, "tuned" to optimally respond to a particular wavelength, harmonic of that wavelength, or particle in the

solar wind. No experimental evidence on that point has been accumulated; it is just a thought to include in this analysis. These ideas are something to consider in terms of attempting to duplicate these electronic effects for therapeutic purposes.

Proposition: secretory IgA molecules create an electronic sieve via a mass of contiguous molecules

How does all of this enable the gastrointestinal membrane to be a gatekeeper governing absorption or rejection of particles within the gastrointestinal lumen? It is conjectured that each secretory IgA molecule, being two serum IgA molecules joined centrally by a secretory piece, may be arranged so that one pole (one serum IgA molecule) is placed against (attracted to) the gastrointestinal membrane and the other pole (the other serum IgA molecule) is sticking up from it. It is as if so many soldiers were at attention, their feet (one pole) on the gastrointestinal membrane and their heads (the other pole) pointing in the opposite direction (up), ie, pointing toward the center of the gastrointestinal lumen.

When the secretory IgA molecule becomes electronically polarized, the head of the secretory IgA molecule (the pole pointing up) would be surrounded by an electronic charge forming a globular halo. Thus, if all of these charges around the heads of these molecules could be seen from a perpendicular aerial view, they would look like a collection of electronic spheres. Each sphere would be touching two other spheres in a triangular mosaic (the most stable geometric configuration is triangular) with a triangular "space" (really an electronic relative "weak spot") between where three electronic spheres meet.

Thus the secretory IgA molecules form an electronic sieve that allows properly-sized digested molecules to electronically "fall" through these relatively weak electronic areas between the three touching electronic spheres onto the absorption portion of the digestive membrane, where they are then absorbed. Passage would occur if the electronic size of the food molecule were smaller than the size of the triangular electronic hole.

An electronic dysfunction of secretory IgA would mean that each secretory IgA molecule would have a weaker charge (be less polarized), resulting in a weaker (larger) electronic triangular hole that would allow larger molecules (potential allergens and antigens) to fit through this more porous electronic sieve.

This may explain why the patients in the case reports did better in areas of higher geomagnetism; higher geomagnetism results in higher polarization of each secretory IgA molecule, resulting in smaller holes in the electronic sieves, preventing larger molecules from falling through until they are absorbed only when they are digested down to a smaller proper size.

One could venture to imagine such inventions as a wearable device that artificially and electronically mimics the herein-described solar energy's salubrious electronic effect on the secretory IgA molecule. Such an exogenous electronic manipulation of secretory IgA would deal with diseases that are instigated by antigens that inappropriately cross the gastrointestinal membrane. Such inappropriate absorption (flooding) of antigens could set off immunological alarms or prevent immunological depression that might result in the development of allergy, autoimmunity, and even possible carcinogenic phenomena via inappropriate increase, decrease and/or dysregulation of portions of the immune system.

Conclusion

There appears to be a correlation between the amount of the Earth's geomagnetism at a given location, the concentration of ambient atmospheric negative ions, the concentration of solar wind and solar waves, the amount of ultraviolet light, and the ability of a patient to resist reacting to a known allergen.

It is conjectured that the sun's energy does not fall homogeneously on the Earth's surface but rather falls heterogeneously. The amount of energy falling at a site is proportional to the amount of the Earth's geomagnetism present at that site. The salubriousness of that site is proportional to the amount of solar energy at that site and the resultant concentration of atmospheric negative ions at that site.

It is also conjectured that the observed salubrious allergic benefits of increased ambient solar energy and increased ambient negative ions are related to secretory IgA functioning as an electronic transistor and that masses of these organic electronic transistors produce an electronic "sieve" that allows for the selective absorption of only appropriately sized molecules.

Disclosure

No competing financial interests exist in this work. The author reports no conflicts of interest in this work.

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