



MERIDIAN INSTITUTE NEWS

RESEARCHING THE SPIRIT-MIND-BODY CONNECTION

pH-Dependent Viruses

For over five years researchers at Meridian Institute have been looking into the connection between pH (acid/alkaline) balance and viral infection – a link noted by Edgar Cayce in several of his psychic readings. With the recent epidemic of severe acute respiratory syndrome (SARS) and continued concerns about common conditions such as colds and flu, our interest in this field has expanded to explore basic science and clinical projects to test the Cayce hypothesis. Here is an overview of what we have found so far and where we are headed. Some simple preventive measures will also be discussed.

Understanding Viruses

Viruses are extremely small parasitic life forms, the smallest living things on Earth. In essence, a virus is a minuscule pocket of protein that contains genetic material.

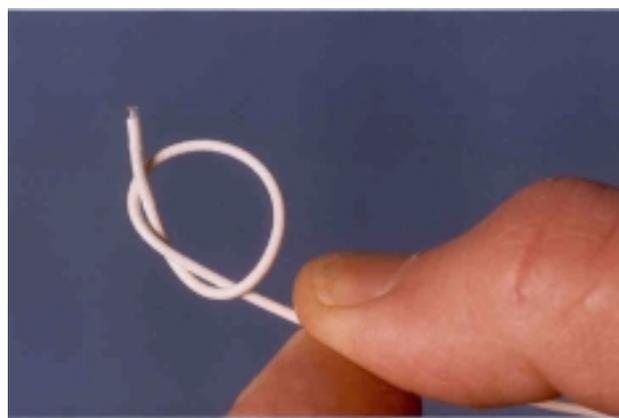
Although viruses can remain dormant outside a living body, they only become active when in contact with live tissue. Once a virus infects a cell by penetrating the cell membrane, it can either lay dormant (lysogenic infection) or begin reproducing itself (lytic infection – the more common pattern). When a cell becomes full of virus, it bursts releasing the virus to infect other host cells.

A wide variety of diseases are caused by viruses including the common cold, flu, warts, measles, hepatitis, herpes, smallpox, and AIDS. SARS is just the latest in a long list of viral parasites.

Unlike bacteria that can usually be effectively treated with antibiotics, viral infections are often unresponsive to modern medical treatment. If the virus causing a disease has been discovered, a serum may be developed to provide inoculation against that specific virus. The most common approach to virus protection is to avoid contamination by infected individuals.

Viral pH Dependency

Laboratory experiments (*in vitro*) have confirmed that many viruses require a mildly acidic environment to attack host cells. At Meridian Institute we are interested in determining exactly how this physiological fact manifests within the human body (*in vivo*). Understanding the role of pH balance in viral infections may provide preven-



Flexible microelectrode used for measuring nasal mucosa pH.

tive and therapeutic breakthroughs for dealing with epidemics including the recent outbreak of SARS.

To appreciate the relevance of pH for viral infection, let's first review some facts about acid/alkaline balance. The acid/alkaline continuum ranges from 0-14 with 7 as neutral. The lower end of the scale (below 7) is acid and above 7 is alkaline.

Acid/alkaline balance is extremely important to normal physiology. For example, the blood will maintain a slightly alkaline range of 7.35 to 7.45. Extended pH imbalances of any kind are not well tolerated by the body. The management of the pH factor is so important that the body's primary regulatory systems (especially breathing, circulation, and eliminations) closely regulate acid-alkaline balance in every cell and system.

Certain viruses (including the rhinoviruses and coronaviruses that are most often responsible for the common cold and influenza viruses that produce flu) infect host cells by fusion with cellular membranes at low pH. Thus they are classified as "pH-dependent viruses."

Drugs that increase intracellular pH (alkalinity within the cell) have been shown to decrease infectivity of pH-dependent viruses. Since such drugs can provoke negative side effects, the obvious question is whether more

natural techniques can produce the same result.

Possible Relevance to SARS

The World Health Organization has concluded that SARS is produced by a new virulent strain of coronavirus. Specific research on the possible pH dependency of the SARS virus has not yet been done. It is well known that coronavirus infectivity is exquisitely sensitive to pH. For example, the MHV-A59 strain of coronavirus is quite stable at pH 6.0 (acidic) but becomes rapidly and irreversibly inactivated by brief treatment at pH 8.0 (alkaline). Human coronavirus strain 229E is maximally infective at pH 6.0. Infection of cells by murine coronavirus A59 at pH 6.0 (acidic) rather than pH 7.0 (neutral) yields a tenfold increase in the infectivity of the virus.

If the strain of coronavirus responsible for SARS shares the pH characteristics of these other coronaviruses that are pH-dependent, this could be a valuable clue to effective prevention and treatment strategies for this frightening epidemic. Perhaps keeping a balanced or slightly alkaline pH environment for the body's tissues can provide viral protection or enhanced healing for SARS and common viral agents that cause respiratory infections.

Edgar Cayce's Recommendations

Edgar Cayce affirmed the importance of pH balance with regard to common viruses that cause colds and flu. Cayce repeatedly insisted that such infectious agents do not thrive in an alkaline environment. When asked how to prevent colds, Cayce replied, "by keeping the body alkaline. Only in acids do colds attack the body." (3248-1)

Cayce recommended using litmus paper to test the pH of urine and saliva as an indication of the pH balance of the body. We now have more precise means for monitoring pH in the form of pH paper and digital pH meters.

As a practical preventive measure, Cayce's suggestions for alkalizing the body emphasized eating an abundance of fresh fruits and vegetables, especially salads: "... if an alkalinity is maintained in the system – especially with lettuce, carrots and celery, these in the blood supply will maintain such a condition as to immunize a person." (480-19) Consuming citrus fruit and juices was also a common alkalizing suggestion in the readings that addressed concerns about cold and flu infections.

Meridian Institute Research

We reported a preliminary study on dietary effects of urine pH in January 1999 (Vol 3 No 1). The study was done to test Edgar Cayce's recommendations for testing urine as a marker for systemic pH balance. Our conclusion was that following Cayce dietary recommendations of eating primarily alkaline-producing foods (such as fruits and vegetables) does indeed tend to alkalize the urine.

We have contacted leading researchers in the field of rhinovirus infection studies to make them aware of the possible role of acid/alkaline balance and seek feedback

on how to do scientific studies to test the Cayce hypothesis *in vivo* – with human subjects. If it turns out that SARS is produced by a pH-dependent coronavirus, we will certainly make sure that the clinical researchers who do *in vivo* studies of viral infections are made aware of this potentially important factor.

Rhinovirus infection studies are done at several leading universities, usually to test the effectiveness of drugs that may help to prevent or relieve the symptoms of colds. Small amounts of solution containing rhinovirus are dropped into the noses of subjects to intentionally infect them under controlled conditions. Interestingly, about five to fifteen percent of subjects do not get colds even when the virus is carefully placed onto the nasal mucosa. Could it be that the pH of the resistant subject's nasal mucosa is alkaline (or neutral), preventing the rhinovirus from infecting the cells inside of the nose?

There have been several published studies on nasal mucosal pH with varying results. Some researchers have concluded that the pH of nasal secretions vary with sleep, rest, ingestion of food, emotional states, and menstrual cycles. Other scientists, using different technology, have failed to confirm these results. Clearly much work needs to be done in this area to establish consistent outcomes.

We have tested equipment from two of the leading companies that sell devices that can measure nasal pH and have learned that there is significant variability in the instruments, apart from the complexities of measuring pH in different people and within the same person over time.

The picture on page 1 shows a pH sensitive micro-electrode that we are currently using to measure nasal mucosa pH. The device was developed for insertion through the nose and down into the esophagus in acid reflux patients. Since the system is already FDA approved for measuring pH in humans by insertion via the nasal cavity, it is ideally suited for our purposes. This particular model seems to be more sensitive and accurate than one we tested from another leading supplier of this type of instrument.

So far we have done a series of nasal mucosa pH measurements on two individuals. One of the notable outcomes from our preliminary efforts in this area is that psychological stress can have profound effects on nasal mucosa pH, causing a major drop (acidification) in pH. We will be doing more work with nasal mucosal pH with additional subjects to determine the possible relevance of this measure with regard to upper respiratory viral infection. We are also hoping to be able to do a collaborative study with established researchers who regularly conduct *in vivo* studies involving intentional infection with rhinovirus (the "common cold") to explore the possible connection between life-style factors (such as diet) and the infectivity of pH-dependent viruses.

CAYCE CONCEPTS

MYSTERIOUS CANCER SERUM

A couple of Edgar Cayce's readings describe a hypothetical treatment technique that involves using part of the rabbit leg to create a serum for treating cancer. It is not clear that this particular technique was ever actually used. The generally accepted explanation of this concept is that it somehow involves utilizing the tendon of the rabbit.

Tom Stonebraker, a veterinarian from Kentucky (Edgar Cayce's home state), has provided a fascinating explanation of Cayce's recommendation. Dr. Stonebraker believes that an uncommon parasite is the key to understanding Cayce's suggestion. Here is an excerpt from a Cayce reading that discusses the development of a cancer serum based on this concept:

... a serum made from that as is called the "wolve" in the beef or the hare, at this season, and injections made ... For this region of system this would be materially aided, or checked - or NICCOLITE, as this becomes....

(Q) How can this be made?

(A) This should be drawn off - that is, the wolve, see? - PUNCTURED by an hypodermic, see? This drawn off and then a culture made into the flesh of the same animal from which it's drawn, whether beef or hare. Then the culture applied to the HUMAN body, see? or blood drawn and a culture made FOR the human body and then applied to the body. There must necessarily be experiments, with the proper heat, the proper precautions taken as to the character of cell as is destroyed in the culture made, and in the activity of the animal as well as human when being used; but for this character of the condition this would be MOST effective in at least fifty percent of such ills. (2457-4, BREAST CANCER)

Another reading (4444-2, SKIN CANCER) also describes this technique, mentioning a "parasite" that infects rabbits and the production of "niccolite" as a therapeutic agent. Cayce stated that niccolite is "Oxygen, Nitrogen, and action on the force of putrified matter in the animal ...". Here are Dr. Stonebraker's insights:

"I believe you can easily confirm "wolf or wolve" is a common name referring to an unusual parasite often found in the rabbit and bovine (beef) but also seen to a lesser degree in all warm blooded animals. Specifically, wolf (wolve) refers to the larval (maggot) stage of the cuterebra fly. The small cuterebra fly is unique in several ways.

"1. It lays only one egg as opposed to large numbers.

"2. It lays its egg on the skin of a live host animal as opposed to decaying matter.

"3. The hatching larva has the ability to penetrate

the unbroken skin.

"4. Just under the skin the larva lives, grows, and matures while maintaining a small open air hole to the surface.

"5. The larva stimulates a much stronger inflammatory reaction from the host compared to most parasites resulting in much local infiltration of tissues, subsequent swelling, and draining from the air hole on the surface. All signs of the body's defense mechanism go in high gear protecting by attacking not only the intruder, but the surrounding tissues which may be supporting the invader.

"Despite this local war, the host leads an otherwise normal life until the larva is killed or expelled or leaves of its own volition (or is surgically removed) and the host seems no worse for wear, maybe even better from the challenge.

"My take on this revolves around stimulating immune response to abnormal cells that try to take on a life of their own (cancer). Edgar Cayce was once again way ahead of his time by proposing a vaccine-like approach to treating cancer utilizing an obscure parasite."

We thank Dr. Stonebraker for sharing his thoughts on this fascinating topic. Does anyone else have ideas about Cayce's mysterious cancer serum?

CALENDAR

September 12-14, 2003: 8th Annual Cayce Health Professionals Symposium, Virginia Beach.

MERIDIAN INSTITUTE NEEDS YOUR SUPPORT

We welcome your support and participation. Please contribute your knowledge, time and money to Meridian Institute's important research on the Edgar Cayce health readings. Meridian Institute is a non-profit organization. Your donations are tax-deductible.

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Statement of Purpose:

The goal of Meridian Institute is to expand the meeting ground between science and spirit by conducting and sponsoring clinical and basic science research. We intend to examine concepts about the body compatible with the premise that we are spiritual beings, and to approach the healing process from this perspective.

The body of information that will be researched and used as a guide for directing our work will be the Edgar Cayce health readings. Now over fifty years old, they provide a coherent and consistent physiology of how the body functions in health and disease. These health readings have never been fully researched in a modern, scientific manner that would provide data acceptable to all healthcare professionals and agencies.

It is our intention to conduct research in a manner acceptable to the modern healthcare community.

Priorities:

1.) To conduct and support research that examines physiological, anatomical, and health concepts which help unify the scientific and spiritual world views. This will involve sponsoring clinical and basic research, and engaging in “seed research” through conferences on specific topics and clinical projects incorporating a network of cooperating researchers and clinicians.

2.) To support, sponsor and directly present programs educating health professionals, scientists, and the public regarding these spirit-mind-body connections.

3.) To serve as an information network for researchers and clinicians exploring and applying these concepts and methods.

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