



MERIDIAN INSTITUTE NEWS

RESEARCHING THE SPIRIT-MIND-BODY CONNECTION

Heart Rate Variability

Information gleaned from the constant beating of the heart can help us to understand the deep physiology of the body. In particular, the rate at which the heart beats may be a window into the relationship of body, mind, and spirit.

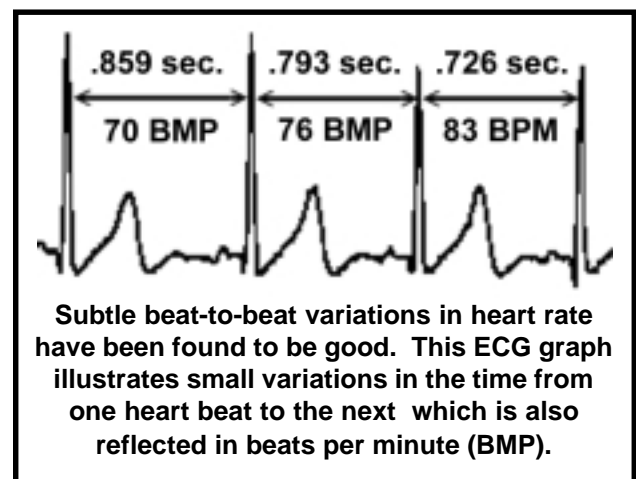
Most people think of heart rate as a consistent rhythm like the regular ticking of a metronome. Surprisingly, a new technology has been developed that focuses on slight variations in heart rate (“heart rate variability”) as a positive indicator of health. This new approach may also help us understand what Edgar Cayce meant by nervous system coordination, an important physiological concept in the Cayce readings.

Heart Rate Physiology

Heart rate is typically expressed as the number of beats per minute as measured by an electrocardiogram (ECG). Heart rate is regulated by the two branches of the *autonomic nervous system* which usually function automatically without our conscious control. The *sympathetic* nerves accelerate heart rate during arousal; the *parasympathetic* nerves slow heart rate during relaxation. In a healthy individual there is a *coordination* or *balance* of these two opposing physiological processes that can instantly change to meet the needs of the body’s emotions, thoughts, or activities. The commonly cited example is the *fight or flight syndrome* that is activated when we face danger (such as when we encounter a lion or bear in a wild setting). The other extreme is the *relaxation response* that is associated with meditative practices or biofeedback.

When the heart rate is *grossly irregular*, it is called a heart-rhythm disorder. For example, atrial fibrillation, a common type of arrhythmia, is a potentially life-threatening condition.

In contrast, *subtle beat-to-beat variations* in normal heart rate have been found to be good. These slight irregularities indicate that the system is paying



close attention and making very subtle adjustments from one moment to the next to a constantly changing environment. In contrast, too much consistency in heart rate (less variability) is often associated with dysfunction and disease.

The best example of the value of measuring heart rate variability is the ability to predict survival after heart attack. Over half a dozen prospective studies have shown that reduced heart rate variability predicts sudden death in patients with heart disease. Specifically, reduced heart rate variability appears to be a marker of fatal ventricular arrhythmia.

Reduced heart rate variability has also been linked to negative emotions (such as anxiety and hostility). The connection between negative emotions and reduced heart rate variability may thus provide a potential mechanism linking chronic stress to disease outcomes.

The autonomic nerves that regulate heart rate also govern other essential visceral processes such as digestion and glandular secretions. Thus, heart rate variability may also be a window into the way the nervous system is managing the body’s vital functions.

This is consistent with the Cayce concept of nervous system coordination.

Meridian Research

Meridian Institute has been researching heart rate variability for several years in conditions ranging from multiple sclerosis and Parkinson's disease to diabetes and depression. In general, our findings have been consistent with the growing medical literature linking reduced heart rate variability to conditions with nervous system pathology.

The initial impetus for this line of research was to explore a key Cayce concept called *nervous system coordination*. Many of the medical readings refer to nervous system incoordination as a basic cause of many illnesses. In particular, incoordination between the *cerebrospinal* and *sympathetic nervous systems* was cited as important. Through research in the historical medical texts of Cayce's era, it has been determined that Cayce's precise use of the terms cerebrospinal and sympathetic are actually the two divisions of the modern autonomic system. Thus, monitoring heart rate variability is a simple, noninvasive way of exploring a key Cayce concept. Using this technology, Meridian Institute researchers were able to measure the nervous incoordination described in the readings in some of the participants in our varied research programs.

Taking the concept of nervous system coordination further, specific therapeutic techniques (osteopathic manipulations) were tested while volunteers were hooked up to equipment for measuring various autonomic nervous system parameters including heart rate variability. (See *Meridian Institute News*, January, 2001, Vol. 5, No. 1).

Therapeutic effects were documented and published in a peer-reviewed journal article. One specific technique apparently produced an "entrainment" effect wherein the various manifestations of autonomic functioning (breathing, heart rate, blood flow, etc.) became synchronous.

The concept of entrainment has been utilized by companies that have developed psychological techniques for influencing heart rate variability. One of the common themes of this type of approach is that the functioning of the heart is an expression of a deeper spiritual reality. In essence, heart rate variability may be an expression of love. Spiritually oriented techniques that increase our capacity for love may have powerful physiological effects and vice versa. Although this aspect of heart rate variability research is in the

early stages of investigation, the holistic implications are fascinating.

Since the autonomic nervous system is influenced by emotions, thoughts, and activity, heart rate variability can, to some extent, be regarded as a reflection of our moment-to-moment psychological and physical status. Some researchers go even further in asserting that changes in heart rate variability can affect brain functioning and how we feel. Much research still remains to be done in this field to determine if this powerful, noninvasive tool can help us to understand the dynamic interactions between physiological, mental, emotional and behavioral processes.

With regard to the Cayce spiritual disciplines, during the various research programs at Meridian Institute it was observed that one of the standard protocols for assessing heart rate variability involved controlled breathing at about six breaths per minute (i.e., one breath every ten seconds). This pattern of respiration produced some of the strongest measurable effects on the pattern of heart rate variability. It was further noted that this rhythm of breathing closely matches that produced by some of the chants recommended in the Cayce readings. The time required to complete the chant and take the next breath is almost ideal for inducing an entrainment effect valued by some experts in this field.

Based on the Cayce assertion that certain types of massage can enhance nervous system coordination, Meridian Institute is currently engaged in a study to explore the relationship between heart rate variability and massage.

LITERATURE

Fibromyalgia Linked to IBS

The Edgar Cayce readings consistently maintain that problems in the bowel can produce systemic conditions. A recent medical study echoes this theme.

Researchers at the Cedars-Sinai Medical Center, Los Angeles, California may have discovered a simple test that links fibromyalgia (a condition manifesting as muscle pain) with irritable bowel syndrome (or IBS, a condition involving abdominal pain, bloating, and diarrhea).

The lactulose breath test (LBT) is used to assess

for the presence of microbes in the bowel in cases of IBS. Some previous studies have found that nearly one-third of fibromyalgia patients also have IBS.

The study, published in the *Annals of the Rheumatic Diseases* (April 2004), explored the hypothesis that LBT would be abnormal in both IBS and fibromyalgia patients. The researchers recruited 42 fibromyalgia patients, 111 IBS patients, and 15 healthy control subjects who were given the LBT.

All the patients with fibromyalgia exhibited abnormal LBT results compared to 84 percent in the IBS group and 20 percent in the control group. Furthermore, the amount of hydrogen gas detected in the LBT correlated with the level of pain in the fibromyalgia patients.

The researchers noted that further studies would be needed to determine if treatment and normalization of the LBT with antibiotics can produce improvement in fibromyalgia symptoms.

Olive Oil Derivative Lowers Blood Pressure

The Mediterranean diet (which relies heavily on olive oil) has been shown to reduce the risk of heart disease and stroke. Olive oil has been shown to have moderate beneficial effects on blood pressure when taken in high doses for several months.

Olive oil is an excellent natural source of the fatty acid oleic acid. Researchers at the University of the Balearic Island in Italy designed a study to see if a faster blood-pressure-lowering response could be achieved using a synthetic derivative of oleic acid (2-hydroxyoleic acid). The results were published in the journal *Hypertension* (February 2004).

Laboratory rats that were given the synthetic derivative of oleic acid for 7 days exhibited reduced blood pressure by 20 to 26 points without affecting heart rate. The researchers believe that the reduction is due to increased levels of cAMP, a natural substance that causes blood vessel to open wider.

Further tests will be needed to determine whether 2-hydroxyoleic acid might be the basis for a new family of drugs for high blood pressure.

CALENDAR

September 17-19, 2004: 9th Annual Cayce Health 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.

Eric Mein, M.D.
Douglas Richards, Ph.D.
Carl Nelson, D.C.
David McMillin, M.A.

Meridian Institute
1853 Old Donation Parkway
Virginia Beach, VA 23454

PHONE: (757) 496-6009
EMAIL: meridian@meridianinstitute.com
WEB: <http://www.meridianinstitute.com>

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.

**MERIDIAN INSTITUTE
1853 OLD DONATION PARKWAY, SUITE 1
VIRGINIA BEACH, VIRGINIA 23454**



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