

# Bowen effect on autonomic nervous system

## **Breaking Records in Golf by Balancing the Autonomic Nervous System**

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Everything needs balance, especially our healthcare system. Allopathic and alternative medicine requires communication and balance between the two disciplines in order to facilitate optimum results of both.

## What We Know

Research studies of the influence of alternative therapies in golfing are very sparse. What we know is that anxiety decreases the ability to focus and cope which is a requirement for a perfect golf shot (1). We also know that many of the alternative therapies elicit the relaxation response (2) and that mood of the athlete affects performance (3).

Therapeutically induced alpha state (parasympathetic response) is a natural healing state and can greatly reduce or eliminate stress related conditions by balancing the autonomic nervous system (4). We also know that the body cannot tell the difference between actual events and events that are present in our imagination (5).

Studies show that lower back injuries are most common among professional male golfers, while left wrist injuries are most common among professional female golfers. While golfing is not a contact sport over 50% of touring professionals stop playing because of injuries (6).

To consistently play better golf you must achieve true “whole body balance” this means having your body, mind and spirit working together in harmony and balance for every shot. Balance refers to harmony in body organs and systems, in a persons diet; and in relationship with other individuals, society and the environment. A state of imbalance within one system will affect other systems.

Most athletes recognize that their most important piece of equipment is their body; this entails all the physical characteristics and their state of mind and spirit. Alternative therapies promote total well-being that balances body, mind and spirit. There is evidence that many therapies balance the autonomic nervous system (7). Individuals who are balanced have more stamina, and fewer injuries which if they occur will heal faster. They are also better able to focus and control the stress response.

Alternative therapies view the human body as a unique and dynamic energy system (8). All organs and cells in the body have a specific frequency and are affected by many forms of energy from external and internal sources. We know that a delicate balance of all forms of energy

sustains and supports life and includes: chemical, electrical, ultra violet light, and subtle energy (9).

Chemical energy results from the food we eat, which converts into metabolic energy and provides raw building blocks for repairing and regenerating aging cells of our bodies this enables us to be creative, active beings.

Nerves constitute the electrical wiring system that allows the brain to telegraph messages to organs and muscles of the body. The brain uses a kind of electrical code to communicate to and receive messages from various parts of the body. These electrical transmissions are responsible for instance, for converting thoughts into action. It is this process that is at work in mental rehearsal or imaging. Many autonomic functions are electrical, such as heart function.

Cells emit weak bursts of ultraviolet light. This light appears to be a control system which cells use to communicate messages to one another.

In addition to chemical, electrical and light energy there is an energy field that surrounds, flows through and extends from the body. This energy field is called the subtle-energy system. It can be sensed with higher sense perceptions and is perceived by mystics and clairvoyants as a visible phenomenon (10). There are instruments which can measure the human energy field, and therapists who have developed higher sense perceptions of subtle energies are able to diagnose complex medical problems by sensing the client's energy field (11). These subtle energies have numerous functions including: nutritive, defense against illness, providing a growth template for the physical body, emotional-energy processing, intellectual functioning, creativity, and flow of so energy into physical form. Imbalances and depletions within the energy fields lead to disease and dysfunction.

We perform best when there is a balance and total interconnection of the different forms of energy. Factors affecting this balance and interconnection are our emotions, our perceptions, our thoughts, our attitudes, our relationships with others, our ability to give and receive love and our relationship with God, however we define God.

Alternative therapies recognize the influence of these factors on the individual's level of wellness and restore and balance the body's energy system. Wellness is about more than proper nutrition and exercise. It is about our total energy environment including our emotions, attitudes, spirit and consciousness.

Consciousness is our perception of what happens within our self. It is how we know ourselves in relation to the universe and our connection to spirit. Consciousness has an integral role in health and illness and is a kind of energy itself. It is not limited to the brain but is a much larger concept, residing in the heart and the central nervous system as well (12).

HeartMath Institute researchers looked at the unique connection between the heart and the brain to provide evidence to support the concept of a "heart based" or "heartful" consciousness. The expression, "acting from my heart, not my head" and "follow your heart" may be more than a metaphor. According to HeartMath researchers, shifting the consciousness focus to the heart

region while reexperiencing a positive emotional memory can help direct a person into a heart-oriented intuitive state which can assist in decision-making and coping with life's struggles in ways that are healthier and lead to fewer and less severe stress reactions in the body (13). Researchers have found considerable scientific evidence supporting the idea that the heart center possesses a unique form of consciousness (14). There are nerve connections that transmit messages to and from the heart and brain. The heart speeds up or slows down depending upon physical demands and emotional reactions to our environment. Our emotions strongly influence the activity of the heart, but not only the heart. There is a direct interconnection between thoughts, beliefs, attitudes, feelings, actions and results that feeds back to thoughts, (a feed back loop) ( 15). Each component influences the other. Thoughts and feelings can positively or negatively affect and direct our beliefs, attitudes, actions and results.

A therapeutically induced alpha state (parasympathetic response) is a natural healing state; blood pressure, breathing rate, and other vital processes normalize, and regenerate (16). Your awareness of your inner processes—physical, emotional and mental—sharpens. Alpha is the key to relaxation and to creating new behaviors. You are aware of the goings-on of the outside world but not actively in it. It is here where you get out of your head and into your heart. You are able to turn off the ego and access your inner, higher self. If you can deal with stress in the moment, rather than after the fact it catches the stress before it begins to affect the body and interfere with performance.

According to Maltz, founder of psychocybernetics, one's self-image is important for guiding performance, one's performance cannot be any higher than one's self-image (17). To improve performance you have to improve your thoughts and beliefs which are directly related to your self-image. This can be accomplished by simply shifting to an alpha state, focus on consciousness in the heart and reframe your thoughts, in order to shift quickly out of stressful emotional patterns. Consciousness has a vital role in an individual's functioning capacity.

Alternative therapies are more typically holistic in their approach, encouraging the client to be responsible for their own health. There are many alternative therapies. Some of the categories according to the NIH are: biomechanical, pressure point, biofield, combined physical and biofield and mind/body (18). Examples of biomechanical therapies include osteopathy, chiropractic and massage. These therapies are based on the concept that any dysfunction of any discrete body part often affects secondarily the function of other discrete, not necessarily directly connected, body parts. Methods that manipulate the soft tissues or realign the body parts are used to restore optimal function. Pressure Point therapies such as Acupressure, Feldenkrais, Trager, Reflexology, and Rolfing use finger pressure on specific points—usually related to the oriental meridian points, and other neurological release points—to release pain and treat various disease states. Biofield therapies include such therapies as Bowen Therapy, Healing Touch Qigong, Reiki, and Therapeutic Touch. These therapies are called energy healing or laying on of hands. It is one of the oldest forms of healing known where practitioners draw on universal or spiritual energy to restore the patient's energy field. Combined Physical and Biofield Therapies combine physical and energy work and include such therapies as Kinesiology, network chiropractic, polarity and Cranioscral. Mind/Body Therapies are therapies that are grounded in the knowledge of the power of the mind and body to affect one another. Examples are meditation, imagery, hypnosis, biofeedback, yoga, and prayer.

## MEDITATION:

Meditation is the practice of focusing one's mind on a single thought, sound or image in an attempt to promote relaxation. The work of Herbert Benson has shown that there are many ways to elicit the Relaxation Response that causes physiologic changes –decreased oxygen consumption, decreased carbon dioxide elimination; decreased rate of breathing, and a decrease in the rate of metabolism (19). Alpha waves (the slow brain waves) increase in intensity and frequency.

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Meditation helps the individual focus on the present, eliminating thoughts of past and future events.

Guided imagery involves using the imagination to project positive images in order to produce favorable physical changes and psychological adjustments. These images enable the person to mentally practice a new skill before encountering it in a real-life situation (20). The value of imagery in sports is widely acknowledged.

The contribution of hypnosis to enhancing athletes' performance is also recognized. Hypnosis accesses the subconscious and parasympathetic nervous system and is a deep relaxation technique (alpha or theta state). Therapeutic benefits include balancing the ANS resulting in increased positive emotional states, strengthening of the immune system, increasing overall health and well-being. Hypnosis is effective in the management of pain, resulting in reduced medication, improved quality of life. It is also a technique that enables the individual to reframe responses to anxiety producing situations (21).

Touch therapy is “a contemporary interpretation of several ancient healing practices. These practices consist of learned skills for consciously directing or sensitively modulating human energies” (22). Therapeutic touch is used to assist clients to repattern their energy in the direction of health and can be used alone or in conjunction with other modalities.

Bowen therapy was developed in the 1950's by an Australian named Tom Bowen who successfully demonstrated the effectiveness of a series of gentle, precise moves on specific muscles, tendons and nerves to relieve all kinds of pain of many acute and chronic conditions. It is known to relax the muscles and has been demonstrated to be a key factor in emotional release. It is a well-known therapy in Australia, New Zealand and parts of Europe but little known in the United States. There are teaching centers in California, Florida, Tennessee, Ohio, and Colorado.

Bowen Therapy heals like the dolphins heal, through harmonic vibration. The Bowen Technique is like strumming a stringed instrument. In order to play a stringed instrument it is important to

have the exact tension in the correct place and release it. The Bowen technique utilizes this same technique on muscles, nerves and tendons. A series of precise moves are made on specific areas of the body resulting in creating specific frequencies within the body. By stimulating the body to create specific harmonic frequencies, the Bowen technique seems to unblock blocked communication channels within the body and serves to balance the autonomic nervous system (ANS). A balanced ANS may hold the key to improve the quality of life, mobility and over all wellness.

The ANS controls most of what goes on in our body. It regulates eighty to ninety percent (80-90%) of physiological and emotional functions and governs such things as digestion, respiration, heart and circulatory function, blood pressure, muscles, glands, and immune function (23). There are two branches of the ANS, the sympathetic that speeds things up and the parasympathetic, which slows things down. The ANS balances cardiac activity, the parasympathetic slows heart rate and the sympathetic speeds it up. Beta-blockers are used to decrease the sympathetic response, which results in decreased heart rate and blood pressure. The sympathetic system controls energy expenditure especially in stressful situations while the parasympathetic system conserves energy through relaxation. In the healthy individual (Olympic athletes) these two systems are balanced and this balance supports optimum health and peak performance.

A recent news article questioned the use of Beta-blockers among golfers to create calmness in high stress events. While this is the desired effect of beta-blockers it is not without risk of untoward side effects as well as poor performance. A word of caution, Beta-blockers that pass the blood brain barrier can cause a decrease in energy and alertness and in some cases drowsiness resulting in poor performance. Alternative therapies like Bowen Therapy are a more efficient way to create that desired inner calmness without harmful effects.

Heart Rate Variability (HRV) can assess the ANS. HRV is a non-invasive methodology, which evaluates both cardiac and autonomic nervous system function. HRV is a simple measure of beat-to-beat degree of evenness of consecutive heartbeats (24). It is a prognostic indicator of risk associated with a variety of chronic diseases, behavioural disorders, mortality and aging. It can be explained as the variation in the beat-to-beat time interval of the heart. Measurements are made using R to R (highest peak of the QRS complex) time intervals from a single lead ECG that are then converted to data representing the sympathetic and parasympathetic components of the ANS (25)(Figure 1). Figure 2 shows normal ANS power spectrum pattern. The high peak represents the sympathetic system and the lower peak represents the parasympathetic system. The illustration on the left of Figure 3 represents increased sympathetic activity and the one on the right side represents increased parasympathetic activity.

Figure 4 shows the effect of the Bowen Technique on the ANS in twenty patients with fibromyalgia. The total power is usually doubled or tripled after a Bowen Technique. Figure 5 is an example of what happens to a patient with fibromyalgia. They have very low power and little or no parasympathetic activity that corresponds with the sleep disturbances many of these patients have. Sleep disturbances result from low parasympathetic activity. After a series of Bowen treatments the parasympathetic response returns (as shown on the right side of Figure 5). Sleep problems dissipate and well being greatly improves in these patients.

We have found that in many healthy individuals the ANS is not balanced. Following a Bowen treatment HRV shows and increase in total energy and a more balanced ANS. We recommend the Bowen Technique as a tune up maintenance program to balance the ANS and optimise energies in order that performance can achieve maximum potential.

All systems, including the CNS, ANS, and motor nerves, must be on go, communicating with each other and in optimal balance. The ANS must be in tune with the personality of each individual. In particular the ANS affects gross and fine motor skills. As we said before the sympathetic readies us to achieve the task before us or it can escalate into fear, acute anxiety and panic, whereas the parasympathetic comes into play to maintain the balance needed for peak performance, providing an inner calmness to go along with the readiness. Additionally, in order to maintain the fine balance of functioning, our brain must execute whole brain thinking, using both right and left sides of the brain. If we think only with our right brain and try to visualize the shot we want to hit we will usually goof because the yardage is wrong, and the club selection is wrong. On the other hand if we play golf using only the left analytic brain we will make the proper club selection, and have the yardage correct but because we are unable to visualize, that process which communicates to the body exactly how to execute the shot, the result is a poor shot! We must have whole brain thinking where the left brain analyses the total preshot routine in a sequential manner, then switch to the right brain to visualize the shot you want to make, step up and make the shot, keeping the visualization in mind the whole time until the ball stops or goes in the hole. At this point we reframe, that is take a break, get mentally off the course until the next shot is to be played. Whole brain thinking is a way to play winning golf. Today, to break records in golf, it takes more than just being in the zone. Our whole body, mind and spirit must be like the most precise instrument. Our physical being must be fit, at attention with the ANS, finely tuned and our brain dedicated one hundred percent to whole brain thinking—to left-brain, right brain, reframe.

## WHAT WE DON'T KNOW

A lot.

How much do golfers use alternative therapies and what is their effect?

## WHAT WE NEED TO KNOW

Does a balanced autonomic nervous system improve golf scores?

What combination of alternative therapies contributes to playing better golf and reducing injury?

How can we make alternative therapies available to golfers to increase their health and overall performance?

How can we measure the effect of selected alternative therapies among golfers?

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Dr. Whitaker had extensive residence and fellowship programs in paediatrics, haematology, oncology, nutrition and psychiatry. She taught in seven different medical schools and retired as a full professor of paediatrics. She spent nine years in Southeast Asia, starting a new medical school and nutritional laboratory in Thailand and a post-graduate training program in Vietnam during the war. After returning from Vietnam, she was director of the Florida Mental Health Centre in Tampa. She helped start and develop the first hospice in Florida and initiated the Little Kids Program for Abused Children at the Chi Chi Rodriguez Children's Program. She died in Florida in December 2008, aged 81.