

Dolphins & Healing

A RESEARCH REPORT FROM



INTRODUCTION

During the fall of 1996, The Upledger Foundation sponsored a pilot project designed to investigate the effects of providing CranioSacral Therapy (CST)¹ to patients while in the presence of, and in direct physical contact with, dolphins. This project was the first known study to investigate the impact of dolphins on the efficacy of an already well-understood and effective therapeutic modality. Some of these CranioSacral Therapy sessions were conducted in shallow lagoons where the dolphins were in repeated and frequent physical contact with our patients and therapists. These CST water sessions with dolphins were alternated with table sessions conducted on a floating dock adjacent to the lagoons and in immediate proximity to the dolphins.

The patient population for the project included seven children ages 5-12 years. Diagnoses and medical histories for these patients included cerebral palsy, traumatic brain injury, spinal cord injury (T12 paraplegia), hemiplegia, chronic pain and depression, post-traumatic stress disorder, developmental delay, manic-depressive illness, Angelman's syndrome, post-concussion syndrome with chronic pain, vertigo and speech impairment, TMJ, epilepsy and learning disability, and agenesis of the corpus callosum with severe epilepsy. Each patient completed two four-hour treatment sessions that included both in-water CST with dolphins and dockside sessions.

Although much has been written relevant to the intelligent, kind, playful nature of dolphins, and anecdotal evidence abounds regarding the "spontaneous healings" many people have experienced as a result of their encounters with dolphins,² ours was the first known program to incorporate a proven therapeutic modality while simultaneously being in such direct contact with dolphins.

Patient response to these treatments was quite significant and included substantial reduction in pain, increased ease in breathing, greater general relaxation and specific reduction of hypertonicity, enhanced strength and flexibility, increased appetite, and more restful sleep.

The very favorable outcomes experienced by the diverse patient population that participated in this program gave rise to a variety of conversations, thoughts, ideas and speculations concerning the nature of the dolphins' "healing presence." Central to these speculations was the importance of the dolphin sound, and the role of sound and energy in our health.

SOUND AND VIBRATION

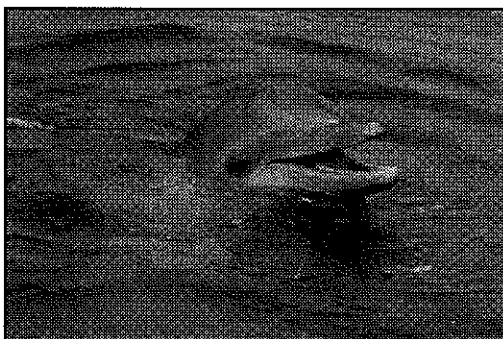
For thousands of years, cultures throughout our world have recognized that sonic vibrations influence states of consciousness and the physical body. Recorded history documents that ancient cultures used music, rhythmic drumming and chanting in religious practices as a means of restoring or maintaining physical and psychic well-being. Indeed, there is written record of Islamic, Chinese, Hebrew, Egyptian and Greek cultures

using sound to impart cultural wisdom, facilitate altered states of consciousness and heal the sick.³

Greek philosopher and mathematician Pythagoras is reported to have believed that certain sounds could be used specifically for curing illness,

other sounds for enlightenment or inspiration, and still different sounds for relaxation and meditation. We additionally know that Plato and Aristotle taught their students that sound and music were curative, and that disease could be thought of as a condition of "dis" ease: being without ease, without harmony within the body. Illnesses were often believed to have their origin in a disharmonious state of being. Music was seen as a primary means of restoring this necessary balance or harmony within the self, a way to reestablish a healthy resonance. Interestingly, the term "resonate" literally means "return to sound." Music was used to return the body to its natural sound, its natural resonant frequency.

In more recent times, relatively speaking, classical and romantic composers saw music as a powerful means of influencing consciousness and also as a means



of transmitting cultural wisdom while simultaneously promoting the advancement of culture.⁴ Composers from the Romantic and Transcendental periods believed they were contributing specifically to the evolution of our culture and civilization through their music. Today, it is increasingly accepted that a variety of sonic stimulation — from music therapy to ultrasonic vibration — may be utilized as a means of altering mood and consciousness as well as affecting the physical body.

Clinical experience has shown that the utilization of various naturally occurring sounds — such as wind and surf, flowing water, rain and wind — tend to promote and support meditation and physical healing.⁵ Music has been shown to directly influence heart rate, breathing, muscle contractions, memory and immune system function.⁶ Within our culture there are numerous examples from film, television, and theater to confirm the experience that different musical themes clearly affect mood state and arousal as well as cognition.

There is, quite obviously, an ancient link between music, sound and health. While the mechanism for this experiential link between sonic vibration and human functioning may not be clearly understood, this has not limited our exploration of this connection and its role in the therapeutic effects noted in our CranioSacral Therapy with dolphins project.

ULTRASOUND

While sound has been used to facilitate altered states of consciousness for various ways of healing in the past, in recent years it has been used for specific and directed healing — most typically through the application of ultrasonic frequencies. Ultrasound has been used in sports medicine and rehabilitation to facilitate the healing of contusions, reduce swelling, and promote

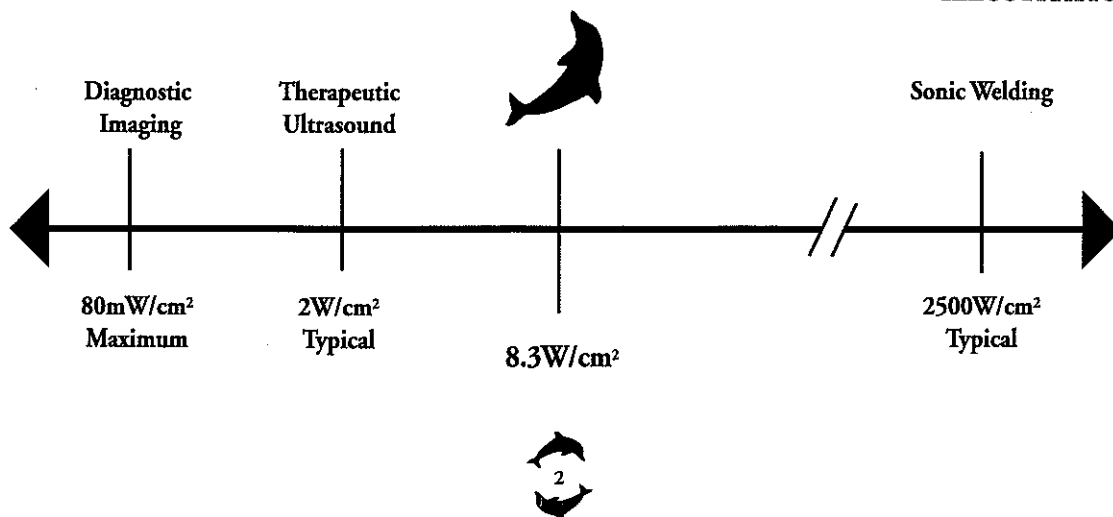
increased blood flow to damaged tissue. Additionally it has been employed in diagnostic imaging and, recently, as an alternative to more invasive procedures to destroy cataracts, kidney stones and gallstones.^{7,8}

Ultrasonic frequencies that are used therapeutically in clinics and hospitals for various purposes of imaging and as a treatment modality are typically in the range of $80\text{mW}/\text{cm}^2$ (for diagnostic purposes) to $2\text{W}/\text{cm}^2$ (for treatment of traumatic injuries). Dolphins have been observed to produce echolocation sound or ultrasonic vibratory sound frequencies at intensities of $8.3\text{W}/\text{cm}^2$. (See Illustration A.)

Thus, dolphins naturally produce an ultrasonic frequency that is four times the frequency used for therapeutic purposes in clinics and hospitals throughout the United States. In addition to this measured frequency of $8.3\text{W}/\text{cm}^2$, it is important to remember that the dolphin ultrasound is delivered through water, a highly efficient medium for sound transference — 60 times more efficient than air, in fact.

Our clinical experience with patients and dolphins suggests that there can be a near immediate, and often quite dramatic, reduction in fascial or muscular restriction as well as release of adhesions resultant from past surgeries, scarring or severe trauma upon receiving direct echolocation from dolphins. Dolphins demonstrate significant variability in the echolocation sound intensities they emit, and it appears that they are able to adjust with near infinite variation the intensity of ultrasonic emanations produced and directed toward patients as well as particular areas or regions within a patient's body. It would seem that dolphins have the capacity through a medium that we understand — ultrasonic vibration — to alter human tissue. This ultrasonic effect, then, is postulated as one of their avenues of therapeutic effectiveness with humans or, if you prefer, one aspect of their "healing presence."

ILLUSTRATION A



ENERGY

Dr. Valerie Hunt states in her book *Infinite Mind*¹⁰ that the electromagnetic component of the human energy field can be detected with special instruments. In her research, Dr. Hunt placed conventional electrodes at specific locations on the body and measured the millivoltage frequencies (500hz to 20khz) associated with the electromagnetic bioenergy field. In particular, she demonstrated that there was an electromagnetic field or current that was specific to different physiological and emotional states. Further, the particular energy wave patterns or frequency signatures measured varied depending upon the particular state of physiological arousal, mental attention and alertness, mood, pain state and general overall wellness of the subject. This suggests that there are definitively distinct electromagnetic field patterns that correlate to the primary three realms of human experience — physical, cognitive and psychological. Within these field patterns there are specific signature wave frequencies that relate to differing physical, cognitive and psychological states.

As profound as this finding may be, perhaps what is more fascinating is the additional discovery that when sensory stimuli (including sound) are presented to an individual, the energy field responds even when the person experiences no conscious sensation or awareness of the presented sensory stimulus. That is, the energy field responds and/or changes before alterations are noted in brain wave patterns, blood pressure, cardiac pulse, muscle contraction or galvanic skin response. A person's energy field seems to be affected prior to the physical body noticing or responding to any alteration resultant from internal or external stimulation.

Dr. Hunt goes further to speculate that one's energy field emanations are affected by negative stimuli, distress or "anticoherency" prior to the physical body experiencing illness or disease and prior to the psychological-self experiencing emotional dysfunction. She additionally speculates that as disease processes begin in the energy field, healing processes also have their origin in this field — a field that is generated at the atomic level and then manifests progressively in the molecular, cellular and system levels. Consequently, when there is distress, disruption or anticoherency within one's energy fields, the negative potential or influence on the physical body is avoided or eliminated if that condition is remedied within the energy field. Thus, healthy and coherent energy fields will diminish, if not preclude, unhealthy or dysfunctional physical and psychological states of being.

Although these speculations may seem extreme on a purely applied scientific basis, most of us appear to experientially understand that disruptions and distress in our energetic being, or energy fields, is very likely to precede concomitant distress or dysfunction in our physical or psychological selves. Indeed, our use of common terms such as "out-of-sync" or "off-balance" to describe how we're feeling seems to bear out this belief.

Dr. Hunt's research confirms what our personal experience has been, and provides a rational model for understanding what has been known to this point, albeit unobservable. If it is true that consciousness is mediated by, and healing begins in, the energy field, then the well-understood principles of resonant entrainment suggest that if dolphins can sense an imbalance in the human energy field, the dolphin-human interaction may well provide the opportunity for initiating an appropriate alteration in the human electromagnetic field. Thus, dolphins' ability to detect and reduce or eliminate incoherencies within our energy fields becomes a second aspect of their "healing presence."

INFORMATION

As noted earlier, water is 60 times more efficient than air to conduct sonic vibration or sound. The human body is composed of at least three-quarters fluid (i.e., blood, water, plasma, lymph and cerebrospinal fluid). Of course within the discipline of CranioSacral Therapy, cerebrospinal fluid is particularly important.

In brief, cerebrospinal fluid is a water-based, nutrient-filled liquid that is generated within the two largest ventricles (the lateral) within the brain. Each hemisphere of the brain contains one of these lateral ventricles. These fluid-filled cavities then connect with centrally located third and fourth ventricles which, in turn, connect to the spinal column. In the best of circumstances, cerebrospinal fluid circulates relatively freely around the brain, throughout these cavities, and within the dural tube of the spinal column.

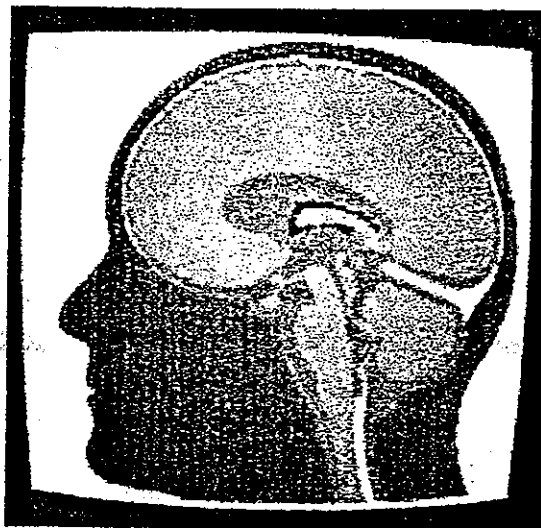
The importance of cerebrospinal fluid to healthy functioning is well known. In fact, the extraordinary importance of this medium to mental functioning is evidenced in individuals with enlarged ventricles who function intelligently with a minute fraction of the cortex of a normal brain. (Many of those with enlarged ventricles who have lost as much as 90 percent of their cortex still test above average in intelligence.) Most interestingly, the water in the body and the cerebrospinal fluid encircling the structures in the brain are wonderful conductors of a particular band of electromagnetic energy-sound. (See Illustration B.)

It is obvious that sound vibrations influence the body and the mind. It is also obvious that, along with our ears and associated neural structures, water and cerebrospinal fluid serve as transmission mediums of this sound energy throughout the body and brain. In addition to the direct effect of sound, the informational content of sound may be equal to, if not more important than, the physiological effects of the sonic vibration. This notion of informational content being embedded within an ultrasonic sound frequency can be illustrated by simple, everyday experiences.

For example, when you tune your car radio to receive your favorite station — let's say 103.7 (megahertz) — that radio signal is modulated or decoded by the receiver in your car radio. These frequencies are, of course, inaudible. They are around us constantly, yet only when the wave is modulated in a particular fashion does whatever content or information that happens to be carried on that wave at that time become available to the listener. It is this modulation that produces, or gives auditory voice to, the music or words contained on the radiowave.

Another example of information being decoded from sound frequency occurs every day in conversation. The human voice during social conversation is typically in the 400hz to 1khz range. That is, your ear receives a sonic vibratory energetic frequency of between 400hz and 1khz during conversation. However, you experience much more than just an energetic frequency. In fact, you receive the content — the words, messages, information — embedded within the sounds that are spoken. The voice frequency contains information in addition to being an experience of sonic vibratory energy.

Additionally, we can decode different waves of similar frequency, as in the case of distinguishing the sound of an A musical note played on the piano versus the same note played on the cello or a guitar. Each musical instrument has a characteristic wave shape, and thus the electromagnetic sound frequency of 440hz (musically the note A) will be decoded by us differently depending upon the musical instrument of origin. We experience the same sonic vibration frequency, but we receive different information. It is this similar ability to decode subtlety of frequency that allows us to distinguish the sound of specific animals, particular voices, or the cry of sadness from the cry of joy, even though they may be the same frequency.



Electromagnetic sound waves in the conductive medium of water in the body, and cerebrospinal fluid surrounding the brain and neural structures, may serve as carriers for further signals coded with information. In both cases (traditional ear-linked neural pathways or via water and cerebro-

spinal fluid), the informational content of the sound may be quite significant. From this discussion we now have the possibility that the sound energy of dolphins may have more to it than brute electromagnetic or ultrasonic force capable of changing physiological structure. It potentially contains information, and one possible medium of transmission of that information is through the cerebrospinal fluid.

We know that dolphins' primary mode of communication is sound, and therefore it seems quite plausible that their sonar must contain vast amounts of information integral to their communication. The exact nature of the information communicated to us is not known. The content of the communication may be intended for us to process and utilize on any number of levels — atomic, molecular, cellular, systems, nonconscious, spiritual. We do know that focused and organized energy can be profoundly powerful, i.e., light to laser, touch to CST, thought to clairvoyance. Perhaps the dolphin sound is another example of the power of organized energy. If so, information bearing bioelectromagnetic sound energy, in addition to ultrasonic sound frequencies, may be at work in the healing phenomenon experienced by so many in their encounters with dolphins. This could well be a third aspect of their "healing presence."

COMMUNITY

The patients we saw in our CST with dolphins project experienced physical and psychological gains that seemed to far exceed those reported by persons who have casual swim encounters with dolphins. Each of our patients received CranioSacral Therapy from two or three therapists simultaneously while receiving direct attention and physical contact from

the dolphins. Certainly a portion of their gains can be attributed to CST as well as to the three healing aspects of the dolphins explained previously. A fourth aspect of the therapeutic effectiveness of this program, however, transcends the individual contributions of CST and the dolphins.

The word "community" has its origin in the Greek word "commus," which means "to make common, to share or make known." This fourth aspect is related to the common unity of purpose shared by the human and dolphin therapists involved with our patients. If there was ever a "therapeutic community" at work for a single goal of patient improvement, it was during this project. The eagerness with which the dolphins participated in this program convinced us that they knew we human therapists were joining efforts for the benefit of one of our own kind. We brought physical skill, emotional care, mental focus and spiritual intent to our involvement with the patients. The dolphins seemed to have sensed what we were about and chose to join us in our efforts. In so doing they brought their own intelligence, care and skill to complement and enhance ours — and we all benefited from such a joining of talents.

All who participated in this project were affected deeply by the dolphins. Our patients improved, and the skill and sensitivity of our therapists were enhanced. Clearly, we have much to gain from continuing our exploration of interspecies healing/communication. Fortunately, the dolphins seem very willing to participate in this exploration with us.

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