

SOUND MEDICINE

By J. Elaine
Spear

Sound-based therapies are striking a healing chord with clients at progressive day spas.

Whether it's the drone of a lawnmower, the laughter of children, the roar of an engine or even the hum of Mother Earth, sound is a constant presence in our lives. Sounds are so deeply ingrained in our perception of the world that science has a term to describe our nervous system's response to

sound stimuli: psychoacoustics. A balanced blend of acoustics and psychology, or how our brain perceives sound (source: Stanford University), psychoacoustics studies are shedding new light on why soothing sound therapies are finding such a willing ear in many day spas, where stress relief could be just a perfect fifth away.



Surrounded by Stereo

The all-pervasive sounds that surround our lives emanate from vibrating objects. From cells to dolphins and stars to galaxies, the universe is literally alive with sound. The orbiting Chandra X-Ray Observatory has discovered that the Perseus Cluster, a galaxy that's 250 million light years away from Earth, has hummed a perfect B flat, 57 octaves below middle C, for the past 3 billion years. The Earth also produces its own constant, deep drone—scientists Junkee Rhie and Barbara Romanowicz from the University of California at Berkeley have recently discovered that this hum, created by the atmosphere, oceans and sea floors, originates in the North Pacific during northern winters, and the South Atlantic during southern winters. Far below the range of human hearing, the Earth's vibrational orchestra represents the release of considerable amounts of energy equivalent to an earthquake of magnitude 5.75 to 6.0 on the Richter scale!

Even microscopic cells sing a merry tune, according to Jim Gimzewski, Ph.D., a chemist at the University of California at Los Angeles, who used an atomic force microscope and com-

*“Be not afeard. The isle is full of noises,
Sounds, and sweet airs that give delight and hurt not.
Sometimes a thousand twangling instruments
Will hum about mine ears, and sometime voices
That, if I then had waked after long sleep,
Will make me sleep again”*

Caliban, *The Tempest* by William Shakespeare, Act III


puter imaging to record the sounds—a series of high-pitched clicks—emitted by yeast cells. Gimzewski calls this new area of study sonocytology. Scientists are now working on this noisy little project in hopes of one day “hearing” cancer cells and other life-threatening diseases when only a handful of the aberrant cells are present.

In terms of sound therapy, the study of vibroacoustics is taking this concept to a whole new level by using dynamic accents, strategic pitch changes and various volume levels to create vibrationally tactile sensations. Vibroacoustics can be administered in many ways, including placing tuning forks along the meridians of the body, or even playing vibroacoustic CDs through specially constructed sound chairs, treatment tables and beds. However this therapy is delivered, the benefits are well-documented: In general, vibroacoustics has been shown to lower blood pressure, pulse and respiration. On a more definitive note, the Texas Center for Music and Medicine at the University of North Texas has found that vibroacoustic frequencies as low as 60 hertz (cycles per second) facilitate measurable pain reduction.

Medical Melodies

Scientists have also found that music—defined as organized, vibrational sounds—truly is a universal language. Since cavemen first picked up a stick and a gourd and began beating away, music has been known to calm, soothe and even excite the soul. The eternal attraction to music is now being investigated by research scientists who suspect that—at least figuratively speaking—the human brain comes preloaded with “music software” in much the same way that a laptop comes preloaded with Windows.

In several studies conducted during the last five years, infants less than one year old consistently reacted favorably to consonant (pleasant) melodies, but fell into despair when dissonant (unpleasant) tones were played, or when music in soulful minor keys



Vibroacoustics, the study of the nervous system's response to sound, has been found to lower blood pressure, pulse and respiration, and reduce pain.

was played for extended periods of time. Children in every culture also incorporate music into play and communication without adult prompting, have the ability to follow rhythms and even make up tunes themselves.

In the laboratory, Doppler sonography has shown that blood flow within the brain varies according to the sounds heard. For instance, brain scans conducted in 1999 at the German University of Munster and the University of Dortmund revealed that when nonmusicians listened to music, the blood flow to the right hemisphere increased. When recordings with very strong rhythms, such as rock music, were played, the blood flow to *both* hemispheres increased, suggesting that rhythm and pitch are processed in different parts of the brain. (This is significant because the right brain is linked to emotion; the left brain is linked to cognition.)

In today's medical world, certified music therapists are using voice, instruments and participatory performance to help assuage the effects of substance abuse, chronic disabilities, psychological problems and even the difficulties of death. In the nonmedical realm of the spa, sound vibrations and music are helping the mind and body to be more present during services, intensify the effects of spa

therapies and encourage clients to slip peacefully into an alpha-theta (relaxed, meditative) state. When all these factors come into play, stress relief is sure to follow.

A client's response to sound therapy in a spa setting is partially caused by a physical phenomenon known as entrainment, which is the tendency of two oscillating objects to synchronize their strokes. Physical entrainment was discovered in 1656, after Dutch physicist Christian Huygens patented the first pendulum clock. Huygens discovered that when he placed two of these clocks side by side, the pendulums would slowly resolve into an extremely accurate, concurrent motion.

Today, researchers are finding that body rhythms can be accelerated or decelerated by music. In this respect, Johann Pachelbel's "Canon in D Major" is believed to be the perfect entrainment piece because it's played at approximately 60 beats per minute—the ideal rate for the human heart at rest. Listening to this piece has been shown to tempo-

VARIED RHYTHMS CREATED BY
HEALTHY HEARTS ARE SIMILAR TO
NOTE PATTERNS IN CLASSICAL MUSIC.



rarily slow breathing and encourage the heart to return to a state of rest, even in patients suffering from tachycardia (rapid heart beat) or atrial fibrillation (palpitations). This information is partly based on research by Ary Goldberger, M.D., of the Harvard Medical School, who theorizes that varied rhythms created by healthy hearts are similar to note patterns in classical music.

In the Old Testament, King Saul's depression was lifted by the sweet strains of a harp. In today's world, harpists are playing this soothing instrument in intensive care units to help normalize sick newborns' heart rates, reduce patients' anxiety and soothe women in labor. Abraham Kocheril, chief of cardiac

electrophysiology at the Carle Heart Center in Urbana, Illinois, has experimented with musical entrainment by having a harpist don hospital scrubs and play “Canon in D Major” in the operating room during heart surgery. In one reported incident, the heart of an elderly patient suffering from atrial fibrillation stabilized to 60 beats per minute for the duration of the surgery.



The sweet strains of a harp can reduce anxiety in medical patients and women in labor.

Creating an “Ohm” Experience

In the world of spa, singing bowls are gaining acceptance by many practitioners who emphasize the spiritual nature of health. Played by Tibetan monks since 700 A.D., the great tantric master Padmasambhava is credited for bringing the singing bowls from India to Tibet. A soft mallet (suede and rubber mallets are common) is run around the rim of the bowl to produce melodic vibrations; several can be played at once to create a veritable soundscape. In spas and wellness centers, Tibetan singing bowls are used to help relax clients and center their thoughts prior to services, during meditation, as part of energy work like Reiki, and while doing certain disciplines such as t'ai chi and yoga.

Tuning forks (Acutonics) that are reportedly tuned to the vibration of each of the seven chakras or energy channels, are also being used by



Clients at Osmosis are able to block out the outside world through the use of Metamusic sessions.

RESOURCES

Books:

Music and Sound in the Healing Arts, John Beaulieu (Station Hill Press, 1995)

This book explores the history and practice of healing sound, from ancient philosophies to practical applications including voice evaluation, tuning forks and music listening.

Musical Massage Sound Therapy—A Chronic Pain Syndrome Case Study, Dorothy Gundling, Ph.D. (Morris Publishing, 1996)

This study examines the physical and psychological effects of a sound therapy technique called “musical massage sound therapy” on 60 individuals with single and multiple long-term chronic disorders including arthritis, headaches and back pain.

Self-Healing With Sound & Music, Dr. Andrew Weil (Sounds True, 2004)

From the book: “Research has shown that when we are deprived of certain light frequencies, we can become sick. One of the most fascinating scientific facts to emerge recently is that sound behaves in a similar fashion to light. In other words, sound and light act like vitamins and minerals in our body... We need a certain balance of sound frequencies, which may vary from one individual to another, in order to maintain our bodies in a healthy state.”

Sounds of Healing, Mitchell L. Gaynor, M.D. (Broadway, 1999)

Gaynor, a New York-based hematologist/oncologist and student of Tibetan medicine, describes metal and crystal singing bowls and their uses for healing with sound, including entrainment, harmony and homeostasis.

Music:

“Golden Bowls” by Karma Moffett (www.karmamoffett.com) was recorded at the Land of the Medicine Buddha Monastery. Moffett uses Tibetan singing bowls, temple drums, bells and a traditional Tibetan trumpet fashioned from a human thigh to create a meditative experience.

“Golden Spa Tones” by Dean Evenson and Walter Makchen (www.soundstrue.com) combines the exquisite sounds of Tibetan singing bowls, bells and gongs, with flutes and ocean recordings.

“Music As Medicine” by Carlos Nakai, Native American flautist, and Nawang Khechog, former Buddhist monk, who combine their talents to produce a cross-cultural apothecary of sounds including flute, ritual chants and sounds highlighted by marimba, drums, cello and violin.

dedicated sound practitioners who approach these treatments as seriously as a skincare therapist would approach an ultrasound facial. Acutonics sessions are being used as a stand-alone, two-hour service at the El Monte Sagrado Living Spa (www.elmontesagrado.com/spa/) in Taos, New Mexico, and in conjunction with other therapies such as Reiki, prior to massage and even as a prelude to a hot stone body treatment at other wellness-oriented spas like Spa Solé (www.spasole.com) in San Francisco.

“We’ve been offering Metamusic—special blends of theta and delta frequencies to slow excess mental activity—as part of our Enzyme Bath treatment regimen for 20 years,” says Michael Stusser, founder of Osmosis (www.osmosis.com) in Sonoma, California. “After researching many of the different systems that employ sound to affect brain wave activity, we’ve found this method to be one of the simplest and most effective. When

THE JOY OF JAMMIN’

You have to admit, there’s something so evocative about drumming that it makes even the tamest people connect with their inner beasts—especially when it’s done as a group. Touted as a better way to release pent-up stress than beating pillows, primal screaming or hitting a punching bag, drum circles have been cropping up in mainstream America since the concept was first imported by African jazz musicians in the 1960s. Women are finding drumming circles empowering; for everyone, they can reduce stress and add the vital element of connection in an all-too-often disconnected world.

Unfortunately, drumming circles often have the opposite effect on listeners, making them difficult to offer in spas, wellness centers and even resort properties with too few acres of land, but it can offer a unique way to improve employee morale and wellness after the spa closes for the evening.

Did You Know ...

Legendary Grateful Dead drummer Mickey Hart made the *Guinness Book of World Records* by organizing a 3,500-person drum circle at Earthdance 2004 (www.earthdance.org). Earthdance is an international not-for-profit organization formed in 1997 by Chris Dekker.

ONE PROGRAM CAN PUT THE MIND IN A MORE RELAXED STATE, WHILE ANOTHER CAN ACTUALLY MAKE A PERSON MORE ALERT.

guests complete our profoundly relaxing enzyme bath, they're ushered into a darkened room where they lie down on a comfortable bed and are covered with blankets. We give them an eye pillow and high-fidelity stereo headsets with a volume control. For many, the experience of leaving the common mind status of alpha and beta activity and entering the more profound delta and theta states takes them over a threshold that's both surprising and welcoming. It's often described as feeling both balanced and extremely peaceful."

"We're doing rhythmic light and sound therapy (Photosonix) to bring people into a more relaxed state prior to a flotation session, or massage," says Andrea Hawkins-Leigh, owner of A New Spirit Wellness Center & Spa (www.anewspirit.com) in Denver. "It enables people to be in the moment and have far more profound results from their therapies. Our light and sound machine mirrors different electroencephalogram (EEG) patterns (alpha, theta, etc.). Through entrainment, one program can put the mind in a more relaxed state, for instance, while another can actually make a person more alert, a state that's ideal for studying or taking an important test. I've personally done rhythmic light and sound therapy for more than 15 years, and I'm convinced that it's the most profoundly balancing therapy on the planet." ●

J. Elaine Spear is *DAYSPA's* editor at large and head writer for *Writers On the Edge*, an agency specializing in custom magazines and newsletters for day spas. She's based in Santa Fe, NM, and can be contacted at fabfashion@aol.com.