

SAMONAS SOUND THERAPY

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Introduction. The Ear, a Miracle of Creation

Hearing is our most fundamental sense, providing information to the brain long before any of the other senses are matured. At 135 days of gestation, the unborn child's cochlea is fully formed and has reached its final, adult size. The first part of the cochlea to form is the part that senses high frequency sounds. This should impress upon us that hearing is somehow very fundamental to development. Protected by the body, deep in the bony part of the skull, this delicate mechanism of hearing makes a fascinating study.

Our sense of hearing has the widest dynamic range of any of our senses. We can hear from the tiniest whisper to the loudest crack of lightening. As a matter of fact, the hearing covers a range of 10 octaves. Comparing this to the sense of sight, we can only "see" over 1 octave of the visual spectrum.

Given the wide dynamic range of hearing, it is not surprising that it was designed with protective mechanisms to shut out painful or injurious sounds. After all, we can always close our eyes, we can pull back from painful touch, but we can't close our ears. Our brain learns to do this for us by a very sophisticated feedback mechanism of control. Hence we can learn to not hear certain sounds that cause pain or distress, even when the source of that pain is gone.

Hearing provides us with much information. We can detect where things are in space and we can determine the slightest change in mood from sounds in a human voice. Our hearing can detect the difference in sound recordings that sophisticated electronic equipment cannot detect. We can tell when music is recorded and we can tell when the music is live. We get much spatial information from hearing. We can tell the size of the room we are in from the nature of the sounds made in that space. We can determine direction and distance with great precision from sound.

Also associated with the hearing mechanism is our sense of balance. And since the auditory nerve is closely associated with the vagus nerve, which is involved in many motor, sensory, autonomic, parasympathetic and digestive systems, our sense of hearing can have an affect on our general sense of well being.

Having established the importance of our auditory system, we will explore how to treat problems with auditory function.

The History of Sound Therapy

Neurodevelopmentalists have known that if something were wrong with the tactility of an individual, then an appropriate and direct stimulation would normalize that sense. The same is true for vision. If an individual has a convergence problem or is not utilizing central detail vision appropriately, then direct stimulation of this system would improve function. The same is **not** true for hearing. If the individual's system has shut down to hearing certain sounds, direct stimulation of the problem frequencies will **not** necessarily result in normal function. In anticipation of sounds that are painful or distressing, the sensing mechanism of hearing has learned to block those sounds so that stimulation is not accessible to the auditory nerve and hence the brain. So, sound therapy has gone through many generations of development to access the auditory system which normalizes function.

The French ENT, Dr. Alfred Tomatis did the pioneering work in sound therapy. He developed the "Electronic Ear" that helped open up the auditory system to sounds previously blocked by a "gating" or frequency shifting technique. The work of Tomatis was truly revolutionary. His laws relating hearing and tones in the voice, and his work on the importance of the high frequency sounds on energy and well being were breakthroughs. There are still Tomatis centers throughout the world today.

The work of Patricia Joudry made high frequency sound therapy available to even more by designing cassette tapes that could be heard on a portable walkman. However, with the limits of the tape and walkman technology, the highest frequencies were often lost to provide optimal stimulation. In addition, the boosting of the higher frequencies resulted in very unnatural and irritating sounds.

Dr. Guy Berard developed a more intensive auditory stimulation: AIT and AET. This technology "blasted" the ears with problem frequencies and had very mixed results. The sounds were very unnatural.

Building on the work of these individuals, especially on Tomatis's "Electronic Ear", Ingo Steinbach developed Sonas and Samonas Sound Therapy. Given his background in music, physics, acoustics and electronics, and given the breakthroughs in technology with portable CD players and the quality of CD's compared to tape technology, Samonas Sound Therapy has been a great leap forward in effective sound therapy.

Samonas Sound Therapy

Samonas Sound Therapy was many years in development. In 1991-92, Klangstudio Lambdoma, the studio of Ingo Steinbach, developed equipment that revolutionized the quality of recording and processing music and nature sounds so that the spatial qualities were preserved up to the 20,000 Hz range. The brain can detect when music is recorded and when it is live. These special spatial qualities are very important information for developing the auditory system, training of lateralization and those global thinking skills necessary for human function. This first stage of development was the Sonas principle, which stands for the "System of Optimal Natural Structure". Recordings of music and nature sounds are available using the Sonas principle of recording.

With the development of the envelope-shape-modulator, Steinbach was able to boost the dynamic of the high frequency overtones of music and nature sounds, while maintaining the same overall energy of the signal. This was a true breakthrough in sound therapy development. His work resulted in very natural sounds with special emphasis on the high frequency sounds that are so important in sound therapy. This is the spectral activation used in the Samonas Sound Therapy. Samonas stand for "Spectrally Activated Music of Optimal Natural Structure".

Today, in our noisy environments, we are bombarded with sound at all times. In the past, high frequency sounds which gave us information from nature such as spatial information, pleasure, and well being, were all around us. The very few sounds in nature that are not threatening are in the low frequency range. Given our noisy environments and also the frequency of ear infections in young children and other developmental problems, there are many reasons we need this extra simulation of sound therapy to open our hearing to those high frequency sounds.

Sound therapy actually provides a slight massage to certain areas of the middle ear (stapedius and tympanic muscles) opening the system to sounds previously shut out or never accessed. If the sounds that are made available to the auditory system are not threatening, then stimulation of the auditory system and growth in this area and all of the related systems can be achieved. If the sounds are a source of continued irritation or if the system is over stimulated, then these very same sounds can become another source of shutting down of the auditory system. Hence, the use of sound therapy must be done with wisdom and caution, making sure that there are not adverse reactions, at least not long term adverse reactions.

In summary, we know several things. Classic music therapy has been shown to have some effect on the human function. Conventionally recorded music also has some effect on therapy; however, conventionally recorded music causes deterioration during the recording process, which causes patterning in the human brain. This results in us "knowing" that this is just a recording and not live music. The Sonas system was developed to avoid this deterioration and triggering of negative brain patterns by providing the same energy level and structure as live music. The Sonas system uses very special recording setups (including equipment developed specifically for these recording) with a team of musicians to achieve the full spectrum of information that live music contains. These recordings contain all the spatial information necessary for the development and lateral integration of the human being as well as detailed information that gives the mood and emotional content of live music. Samonas is an additional process of Sonas recording to enhance the effect of the natural sounds by using the process of spectral activation. The intensity of this spectral activation must be matched to the sensitivity of the individual. The individual very sensitive to sounds must start with the lower levels of spectral activation. The individual that is insensitive needs a higher degree of stimulation for a therapeutic effect.

Samonas and Sonas work with three different areas of knowledge: knowledge of conventional music therapy, knowledge of the difference between conventional recordings and live music and the fact that this is programmed in the human brain as well, and knowledge of the elements triggering alertness and attentiveness in the human being. Normal recordings, regardless of the technical quality, only cover one part of the total effect of the Samonas system. At best, this is done in an unsophisticated way.

Samonas Sound Therapy is a great tool for neurodevelopmentalists. We finally have a tool that allows us to stimulate the auditory system with the natural, beautiful sounds of music and nature.

Conclusions

Sonos and Samonas Sound Therapy are wonderful tools to work on a variety of developmental problems associated with the auditory system. Some of the problems that have been addressed are hearing hypersensitivity and distractibility, loss of hearing, tonal processing problems, speech and language problems, problems with lateralization and visualization, irritability, learning disabilities and psychological problems. Working with a competent therapist, this sound therapy can become a life long tool to enhance function in many areas. Great care and technical breakthroughs are used in the production of these beautiful recordings. Attention is paid to the musicians, acoustics, and of course all technical aspects of recording.

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