

User's Guide

Hemi-Sync[®] for Learning and Stress Reduction

An important element in the exploration of learning is the use of sound and music to facilitate a calm, focused learning environment and enhance sensory organization and processing. As quiet music containing Hemi-Sync sounds is played in the background at home and during therapy sessions, many children become more focused in their attention. They frequently are more open to exploring new sensory experiences and movement possibilities.

What is Hemi-Sync? How Does it Work Physically?

Hemi-Sync is a special binaural beat sound technology that helps people relax and learn more easily. In the creation of Hemi-Sync, different sound frequencies are presented to each ear through stereo headphones or over open speakers. These create a difference tone as the brain puts together the two tones it actually hears. Research with EEG monitoring has shown that the difference tone is identified by a change in the electrical pattern produced by the brain. For example, frequencies of 100 Hz and 107 Hz produce a difference tone or binaural beat frequency of 7 Hz. Monitoring of the brain's electricity (EEG) shows that the brain produces the 7 Hz pattern with equal frequency and amplitude of the waveform in both hemispheres. Because of the apparent synchronization of the two halves of the brain occurring with this type of facilitation, this procedure has been called Hemi-Sync (short for Hemispheric Synchronization). We don't know where or exactly how the synchronization occurs in the brain.

How Can Hemi-Sync Help Learning?

Hemi-Sync recordings have helped children and adults focus their attention more easily for learning. Because the sounds activate both sides of the brain, it is often easier to process information. Hemi-Sync helps reduce physical tension and promote relaxation. However, it simultaneously helps keep the mind alert. It helps calm the emotions too, and reduces the fearfulness and negativity that often interfere with learning. Hemi-Sync helps the brain organize its response to sensory information, and in many instances reduces sensory defensiveness. Some Hemi-Sync recordings are designed to help a person get to sleep and get a deeper more refreshing sleep. We know that learning is more difficult for children and adults who don't get enough sleep.

How Can Hemi-Sync Reduce Stress and Promote Relaxation?

In addition to promoting physical relaxation, Hemi-Sync signals also influence the areas deep in the center of the brain that process our emotions. They support the intention of the listener to be calmer and more focused. Stress thrives in a mental environment of unfocused attention where every random thought diverts the mind into patterns that promote fear and anxiety. Adults listening to Hemi-Sync recordings report that they are not as caught up in small repetitive thoughts and feelings and are able to see and understand "the big picture" more easily. Children and adults often become less anxious and more open to new possibilities when listening to recordings containing Hemi-Sync.

What is Metamusic®?

Metamusic is the trade name for background music that contains Hemi-Sync sounds. The Hemi-Sync signals incorporated into Metamusic recordings have been shown clinically to increase physical and mental relaxation, to improve the organization and function of the sensorimotor system, and to improve concentration and focus of attention.

Are There Different Types of Metamusic?

Three distinctive Hemi-Sync sound patterns may be blended with the music component of Metamusic. There is a relationship between the predominant frequency of the Hemi-Sync sounds and our state of awareness. Therefore, listener's report different subjective experiences when listening to recordings containing different types of Hemi-Sync.

- ***Relaxed focus*** tapes and CDs are based on Hemi-Sync sound patterns that invite the brain to produce more activity in the lower brain wave frequencies that have been associated with greater openness for learning and creativity (i.e., theta range of 4-7 Hz). Most listeners experience the unique combination of increased physical relaxation with a high level of mental alertness, and a wide or open focus of attention. The majority of Metamusic recordings contain these "relaxed focus frequencies".
- ***Concentration*** tapes and CDs incorporate higher frequency Hemi-Sync patterns in the alpha (8-12 Hz) and beta (13-26 Hz) ranges. Listeners report a high level of alertness combined with the increased narrow focus of attention used in task-oriented activities such as studying, writing reports, or repetitive activities requiring a high level of focused alertness.
- ***Sleep*** recordings create the pattern of binaural beats that gradually move the listener into the very slow delta state (1-3 Hz) associated with deep sleep.

There Are a Lot of Metamusic Recordings. Which One Should I Use?

Select the category of recording you wish to use. Do you want to support a more relaxed, creative focus or a more narrow focus of attention? Or do you want a recording that will help you fall asleep? Remember that music and sound supports your intention. The Hemi-Sync sounds that are blended into the music are the same or similar in each category of Metamusic recordings. The biggest difference is the music itself. Metamusic recordings are designed to be played in the background, so you typically don't find strong melodies and rhythms that would ask you to pay attention. Differences lie mostly in the instruments used and the general melody of each piece. Music preferences are highly individual.

If a recording is used at home or in therapy over open speakers, it is very important for everyone listening to like the recording. Hemi-Sync doesn't make the brain respond in a specific way just because of the sounds. It invites the brain to participate. If an adult or child is saying "no" inside to the sound of the music, the brain won't participate, and Hemi-Sync won't work.

If you are using a recording with another person – infant, child, or adult– observe very carefully for any cues that the tape/CD is not acceptable. Even very young or delayed children will tell you through non-verbal cues whether the music and Hemi-Sync is okay. If

you sense that it's not okay, don't use it. If at all possible, borrow a recording or listen to a music sampler recording before buying a recording/CD. If you buy one that irritates you or your child, ask to return it and exchange it for a different one.

Are There Metamusic Recordings for Children with Specific Diagnoses?

Most children respond positively to each of the three types of Metamusic recording. There are no specific tapes or CDs for a specific diagnosis such as cerebral palsy or Down syndrome. However, children who have problems with sensory overload and sensory defensiveness typically respond best to recordings in the Relaxed Focus group. Children who have attention deficit disorders generally prefer recordings in the Concentration group. However, each child is different and this generalization does not apply to all children within these groups.

Can I Use Hemi-Sync if a Child has a Hearing Impairment, or is Missing a Part of the Brain?

Many children who are deaf, have a unilateral hearing loss, or absence of a brain structure such as the corpus callosum appear to respond to Hemi-Sync. The best way to find out with a specific child is to use the sounds over a period of time and observe responses. There is a lot we don't know about how the ear and brain process Hemi-Sync sounds. The primary frequencies carrying the Hemi-Sync signal in many Metamusic recordings are low frequency sounds in the range of 60-150 Hz. Many children with severe hearing impairment have better hearing for these low frequencies.

Are There Hemi-Sync Recordings for Older Children and Adults?

Metamusic is enjoyed by both children and adults and is the most appropriate type of Hemi-Sync to use as a background recording in the learning environment. There are, however, hundreds of specialized recordings that blend Hemi-Sync sounds with a soft pink-sound background that is similar to ocean surf. Most of these include a spoken sound track to guide the listener in the intended purpose of the recording. These recordings are designed for adults. Some are appropriate for older children and adolescents. These recordings include support for deep relaxation, inner healing, improved memory and learning, enhanced immune function, pregnancy and child birth, stroke recovery, surgery and chemotherapy.

Do I need Special Equipment to Use Hemi-Sync?

Hemi-Sync sounds are created from two slightly different sound frequencies on both tracks of a stereo recording. Therefore, you must play it back on a stereo cassette or CD player. A simple stereo "boom box" will work if you are using it for only 1 or 2 people. If you are using it for yourself or an older child, you could also use a small Walkman™ unit with headphones.

The boom box can be placed in front or behind the child. It is very important that the child be "between the speakers". Do not place the speakers to the side of the listener or have them in a different room of the house. A "boom box" or cassette player with continuous auto-reverse or CD player with a repeat function are very helpful since the recording can be programmed to play continuously.

How Often Should I Play a Hemi-Sync Recording?

There are no fixed rules for the amount of time to play a recording for the child or yourself. The recordings become more effective when they are used frequently. Hemi-Sync sounds are like training wheels on a bicycle. The more you use a Hemi-Sync recording, the more your body and brain will recognize the inner feelings and changes assisted by the recording. The brain will actually learn how to reproduce these patterns by itself. Initially let the child be your guide. Some children want a recording on a lot. Others will be quite interested initially and then tune it out. Contrast is also needed for learning. So don't play a Hemi-Sync recording all day.

Choose quiet times when Hemi-Sync can support the general activity you have selected. The recordings are especially effective at mealtimes, while reading your child a story or looking at a book, while studying, or other similar times when quiet focus of attention is an advantage.

Some recordings can be played during a naptime or at night. Don't use the same recording for both sleep and non-sleeping activities.

What are Specific Examples of The Different Types of Hemi-Sync Recordings?

- ***Relaxed Focus***

Metamusic Inner Journey

Metamusic Cloudscapes

Metamusic Midsummer Night

Metamusic Portraits

Metamusic Voyage to the Other Side

Metamusic Gaia

Metamusic Masterworks

Surf

- ***Concentration***

Metamusic Remembrance

Metamusic Baroque Gardens

Metamusic Einstein's Dream

Concentration

Metamusic Indigo for Quantum Focus

Metamusic Illumination for Peak Performance

Metamusic Spring at Roberts Mountain

- ***Sleep***

Robbie the Rabbit

Joy Jumper

Sleepy Locust

Surf

Metamusic Sleeping Through the Rain

Sound Sleeper

Catnapper

Deep 10 Relaxation

Where Can I Purchase Hemi-Sync Recordings?

Hemi-Sync recordings are available in some larger or speciality bookstores. They can also be purchased from the New Visions *Mealtimes* catalog (800-606-3665 or www.new-vis.com) or from Monroe Products (800-541-2488 or www.hemi-sync.com).