

Chapter 4

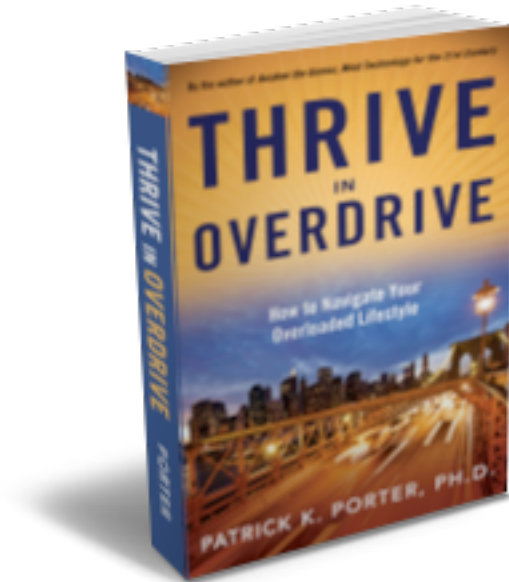
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Thrive in Overdrive

How to Navigate Your Overloaded Lifestyle

Patrick K. Porter, PhD

CHAPTER FOUR



Other Books & Tapes
By Patrick K. Porter, PhD

*Awaken the Genius—Mind
Technology for the 21st Century*

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First Edition: Jan 2009

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ISBN:
Printed in the United States of America

10 9 8 7 6 5 4 3 2

Chapter 4

High-Tech Solutions for High-Tech Stress

In the middle of a scorching summer heat wave, I attended a convention in Las Vegas, Nevada. It was only a few months after the opening of our new enterprise in Phoenix, and I really couldn't afford to be there. My curiosity got the better of me, however, when I discovered that new mind technology would be introduced at that event.

I was rushing to my next workshop when a female voice called out to me. I glanced at the woman who smiled at me as she stood in front of her booth. I waved and smiled at her. "I don't have time," I said. "I'm late for my next workshop."

Then a strange electronic device perched on the table behind her caught my eye. I touched the machine. "What's this?"

The woman stroked the device as if it were her beloved pet. "*This* is the Sensory Input Learning System. We call it SILS for short," she said. "I'm Linnea Reid." She shook my hand then signaled to a middle-aged man sitting beside the machine. "This is my partner, Larry Gillen," she added.

"Would you like to go for a ride?" Linnea asked.

One of my early loves was electronics, so I couldn't resist giving it a try. "Sure," I replied.

Linnea told me to lie back in a reclining chair. She tucked a blanket around me and handed me a set of earphones and a pair of sunglasses equipped with small LED lights. "I'll let you go about ten minutes," she said. "Just close your eyes and have a great trip."

CHAPTER FOUR

Not knowing what to expect, I settled into the chair and closed my eyes. Within moments my senses were awakened by the rhythm of flashing lights and tones. An immediate feeling of relaxation and well-being washed over me. Now this was something I could get into.

By the time the session ended, I was blown away. I had never before felt so relaxed. I didn't want to move. "Come on," Linnea said as she shook me, "the group is about to take a break. You need to get up."

"That was the most amazing ten minutes of my life," I said.

"Ten minutes? That was more like forty-five minutes. You seemed to be having such a good time, I decided to let you keep going."

"Wow! It seemed to go that fast," I said, snapping my fingers. "I've got to have one of these machines. How do I buy one?"

"Well, you're in luck, I happen to sell these things... and the show special is only ten-thousand dollars."

My heart sank. I was a new business owner. She might as well have said ten million dollars. Yet I had never let money stand in my way before. I simply had to own one of these amazing devices. The wheels in my mind began to turn.

As fate would have it, Linnea and Larry relocated to Mesa, Arizona, and opened their business, Light & Sound Research, a short distance from my clinic. I attended several of their demonstrations and we soon formed a friendship.

One night, we sat in a diner discussing all the possibilities the SILS system offered. "I've got an idea," I said, "what if I sponsor your demonstrations at my clinic and, between events, you can leave the machine with me so I can research the benefits with my clients?"

“I have to admit, I’m pretty tired of hustling around to different locations,” Larry said to Linnea. “Sounds like a great idea to me.”

“I agree,” she said. “Getting some feedback from real clients would be invaluable.”

In that instant I once again had accomplished a goal without it costing me a dime. By setting no limitations on how I would possess the machine, I had visualized and realized my goal.

That was 1987. Since then almost every one of my clients, along with the clients who attended programs in my franchise system, experienced this life changing technology. To say the results were astounding would be an understatement.

How is technology changing the way we use our brain?

Light and sound technology, also known as *visual/auditory entrainment*, is introduced to the brain through the ears and optic nerve using computerized technology emitted through headphones and specially designed glasses equipped with light-emitting diodes (LEDs). The lights flash at predetermined frequencies and are coupled with *binaural beats*, which are heard at a low level through the headphones. The visual/auditory entrainment is typically synchronized, but can be varied depending on the desired effect.

The flickering light patterns and binaural beats reach the brain by way of the optic nerve and inner ear respectively. Within minutes the brain begins to match the frequencies of the light pulses and sound beats. The method by which this entrainment occurs is known as *frequency following response*. Unlike biofeedback, where the user attempts to consciously

change brainwave activity, light and sound induced entrainment influences the brain without any conscious effort.

The frequency following response simulates the relaxed brainwave frequencies know as *alpha* and *theta*. This is the state in which the individual relaxes and the mind develops focus. Listeners experience a reduction in inner chatter and improved concentration. Because frequency following response is a learned response, the effect is cumulative. After a few weeks of regular use, users gain a sense of balance and inner calm. Most people report feeling serene, focused, and alert even when faced with high-pressure situations. Furthermore, most users report experiencing enhanced creativity and feeling more rested with less sleep.

While light and sound technology can be beneficial to most people, it is not for everyone. Persons with epilepsy, any type of seizure disorder, or any visual photosensitivity are advised against using a light and sound device. People who have a pacemaker, suffer from a heart disorder, have a history of serious head trauma, or are taking stimulants, tranquilizers, or psychotropic medications, including alcohol or drugs, should consult their physician before use. Anyone experiencing dizziness, migraine, or severe anxiety after using light and sound should discontinue using the device and consult a physician.

How do tones create relaxation?

In 1839, an associate professor at the University of Berlin, H. W. Dove, discovered what he termed binaural beats. His early research showed that putting a given frequency in one ear and a different tone in the other causes a person to hear a third tone, which is the difference in frequency of the two tones.

CHAPTER FOUR

He found that the human ability to hear binaural beats appeared to be the result of evolutionary adaptation and that our brains detect and follow binaural beats because of the structure of the brain itself.

Until a 1973 article by Gerald Oster⁸, however, binaural beats were considered no more than a scientific curiosity. Oster's paper was groundbreaking not so much in presenting new laboratory findings, but rather in bringing fresh insight to the topic by identifying and connecting a variety of relevant research performed after Dove's discovery. Oster is credited with uncovering just what effect binaural beats could have on the mind and body. He viewed binaural beats as a tool for cognitive and neurological research. Moreover, he identified the auditory system's propensity for selective attention (sometimes referred to as the cocktail party effect), which is our ability to tune out distractions and focus on a single activity. Oster also found that Parkinson's sufferers and those with auditory impairments generally could not hear binaural beats. Thus, he concluded that binaural beats could be used for diagnosing certain disorders. He also discovered gender differences in the perception of beats and felt that how a woman perceived the tones could be used to gauge fluctuations of estrogen (the latter assertion rising from a study he replicated that corroborated findings of gender differences in the perception of beats).⁹

Oster's publication of "Auditory Beats in the Brain," along with his assertion that binaural beats could be created even when one of the frequencies is below the human volume threshold (which supported his hypothesis that binaural beats involved different neural pathways from those involved in our direct conscious perception), launched a wave of new research into frequency following response.

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How Binaural Beats Work

1. The binaural beat is generated from two separate tones of a slightly different pitch
2. One tone is presented to the left ear and the other to the right ear
3. Your brain combines the two tones to make a single new tone
4. The single tone pulses to match relaxed brainwave frequencies
5. Your brain follows the pattern and creates the relaxed state

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How does light create relaxation?

Almost since the time humans discovered fire, it's been observed that flickering light can cause alterations in consciousness and even inexplicable visual hallucinations. Throughout history, stories abound of tribal elders, healers, and shamans using this knowledge to enhance their practices.

Early scientists, also captivated by this phenomenon, explored its practical applications. Around 200 AD, Ptolemy experimented with a spinning spoked wheel placed between an observer and the sun. The flickering of the sunlight through the spokes of the spinning wheel caused patterns and colors to appear before the eyes of the observer. Many of these observers described a feeling of euphoria after exposure to the light patterns.

Joseph Plateau, a Belgian scientist, used the flickering of light through a strobe wheel to study the diagnostic significance of the *flicker fusion phenomenon*. As he caused the light flickers to come faster and faster, he found that at a certain point the flickers seemed to "fuse" into a steady, unflickering light pattern. In 1829, Plateau dubbed this phenomenon *persistence*

of vision. He noted that healthy people were able to see separate flashes of light at much higher flicker speeds than were sick people. Today Plateau is recognized as the first animator. Modern filmmakers still rely on persistence of vision to trick our brains into believing that what we are viewing is actually moving and not just a series of still images.

At the turn of the century, French physician Pierre Janet noticed that when patients at the Salpetriere Hospital in Paris were exposed to flickering lights, they experienced reductions in hysteria and increases in relaxation.

By 1990, scientists were able to measure the effect of light on serotonin and endorphin levels. In one such study, eleven patients had peridural (the outermost of the three membranes covering the brain and spinal cord) and blood analysis performed before and after participation in relaxation sessions using flash emitting goggles. An average increase of beta-endorphin levels of twenty-five percent and serotonin levels of twenty-one percent were registered. The beta-endorphin levels are comparable to those obtained by cranial electrical stimulation (CES). The researchers concluded that photic stimulation has great potential for decreasing depression-related symptoms.⁽¹⁰⁾

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Four Brainwave Frequencies

Brainwave Frequency

Name

13–40 Hz

Beta waves (Reactionary Mind)

Active thought and concentration; associated with busyness and anxious thinking

7–13 Hz

Alpha waves (Intuitive Mind)

Relaxation (while awake), daydreaming; associated with creativity

4–7 Hz **Theta waves** (Inventive Mind)

The place between asleep and awake; associated with deep meditation and sleep learning

< 4 Hz **Delta waves** (Rejuvenating Mind)

Deep dreamless sleep

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Why use light and sound together?

While research has proven that both light (flickering) and sound (binaural beats) can produce relaxed states, at Light & Sound Research we found that combining the two could move the body into a more profound level of relaxation; it is the highly kinesthetic state of tranquility that is optimum for healing and accelerated learning.

When I met Linnea and Larry, it was at the dawn of the computer revolution.

Microchip technology was in its infancy, and computer engineers were a rare commodity.

Nevertheless, Larry and Linnea found an engineer who could program a computer chip to do the work that the therapist previously had to do. With the help of thousands of documented sessions using a *mind mirror* (EEG machine), they discovered which programs worked to optimize the frequency following response and bring about optimum states of relaxation and learning. They then designed the first portable relaxation system and called it the MC².

In the next two decades, the franchise company I founded used this light and sound technology combined with CVR to help hundreds of thousands of people facilitate life changes such as losing weight, kicking a smoking habit, or conquering an alcohol or drug addiction.

Others used it to eliminate pain, have stress-free childbirth, get motivated, achieve goals, enhance sports performance, improve at sales, and other life enhancements. One gentleman found that the light/sound/CVR combination ended a five-year battle with chronic hiccups. Another young man came to me with a habitual nose click that even surgery hadn't cured. It stopped during his first session and never came back.

What is the secret to getting these kinds of results?

One of my favorite songs is *Change Your Mind* by Sister Hazel. One of the lines in the song goes, "If you want to be somebody else, if you're tired of fighting battles with yourself . . . change your mind . . ." I love this song because I believe the best way, and sometimes the only way, to make changes in your life is to first change your mind. Because images, beliefs, and values are so deeply rooted in consciousness, changes must happen at the other-than-conscious level before they can manifest in your life. In my experience, the light/sound/CVR combination is the quickest and easiest way to change your mind.

If you plant a seed, and know that you are watering and caring for it, you can pretty much sit back, relax, and let it sprout. You wouldn't keep digging up the dirt to see if the seed sprouted, would you? If you did uncover the seed to see if it is sprouting, you would probably stop its growth. I believe that this is what happens when people try to make changes at the conscious level; they set a goal, but then find themselves digging up old images, beliefs, and thought patterns, and end up stopping their growth.

When you relax with light, sound, and CVR guiding your conscious mind, you are free to liberate your other-than-conscious mind. Psychologists would say that you are bypassing the critical factor and letting the other-than-conscious mind take over. In other words, you plant the seeds of change, then sit back, relax, and let them sprout.

What are the Best Light & Sound Parameters?

A good choice for a frequency following response program that produces deep relaxation starts at a state of high cortical arousal, a beta frequency of say 15 or 16 Hz. It then ramps down by gradually changing frequency until reaching slow alpha (8 Hz). The frequency should stay there for about seven minutes of the session and then ramp up to a moderate, relaxed alpha (10 Hz). Some programs ramp down into the theta range (4 -7 Hz) in order to achieve a deep other-than-conscious experience. Light and sound combined with positive suggestion, creative visualization, deep relaxation, soothing music, nature sounds, or a combination of these, creates heightened states of awareness.

While there is a wide assortment of relaxation training systems—autogenic (self-produced) training, progressive relaxation, meditation, and biofeedback to name a few—most of these take conscious effort. With the breakthrough of light and sound technology, you don't have to “believe in” or “do” anything. Through the frequency following response, the brain “syncs” to the strobe light and binaural sounds. You are in the experience and don't have to create it.

As an example, if you and I were to go to a secluded beach on a beautiful day while the sunlight reflects off the water and the waves rhythmically pound the sand, and if, while in this environment, we discussed the life improvements you would like to make, chances are good you would enjoy the conversation and accept any advice I might offer. Because of the environment created by this seaside walk, we would be synching to an alpha state, or about ten cycles per second.

Now if we were to have this same conversation on a bustling street in downtown Manhattan with horns blowing, lights flashing, vendors yelling, and rapid footsteps all around us, we would be synching to high Beta, or about eighteen cycles per second. The results would be very different. During the city walk, you might get distracted, frustrated, or nervous. In this state, you would be much less open to a conversation about improving your life, and would probably reject any advice I may give, even if it's logical advice. Are you starting to see why brainwaves are so important to our well-being?

What is the Benefit in Achieving the Alpha and Theta States?

As you learned in Chapter 3, getting out of the fight-or-flight response and into the relaxation response is the best step you can take to overcome the brutal effects of stress. The relaxation response can't happen as long as you generate high beta brainwave activity. Your brainwave activity must dip into alpha, which I refer to as the "intuitive mind," or theta, which I call the "inventive mind."

Because theta is the threshold of sleep, it is best known for lucid dreaming. A person in this state often cannot separate thoughts about his or her awakened state from the lucid dream state. Many believe that theta is the optimum state for creativity and that it's the only place one can make a quantum leap in consciousness. Unfortunately, the theta state is difficult to maintain. When you slip into theta (4-7 Hz), which everyone does at least twice each day (right before falling asleep and just before awakening), and when there are no beta or alpha frequencies mixed with the theta, most people lose consciousness. This is where the frequency following response comes in—it keeps your brain engaged. When people use a light and sound device, they often describe feeling as if their inner experience is more real than the outer experience, which is temporarily suspended.

Researchers might say that these people have entered stage-one sleep, sometimes called the twilight state or the *hypnogogic* (from the Greek *hypnos*, meaning sleep, and *agnogous* meaning conductor) state. While this is a very healing state, and one that heightens the visualization experience, it was not often used for the purpose of teaching relaxation skills. I believe the results achieved by the thousands of clients who have used the light/sound/CVR combination in our franchise programs proves that when a person sees, hears, and experiences the life changes they desire in the alpha and theta states, those changes come to pass in the physical world more quickly and with far less effort.

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“Dale Ann’s Story”

Dale Ann Springer had shattered the bones of her lower leg in a fall. After a half dozen surgeries and a year and a half in a wheelchair, she experienced agonizing pain and could walk only a few steps at a time. The persistent burning in her hips, knees, and ankles was often so intense that it would freeze her in her steps. She struggled to get even a few hours of sleep each night, and she spent most days in a medicated fog. Dale followed my pain-free program with light and sound at home. She learned to control her pain so that now she can walk without any discomfort. Not only that, she can once again pursue her hobbies, which include gardening and golf. Her friends and family are astounded by the difference, and she now tells everyone about the miracle she experienced through the technology of light and sound and CVR. “The benefit I received from CVR is so huge, I have a hard time putting it to words. What I can tell you, though, is that every day I celebrate my pain-free life.”

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What are the Benefits of Light and Sound Technology?

Whenever people ask me why I'm so passionate about light and sound technology, I tell them one of my favorite jokes. It goes something like this: One evening a man in a tuxedo rushed up to a street musician and asked, "How do you get to Carnegie Hall?" Without skipping a beat the musician answered, "Practice, man, practice!"

CVR works because it involves mental practice or *spaced repetition*. In my opinion, there is no faster or easier method for achieving spaced repetition than through the synchronized rhythm of light and sound. The induction into higher brainwave states increases brain activity, while the induction of lower brainwave states reduces hyperactivity and feelings of anxiety. Brainwave entrainment within alpha states, for example, creates relaxation and a decreased stress response by providing a slower and more relaxed brainwave state. A faster brainwave state, produced by faster flickering of the LED lights, induces a higher brainwave state, and is theorized to enhance brain stimulation and increase cognitive abilities. In many cases, a faster brainwave state can decrease hyperactivity, similar to the paradoxical application of neurostimulant medications such as Ritalin and Dexedrine.

Research showing the efficacy of light and sound technology is not uncommon. Creative visualization and stimulation of brain wave activity are among the most studied areas of psychiatry and psychology. The following results have been demonstrated through numerous studies and in my own experience with thousands of clients:

- Increased long- and short-term memory

CHAPTER FOUR

- Increased attention span and concentration
- Reduction of anxiety and depression
- Reduction of medication intake
- Increase in right-left visual-spatial integration
- Major increase in creativity idea generation
- Easier decision making and holistic problem solving
- Decrease in migraine or headache frequency and intensity
- Reduction in PMS and menopause symptoms
- Reduction in insomnia and sleep disorders
- Improvement of motivation

All of this is in addition to the benefits of deep relaxation that I outlined in Chapter 3. For more research on the benefits of light and sound, please see the section in the back of this book entitled, “Abstracts of Relevant Clinical Studies.”

“The only way to discover the limits of the possible is to go beyond them into the impossible.”

Arthur C. Clarke