Insomnia

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According to a recent article in Clinical Psychiatry, over 70 million Americans suffer from insomnia, the inability to fall asleep and/or remain asleep for a reasonable period. There are significant consequences of insomnia, for the sufferer and for society at large. Insufficient sleep causes increased risks of fatal accidents, decreased productivity and reduced quality of life. Insomnia affects a person’s performance by reducing their concentration and has a negative effect on memory, and mood. Sleep deprivation costs society billions of dollars due to the loss of productivity and for the treatment of insomnia. Some literatures states and insomnia is often treated, as an illness of the brain.

The Ability to Sleep

Sleep is natural phenomena; to treat sleep problems we need to understand what is going on when it is interrupted. There are three processes that contribute to the regulation of sleep/wake cycles: circadian and ultradian rhythm processes and the homeostatic process. The homeostatic process builds from the time a person wakes up and dissipates as bedtime approaches. Circadian and ultradian rhythms coincide with homeostatic process by bedtime in normal patterns of sleep. In addition, there are neurotransmitters and neurohormones that play a crucial role in sleep/wake regulation.

There are a variety of factors that can affect a person’s ability to sleep, including activity levels, diet, sleep patterns and overall physical and mental health. There are numerous clinical situations that can cause sleep disorders. Mental health issues including anxiety disorders, depression, bipolar affective disorder and schizophrenia all can cause insomnia. Insomnia is a common complaint of people suffering from mental illness. Some physical ailments commonly linked to insomnia are chronic pain, fibromyalgia, hypertension, and head injuries.

Traditional Methods for Treating Insomnia

Normally when a person suffers from insomnia, the main treatment is through pharmaceuticals, ranging from sedatives, most commonly used, to antidepressants and anti-anxiety drugs. One type of sedative, benzodiazepines, target the GABA receptors which play an important role in inducing and maintaining sleep. But these drugs can have some adverse effects on memory and balance. Other sedatives include Ambien, Tamazepam, Triazolam, Sonata and Lunesta, which have range of side effects. Some doctors prescribe antidepressants such as Elavil and Trazadone, and they do have sedative effects which can help insomnia and depression. Also used are antihistamines such as diphenhydramine, whose side effects include dry mouth, constipation, and urinary retention.

Less common, but often effective, are behavioral and cognitive approaches to insomnia including sleep hygiene, relaxation exercises, meditation, stimulus control environment, daily exercises, and the elimination of caffeine, alcohol, and smoking. Despite the fact that research has shown these methodologies to be superior to pharmaceutical intervention, public awareness is limited, and there is a shortage of therapists available to do this kind of intervention.

Our Approach to Treating Insomnia

At the Advanced Neurofeedback Clinic (ANC), we approach insomnia a little bit differently. When a person chronically cannot fall asleep, they become nervous, anxious, and are often thinking and consequently worrying too much. It has been proven that, when we think about something, our brain sends messages to wake our muscles, to ready them for action. It is important to realize that, to the body, thinking is like acting and can cause muscles tighten up when we want them to relax. At the ANC, we train the mind and the body to fall asleep – naturally by enabling the homeostatic process and the circadian rhythms can be restored to normal to initiate normal sleep patterns.
As a person with insomnia becomes more desperate to fall asleep, their brain perceives this as an emergency situation and it becomes watchful and defensive, greatly reducing the body’s ability to relax. This seems to be the reason sleep disorders tend to worsen over time. Therefore we at the ANC, use innovative techniques to develop a feedback loop from the muscles to the brain so that the brain will change its defense mode, and become aware of the tight muscles and relax them. Through a unique set of exercises, we build up the feedback loop which allows the body to become less defensive and more relaxed which enables the mind and body to integrate more quickly.

In addition to conscious learning through exercise, we also provide a form of unconscious learning through neurofeedback, whereby the brain learns by association. In treating insomnia through neurofeedback we teach the brain, through operant conditioning, to produce more low alpha waves which our brain produces when we fall asleep naturally. Neurofeedback effectively teaches the brain to learn by association. Greatly simplified, the process is like training a puppy to sit. The puppy that has learned the “sit” command has no understanding or insight, but it associates command with the reward. This is called the operant conditioning and involves the electrophysiology of the brain.

When this learning process is repeated many times, then the brain is effectively trained to produce more low alpha waves on its own. In the presence of low alpha waves a person may relax without any conscious effort. Furthermore, higher alpha waves can induce hormonal changes as well, which enhance the body’s ability to restore its own normal sleep patterns. When a person’s body and mind are in a relaxed state, the natural processes of circadian and ultradian rhythms can resume, and their synchronization with the homeostatic process will enable them to fall asleep naturally and stay asleep as long the body needs.

Insomnia is a serious condition which affects more than seventy million people a year and is often thought to be an illness of the brain. In addition to looking at the traditional treatment with pharmacology, meditation and relaxation exercises we have looked at two novel approaches successfully employed by the ANC: neurofeedback and specially designed exercises to develop the feedback loop from the muscles to the brain. Radically different from the traditional methods of dealing with insomnia with medications, the ANC methodology incorporates mind-body feedback which allows the mind and body to work in sync to allow the natural patterns of sleep to resume. Normalized sleep patterns and the relaxed integration of the mind and body dramatically increase quality of life, productivity and overall health.

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