Line 49 Inc.

The Physiological Mechanism Underlying the Glo to Sleep™ Effect

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Introduction

The Glo to Sleep™ effect, raising the eyes to alter the mind state, is based on a physiological mechanism that has been understood on a subjective level for thousands of years. No studies on the "efficacy of the raised eye technique as a relaxation aid" are available yet, therefore we can only offer some general information that may provide some insight into the physiological mechanism that underlies the Glo to Sleep™ effect.

Brain Activity and the Underlying Mechanism of the Glo to Sleep™

The activity in the brain is electrical and can be detected as waves. Brain waves occur at different frequencies, the number of times a wave repeats itself within a second. The normal, awake, conscious activity of the brain is the Beta brain-wave state. If a person is lying in bed awake - thinking or worrying - the brain is generating faster Beta waves. To sleep, brain activity must be slowed to the Alpha wave state - mind and body become relaxed - the bridge between awake and asleep.

An interaction between the brain and eyes is the physiological mechanism that underlies the Glo to Sleep™ effect. The brain and eyes form a subconscious monitoring system that is working when we are awake and alert. When the eyes are raised, the brain stops receiving orienting information, and enters the Alpha brain wave state of mental relaxation. The Glo to Sleep™ provides a pattern of blue glow that serves as a reference point, keeping the users eyes focused upwards.

Raising the Eyes to Change the Mind State

The technique of raising the eyes to change the mind state was explored by Dr. Jose Silva in the 1950's. Later work by Dr. Herbert Spiegel also sought to quantify this mechanism. Dr. Silva demonstrated that

by raising the eyes 20 degrees, behind closed eyelids, with practice and training, one could slow brain activity to the Alpha wave state. His work focused on using the Alpha state to increase the minds capacity for learning. Dr. Spiegel's research demonstrated that the distance a subject can roll their eyes upward correlates with the ease with which they can be hypnotized.

By combining the physiological relationship between eye orientation and the brain wave state with the focused state of concentration of the hypnotic technique, the Glo to Sleep™ works to quickly slow the frequency of the brains electrical activity, without practice or training.

References to the "Raised Eye Technique"

Some Thoughts on Eyes - Michael Krugman

"You're probably aware that when a person faints, all his muscles go limp and his eyes roll upward, as if he were looking up. That's why we see the whites of his eyes. You may not know that the same thing happens when you relax very, very deeply. The reason has to do with the architecture of the eyeball: Its center of gravity is not the same as its axis of rotation, rendering it slightly lopsided, with the greater mass behind the axis. That means that when you're awake, you must continuously activate the eye muscles to bring the front of the eyeball down to meet the horizon so you can see what's going on around you. When you relax deeply, you cease that effort, and your eyes roll up.

Bringing your eyes down to the horizon allows you to see what's in front of you, but it's important for another reason as well. In addition to vision, your eyes also have an orienting function. In order to maintain the integrity of your experience and action, your brain needs to know the position of your body in space at all times. To this end, your eyes continuously scan your environment, sending the information they gather to the brain. The brain uses this information to create a coherent map of the body and its position in surrounding space. This map is revised on a moment-to-moment basis. That's one reason why an Olympic diver can jump off a diving board, execute a series of complex gymnastic maneuvers in midair, and still enter the water in perfect vertical alignment. That's orientation!

This orienting function of the eyes is an essential component of normal waking consciousness. But when you roll your eyes up, orienting temporarily ceases, and the brain stops receiving the visual signals that tell it where the body is in space. As a result, normal waking consciousness is interrupted and your brain

shifts into an “altered state,” which simply means that for as long as you choose, you will see, hear, think, and feel differently than usual. In the particular state evoked by rolling your eyes, my experience and observation indicate that the volume of your thoughts tends to become considerably reduced and your mind becomes very still. Or, as a chronic-pain patient reported, “When I roll my eyes like that, I can’t keep a thought in my head!”

If you are one of the millions plagued by obsessive, repetitive, self-defeating, or anxiety-producing thoughts, that ability to use eye movements to slow your thoughts can be a real godsend. It will calm your mind and give you a brief respite from the stress of life. For those few moments, whatever you’re holding on to, you can just let it go. As a result, you may find yourself breathing a deeply pleasurable sigh of relief as your fear, your anxiety, and all your unrealistic expectations start to lose their grip on you. And can achieve all that without potions or pills!”(1)

The Eye Roll Test - Dr. Herbert Spiegel

“We are also learning that both biological and environmental factors predict how deeply a person goes into a trance. Identical twins reared apart often have strikingly similar responses to hypnosis. Furthermore, an "eye roll" test (2) developed by Herbert Spiegel, M.D., measures how far a person can roll his eyes up beneath slowly lowering lids and is correlated with hypnotizability, implying that hypnosis has neurological underpinnings. New studies by David Spiegel, M.D. (son of Herbert Spiegel) at Stanford, Helen Crawford, Ph.D., at Virginia Tech and Robert Kunsendorf, Ph.D., at the University of Massachusetts support that idea, indicating that some hypnotic suggestions influence areas in the brain involved in those perceptions. For example, suggesting anesthesia could blunt cortical activity in areas of the brain associated with pain, while asking hypnotized people to hallucinate an image could produce activity in the visual cortex.”(2)

Radio Interview with Dr. Herbert Spiegel

“No one knows why there is a correlation between eye flexibility and hypnotic capacity. But Spiegel says roughly 15 to 20 percent of the population is on the low end of the scale, 50 percent are midrange, 25 percent are highly hypnotizable . . . and about 5 percent of the population is not hypnotizable at all.” (3)

Dr. Silva Method

“When the body is relaxed, close your eyes. Look upwards behind your eyelids at a 20° angle. Now mentally count from 100 to 1. Concentrate on counting and nothing else. You will gradually reach a wonderful state of mind. You may feel that this is nothing new, you have experienced this earlier - just before falling asleep, or when lost in a childhood memory, or while daydreaming. You have unknowingly passed through this level of your mind many times, hence this feeling now seems just as familiar to you.” (4)

The Eyes Have It – Time Magazine

“To Spiegel, 63, a clinical professor at Columbia University's College of Physicians and Surgeons, measuring the eye roll is no mere cocktail-party game but "a pivotal clinical sign" of how susceptible a person is to being hypnotized. Even more surprising, he says it is also a rough index of some basic personality traits, including suggestibility and gullibility.

Spiegel's test: hold the head level and roll the eyes upward as far as possible. Then, as the eyelids are lowered slowly, have someone check the amount of white space that shows under the corneas. The greater the white space, the greater the capacity to be hypnotized.

Spiegel developed his curious theory in the early '60s, after noting that a woman filmed during a trancelike seizure showed an unusual ability to roll her eyes up and down, while an unhypnotizable male patient showed no eye roll at all. Since then, in his clinical work, he has tested the theory on some 5,000 adults. His finding: the eye-roll scale accurately predicts hypnotizability 75% of the time.” (5)

1. Michael Krugman, MA, GCFP (2005) *The Insomnia Solution: The Natural, Drug-Free Way to a Good Night's Sleep.* Time Warner Book Group. pp. 184-186

2. Deirdrie Barrett (2001) The Power of Hypnosis. Psychology Today. http://www.psychologytoday.com/articles/index.php?term=20010101-000034&page=2

3. Benjamin Shaw (2004) *Medical Hypnosis: A Radio Master's Project in Three Part*. Columbia Radio News. http://web.jrn.columbia.edu/studentwork/radio/masters/2004/Hypnosis_Transcript.asp

4. Bimol Rakshit (1996) *Alpha and Ecstasy.* Life Positive. http://www.lifepositive.com/mind/personal-growth/silva-method/alpha.asp

5. (1997) *The Eyes Have It.* Time Magazine http://www.time.com/time/magazine/article/0,9171,945855,00.html