



## **Wake Forest Baptist Conducts Clinical Study for Insomnia Using New Technology**

**WINSTON-SALEM, N.C. – June 30, 2011** – Insomnia is the most prevalent sleep disorder, affecting up to 50 percent of the adult population in the United States on a weekly basis.

[Wake Forest Baptist Medical Center](#) is conducting the first ever, randomized, controlled clinical research study in the country using Brainwave Optimization™ to treat people with insomnia. Brainwave Optimization™ is a non-invasive technology that helps the brain balance itself for optimal performance.

The study is made possible by a research grant from [Brain State Technologies®](#), a company based in Scottsdale, Ariz., whose founder developed Brainwave Optimization™ or what is technically known as High-resolution, Relational, Resonance-based, Electroencephalic Mirroring™ (HIRREM™).

“Energetic imbalance of the brain, with dominance of the right or left hemispheres, can be seen in conditions such as trauma or stress, for which insomnia is often an accompanying symptom,” said [Charles Tegeler IV, M.D.](#), professor of neurology and the primary investigator for the study. “This new technology is intended to facilitate greater balance and harmony in brain functioning, which may result in improved symptoms.”

The human brain is made up of the left and right hemispheres that work together as parallel processors with balanced progression from front to back as well. When a person undergoes trauma or a major stressor, their autonomic response for survival kicks in, and the brain can become unbalanced as a result. That occurs naturally. However, sometimes the brain doesn't balance itself back, Tegeler explains, and that can lead to adverse effects, such as trouble sleeping or anxiety.

"In effect, we are allowing the brain to look at itself in the mirror and see itself in an optimized, energetic state," Tegeler said. "Those areas that are out of balance then begin to work toward a more functional state."

Tegeler said the study is focusing only on insomniacs because it is such a common condition in the general population and because it is a condition for which improvement can be easily measured. Twenty people who tested for moderate to severe insomnia were enrolled and underwent baseline testing. The study participants were randomly placed into two separate groups. The first group underwent eight to 12 Brainwave Optimization™ sessions each while the second group continues as is, acting as the control group. Once the data has been collected, the second group will also undergo the sessions.

The Brainwave Optimization™ process begins with specifically placed electrodes affixed to the scalp and connected to a computer to detect the brainwaves of various brain lobes. A brainwave is electromagnetic energy that can be broken down into frequencies. Higher frequencies have more cycles per second and, relative to sound, would be a higher pitch on a musical scale. To reflect the brain's own optimal wave patterns back to it non-invasively, the frequencies are assigned a musical tone, and played back to the subject via stereo ear buds placed in the ears – this is done in almost real time. As the brain resonates with the transmitted sounds, changes occur in the neural network.

One study participant described his experience as having "a big reset button that's been hit."

While Brainwave Optimization™ has already been used by more than 32,000 people around the world, this clinical study at Wake Forest Baptist is the first attempt to look at a specific health problem – insomnia – in a controlled setting in order to be able to measure outcomes and results.

“Sleep problems and sleep deprivation can have far reaching implications on people’s health and well being,” Tegeler said. “Lack of sleep can affect people’s lives with detrimental effects from irritability to sickness to weight gain and more.”

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**Wake Forest Baptist Medical Center** ([www.wakehealth.edu](http://www.wakehealth.edu)) is a fully integrated academic medical center located in Winston-Salem, N.C. Wake Forest School of Medicine directs the education and research components, with the medical school ranked among the nation’s best and recognized as a leading research center in regenerative medicine, cancer, the neurosciences, aging, addiction and public health sciences. Piedmont Triad Research Park, a division of Wake Forest Baptist, fosters biotechnology innovation in an urban park community. Wake Forest Baptist Health, the clinical enterprise, includes a flagship tertiary care hospital for adults, Brenner Children’s Hospital, a network of affiliated community-based hospitals, physician practices and outpatient services. The institution’s clinical programs and the medical school are consistently recognized as among the best in the country by *U.S.News & World Report*.

**About Brain State Technologies:** Brain State Technologies® is the world’s largest provider of brainwave balancing services. Started in 2001 and invented by Lee Gerdes, the modality combines the latest advances in neuroscience, neuroplasticity, computer technology, mathematics and physics. Brainwave Optimization™ offers an effective way for people of all ages and conditions to overcome cognitive, emotional and physical challenges and enhance overall performance and well-being. With nearly 32,000 clients and 150 affiliated centers in 16 countries, people who are challenged by anxiety, sleeplessness, learning challenges, fuzzy thinking, addictions, post-traumatic stress disorder or a sense of hopelessness and confusion, find that Brainwave Optimization™ improves brain balance and harmony.