

NuCalm for Veterans

Lower stress = lower anxiety, better emotional stability, and improved sleep quality

The physiology of stress and anxiety

Anxiety is caused by a biological response to the stimulus of a threat, real or perceived. When a person is faced with a threat, the amygdala prepares the body by contacting an array of brain regions to activate the fight-or-flight system. The fight-or-flight response uses the sympathetic nervous system and the adrenal-cortical system to alert the body to speed up, tense up, become hypervigilant, and take action. The sympathetic nervous system triggers the release of epinephrine (adrenaline) and norepinephrine (noradrenaline) from the adrenal medulla into the bloodstream. These hormones increase heart rate and blood pressure. In parallel, the hypothalamus releases corticotropin-releasing factor (CRF) into the pituitary gland, which triggers the release of the adrenocorticotropic hormone (ACTH). ACTH travels through the blood stream to the adrenal cortex where it initiates the release of numerous hormones that prepare the body to respond to a threat. Once the fight-or-flight adrenaline response is activated, the mind cannot rationalize itself or self-regulate until the threat is removed and time passes.

The physiology of anxiety is characterized by cognitive, somatic, emotional, and behavioral components. These components combine to create feelings of **fear, apprehension, and/or worry**. Anxiety is often accompanied by physical sensations such as heart palpitations, nausea, chest pain, shortness of breath, stomach ache, cold and clammy feeling extremities, irritability, muscle tension, or headache. This is the permanent state of a person suffering from

acute PTSD.

NuCalm® was developed to resolve stress at the midbrain (the source of stress) for subjects suffering from acute PTSD.

NuCalm is clinically proven to naturally relax the brain and body within minutes without drugs. This patented technology addresses the midbrain activities responsible for producing stress and anxiety by naturally mimicking the communication pathways used to prepare the body for sleep. NuCalm works on the GABAergic system to create a biomimetic negative feedback loop that reduces the action of the HPA axis (Hypothalamus – Anterior Pituitary Gland – Adrenal Gland). NuCalm is comprised of 4 discreet steps that work in concert to entrain the brain wave function to the first stages of sleep and create parasympathetic nervous system dominance. Subjects in the first stages of sleep are physically unable to have an anxious response. Within moments of application, subjects will stop producing cortisol and the ‘fight or flight’ response will be disabled.

The neurophysiologic manifestations of NuCalm include the following:

- Rapid induction of a parasympathetic hypnogogic dissociative state
- Sustained, steady parasympathetic dominance throughout the NuCalm session
- Rapid return to a functional state (motor skills, attention, and full cognition) with no lingering negative post-sedative effects



Recovery through NuCalm

NuCalm is scientifically sequenced to create and sustain parasympathetic nervous system dominance as indicated by the hypnogogic state caused by Alpha/Theta brain wave dominance. The research indicates the subject's physiology on NuCalm is consistent with a 'relaxation response'. The muscles

relax as oxygenated red blood cells are pumped throughout the body including the frontal cortex. The physical manifestations of the 'relaxation response' include deep, measured breathing, neuromuscular release throughout the body, cellular restoration, accelerated recovery.

“Developing a beneficial meditation practice can take countless hours over a period of years. By using NuCalm I can effectively and quickly access a state of mind where I have the ability to respond instead of react. I use NuCalm because I have post traumatic stress. With as little as 20 mins a day I get to respond to my feelings and thoughts instead of react to them. When I have the ability to respond I can be humble, thoughtful, patient and kind. When I react instead of respond I can be aggressive, irritable and fearful. NuCalm aids me into being the version of myself that is genuine and real. It is who I am without PTS.”

– Magnus Johnson, President of Mission 22, Former Green Beret Combat Veteran



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