

NEUROWRAP – BRAIN PBM - EPILEPSY

Epilepsy is a very common condition that affects the brain and is the cause of recurring seizure. Seizures are a wide range of bursts of electrical activity in the brain that affects momentarily its functions. A variety of symptoms can come along the seizures.

Brain Photobiomodulation has been shown as being an effective treatment that could overcome the shortcomings linked to anticonvulsants. Different studies have explored the effect of PBM and have come up with the following discoveries:

-**PBM** can modulate the imbalance between neurotransmitters by regulating glutamate and GABA release in the cortex and hippocampus, which is responsible for the control of many processes, counting the brain's general level of excitation.

-**PBM** increased cell viability (number of living cells) in neurons and improved mitochondrial dysfunction, which increases the production of adenosine triphosphate (ATP), responsible for the source of energy for use and storage at the cellular level, in a status epilepticus induced drug.

Despite the fact that there is insufficient evidence regarding the different models of epilepsy to confirm the efficacy of PBM, the present findings suggest that PBM may be an innovative treatment for epilepsy in the future. Finally, photobiomodulation studies relevant to neuroprotection in epilepsy suggest that LED 810 nm, 25 mW/cm² increased cell survival, ATP production and MMP decreased Ca² release, ROS and NO production.

Bright light therapy has shown to decrease the body's production of melatonin, the hormone responsible for sleep and wake cycles. Moreover, detailed studies have also shown the significant decrease of levels of depression and anxiety in patients with epilepsy (especially focal epilepsy).

To conclude, numerous studies have discovered that bright light therapy can indeed help some patients.

CONTRAINDICATION

-Photosensitive patients