

Feeling stressed, overwhelmed, and under pressure is a common experience for us all. The challenges and demands of modern day-to-day life can impact our physical and mental health, particularly if you also have epilepsy. So what can we do about it?

There has been a lot of contentious discussion about the benefits and limitations of various relaxation techniques for people with epilepsy. Do they work? What are the risks? This article will briefly review important points you need to know before you buy that yoga mat.

Relaxation techniques for people with epilepsy: some benefits and cautions



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Stress & Seizures

It is widely accepted that stress can trigger seizures for many people with epilepsy. In one survey of 177 patients, 58 per cent identified that seizures occurred more frequently when they were stressed, with seizures occurring sometimes days or weeks later (Mattson, 1991). Similar studies also indicate that stress is the most frequent trigger of seizures, and is linked with sleep deprivation and fatigue (Frucht, Quigg, Schwaner & Fountain, 2000).

In a more recent survey of 89 patients, 64 per cent of people with epilepsy reported that they believed stress increased the frequency of their seizures (Haut, Vouyiouklis & Shinnar, 2003). 32 per cent had tried stress reduction techniques, and of those who hadn't, 53 per cent were willing to try. However, it is not just stress, but also life events that are reported to influence seizure frequency. Major life events identified by people interviewed in the study include death, abuse, financial crisis, divorce, job loss, marriage and pregnancy/birth. Minor life events which increased seizures included family tension, arguments, time pressure, debt and traffic/car related events.

It would seem to make sense that when managing an important issue like stress, using relaxation techniques which

are accessible, affordable, and easy to do appear a logical self-management approach. So, why the discussion?

Take a Deep Breath...

A variety of relaxation techniques exist which aim to relieve stress and tension, reduce blood pressure, and improve feelings of control over our lives. Workshops and classes in progressive muscular relaxation, meditation, yoga, tai chi, massage, and acupuncture can be found in increasing numbers. Many of these techniques have reported improved sleep, decreased aggravation and tension during the day, increased overall health, and reduced fear of seizures, indicating a greater sense of well being (Rosseau, Hermann & Whitmann, 1985). In addition, the general observation that techniques like meditation are side effect-free (in contrast to drugs) is of great appeal*. Table 1 provides an overview of studies which examine relaxation in epilepsy management.

* Important note: relaxation techniques are recommended as a complementary approach, and not a replacement to medication.

Table 1. Studies featuring relaxation in epilepsy management

Reference	Study
Dodrill, Batzel, Queissen & Temkin (1980)	No significant results of relaxation were reported on the Washington Psychosocial Seizure Inventory, yet participants reported progressive relaxation had improved their lives (e.g., by facilitating openness with parents which may have reflected the nonspecific effects of social support in relaxation therapy).
Snyder (1983)	Three out of four adults trained in relaxation and who practiced for at least 15 days per month experienced an average reduction in seizure frequency.
Dahl, Melin & Lund (1987)	Contingent relaxation involves learning to apply progressive muscular relaxation (which people learn to associate with bodily sensations and environmental situations that are incompatible with seizure occurrence) to situations and feelings associated with a high risk of seizure activity. Results report a 66 per cent decrease in seizure frequency. This study also found that where pre-seizure signals are associated with fear or stress, relaxation reduced negative emotional reactions and helped people to cope. Reports included gaining greater control over seizures and reducing their danger, while improving confidence and enabling greater independence.
Whitman, Dell, Legion, Eibhlyn & Statsinger (1990)	12 people trained with progressive muscular relaxation were followed up at 8, 16 and 24 weeks post-treatment. Although a decrease in seizure frequency from baseline to first follow-up was only marginally significant, the reduction in frequency continued, with a significant 54 per cent reduction in median seizure frequency after 6 months. No control group was included.
Fried (1993)	Diaphragmatic breathing was used to counteract hyperventilation, which may itself lower seizure thresh-holds and contribute to the occurrence of seizures. Carbon dioxide loss demonstrated to have an almost linear relationship to decreases in EEG frequency and seizure onset.
Miller (1994)	People who practice relaxation regularly were reported to be more likely to take their medication conscientiously.
Deepak, Manchanda & Maheshwari (1994)	Meditation for 20 minutes daily resulted in significant seizure reduction as opposed to the control group. Relaxation training was reported to significantly reduce seizure frequency.
Panjwani et al (1996)	Randomised control trial of 32 people with uncontrolled epilepsy, medication continued. 10 people were treated with sahaja yoga, 10 people were treated with exercises mimicking sahaja yoga (sham treatment), and 12 people were controls without any treatment. Yoga was practiced twice daily for 20-30mins over 6-month period. 9 of 10 people in the yoga group had 50% reduction in seizure frequency, compared to 1 in the sham treatment group, and none in the control group.
Arias, Steinberg, Banga & Trestman (2006)	Systematic review of the efficacy of meditation techniques for treating serious medical illness. 82 studies were reviewed with a total of 958 subjects. No serious adverse events of meditation were reported in any of the included or excluded clinical trials. The strongest evidence for efficacy was found for epilepsy, premenstrual syndrome and menopausal symptoms.

Apart from epilepsy management, relaxation training has also been demonstrated as effective when held at the beginning of training sessions. Deep breathing exercises have been shown to reduce anxiety and inhibit the stress response, allowing the person with epilepsy to be more open to learning as well as assisting with indirect difficulties of depression and social isolation (Gupta & Naorem, 2003). Such benefits seem to provide strong support for the inclusion of relaxation programs in management interventions.

Still Looking for Evidence...

There is a large pool of anecdotal evidence which indicates the effectiveness of different relaxation approaches. However, robust scientific research is lacking to support the efficacy and safety of many relaxation interventions in epilepsy.

A Cochrane Review on the efficacy of yoga as a treatment for epilepsy found only one quasi-randomized, unblinded, controlled trial, and could report no reliable conclusions (Ramaratnam & Sridharan, 2002). A second Cochrane Review on relaxation therapy and seizure control indicates only possible beneficial effects on seizure frequency (Ramaratnam, Baker & Goldstein, 2005).

Acupuncture in epilepsy has similarly been reviewed (Cheuk & Wong, 2006). Three studies meeting selection criteria explored the effects of acupuncture (Kloster, 1999; Ma 2001; Xiong, 2003), with no evidence to support it as an effective treatment for epilepsy. It is important to note that despite some positive reports in individual studies, no reliable evidence is provided and definite conclusions cannot be made. Further research containing rigorous study designs are needed.

Risks for Epilepsy

Certain relaxation techniques (namely meditation) have been reported to be potentially dangerous for people with epilepsy. Lowered blood pressure and brain electrophysiological arousal can be triggered which are associated with triggering seizures in some people (Miller, 1994). Let's review the evidence.

Effects of Meditation on the Brain

Neuroimaging advances in EEG, fMRI, PET and SPECT techniques have brought with them new insight to our understanding of how various relaxation techniques alter our brain function. Studies have revealed that individual techniques such as meditation have complex influences on the brain, which change mental, neuron-hormonal and autonomic functions (Jaseja, 2005; Lansky & St Louis, 2006). Jaseja's review identified the following neuro-effects of meditation:

- EEG changes in alpha and theta frequencies
- increase in synchrony of EEG activity (hypersynchrony)
- increase in inter-hemispheric coherence of EEG activity
- increase in brain Serotonin (implicated in epileptogenesis)
- increased production of brain Glutamate (an excitatory neurotransmitter)

Jaseja cautions that each of these effects which occur during meditation can increase a person's risk for epileptogenesis and/or trigger a seizure in a person with epilepsy. It is important to be aware that meditating when you have epilepsy can be a potentially hazardous practice (Jaseja, 2005).

Lansky & St Louis (2006) provide an in depth review of the effects of Transcendental Meditation (TM) on people with epilepsy. Simply described, TM involves the repetition of a

mantra during multiple sessions over the day, and can also include yogic postures (asanas), alternate nostril breathing exercises (pranayama) and advanced techniques including Flying (Sidhis) "in which 'involuntary muscle contractions' are induced to allow the flyer a paroxysmal movement into the air from a sitting position" (p395). Their findings indicate that this form of meditation, like others which produce powerful physiological effects, should be treated with respect and caution by people with epilepsy. It was hypothesized that theoretically, repetitive TM could trigger seizures in susceptible people while in the meditative state, or meditation could lead to kindling which could lead to the development of epilepsy, and seizures between meditation sessions. Alternatively, other studies suggest TM may also be a potential antiepileptic therapy (Kumar & Kurup, 2003). There is no persuasive scientific evidence to indicate that TM is either therapeutic, or possesses epileptogenic effects. The authors highlight the need for well-designed and unbiased research on the topic.

Final Comments

It is important to be aware of the potential risks, as well as the benefits of various relaxation approaches for people with epilepsy. There are many ways relaxation can be helpful in managing stress and improving quality of life, and these should not be overlooked. However, there is a lack of research evidence to support the efficacy and safety of certain relaxation approaches (namely meditation) in epilepsy. The suggestion that these interventions be treated with respect and caution should be heeded until further research is done.

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