


THE EFFECTS OF PHYSICAL EXERCISE ON EPILEPSY

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Epilepsy is a chronic neurological disease which affects approximately 50 million people worldwide. It is usually accompanied by cognitive and psychiatric disorders such as anxiety or depression which impair quality of life. Although epilepsy can be easily treated with numerous medications, patients face the fear that seizures may disrupt their daily routine, as well as cognitive deficits creating problems while performing everyday tasks. One example of the limitations patients often struggle with are difficulties in performing physical activities (PA), mostly because of the risks and ignorance of the positive effects associated with exercising.

Previous data on physical activity in people with epilepsy (PWE) indicate lower participation in sports compared with the general population. Recent studies showed that PWE are more likely to be sedentary, often because of anxiety, recommendations or experiences of having a seizure during exercise. However, the

control group is less inactive and more engaged in regular PA.

Moderate exercise and sport participation can have a positive effect on physical and mental health in people with chronic diseases such as diabetes, asthma, hypertension and depression. A study conducted on animal models by Carrizosa-Moog et al. found a positive impact of PA on mood and seizure control. Moreover, in murines with depression, regular PA increased the mood and slowed epilepsy development, which was associated with the production of galanin, a neurotransmitter with antidepressant and anticonvulsive effects. Findings from animal models indicate benefits of exercise on patients with epilepsy. The neuroprotective effect of PA is attributed to various biochemical mechanisms such as the release of endorphins or increase of melatonin and parvo albumin concentrations in affected cells. Capovilla et al. reported that exercise can reduce epileptiform discharges on electroenceph-

alography (EEG) and patients are unlikely to have seizures during progressive PA. Regular exercise can improve quality of life and positively affect personal development and mental health. According to the clinical studies, patients who are physically active tend to be more satisfied and have a lower possibility for depression development. Furthermore, concentration and memory issues were fewer in the active group than in the inactive one.

PA is associated with good outcomes on health and wellbeing in patients suffering from epilepsy. According to data, PA has numerous beneficial effects on the psychosocial and emotional state, reducing anxiety and depression levels. Some authors even suggest PA as a nonpharmacological treatment for epilepsy as it is documented that exercise reduces seizure occurrence. However, more studies should be conducted regarding the type of exercise, its intensity and impact on the frequency of seizures.

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