In the last 15 years studies have shown that exercise can, in many cases, help with seizure control and increase your sense of well being. Nicola Swanborough looks at the evidence

How exercise can help with seizures

Trudy Kerr took up running to try to regain some control in her life. She had been diagnosed with epilepsy in 2010 following a horse riding accident which resulted in two brain haemorrhages and a ruptured spleen. She was experiencing clusters of 25-60 simple partial seizures on a regular basis which she found challenging.

'I never knew when the seizures would happen, how severe they would be and how long they would last,' says Trudy who is a TV and radio presenter in Malta and also owns her own design agency and TV production company.

'It was scary and inconvenient but at the same time I didn't want to take medication – this was a decision I discussed with my neurologist. Instead I decided to start running to try to regain control of one part of my life. I could not have predicted the difference exercise would make.

'By taking time out for myself and really making physical exercise a part of my routine I felt an increased sense of well being and personal achievement. What is more, my seizures stopped. I had my last seizure as I crossed the starting line in my first half-marathon and I haven't had another one since.

'I cannot say whether this is because of the running but I do feel that by increasing my oxygen uptake I have somehow helped restore my brain to its normal state. All the time that I had seizures, I never dreamt. Now my dreams have returned and it's wonderful.'

Trudy's experience is rare but there is growing evidence about the positive effects of exercise for both increased seizure control and quality of life. And there is a groundswell of support for the integration of exercise as a complementary non-pharmacological treatment of epilepsy alongisde anti-epileptic medication. (*You should never stop taking medication without consulting your epilepsy specialist*.)

Trudy Kerr is running in the Virgin Money London Marathon 2015 for Epilepsy Society

In Norway, a study involving women with uncontrolled epilepsy showed that regular sessions of aerobic exercise for 60 minutes, twice a week for 15 weeks, resulted in a significant drop in the number of seizures.

Participants also reported a reduction in muscle pains, sleep problems and fatigue with reduced levels of cholesterol and improved utilisation of oxygen by the body.

Dr Eleanor Tillett is honorary consultant in sports and exercise medicine at The Institute for Sport, Exercise and Health , University College Hospital, London. 'There is evidence to suggest that people with epilepsy who take exercise regularly may have less frequent seizures than those who are less active,' she says.

> 'Exercise can help with anxiety, depression, obesity and osteoporosis'

'Scientists still cannot fully explain the numerous health benefits of exercise to the brain. However, the most common explanation is that exercise increases our metabolism and flow of blood to the brain which increases growth factors and reduces loss of cells.

'For people with epilepsy, it would seem that exercise increases the level of neurotransmitters in the brain, so helping to increase seizure threshold. There is also some evidence to suggest that exercise in early and mid life may help to protect against the risk of brain disorders later in life.'

Dr Tillett points out that with epilepsy, one size rarely fits all and that a minority of people with the condition may find that exercise triggers a seizure. 'In addition, there can be a concern that if seizures are triggered by fatigue and stress, exercise may make things worse. However research shows that the fatigue and physical stress of moderate exercise does not usually trigger a seizure, even for those who would find these factors a problem in other environments.'

The International League against Epilepsy (ILAE) recognises the potential of exercise in the self-management of epilepsy. In its report *About epilepsy and sports*, ILAE stresses: 'For people who have infrequent seizures – or have not had a seizure for a long time – it is rare to have a seizure during exercise. If seizures are frequent, the probability of a seizure occurring during sports activities is higher simply due to chance.'

While some people express concerns about exercising if they have epilepsy, Dr Tillett says that for the majority of people, exercise can be done safely with a few simple precautions. However, if you have a chronic medical condition, it as always sensible to consult your doctor before starting a new exercise regime. The potential benefits though are clear.

'Epilepsy is often accompanied by anxiety and depression, osteoporosis and obesity. Exercise can help with all of these,' says Dr Tillett. 'As with the general population – it can also help to reduce the risk of other potentially fatal conditions.

'Exercise helps to reduce the risk of ischaemic heart disease by 40 per cent, stroke by 27 per cent, colon cancer by 25 per cent, breast cancer by 24 per cent, type 2 diabetes by 30 per cent and high blood pressure by 50 per cent.'

Ricardo Arida from the Federal University of Sao Paulo, Brazil has looked at the relationship between exercise and seizure control. Writing in the journal *Epilepsy & Behavior*, he says: 'Studies with patients with epilepsy have demonstrated that active subjects have significantly lower levels of depression than inactive subjects. Some anti-epileptic drugs are correlated not only to weight gain but also to reduced bone density. Exercise induces positive effects on bone health.

'People with epilepsy should include exercise as a complementary therapy not only for seizure control but also for physical health promotion and mental state. To reach these goals, support of health authorities, social workers and sport instructors, and campaigns to inform patients to become more active are necessary.'

Exercise and you

Dr Eleanor Tillett advises

- a small change can have the biggest impact on your health. Going from nothing to something, even 10 minutes exercise a day, can make a difference
- think about the kind of exercise you might enjoy: in a group/on your own, sporting/general activity, outdoors/indoors. Join your local sports centre
- think about the benefits of being physically active
- walking is fantastic. It's weight bearing, it's free and it's outdoors
- any moderate intensity activity that leaves you slightly short of breath and sweaty is beneficial
- make your daily routine more active. Get off the bus a stop early and walk the last leg of your journey. Take the stairs, not the lift
- if you're not used to being active, talk to your GP about how to get started
- the safest forms of exercise are non-contact, non-height and non-water
- cycling, climbing and contact sports such as football and rugby, are slightly risky but should not be ruled out. Ask your healthcare professional for a risk assessment
- exercise should include aerobic exercise, strength building, flexibility and balance but many activities will incorporate all of these
- enjoy and feel the change.