

Epilepsy and exercise

Epilepsy is a disorder of brain function that takes the form of recurring seizures. Our thoughts, feelings and actions are controlled by brain cells that communicate with each other through regular electrical impulses. A seizure occurs when sudden, uncontrolled bursts of electrical activity disrupt this regular pattern.

This can be confined to just one part of the brain or can occur right across the brain. Communication between cells becomes scrambled, and our thoughts, feelings or movements become momentarily confused or uncontrolled. There are many different types of seizures, classified depending on which part of the brain the seizures occur in and how much of the brain is affected.

The different types of seizures will affect people in varying ways, depending on where in the brain the seizure is occurring and what functions that part of the brain controls. Seizures can disrupt any function which the brain controls – movement, thoughts, sensations, behaviour, and the person's level of consciousness.

The benefits of exercise and epilepsy

Exercise is good for everyone, but it also has important benefits for people with epilepsy. People with epilepsy and their families are commonly concerned about seizures during exercise and this fear often results in overprotection, feelings of isolation and needless restrictions on activity.

Seizures during exercise are rare, but an understanding of how exercise affects both epilepsy and seizures, and what to do if a seizure occurs, is important.

In many cases, a seizure occurs suddenly and without warning, so a person with epilepsy needs to make sure their exercise and sporting activities are as safe as possible at all times. Consult your doctor or epilepsy support organisation for further information.

Exercise and seizures

Some people with epilepsy avoid exercise because they are afraid they will have a seizure during the activity. In fact, it is extremely rare for a person to have a seizure while exercising. Rather than triggering seizures, their epilepsy may improve with exercise. Although the reasons are unclear, studies demonstrate that abnormalities on EEG (a test that measures electrical activity of the brain) decrease during exercise.

Overall fitness and a feeling of wellbeing have been shown to help reduce seizure frequency. People feel better and may improve their seizure control with regular exercise. One report suggests that exercise improves self-esteem and social integration, regardless of seizure control. It has also been shown that regular exercise reduces the number of overall health complaints, such as muscle pains, sleep problems, depression and fatigue.

Most sports activities are acceptable as long as people avoid overexertion, dehydration and hypoglycaemia (low blood sugar). If seizures occur, it is most likely after the exercise (15 minutes to three hours after exercise).

Exercise safety issues and epilepsy

Be guided by your doctor, but general safety considerations include:

- Before starting any new exercise program, consult with your doctor or specialist.
- Avoid known seizure triggers.
- Always take your medication as prescribed and have an adequate supply available.

- Stay well-hydrated and drink or snack on something with sugar in it.
- **Don't** continue exercising if you feel faint, lightheaded, nauseous or dehydrated.
- **Don't** overexert yourself – know your limits.
- Make sure your coach and possibly teammates are aware of your condition and know what to do if you have a seizure.
- If involved in solo exercise, consider wearing a medical alert bracelet or pendant, so people can easily identify you have epilepsy.
- Wear protective gear appropriate to your sport, such as a helmet or knee pads.
- Always wear a life jacket when involved in water sports.
- Let family or friends know your walking, jogging or exercise route before you leave and how long you will be out.
- Consider carrying a mobile phone with an ICE (in case of emergency) telephone number listed.

Risky activities and seizures

People with uncontrolled seizures need to be especially careful when engaging in more risky activities and should seek advice from their doctor before engaging in them, including:

- Contact sports, scuba diving, bungee jumping and boxing
- Solo aerial sports such as hang gliding and skydiving
- High altitude activities such as mountain climbing
- Motor sports
- Horseback riding
- Gymnastics
- Ice activities, such as skating or hockey
- Skiing
- Solo water sports, such as sailing or wind surfing.

People with epilepsy whose seizures are difficult to control need to have someone with them who knows what to do if they have a seizure, and is able to carry out the necessary seizure first aid.

People with epilepsy should discuss their sports goals with their doctor. Adequate planning and precautions can enable them to take part in a wide range of activities.

Water safety and epilepsy

Water safety is particularly crucial, because a person who experiences a seizure while alone in water will almost certainly get into difficulty and may even drown. Suggestions include:

- Be alert – showers, baths, pools, spas and the ocean are problematic for anyone experiencing seizures.
- Swim with companions who are aware of your condition and who are physically strong enough to support you and know what to do if you have a seizure.
- Swim in supervised areas, such as in a public pool with an attendant or at the beach between the flags, where lifeguards are on patrol.
- Tell the pool attendant or lifeguard that you have epilepsy and the type of seizures you experience. You may need to brief them on how best to help you, if they don't already know.
- People with epilepsy, even if well controlled, should **never** swim alone.

Epilepsy medications and exercise

Exercise can alter the levels of anti-epileptic drugs (AEDs) in the blood. People taking AEDs who exercise regularly should discuss the need to have their blood levels monitored with their doctor (especially in the first few months of training).

AEDs are the most common treatment for epilepsy and seizures, but some side effects may influence your performance, including:

- **Fatigue and tiredness** – which can be a problem for active people
- **Other problems** – such as blurred vision or problems with concentration, impaired coordination and slower response times

- **Anabolic steroids** – **don't** take anabolic steroids as they interfere with AED levels in the blood
- **Bone loss (osteopaenia and osteoporosis)** – large studies suggest a doubling of fracture risk in people with epilepsy. Weight-bearing exercise is a preventative intervention for these conditions. Appropriate activities should be discussed with your doctor.

Exercise-related epilepsy triggers

It is important to exercise sensibly. You could trigger a seizure minutes or hours after exercise if you unnecessarily strain your body. Exercise-related risk factors could include:

- Extreme fatigue
- Lack of sleep
- Dehydration (and electrolyte loss, due to severe dehydration)
- Hyperthermia (elevated body temperature)
- Hypoglycaemia (low blood sugar levels).

Avoiding exercise-related epilepsy triggers

Suggestions include:

- Make sure you take your medication according to your doctor's directions.
- Drink plenty of water before, during and after exercise.
- Don't push yourself to the point of physical exhaustion.
- If you are feeling very hot and tired, slow down or stop.
- Make sure you have at least two rest days every week.
- Make sure your diet is nutritionally adequate.
- Get plenty of rest and good quality sleep.
- Limit or abstain from alcohol.

Where to get help

- Your doctor
- Your neurologist
- Epilepsy Action Australia Tel. 1300 37 45 37
- Epilepsy Foundation of Victoria Tel. (03) 9805 9111
- Epilepsy Australia National Helpline Tel. 1300 852 853
- Children's Epilepsy Program, Royal Children's Hospital Tel. (03) 9345 5661

Things to remember

- Exercise is good for everyone, but it also has important benefits for people with epilepsy. Epilepsy may improve with exercise.
- Take all necessary safety precautions while exercising.
- Anti-epileptic drugs can influence sporting performance.

This page has been produced in consultation with, and approved by:

Epilepsy Foundation of Victoria Incorporated

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