Epilepsy and exercise

Summary

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

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 it can occur right across the brain. Communication between cells becomes scrambled and our thoughts, feelings or movements become momentarily confused or uncontrolled.

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 the brain controls – movement, thoughts, sensations, behaviour, and the person’s level of consciousness.

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 over protection, feelings of isolation and needless restrictions on activity.

While seizures during exercise are rare, it is important to understand how exercise affects both epilepsy and seizures, and what to do if a seizure occurs.

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.

Exercise and epileptic seizures

It is extremely rare for a person to have a seizure while exercising. Rather than triggering seizures, your epilepsy may improve with exercise. Although the reasons are unclear, studies demonstrate that abnormalities on EEG (a test that measures the electrical activity of the brain) decrease during exercise.

Overall fitness and a feeling of well being 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 safe as long as people avoid overexertion, dehydration and hypoglycaemia (low blood sugar). If a seizure occurs, it is most likely to be after the exercise (15 minutes to three hours later).

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.
- Pre-exercise screening is used to identify people with medical conditions that may put them at a higher risk of experiencing a health problem during physical activity. It is a filter or ‘safety net’ to help decide if the potential benefits of exercise outweigh the risks for you. Print a copy of the pre-exercise screening tool and

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discuss it with your doctor or exercise professional.

- 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 epileptic seizures**

In addition to the above, 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:

- 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 sailboarding.

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.

Discuss your sports aspirations with your doctor. With adequate planning and precautions, you can 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 can be dangerous 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.

**Anti-epileptic medications and exercise**

Anti-epileptic medications are the most common treatment for epilepsy and seizures, but some of the 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
• Exercise – can alter the levels of anti-epileptic medications in the blood. People taking anti-epileptic medications who exercise regularly should discuss with their doctor the need to have their blood levels monitored (especially in the first few months of training)
• Anabolic steroids – don’t take anabolic steroids, as they interfere with anti-epileptic medication levels in the blood
• Anti-epileptic medications may lead to bone loss (osteopaenia and osteoporosis) – large studies suggest a doubling of fracture risk in people with epilepsy. Weight-bearing exercise can help prevent these conditions. Discuss appropriate activities 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).

Suggestions to help you avoid these triggers 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 Foundation of Victoria Tel. (03) 8809 0600
• Epilepsy 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 as the condition may improve with exercise.
• Take all necessary safety precautions while exercising.
• Anti-epileptic drugs can affect sporting performance.