

Brain Tumours and Epilepsy

Introduction

Most people with a brain tumour and epilepsy will have the epilepsy because the tumour causes a focal disturbance in one part of the brain. Drug treatments can reduce the frequency, severity and duration of seizures and sometime stop them completely.

What is epilepsy?

Primary Generalised Epilepsy

This is where the chemical and electrical disturbance occurs throughout all of the brain. These seizures come on without warning. This can result in a convulsion (grand mal) or simply cause a momentary loss of awareness lasting seconds (absence) or sudden jerks (myoclonic).

Partial/Focal Epilepsy

This is where the disturbance in brain cell function starts at one specific site in the brain. The symptoms reflect the normal function of the part of the brain that is involved, by the seizure. For example, if the seizure arises in the part of the brain that controls movement there will be jerking of the limbs. If it involves the part of the brain that perceives sensation, it causes a strange tingling in the limbs. If it affects the temporal lobe of the brain, where thoughts and memories are stored, it may produce a feeling of disorientation, a funny smell *deja' vu*, panic attacks or strange recurring thoughts. These seizures can occur without any loss of awareness (simple partial seizures), or with loss of awareness for a short period (complex partial seizures).

Occasionally the focus of electrical activity can spread from the localised area to involve the whole brain. When this occurs it causes a convulsion with loss of consciousness and movements of arms and legs (secondary generalised seizures). These convulsions usually differ from those of primary generalised epilepsy only in that there is frequently a "warning" before losing consciousness.

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Is epilepsy a common problem?

Epilepsy is relatively common. At any one time, at least 1 in 200 people have epilepsy and 5% of all people will have a seizure at some time in their life. Most people with epilepsy have normal brain scans and only a very small proportion have a brain tumour.

What are the common types of brain tumour?

- **Primary Brain Tumours** are those that arise from the brain cells directly.
- **Secondary Brain Tumours** are those that arise in another site in the body and spread (metastasis) to the brain.
- **Meningioma's** arise from the coverings of the brain (meninges) and are usually benign.

- **Neuromas** arise from nerves and are benign.
- **Pituitary Adenomas** arise from the glandular tissue of the pituitary and are benign.

If I have seizures does it mean my tumour is more severe?

No. About 80% of people with less serious glioma brain tumours will have seizures and only 20-30% of people with more serious brain tumours. If seizures are present from the start, the overall outlook is better than in people who present with other symptoms such as weakness or headache. Seizures can also occur with benign brain tumours (e.g. meningioma) or tumours that have spread to the brain from another site (metastases).

How is epilepsy diagnosed?

The diagnosis is made from the description of the precise features of the seizures, and the circumstances in which they occur.

An **EEG** test (electroencephalogram) may be helpful in determining the type of seizure and site of any problem. The EEG is a painless, safe procedure where thin wires are placed onto the scalp and these wires (electrodes) can demonstrate any irregularities in the normal activity of the brain. Frequently, however the EEG is completely normal between attacks.

A **CT** brain scan or **MRI** brain scan produce pictures of the structure of the brain and will demonstrate where the abnormality is in the brain.

Can epilepsy be treated?

Yes. Treatment with tablets or medicines will control seizures in about 50% of people who have brain tumours and seizures. About 50% of people will continue to have seizures despite treatment, but the seizure severity and frequency is much less with medication. The treatment is aimed at trying to improve seizure frequency and severity without causing too many side effects from medication.

The role of surgery in the treatment of epilepsy is still not completely certain. Sometimes surgery can cure the seizures and occasionally seizures can come on or be temporarily worse after surgery. There are reports of radiotherapy improving seizure frequency, but not enough evidence to say that it does with any certainty.

The choice of medication usually depends on the seizure type, the possible side effects, and interactions with other medications that you may have to take.

What side effects could I have from the medication?

All medicines can cause side effects. Medication, which prevents seizures (anticonvulsants) can cause side effects too, even though most people take them for long periods of time with no unpleasant side effects.

Some people can have an allergic reaction to the medication, (e.g. rash, effects on the blood count, or liver upset) and others may feel tired or nauseated when a tablet is first started.

The tiredness and nausea may settle when you become used to the tablet, but the drug should be stopped if there is an allergic reaction (contact your doctor).

Another possibility is that if you take too much of the medication, you can get 'toxic' side effects, which may cause double vision, unsteadiness, dizziness, drowsiness, nausea, headache or changes in behaviour. Ask your doctor, if you have any of these symptoms, as he may want you to take a smaller dose of the medication or to take a blood sample to measure how much is in the blood stream.

Each medication has its own list of possible side effects. If you are concerned ask your doctor for advice.

How will the doctor try and help me?

Doctors will usually introduce medication gradually in small doses and advise you to take the medication regularly. Some medication only has to be taken once a day, others need to be taken three times a day. The aim is to use the lowest dose of a single medication that will control seizures without toxic effects. Your doctor may wish to measure the drug levels to check if the dose is right and is being taken regularly, or for making planned increases in the dose of some medication.

In general doctors don't feel that the addition of a second drug to the first makes much difference, although there are some newer drugs that might be useful at reducing seizure frequency by 30-40%. There may be interactions between different anticonvulsants and frequently it is difficult to tell which one may be causing the side effects.

If drugs have been given which are unhelpful in your case it makes sense that they should be discontinued and subsequently avoided. Withdrawal of medication will be done gradually and new medication can be introduced slowly as the old one is removed.

Stress and poor sleep can make seizures worse and doctors may suggest methods of overcoming this. It is uncertain if antidepressants make matters better or worse.

In some people seizure control with available medication is not possible. In these cases it is worthwhile reducing the medication in order to minimise side effects. In cases like this sometimes surgery can be considered.

How can I help myself?

- Do not run out of medication. Stopping anticonvulsants quickly can lead to an abrupt increase in the number of seizures.
- A diary of seizure frequency and severity should be kept, as it will help when assessing any change in seizures related to changes with medication. If you have any other illness, anticonvulsants should be continued. If the medication is vomited up, within a few hours of taking it, an extra dose should be taken. Avoid taking other medication unless it is really necessary and has been prescribed by a doctor.
- Not taking the medication regularly is the most common cause of treatment failure. Irregular therapy may be worse than no therapy at all. It may cause withdrawal effects, or it may make seizures or toxic side effects worse.

- Establish a routine about taking your medication, e.g. after breakfast and evening meal and consider using a pillbox divided into the days of the week. Don't take too much alcohol and get sufficient sleep and eat regularly.
- Anyone may forget to take their medication at some time. If you miss a dose it is probably best to take an extra dose within the same 24-hour period.

What should my friends do if I have a seizure?

While the convulsion is in progress:

- They should not put anything in your mouth or force your teeth open.
- They should not try to restrain your movements but let the seizure run its course.
- You should only be moved if you are in danger from injury, e.g. close to a fire or on the road.

After the seizure has finished:

- You should be turned on your side.
- Your airway should be checked and kept under observation.

After a major seizure:

- You may be confused and need reassurance.
- Friends shouldn't give you anything to drink, until you have fully recovered. Transfer to hospital is necessary only if the fit is prolonged or repeated, or if injury has occurred.

Do not take additional anticonvulsants after a seizure but continue to take them at your regular time and dose. Ask your doctor for further advice if you are concerned.

How will the seizures affect my daily life?

Driving

The law regarding epilepsy and brain tumours depends on the type and grade of tumour. The time that you will not be able to drive can be as low as one year or up to four years seizure free.

Your doctor has information from the Driver and Vehicle Licensing Agency (DVLA) and will be able to advise you.

You should notify the DVLA by writing to the Medical Adviser, Drivers Medical Unit, Longview Road, Swansea, SA99 1TU.

Work

You should not work with dangerous machinery, at heights, or in a job where, if you had a seizure, you could put yourself or others at risk. This is common sense, but also your employer may not be covered for any accidents that happen to you or others, and if you have not informed your employer, it is you that may be liable for any damages.

In general, employers and work mates are very supportive and understanding and if your job involves any of the above, some alteration in the structure of your job may be possible.

Computers, VDU's, discos and TV's are unlikely to precipitate seizures.

If you are in the armed services, then it is likely that you will not be able to continue and you will be advised to take early retirement. The police and fire-service are a little more lenient, but it may mean a change in your job description.

If you wish to continue working, and your employer says this is not possible, it may be worth while discussing things in more detail with the person who makes the final decision, in order to personalise things more, or request a supporting medical statement. Many employers think there is only one kind of epilepsy (generalised seizures/convulsions). Employers may be more open to persuasion if you have "simple partial" or even "complex partial" seizures.

Home

Troublesome seizures can lead to all sorts of stresses and anxieties in the family. It is best that everyone in the family home is aware that you have occasional seizures, but that they should not over-react to them. Discuss things openly with your partner and children to ensure that they do not "overprotect" you. The well meaning partner who does this can unwittingly find that they are contributing to a loss of confidence and self esteem and reducing your role within the family. This can lead to frustration and depression, which may in turn aggravate your seizure frequency. Especially if you are losing sleep, there is good evidence that relaxation techniques can reduce seizure frequency.

It is advisable to shower rather than bathe, use a smother-proof variety of pillows in bed and when cooking and setting fires be aware of the possible dangers.

Sport

Don't swim alone, wear a distinctive cap and inform the pool attendant. Bicycle in company. Don't box, canoe alone or rock climb. You can play rugby, karate and football as well as many other sports. Consult your doctor if you have any worries.

Should I tell people that I take seizures?

It is usually advisable to tell your family, employer and work mates. If you take a 'major' seizure, they should also be told what to do and be reassured that the seizure is usually over in 1 - 5 minutes, but that you may be confused for a little while afterwards.

Do seizures injure the brain?

There is no evidence that the average seizure has any lasting effect on how the brain works. Many people with epilepsy have had hundreds of seizures in their lives, without any noticeable changes in their alertness or intelligence. Sometimes after a partial or generalised seizure, there can be a weakness on one side of the body for minutes or occasionally days (Todd's paresis), but this usually resolves completely. Rarely, seizures that last an unusually long time, or a series of non-stop seizures may produce changes in the brain that can affect the brain's abilities, but this is an uncommon occurrence.

Is epilepsy linked to mental illness?

Epilepsy and mental illness are separate conditions. Sometimes people with epilepsy experience fear that they may be mentally ill, and are usually relieved to hear that what is happening to them is merely the result of seizure activity in the brain. Of course some people with epilepsy do experience mental illness, just as some people do who have no physical problems, but there is no clear relationship between the two conditions.

Could I injure anyone during a seizure?

Although a seizure involving jerking of the limbs can look violent, the movements are undirected and it is therefore not possible to carry out a planned attack on anyone. Injury to others only occurs if they get in the way accidentally; when trying to suppress the limb movements or, in the period after a seizure when you may be confused, if you feel threatened (i.e. someone holding you down). Injury to yourself occurs rarely and almost always only if there is a loss of consciousness (generalised seizures) (especially when working at heights, with dangerous machinery or swimming unaccompanied). If you take generalised seizures you should be sensible and avoid situations where you could put yourself at serious risk.

If I lose my Job what benefits might I be entitled to?

If seizures are a major problem or you also have a physical impairment, find out about eligibility for Disability Living Allowance (less than 65 years) or Attendance Allowance (over 65). Ask your doctor or nurse for advice or referral to a social worker.

Income Support may be available to you, as may Housing Benefit.

No one on regular anticonvulsants need pay prescription fees. Special travel passes can be applied for.