



THE SOUTH AFRICAN SOCIETY OF OCCUPATIONAL MEDICINE

EPILEPSY AND EMPLOYMENT

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1. INTRODUCTION

- 1.1. Epilepsy is a central nervous brain disorder in which brain activity becomes abnormal. It affects ± 50 million people worldwide; males and females of all races, ethnic backgrounds and ages.
- 1.2. The decision to employ a person who suffers from epilepsy, or to place such a worker in another job or working environment is taken only after doing the following:
 - 1.2.1. A medical assessment, which includes a neurological report and confirmatory tests, usually an electroencephalogram EEG and brain scan, but other tests are equally acceptable – see par 5.
 - 1.2.2. An objective assessment of the job requirements and the working environment.
 - 1.2.3. An interpretation of pertinent legislation, e.g. the Occupational Health and Safety Act, 1993 (Act 85 of 1993 amended by Act 181 of 1993), Hazardous Substances Act, 1973 (Act 15 of 1973 as amended) and the Mines Health and Safety Act (Act 29 of 2006).
- 1.3. Workers with episodic loss of consciousness or awareness should be dealt with in the same manner as workers who suffer from epilepsy. This includes workers suffering from conditions such as narcolepsy, unexplained blackouts, severe dizziness or vertigo.

2. CAUSES

Causes of epilepsy include:

- 2.1. No identifiable cause (± 50% of all cases).
- 2.2. Genetic disorder.
- 2.3. Head trauma.
- 2.4. Brain conditions like stroke.
- 2.5. Infectious diseases like meningitis and AIDS.
- 2.6. Developmental disorders.
- 2.7. Pre-natal injury like poor nutrition and oxygen deficiencies.

3. RISK FACTORS

Risk factors for epilepsy include:

- 3.1. Family history.
- 3.2. Head injuries.
- 3.3. Stroke.
- 3.4. Dementia.
- 3.5. Brain infections.
- 3.6. Seizures in childhood like febrile convulsions.

4. DIFFERENTIAL DIAGNOSES

The differential diagnosis will include:

- Syncope (vasovagal or cardiac),
- Non-epileptic seizures (pseudo seizures),
- Transient ischaemic attacks,
- Migraine.

5. DIAGNOSES

A single seizure is not enough to make a diagnosis. At least two unprovoked seizures that last more than 5 minutes each are required to make the diagnoses. Accurate witnessed description of the seizure(s) is very important. Diagnoses are usually made clinically. To confirm, or sometimes makes, the diagnosis, the following can be done:

- 5.1. Neurological examination.
- 5.2. EEG.
- 5.3. High density EEG.
- 5.4. CT of the brain.
- 5.5. MRI of the brain.
- 5.6. Functional MRI (fMRI) of the brain.
- 5.7. Positron emission tomography.
- 5.8. Single photon emission CT.
- 5.9. Neuropsychological tests.

The above tests, including the neurological examination (5.1) are done by relevant specialists / technicians. According to specific criteria the diagnosis of epilepsy is made.

6. CLASSIFICATION OF SEIZURES

Seizures are classified as:

- 6.1. Focal seizures: Abnormal activity in just one area of your brain. Often preceded by an aura. It may be confused with other neurological disorders such as migraine, narcolepsy, mental illness.
 - 6.1.1. Focal seizures without loss of consciousness.
 - 6.1.2. Focal seizures with impaired awareness.
- 6.2. Generalized seizures
 - 6.2.1. Absence seizures (previously known a petit mal seizures).

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6.2.2. Tonic seizures (stiffening of muscles).

6.2.3. Atonic seizures (loss of muscle control and falling).

6.2.4. Clonic seizures (rhythmic or repeated jerking muscle movements).

6.2.5. Myoclonic seizures (sudden brief jerks or twitches of the arms and legs).

6.2.6. Tonic-clonic seizures (previously known as grand mal seizures. Patient has loss of consciousness, bodily stiffening and shaking and sometimes loss of bladder control and biting of tongue).

7. REFLEX EPILEPSY

Reflex epilepsies make up 4 – 7% of epilepsies. They are a group of syndromes in which a certain stimulus brings on seizures. Stimuli can be:

- 7.1. Extrinsic. Most common is photosensitive epilepsy in which flashing lights trigger seizures. Other stimuli include acoustic (sounds and music), spinning and / or fast movement, over cooked and over ripe fruits and other tactile stimuli.
- 7.2. Intrinsic. Stimuli include thinking, reading, startle response and proprioceptive.

8. SYMPTOMS

Symptoms may include:

- 8.1. Temporary confusion.
- 8.2. A staring spell.
- 8.3. Uncontrollable jerking movements of the arms and legs.
- 8.4. Loss of consciousness or awareness.
- 8.5. Psychic symptoms such as fear and anxiety.
- 8.6. Post-ictal. The active portion of a seizure (ictal state) is followed by a period of confusion, called post-ictal period. It can last from 3 – 15 minutes to several hours.

In most cases a person will tend to have the same type of seizure each time.

9. COMPLICATIONS

The most common complications are:

- 9.1. Falling.
- 9.2. Drowning.
- 9.3. Car accidents.
- 9.4. Emotional health issues such as depression and anxiety.
- 9.5. Status epilepticus.
- 9.6. Pregnancy complications.

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9.7. Sudden unexpected death in epilepsy – 3 x higher than the general population.

10. TREATMENT

Some people require lifelong treatment. For others the seizures can eventually go away. With the right treatment seizures can be prevented in 70% of epileptics. Treatment includes:

- 10.1. Medication. It is important to keep possible side effects in mind, like fatigue, depression, speech problems, memory and thinking problems and suicidal thoughts.
- 10.2. Surgery. If medication fails, the part of the brain that causes the seizures is removed. It may be necessary to continue with medication after surgery.
- 10.3. Other therapies include vagus nerve stimulation, ketogenic diet, deep brain stimulation.
- 10.4. Treatment for reflex epilepsy includes avoidance, prevention, modification of the provocative stimuli.
- 10.5. Poorly controlled epilepsy: Ensure compliance with treatment, determine the use of (excessive) alcohol and recently used other medicine which could cause undesired drug interactions.

11. SEIZURE RECURRENCE

Seizure recurrence is therefore much higher in the first weeks or months after the initial event. The longer the time period which passes without a second seizure, the less the overall risk of subsequent recurrence.

12. REMISSION OF EPILEPSY

Seizures cease in the great majority of patients. Most patients, who enter remission, do so in the first 2 years after diagnosis. Patients who are seizure-free at 5 years were found to be 95% in remission and 100% in remission 5 & 10 years later.

13. PROGNOSES

Newly diagnosed epilepsy has a good prognosis, chronic established epilepsy has a poor prognosis.

Poor prognostic factors are: a long duration of poor control, mixed seizure types, frequent seizures, partial seizures, structural cerebral disorder and associated neurological or psychiatric conditions

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14. GENERAL GUIDELINES

Control of epilepsy does not depend on drugs alone; stress, psychological and social factors may be highly relevant in some cases.

General guidelines for people with epilepsy include:

- 14.1. Take medicine as prescribed.
- 14.2. Always seek medical advice before stopping or changing medicine and if side effects are experienced.
- 14.3. Exercise regularly.
- 14.4. Get enough sleep.
- 14.5. Shift work is not an absolute contra-indication for workers who suffer from epilepsy.
- 14.6. Night work may be an exception – sleep pattern (diurnal rhythm) is disturbed because of rest days
- 14.7. Wear a medical alert identification, e.g. bracelet
- 14.8. Ignore negative reactions from people (stigma) and live as independently as possible.
- 14.9. Epileptics must educate themselves, friends and family about the disease and what to do in case of a seizure.
- 14.10. Join an epilepsy support group.
- 14.11. Stop smoking.
- 14.12. Stop or limit alcohol intake. Alcohol misuse/abuse increases seizure risk. Seizures may also be caused by withdrawal, a direct toxic effect or associated metabolic disturbance such as hypoglycaemia (rare).
- 14.13. Reduce stress as far as possible as stress increases seizure frequency.
- 14.14. Keep detailed log of your seizures.
- 14.15. Look after yourself and timeously seek professional help if needed.

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Legislation requires employers to ensure a healthy and safe workplace. Legislation also states that employees are responsible for their own health and safety and that of their colleagues and others as far as reasonably practical.

- 15.1. As a guideline people who suffer from epilepsy should be excluded from the following jobs:
 - 15.1.1. Driving – Refer to the SASOM guideline on Driver Fitness.
 - 15.1.2. Working at heights, even with adequate safeguarding.
 - 15.1.3. Working with unguarded machines or in the vicinity of moving machinery.
 - 15.1.4. Working with live electricity.

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- 15.1.5. Working near open fires and furnaces, or with high-temperature equipment and materials.
- 15.1.6. Working near open water without adequate safeguarding. Working in or under water is permissible under certain conditions.
- 15.1.7. Working near depths or excavations
- 15.2. Work that may aggravate or provoke an attack should be carefully considered, e.g.:
 - 15.2.1. Working with flickering lights, e.g. at a disco, with flickering computer monitors, notice boards, TV screens, video-display terminals, light coming through leaves or reflecting in moving water, etc. Visual display screens are hardly ever a problem because of little flicker even with a photosensitive subject.
 - 15.2.2. Working with certain chemicals.
 - 15.2.3. Working with noise.
 - 15.2.4. Working with radiation or glare.
 - 15.2.5. Work that requires rapid reaction or distribution of attention to several matters at the same time.
 - 15.2.6. Working at a place where the nature of the work may present a danger to the worker who suffers from epilepsy and others.
- 15.3. Workers who suffer from epilepsy should be free from drug side-effects which may impair their work performance, and they must be warned of the danger of alcohol and other drugs that may interact with their anti-epileptic drug treatment.
- 15.4. Workers who suffer from epilepsy must understand that their freedom from attacks, and thus their safety and fitness to work, may depend on their continuing with the same (effective) treatment regimen; furthermore, if they change or stop treatment, they must seek medical advice.
- 15.5. Proper task assignment and stimulating work usually inhibit seizures, whereas monotonous work may have the opposite effect. Inactivity and drowsiness may increase seizure frequency.
- 15.6. Workers who suffer from epilepsy must inform and educate a supervisor and / or colleague about the disease and what to do in case of a seizure.
- 15.7. Any worker who suffer from epilepsy must be counselled regarding the following:
 - 15.7.1. His or her personal responsibility to cooperate in preventing unsafe situations.
 - 15.7.2. His or her obligation to seek regular medical advice and to comply with medical treatment.
- 15.8. A worker who is already employed and who for the first time suffers from a fit or seizure must be managed similar as a worker who is suffering from epilepsy until such time as a

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diagnosis is made. As soon as a diagnosis is made the worker must be managed accordingly.

- 15.9. Workers who suffer from epilepsy, but who have been seizure-free for a period of two years may have their work restrictions relaxed. There is no place for partial lifting of restrictions – the worker is either safe or not.
- 15.10. Change of circumstance must be reported immediately as restrictions may need to be temporarily re-introduced, e.g. Change of medication, very stressful event, forgot to take medication, too much alcohol and some late nights.
- 15.11. Should a worker who suffer from epilepsy cannot perform the duties of the post the usual fitness for work policy and procedure have to be followed. Very often change in the work or work place, including re-deployment can be done. Termination of services on the grounds of medical incapacity due to epilepsy is rarely indicated.

16. CONCLUSION

People who suffer from epilepsy are often unjustly deprived of employment opportunities or excluded from certain jobs. Although there are a few hard-and-fast rules concerning workers who suffer from epilepsy, each case or situation should be treated on its own merits.

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NOTE

The SASOM guidelines are active working documents that are reviewed regularly or as changes take place in legislation, the work or the workplace. Your inputs and comments are therefore regarded as most valuable. Please send them to info@sasom.org.