

# Acquired Brain Injury Conference EPILEPSY

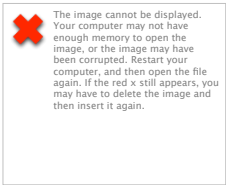
Seizures- what are they?

Treatment – medications and problems

Safety and Lifestyle Choices

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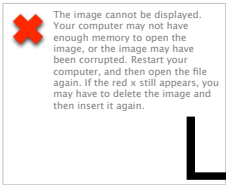


# What is epilepsy?

Epilepsy is a tendency to have recurrent seizures.

- More than half the people with epilepsy will have this problem for their whole lives and need to have treatment.
- For people with ABI and epilepsy it is more than half and treatment is given longer as a result.
- The seizure usually happens where there is a scar in the brain as a consequence of the injury.





# Likelihood of epilepsy for people with acquired brain injury

- Most commonly within a year following the injury.
- Most people who have a brain injury will never have a seizure
- Early post-traumatic seizures:

A seizure in the first week after a brain injury is called an early post-traumatic seizure.

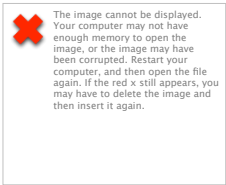
About 25% of people who have an early post-traumatic seizure will have another seizure months or years later.

- Late post-traumatic seizures:

A seizure more than seven days after a brain injury is called a late post-traumatic seizure.

About 80% of people who have a late post-traumatic seizure will have another seizure (epilepsy).



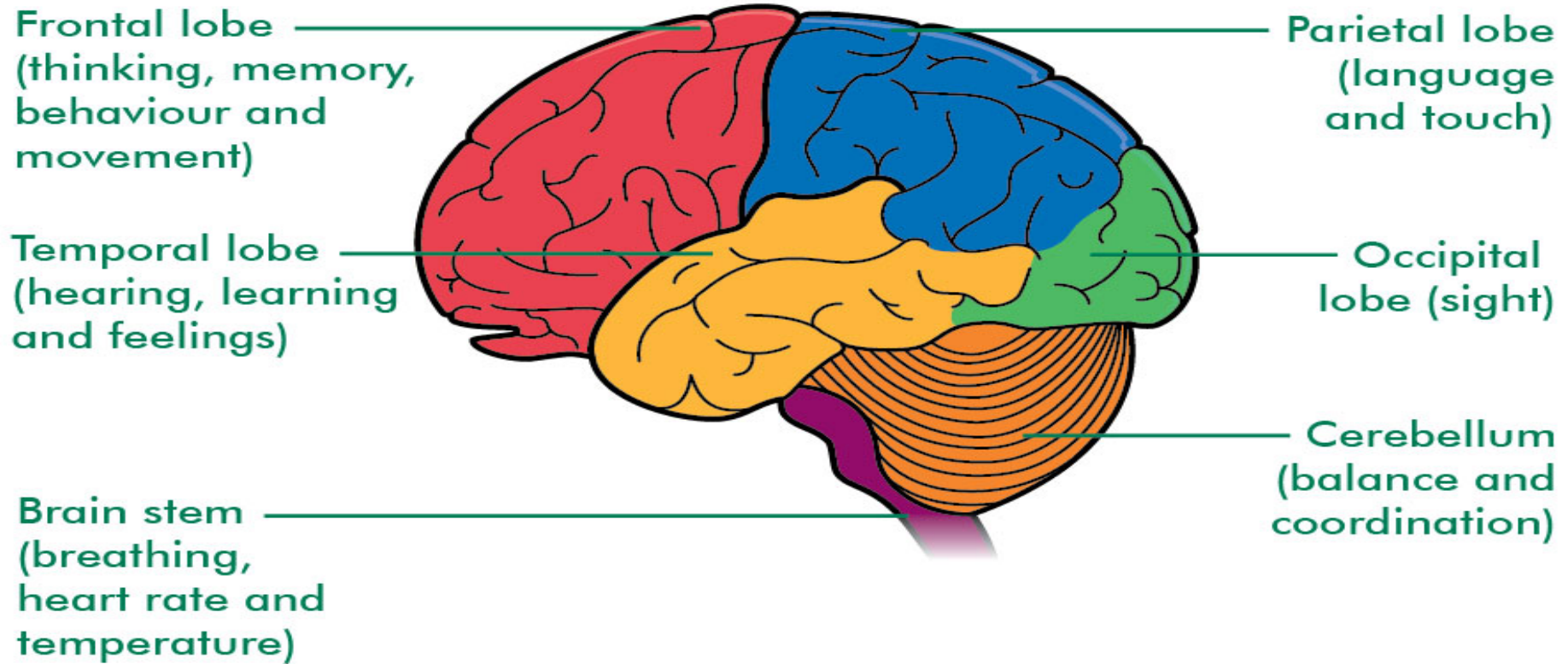


# What are Seizures?

- A seizure is an abnormal excess of electrical activity in the brain.
- How a seizure presents depends on where in the brain the abnormal burst of electrical activity occurs.
- Seizures can take many forms.
- There are over 40 different types.

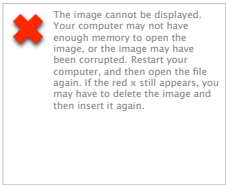


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**The seizure type depends on where it occurs in the brain**

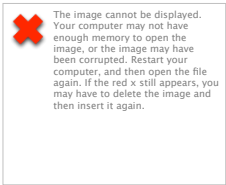




# How seizures can present

- Twitching limbs
- Stiffness
- Loss of consciousness
- Altered state of awareness
- Absences
- Unusual behaviours
- Sensory changes





# Focal Seizures

## Temporal Lobe Seizures

Emotions and feelings may be affected.

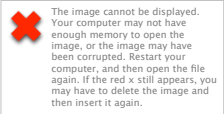
They may have strange tastes or smell or feelings of déjà vu.

Problems with understanding, processing the world around them.

## Frontal lobe seizures

They tend to start and stop abruptly. People can have dramatic movements (head turning, posturing of arms or muscle weakness) They might wander aimlessly, pluck at clothes or chew. They often occur in sleep.





# Focal Seizures

## Parietal lobe seizures

Tend to result in strange sensations, like tingling or warmness or areas of numbness.

## Occipital lobe seizures

People see patterns of flashing lights, visual changes or temporary blindness.







# Personal Picture

- For each person they have their own typical seizure pattern
- This can look similar to others but is specific for them.
- Some focal seizures can turn into bilateral generalised seizures.
- Some people cannot recognise the focal symptoms before the generalised seizure.



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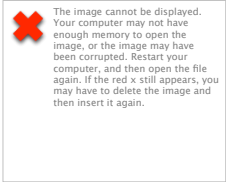
# Bilateralisation

## Focal seizure



## Bilateralisation





# Treatment

- Anti Epileptic Drugs are the main course of treatment
- 70% of people will have their epilepsy well controlled with AEDs
- Surgery- most common is the insertion of a vagal nerve stimulator (VNS)
- Resection surgery
- Ketogenic Diet



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# Anticonvulsant Medications


- Sometimes known as antiepileptic drugs- AEDs
- What do they do?
- Why do they cause trouble?



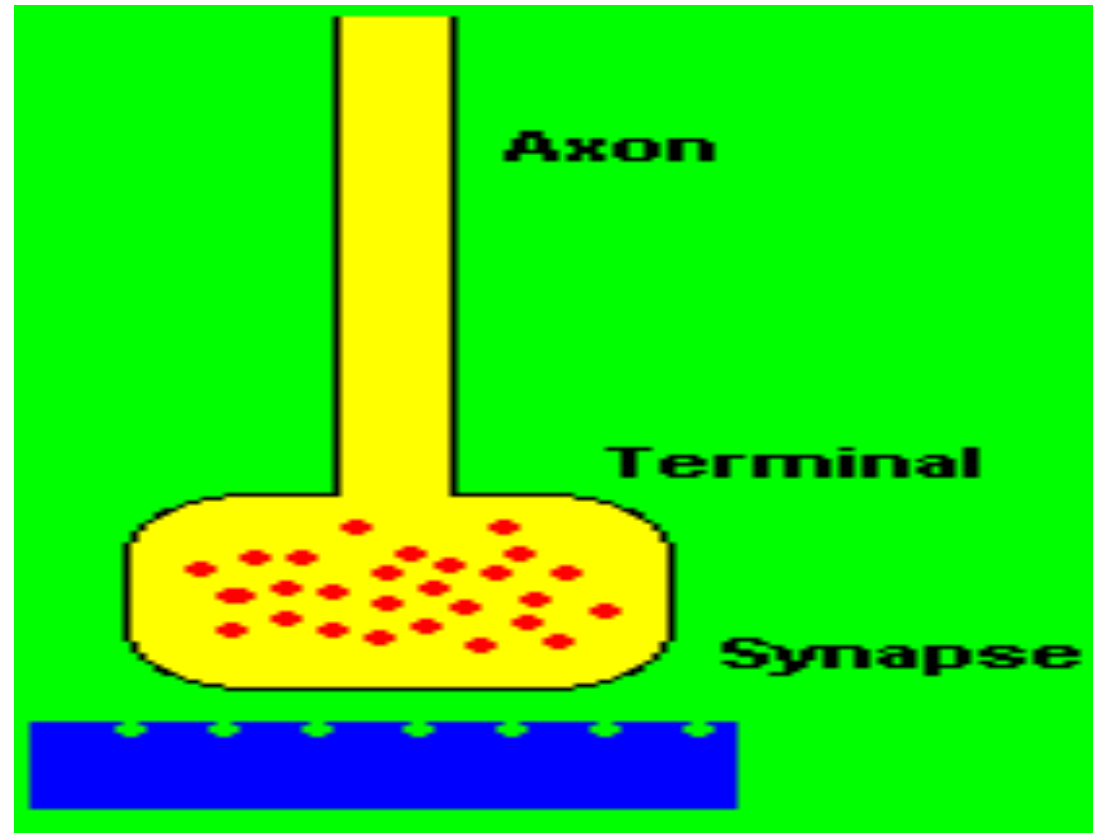
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# Blood Brain Barrier



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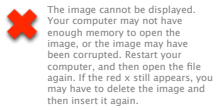
# Neuron and synapse



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# Busy Neuron





## Enzyme inducers

- Carbamazepine
- Oxcarbazepine
- Phenobarbital
- Phenytoin
- Primidone
- Topiramate

## Non enzyme inducers

- Clonazepam
- Ethosuximide
- Sodium Valproate
- Levetiracetam
- Clobazam
- Gabapentin
- Pregabalin
- Zonisamide
- Lamotrigine
- Perampanel



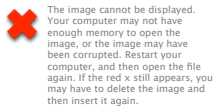


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# Common side effects of AEDs

- Drowsiness and lethargy
- Memory difficulties
- Nausea & Dizziness
- Co-ordination problems
- Mood and behavioural changes
- Double vision
- Changes in appetite and weight
- Rash (rare but potentially serious)

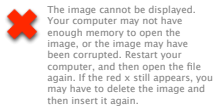




# What do we mean by an enzyme inducer?

- These are medications that are metabolised by the liver
- We have to be careful people's livers are working well
- We have to see if they will affect other medications somehow.






# Blood Tests- why and when?

- With the older medications they can sometimes hang around the body too much and cause problems.
- For the older drugs, Carbamazepine, Phenytoin you should have checks every year.
- You should have a blood test to check your liver, kidneys and full blood count.
- You should have your bone profile checked if you are on some AEDs
- You should have regular checks if you are on lots of other drugs or on more than one AED.
- If you are unwell it is important to have medication levels checked.
- Other medications can sometimes interact with the effectiveness of the AEDs or give you toxicity.

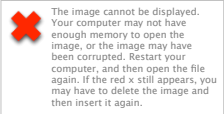


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# Women's Issues

- Hormones and menstrual cycle
- Pre-conception counselling
- Folic acid 5mg/ Vitamin K
- Pregnancy/high risk antenatal clinic
- Breast feeding
- Child care and development issues
- Osteoporosis





# Bone Health

- Patients should be made aware of possible bone mass density reduction with use of some long term AEDs
- High risk patients:
  - Women in menopause
  - Physically disabled patients
  - Family history of osteoporosis
  - High risk of falls
  - Long term use of liver enzyme inducing medications
  - Cultural – dress, diet, lifestyle
  - Smokers
- Dexa scans
- Vitamin D and calcium

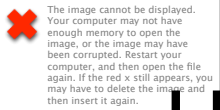




# Triggers and lifestyle choices

- Tiredness
- Stress
- Alcohol
- Missing medication
- Menstruation
- Irregular meals
- Illnesses like colds/flu/gastrointestinal.
- Recreational drugs





# How could my seizures put me at risk?

- Bruises
- Burns and scalds
- Cuts
- Drowning
- Fractures
- Head injuries

## Which are the riskiest situations?

- Heights
- Traffic
- Water
- Sources of heat or power




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# Safety and Risk

- Mattress alarms
- Falls alarms
- Showers
- ICE
- Wallet Cards
- Driving
- Swimming
- Living environment

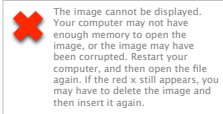




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# First aid for tonic clonic seizures





# Care during a seizure

- Protect the person from injury, protect from falling
- The person may be incontinent maintain dignity
- Do not use physical restraint, this could cause injury
- Loosen tight clothing
- Do not put anything in their mouth
- Protect the head with cushioning.
- Maintain a clear airway (head tilt, chin lift).
- After convulsive stage put in the recovery position
- Administer oxygen via face mask if becomes cyanosed
- Reassure throughout
- Keep accurate timing of seizure.

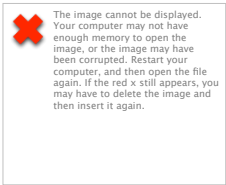




## Call an ambulance if:

- The seizure lasts for more than 5 minutes
- One seizure appears to follow another without the person gaining consciousness in between
- The person is injured
- You believe the person needs urgent medical attention






# Status Epilepticus

- This is a continuous seizure lasting over 30 minutes usually with loss of awareness
- Also includes a cluster of seizures with no return to consciousness in 30 minutes.

**IT IS A MEDICAL EMERGENCY**



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