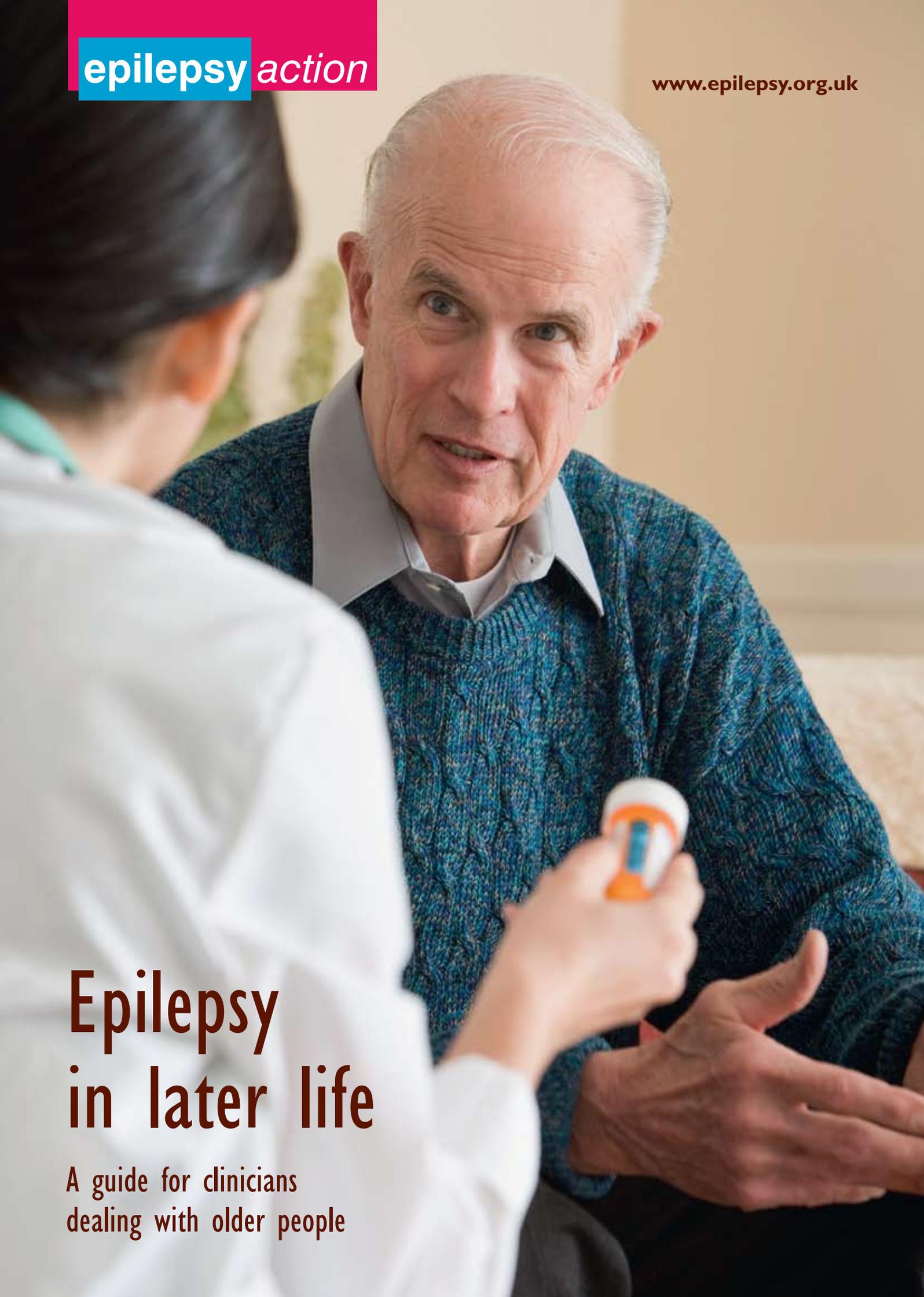


# Epilepsy in later life

A guide for clinicians  
dealing with older people



# Acknowledgements

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## Introduction

This publication is written specifically for clinicians who may regularly see older people after a first seizure. They have the difficult task of deciding whether they have epilepsy, or some other condition, and determining appropriate treatment. They will also have ongoing responsibility for the management of many older people with epilepsy. It is based on the excellent publication by Epilepsy Scotland, *Epilepsy in Later Life: A Good Practice Guide*, together with the Roundtable meeting report, *Progress Reports in Neurology and Psychiatry: Epilepsy in older adults* chaired by Professor Raymond Tallis, Emeritus Professor of Geriatric Medicine, University of Manchester, in London in the autumn of 2009.

The over 65s are now the largest group in which a first seizure is reported. These seizures are an unpleasant experience for the person concerned, and can have important physical and psychosocial consequences. However, although there are national guidelines that make recommendations about the diagnosis and management of seizures in all adults, older people are the least likely to be diagnosed and treated by an epilepsy specialist.

With an ageing, more informed population, there is a need to highlight the special requirements of older people to the doctors who provide their care, particularly to clinicians, who should have the expertise to manage not only epilepsy, but also other co-morbid conditions affecting older people. There is also an economic incentive to improving the quality of life of older people as, with increasing retirement age, more people over the age of 65 will be expected to work, despite their higher risk of having epilepsy and other long-term conditions.

NICE guidance should be followed wherever appropriate. This includes referral to an epilepsy specialist for diagnosis. We hope that this booklet, which provides a quick reference guide to diagnosis, treatment and long-term management, will assist clinicians to gain a clearer understanding of epilepsy. This should enable them to better support older people with epilepsy in their care.

# Epilepsy in later life

The incidence of epilepsy rises from 90/100,000 per year in people aged 65-69 years, to 150/100,000 per year after the age of 80 years.

Cerebrovascular disease and Alzheimer's disease become more prevalent with increasing age, and both are associated with an increased incidence of epilepsy. This means that more people with epilepsy will be older, more older people will have epilepsy, and co-morbid conditions will more frequently complicate care. Services must therefore adapt to meet these changing needs.

Many aspects of good clinical care of people with epilepsy apply equally to all age groups. However, important differences do exist. The range of differential diagnoses of epilepsy and of possible underlying causes is wide. Co-morbidity, cognitive impairment and polypharmacy can create diagnostic difficulty, and complicate drug treatment. The functional impact of 'funny turns', whatever the cause, may be significant to the older person, undermining confidence, and sometimes leading to social isolation.

## Differential diagnosis

### Falls, faints and funny turns – could this be epilepsy?

The diagnosis of epilepsy is primarily based on a history and clinical examination. The accuracy of a history decays rapidly with time. Therefore patients and witnesses should be seen, and a clear history documented, as soon as possible after the suspected seizure.

### Co-existent cognitive impairment

If the history is unclear, there is evidence of cognitive impairment, or there is amnesia for the event or its prodrome, an abbreviated mental test (AMT) or mini mental state examination (MMSE) is essential. A diagnosis of dementia is just as important to the care of the patient as a diagnosis of epilepsy.

### Loss of consciousness or disturbance of consciousness

This is common in epilepsy but rarely a feature of transient ischemic attack (TIA).

A witness history is crucial and must be sought. The telephone is a key diagnostic instrument. Get the witness history as soon as you can; the longer you wait, the more difficult the witness may find it to recall important detail. For future reference, you could ask the witness to any further events to video, with the patient's permission, the event(s), perhaps using a mobile phone, or to make notes immediately after the event.

### **Six key questions to ask the older patient with falls, faints and funny turns**

1. What were you doing at the time? Being in an upright position or having just stood up are potential triggers for postural hypotension.
2. Did you get any warning? Dizziness or visual warnings are unusual in epileptic seizures.
3. Did you black out? How long for? Definite loss of consciousness excludes simple falls or TIA.
4. What happened afterwards? Headache, myalgia, bitten lateral tongue or cheek or urinary incontinence suggests epileptic seizure. If the patient's next memory is 'waking' in the ambulance or hospital, it is likely they were postictal. Post-event confusion is another important pointer to epilepsy.
5. Do you take any medications and have they recently changed?
6. Did anybody else see this happening?

### **Six key questions to ask the witness**

1. What was the person doing at the time?
2. Did you notice anything, or did the person complain of anything before it happened? For example, changes in skin colour, altered speech, sweating, nausea, vomiting or confusion?
3. Did they lose consciousness, become unresponsive, or seem unaware that you were there? How long for?
4. Were they still, or did they twitch, jerk or move around?
5. What happened after the event? Were they confused, nauseated or aggressive? Was their speech altered? Were there any other more specific complaints from the patient?
6. Did anyone try to take the patient's pulse?

**This could be epilepsy if your patient has recurrent episodes of:**

- loss, or disturbance of consciousness
- confusion, behavioural change or 'absence' without other explanation
- falls, after which the patient cannot recall or explain the event
- twitching, involuntary movement or sensory disturbance of a limb, limbs or face without loss of consciousness. Positive symptoms are more likely to be due to epilepsy and negative symptoms (for example weakness) to cerebrovascular disease.

**This is less likely to be epilepsy if:**

- the episodes comprise dizziness only, or vertigo followed by a fall without loss of consciousness. However, rarely, temporal lobe seizures may take the form of episodic vertigo, Consider alternative explanations such as vestibular pathology, vertebrobasilar TIA or cardiac dysrhythmia.
- there is only very transient twitching, which might happen in a syncopal attack.

Remember that a prolonged syncopal attack may be associated with confusion in someone who already has impaired mental function.

**Epileptic seizures are more likely if:**

- the events happen in a variety of postures, and not only during standing, or just after standing
- the events always happen during sleep
- the duration of confusion or amnesia following the event is longer than one hour
- myalgia, headache or bitten lateral tongue or cheek are noted.

**Epileptic seizures are less likely if:**

- the event always happens while standing or just after standing (could this be postural hypotension or other vasomotor problem?)
- the prodrome, if remembered, is dominated by visual symptoms or dizziness (could this be syncope?).

### **Some important points to remember**

- Non-epileptic attack disorder (pseudoseizures) is relatively uncommon in older people, but should be considered when attacks include tremors.
- Always consider syncope if the patient is taking diuretics, antidepressants, antihypertensive or antipsychotic drugs. This is particularly important if there is a temporal relationship between starting the drug and the events.
- If your patient has had multiple negative investigations for recurrent disabling events, reconsider the whole history – others may have overlooked an obvious clinical diagnosis.

### **Principal differential diagnoses**

Whatever the cause of the loss of consciousness, your patient may have amnesia for both the event and its exact circumstances. The two main causes of transient loss of consciousness are syncope and seizures. Transient cerebral ischaemia due to embolus is not associated with impairment of consciousness. Microsleeps (very short daytime naps) may occur with any cause of severe sleep deprivation or disruption. Other causes of diagnostic confusion are much rarer and include: hypoglycaemia or other intermittent metabolic disorders, possibly structural anomalies of the skull base resulting in episodic brainstem ischaemia, or (very rarely) lesions affecting the CSF circulation. Hypnic jerks on the verge of sleep may be confused with nocturnal seizures.

# Management of a possible first seizure in an older person

## In line with NICE guidelines

- The patient should be referred to a regularly scheduled 'first seizure' clinic, where specialists in both epilepsy and cardiology/syncope are available.
- If there is no local clinic, the patient should be referred to a clinician with experience and expertise in both epilepsy and syncope.
- If there is no clinic and no clinician with experience in both areas, the patient should ideally be referred to both an epilepsy specialist and a cardiology specialist.
- If the event is confirmed as an epileptic seizure, the patient should be informed about treatment options, and the consultant should begin the treatment regimen.
- If the event is believed to be of cardiovascular or cerebrovascular origin, patients should be referred promptly to the appropriate services. The assessment clinic should consequently have clear links to other services.
- Once treatment has begun, the patient should be referred to an epilepsy specialist nurse (ESN) or similar service for ongoing support, with a clear plan for medical follow-up.
- Where an ESN is not available, a district liaison nurse, under the supervision of a clinician with expertise is an effective model.
- ESNs (or similar) should act as a liaison between the patient and the services they need to access.

**Where there is a probability of recurrent seizures, patients should be offered drug treatment and have access to sources of information about:**

- epilepsy in general
- medication and side-effects
- seizure type(s), triggers, including recreational drugs, alcohol, and sleep deprivation, and seizure control
- management and self-care
- risk management
- first aid, safety and injury prevention at home and at work
- psychological issues
- social and welfare benefits
- insurance issues
- employment and independent living
- road safety and driving
- status epilepticus
- lifestyle, leisure and social issues, including sexual activity
- voluntary organisations/support groups and how to contact them.

### **Investigations**

It may not be possible to make a definite diagnosis of epilepsy. If the diagnosis can't be clearly established, further investigations and/or referral to a tertiary centre should be considered.

#### **Do's**

- Get as clear a history as possible.
- Check lying and standing blood pressure.
- Suggest a relative and/or witness attends the clinic with the patient or is available by telephone.
- Review all medications.
- Refer for an ECG (12 lead).
- Where there is a possibility of recurrent unexplained syncope then full cardiovascular investigation, including prolonged ECG recording and tilt table testing should be carried out.
- Perform an MMSE or AMT if the history is unclear.
- Advise the patient not to drive a car.

#### **Don't**

- Try a treatment trial.

### **Acute provoked seizures**

- Acute provoked seizures are seizures with an identifiable and immediate preceding cause.
- The commonest causes of acute provoked seizures in older people are acute stroke, infection, medications and alcohol.
- Metabolic disorders are also associated with acute provoked seizures. Hypoglycaemia, hyperglycaemia, uraemia, hyponatraemia, and hypocalcaemia should all be sought and treated if found.
- Short-term ancillary anti-epileptic drug (AED) treatment may be needed while the underlying precipitant is treated but the need for it should be kept under close review.

## **The treatment of epilepsy in later life – summary**

- An epilepsy specialist or clinician who is familiar with epilepsy and who can discuss the advantages and disadvantages of AED treatment with the patient and carer should start treatment.
- There are few circumstances in which prevention of generalised seizures are not advisable. Age is never a barrier to treatment, but a patient's wishes, co-morbidities and general functional status may sometimes affect the balance of the risks and benefits of treatment.
- Very few treatment studies have included older people and the evidence base for the choice of AEDs is limited.
- AED tolerability and long-term safety must be the paramount consideration in older patients with newly diagnosed epilepsy.
- Pharmacodynamics and pharmacokinetics are altered in older people due to reduced protein binding, enzyme inducibility, renal elimination and hepatic metabolism of many common agents. These age-related changes, however, are less important than those due to co-morbidity, especially those affecting the liver, the kidney and the brain.
- Older patients are at greater risk of polypharmacy. More drugs often mean more drug interactions, more adverse effects and reduced adherence to treatment.
- Physical or cognitive /psychological co-morbidities may be made worse by certain AEDs.
- Older people are sometimes more likely to experience adverse effects of treatment.

### **Starting treatment**

- Except where frequent recurrent seizures require urgent control, follow the 'start low, go slow' rule.
- Always aim for seizure control with a single drug but acknowledge that sometimes drug combinations may provide the best control with the fewest adverse effects.

### **Changing treatment**

- Choose another drug if the first fails due to:
  - rash or other idiosyncratic reaction
  - poor tolerability of the drug at low or moderate dosage
  - no improvement in seizure control.
- If your patient's symptoms are controlled on a 'second line' drug and they have no significant adverse effects – make no change.
- If your patient has no seizures over a number of years, then consideration can be given to a trial of treatment withdrawal. This should only happen with full patient understanding and involvement. Treatment withdrawal is less likely to be successful in the presence of underlying structural brain disease such as stroke. It's worth remembering that if someone is withdrawn from anti-epileptic drugs, they will need to stop driving while the withdrawal is complete, and for six months afterwards.

### **Drug levels**

Therapeutic blood levels have been established on younger populations and may not apply to older adults. Older patients are often well controlled below the standard therapeutic range, and symptoms of toxicity may occur with levels within the traditional therapeutic range. Routine monitoring of serum AED levels is therefore not recommended, but single values may be useful in the evaluation of treatment adherence, in determining whether deterioration in a patient's mobility or mental function is drug-related, or in clarifying drug interactions.

### **Tertiary care**

If seizures are not controlled and/or there is diagnostic uncertainty or treatment failure, older people should be referred to tertiary services for further assessment.

Referral should be considered if

- the epilepsy is not controlled with medication within two years
- management is unsuccessful after two drugs have been tried
- the person experiences, or is at risk of, unacceptable side-effects from medication
- there is a structural lesion
- there is psychological and/or psychiatric co-morbidity
- there is continuing diagnostic doubt as to the nature of the seizures and/or seizure syndrome.

### **Ancillary care**

Epilepsy specialist nurses, occupational therapists, physiotherapists and pharmacists may all have a role in assessment, support and functional review of older people with epilepsy.

## An overview of specific drug options

NICE guidelines should be referred to for more detailed information. There is limited evidence of efficacy of some of the newer drugs in the elderly. This is highlighted in Disadvantages. (See opposite.) Clinicians are cautioned to take care in using these unless they are experienced in their use.

How a drug is used is often as important as the choice of drug. Clinicians should be prepared to adjust the dose to suit the individual patient and be prepared to make small incremental dose changes in the light of observed therapeutic effect. For this reason the ongoing support of an epilepsy specialist nurse is particularly important.

### Caution

- Phenobarbitone and primidone should be avoided because of side-effect profiles, sedative effects, and interactions.
- Topiramate may cause cognitive slowing, requires slow titration and is best avoided.
- Phenytoin is a potentially useful drug but has non linear kinetics which may result in patient going from sub-therapeutic dose to toxic dose very quickly and as such should usually be avoided.

Drug	Advantages	Disadvantages
<b>Carbamazepine (modified release preferred)</b>	Studied in older people	Neurotoxicity Hyponatraemia Enzyme induction Bone loss
<b>Gabapentin</b>	Studied in older people  No significant interactions	Clinical experience suggests efficacy lower than that suggested by clinical trials.  Dizziness  Weight gain  TDS or QDS dosing schedule

<b>Drug</b>	<b>Advantages</b>	<b>Disadvantages</b>
<b>Lamotrigine</b>	Studied in older people Few interactions or adverse effects	Neurotoxicity in higher doses Slow up-titration Insomnia Dose related rash
<b>Levetacetam</b>	Broad spectrum No interactions Rapid up-titration possible	Sedation Mood problems Bone loss
<b>Oxcarbazepine</b>	Generally well tolerated	Hyponatraemia Neurotoxicity Allergic rash Avoid in combination with diuretics, hypotensive medications.
<b>Pregabalin</b>	No interactions	Dizziness Weight gain Limited efficacy in the elderly
<b>Sodium valproate</b>	Broad spectrum Few interactions	Sedation Weight gain Tremor Parkinsonism
<b>Tiagabine</b>	Few allergic reactions Few interactions	Sedation Few data in elderly
<b>Zonisamide</b>	Broad spectrum Once daily No interactions	Slow titration

# Management of epilepsy in an older person

## Individual care plans

All older people with epilepsy should have a comprehensive care plan that is agreed between the person with epilepsy, their family and/or carers, as appropriate, and primary and secondary care providers. This should include lifestyle issues, as well as medical issues.

## Annual review

All older people with epilepsy should have a regular structured review with their GP, epilepsy specialist, or clinician.

## Other aspects of patient care

You may have a newly-referred patient who has a long history of epilepsy, who is experiencing frequent seizures or side-effects of medication. They may have problems in addition to epilepsy. It is therefore important to consider the following when assessing your patient with a possible new diagnosis, as well as new patients with longstanding epilepsy.

### Polypharmacy

- Take the opportunity to review and simplify medication, reducing potential for interactions and poor compliance.

### Consequences of falls from seizure or any other cause

- Consider the need for bone protection (some AEDs accelerate bone loss), the patient's ability to rise unassisted, the need for alert systems and any changes needed to their environment. Balance and gait may be impaired by some AEDs.

### Social isolation

- Loss of confidence, with associated dependence on carers or family, may follow 'turns' of any sort. Can confidence be improved? Is rehabilitation, in particular gait re-training by a physiotherapist or advice from an occupational therapist needed?

### Stigma

- Epilepsy still carries a stigma for many older people; this may impede diagnosis or acceptance of treatment and needs to be addressed.

### Cognitive impairment

- There is a higher incidence of epilepsy in dementia, particular multi-infarct dementia, and this may influence diagnosis, choice of medication or treatment adherence. Has the presence of dementia been considered? If present, it will need to be investigated and managed.

### Vascular risk

- Epilepsy is strongly associated with cerebrovascular disease in older people; have the treatable risk factors been addressed?

### **Lowered seizure threshold**

- Metabolic upset, drug treatment or intercurrent illnesses are more likely to provoke seizures in older people.
- Alcohol may interact with AED treatment and lower the seizure threshold. A high alcohol intake or sudden alcohol withdrawal may trigger seizures.

### **Driving**

- Loss of a driving licence may alter the care needs of a patient or their partner or dependants.

### **Monitoring the condition**

- Assessing frequency of seizures may be difficult due to social isolation or impaired recall.

### **Models of care**

- Clinic attendance may be more difficult for the frail. Would a day hospital setting be better? Would specialist nurse input help?

**Despite these additional challenges, older people with epilepsy generally have a good prognosis – accurate diagnosis often leads to excellent seizure control.**

## Further Reading

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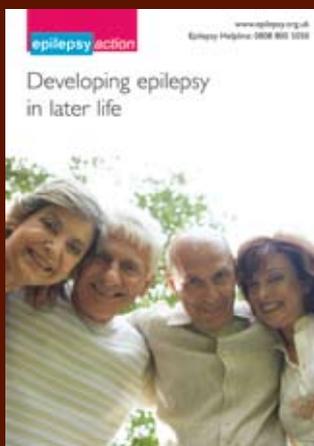
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## **Are you a member of the British Geriatrics Society? Then join the new Special Interest Group for Epilepsy in Older Adults**

The Special Interest Group was set up in 2010. The group is looking for geriatricians with an interest in epilepsy to share best practice and raise the profile of the condition among their peers.

The over 65s are now the largest group in which a first seizure is reported. Most of these people will present initially to their geriatrician. Increasing awareness of both the clinical presentation and its management among geriatricians and medical staff looking after older people is important.

To sign up to the Special Interest Group, or to find out more, write to the British Geriatrics Society, 31 St Johns Square, London EC1M 4DN or call 0207 608 8574.



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