First Seizure in Adults

Disclaimer

This pathway is about patients presenting with a possible seizure. See also Epilepsy in Adults if established epilepsy.

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Red Flags

- Seizure associated with fever, neurological deficit, recent trauma, or persistent severe headache
- Prolonged or recurrent seizure (more than one in 24 hours) with incomplete recovery
- Persisting altered level of consciousness
- First seizure or suspected eclampsia in a pregnant woman
Background

About first seizure in adults

- Approximately 50% of single seizures recur within 2 years.
- The probability of recurrence is highest within the first few months.

Assessment

Practice Point - Multiple seizures in 24 hours

Multiple seizures in a single 24-hour period are considered a single seizure.

1. Take a detailed history of the episode:
   - Obtain separate histories from the patient and any eyewitness.

Eyewitness account of seizure events

- Event circumstances e.g., the trigger
- Duration
- Any loss of response or consciousness
- Any movements
- Clinical state after the event, especially any focal deficits

Obtaining patient history

Determine:
- what they were doing at the time.
- whether there was any loss of awareness.
- if there was any:
  - prodrome (precursor symptoms).
  - biting of the side of the tongue.
  - postictal myalgia.
- if prolonged (more than 10 minutes), confusion, or amnesia.

- Record any further episodes by video, smartphone, or diary.
- Drug history – the most common cause of drug-induced seizures are alcohol, synthetic cannabis, amphetamines, and benzodiazepines, both in intoxication and withdrawal.
- Medication use – ask about medications that lower the seizure threshold. If a patient with a first seizure is taking one of these medications, endeavour to stop that medication if safe to do so.

Medications that lower the seizure threshold

- Clozapine
➢ Tramadol
➢ Bupropion
➢ Pethidine
➢ Tricyclic antidepressants
➢ Antihistamines
➢ SSRIs and SNRIs used at therapeutic doses do not appear to provoke seizures

2. Differentiate vasovagal syncope, migraine, and syncope from a seizure.

Vasovagal syncope

Vasovagal syncope is common. Vasovagal syncope is distinguished by the situation, the trigger, and the presence of a prodrome.

Consider:

➢ Common situations:
  o Change in blood pressure – dehydration, heat exposure, pregnancy, postural change
  o Prolonged sitting or standing – bathroom, aeroplane, church, supermarket
  o Unwell
  o New or changed medications
  o Pain, sight of blood, or medical procedures

➢ Prodrome:
  o Dizziness or lightheadedness
  o Bilateral elemental visual effects (e.g., darkening, spots, lights)
  o Buzzing, echoing, hearing fade
  o Feeling hot, nausea

➢ Event:
  o The time from trigger to onset may be 10 to 20 seconds or longer.
  o Loss of consciousness is usually brief if the patient falls (up to 30 seconds).
  o Rapid recovery (< 60 seconds).
  o If the patient does not fall (e.g., they are helped upright by passer-by), then loss of consciousness may be prolonged and recovery slow. Convulsive features such as brief stiffness or a few jerks are then more likely.
  o Can occur sitting or standing.
  o Urinary incontinence does not differentiate seizure and syncope.

3. Consider causes of provoked epileptic seizures.

Causes of provoked epileptic seizures

➢ Intracranial pathology
  o Stroke
  o Trauma
  o Infection
  o Inflammation
  o Space occupying lesion

➢ Metabolic causes
  o Hypoglycaemia or hyperglycaemia
  o Hyponatraemia or hypernatraemia
  o Hypocalcaemia or hypercalcaemia

➢ Alcohol and other drugs (intoxication and withdrawal)
4. Perform an examination:
   - Look for focal neurological deficit.
   - Assess level of consciousness.
   - Take the patient’s temperature.

5. Arrange investigations prior to neurologist review:
   - FBE, electrolytes, urea and creatinine, LFT and BGL
   - ECG
   - EEG (if available)
   - **MRI brain**

   **MRI brain**
   - Medicare MRI brain rebates are available for children and adults where the indication is "unexplained seizure".
   - Specify "epilepsy protocol" on the request form – thinner slices are obtained under this protocol.

6. In pregnant or postpartum patients, consider:
   - **Eclampsia.**
   - **Structural cause e.g., meningioma (which can swell during pregnancy), cerebral venous thrombosis (particularly postpartum).**

### Management

1. If any **red flags**, arrange **immediate neurology referral or admission**.

2. Refer pregnant patients with possible eclampsia for an **immediate obstetric assessment** via ambulance.

3. In most cases, the patient substantially or completely recovers within minutes. In this case, advise that the patient can go home.

4. Refer all patients with a first seizure for **urgent or routine neurology assessment**. If seizure aetiology is unclear, proceed with the referral ensuring an MRI brain and ECG are completed prior.

5. Wait until 2 seizures have occurred before starting anti-epilepsy medication, and only via **urgent or routine neurology referral** or in direct discussion with a neurologist.
   - There is a 40 to 50% chance of another seizure following a first, unprovoked epileptic seizure.
   - If more than one seizure occurs, a diagnosis of epilepsy is likely.

6. Advise patients of mandatory driving stand-downs:
   - Private licence holders can resume driving when they have been seizure-free for 6 months.
   - Longer exclusion periods apply for commercial drivers (including ride-sharing operators).
   - All decisions regarding returning to driving should be made in discussion with the treating neurologist.

7. Give patients and relatives advice on:
   - **first aid seizure management.**

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*South Eastern Melbourne PHN First Seizure in Adults pathway*
Referral

- If any **red flags**, arrange **immediate neurology referral or admission**.
- Refer pregnant patients with possible eclampsia for an **immediate obstetric assessment** via ambulance.
- Refer all patients who have had a first seizure for an **urgent or routine neurology assessment**. Even for patients who appear to have had a drug induced seizure, except in cases of clear alcohol or benzodiazepine withdrawal seizure.
- If it is not clear whether the event was a seizure or syncopal, request **urgent or routine neurology assessment**.
  - Arrange an MRI brain and a 12-lead ECG, and an EEG (if available) for all patients prior to their appointment.
  - Specify that the referral is for assessment of a first seizure.
- To start anti-epileptic treatment, or for advice on treatment refer for **urgent or routine neurology assessment**.

Information

For health professionals

Further information
- Australian Family Physician – [Epilepsy in Adults](#)
- Austroads – [Assessing Fitness to Drive: Seizures and Epilepsy: 6.2.3 Medical Standards for Licensing](#)

For patients
- Better Health Channel – [Epilepsy: First Aid and Safety](#)
- [Epilepsy Action Australia](#)
- [Epilepsy Foundation – Epilepsy Information](#)

References


Select bibliography

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