

# Electroencephalogram (EEG)

## When to use an EEG

1. Perform an EEG only to support a diagnosis of epilepsy in adults when the clinical history suggests that the seizure is likely to be epileptic in origin.
2. Perform an EEG only to **support** a diagnosis of epilepsy in children and young people. If an EEG is considered necessary, perform it after the second [epileptic seizure](#). However, it may, in certain circumstances, as evaluated by the [specialist](#), be considered after a first epileptic seizure.
3. In those presenting with a first unprovoked seizure, use unequivocal epileptiform activity on EEG to assess the risk of seizure recurrence.
4. Use an EEG to help determine seizure type and [epilepsy syndrome](#) when epilepsy is suspected. This enables children, young people and adults to be given the correct [prognosis](#).
5. Use photic stimulation and hyperventilation as part of standard EEG assessment. Ensure the child, young person or adult and family and/or [carer](#) are aware that such activation procedures may induce a seizure and they have a right to refuse.

## When an EEG should not be used

1. Do not perform an EEG in the case of probable [syncope](#) because of the possibility of a false-positive result. (NICE has produced a pathway on [the management of transient loss of consciousness \('blackouts'\) in adults and young people](#).)
2. Do not use an EEG to exclude a diagnosis of epilepsy when the [clinical presentation](#) supports a diagnosis of a non-epileptic event.
3. Do not use an EEG in isolation to make a diagnosis of epilepsy.

## If diagnosis is still unclear after a standard EEG

For those in whom epilepsy is suspected, but who present with diagnostic difficulties, specialist investigations should be available.

1. Repeated standard EEGs may be helpful when the diagnosis of the epilepsy or the syndrome is unclear. However, if the diagnosis has been established, repeat EEGs are not likely to be helpful.
2. Do not use repeated standard EEGs in preference to sleep or sleep-deprived EEGs.
3. When a standard EEG has not contributed to diagnosis or classification, perform a sleep EEG. In children and young people, this is best achieved through sleep deprivation or the use of melatonin.
4. Use long-term video or ambulatory EEG to assess those who present with diagnostic difficulties after clinical assessment and standard EEG.

## Evaluation of non-epileptic attack disorder

Provocation by suggestion may be used in the evaluation of [non-epileptic attack disorder](#). However, it has a limited role and may lead to false-positive results in some people.

For more information on non-epileptic attack disorder, see [non-epileptic attack disorder suspected](#) in this pathway.

## Performing investigations in special groups of people with epilepsy

For special considerations when performing investigations in people with learning disabilities and in [older people](#), see [treatment and care in people with learning disabilities](#) and [older people](#) in this pathway.