

Initial Evaluation of the Patient with Suspected Epilepsy



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KEYWORDS

- Definition of epilepsy • Newly diagnosed • Misdiagnosis • Differential diagnosis
- Investigation • Referral • Psychiatric comorbidity • Neuro-cognitive outcomes

KEY POINTS

- Epilepsy can be diagnosed after a single unprovoked seizure if a patient's risk of having a recurrent seizure is similar to that after 2 unprovoked seizures (>60%).
- Predictors of recurrent seizure include a previous brain injury, a significant abnormality on brain imaging, and a seizure occurring out of sleep.
- An epilepsy specialist who can promptly establish the diagnosis should see patients with new-onset seizures.
- An electroencephalogram is recommended in those with suspected or newly diagnosed epilepsy. Brain imaging (preferably MRI) is recommended in those with new-onset unprovoked seizures unless they have a clear generalized epilepsy of genetic origin.
- Patients with new-onset epilepsy should be screened for depression and anxiety, and undergo neurocognitive testing when appropriate.

INTRODUCTION

Receiving a diagnosis of new-onset epilepsy can be life changing. Epilepsy is associated with a number of poor outcomes, including premature mortality, multimorbidity, and social and psychosocial challenges, such as driving restrictions,

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unemployment, and stigma.¹⁻³ As such, the prompt evaluation of those who present with possible epilepsy is necessary to ensure they are accurately diagnosed and properly managed. Important new concepts have emerged in recent years, including that epilepsy can now be diagnosed after a single unprovoked seizure under certain circumstances. There is also a new classification of seizures and the epilepsies, along with a definition of drug-resistant epilepsy that should promote an earlier referral to specialized epilepsy programs. We review the approach to the initial evaluation of the person with suspected epilepsy, including new definitions, which diagnostic tests should be considered, and when early referral to an epilepsy program is suggested.

IS IT EPILEPSY?

Definition of Epilepsy

Epilepsy has traditionally been defined as a “condition characterized by recurrent (2 or more) epileptic seizures, unprovoked by any immediate cause.”⁴ However, it has become evident to experts over time that there are instances in which a single seizure may signal the presence of epilepsy. Indeed, in 2005, the following conceptual definition of epilepsy was proposed by the International League Against Epilepsy (ILAE) and the International Bureau for Epilepsy, although it was not initially adopted: “Epilepsy is a disorder of the brain characterized by an enduring predisposition to generate epileptic seizures and by the neurobiologic, cognitive, psychosocial, and social consequences of this condition. The definition of epilepsy requires the occurrence of at least one epileptic seizure.”⁵ Although some were concerned by the risks of diagnosing epilepsy after a single seizure (eg, stigma in those who may not go on to have epilepsy), others also saw merit in this proposal. Earlier identification of those with suspected epilepsy could (1) reduce the time to intervention and as a result decrease injuries and morbidity, (2) provide the opportunity to introduce disease-modifying therapies when available, and (3) allow for the prevention or the earlier assessment and management of comorbidities with the goal of improving overall epilepsy-related outcomes. A few years ago, the ILAE commissioned a task force to convert this conceptual definition into a practical definition that could be used for clinical care. The new definition of epilepsy (**Box 1**) was adopted by the ILAE Executive Committee in December 2013, after undergoing extensive review (public comments by more than 200 individuals, journal reviewers, and so forth).⁶ The most significant change to the classic epilepsy definition is the adoption of the concept that epilepsy can now be diagnosed in a patient with reflex seizures and after a single seizure, if the patient’s risk of having a recurrent seizure is similar to that after 2 unprovoked seizures, which is at least 60%.

Box 1

Practical clinical definition of epilepsy

Epilepsy is a disorder of the brain defined by any of the following conditions

1. At least 2 unprovoked (or reflex) seizures occurring more than 24 hours apart
2. One unprovoked (or reflex) seizure and a probability of further seizures similar to the general recurrence risk (at least 60%) after 2 unprovoked seizures, occurring over the next 10 years

Adapted from Fisher RS, Acevedo C, Arzimanoglou A, et al. ILAE official report: a practical clinical definition of epilepsy. *Epilepsia* 2014;55:477; with permission.

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