

# Testing patients during a seizure

Dovydas Burkojus<sup>1</sup>, Milda Endzinienė<sup>1</sup>, Giedrė Jurkevičienė<sup>1</sup>, Giedrė Gelžinienė<sup>1</sup>,  
Sándor Beniczky<sup>2</sup>

<sup>1</sup> Neurology Department, Lithuanian University of Health Sciences; Hospital of Lithuanian University of Health Sciences Kauno klinikos, Affiliated member of the European Reference Network EpiCARE, Kaunas, Lithuania

<sup>2</sup> Department of Clinical Neurophysiology, Danish Epilepsy Center, Affiliated member of the European Reference Network EpiCARE, Dianalund and Aarhus University Hospital; Department of Clinical Medicine, Aarhus University, Aarhus, Denmark

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Recognizing seizure semiology is essential for identifying, characterizing and classifying seizures [1]. Important semiological features (such as attention, awareness, speech, memory, etc.) require active assessment during seizures. Therefore, standardized protocols for behavioural testing of people with epilepsy are needed in order to assess these semiological features. In 2016, a European consensus procedure was developed by a joint taskforce of the International League Against Epilepsy that focuses on distinguishing behavioural and other semiological findings that are otherwise difficult or impossible to record using video encephalography alone [2]. We created an educational animation video, based on the previously published consensus.

## Disclosures.

None of the authors have any conflict of interest to declare.

## References

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2. Beniczky S, Neufeld M, Diehl B, Dobesberger J, Trinka E, Mameniskiene R, *et al.* Testing patients during seizures: a European consensus procedure developed by a joint taskforce of the ILAE - Commission on European Affairs and the European Epilepsy Monitoring Unit Association. *Epilepsia* 2016; 57(9): 1363-8.



VIDEO ONLINE



• **Correspondence:**  
Dovydas Burkojus Neurology  
Department, Lithuanian  
University of Health Sciences,  
Hospital of Lithuanian  
University of Health Sciences  
Kauno klinikos, Kaunas 50009,  
Lithuania

## Legend for video sequence

Hello, we would like to introduce you to a seizure testing procedure.

This video is based on European consensus procedure developed by a joint taskforce of the International League Against Epilepsy.

An epilepsy seizure is defined as a transient occurrence of signs and/or symptoms due to abnormal excessive or synchronous neuronal activity in the brain.

Epilepsy centres are equipped with tools and trained personnel to ensure diagnostic precision.

It is of utmost importance to recognize different characteristics of a seizure in order for further investigation to be successful.

Before ictal testing, ensure patients' safety and note the time the seizure starts. Pull covers off the patient, respecting the patient' privacy.

Despite the majority of the seizure being recorded, make sure to recognise semiological features throughout the seizure. These include elementary motor, automatisms and language-related findings.

Some subtle features such as autonomic reactions, eye deviation or jerks, sensory and experiential symptoms require additional live observation.

First, assess the patient's responsiveness. Verbally greet the patient by name, if the patient is able to answer, ask what he or she feels. If not, slightly pinch the patient's arm.

Verbally ask the patient to lift arms. This way, we are able to evaluate speech comprehension and ictal palsy simultaneously. Give visual clues only if the patient does not follow your commands. If the patient still doesn't follow, try to shake hands.

Verbal function can be tested by asking to repeat and memorize pairs of words like "horse", "table" or "dog", "red".

Proceed only if the patient is reacting, if not – start from the beginning.

Step 4 is to evaluate patients' orientation. Ask the patient's name, where is he or she right now, what's the day of the week? For children, these questions can be related to parents or toys.

Verbal memory is assessed by asking whether the patient remembers the words or commands given previously.

The next step is to assess anomia and visual memory - pick a test object - a pen - and ask the patient what it is or, if the patient is unable to answer, ask to describe what it is used for. Ask the patient to memorize a test object. If the patient fails requested tasks, ask the patient to stick his or her tongue out. The latter action can be demonstrated.

To test other cognitive functions, ask the patient to count, then to remember the test item. If the patient is unable to remember the test item, show three different items and ask which one was showed previously.

Test muscle tone by touching the limb and passively flexing it.

If the seizure continues, return to step one.

Ask the patient the following questions: did he or she have a seizure, how did it feel throughout the course? Was there a visual aura? If so, ask the patient to draw it. What was the action performed? Does he or she recall test words and a test object?

To test speech comprehension and Todd's palsy, ask the patient to lift arms and legs. Demonstrate the action only if the patient is not following verbal commands. If the patient still doesn't follow, try to lift both of his or her arms.

Once again, test for orientation and anomia.

Continue testing until the patient returns to baseline.

There are indeed a lot of steps so let's sum it up with a shorter version of the whole process.

Before testing, ensure safety, appropriate display of the patient and say what you see.

The first three steps are to evaluate responsiveness, speech comprehension, ictal palsy and verbal function. Move on to other steps if the patient is reacting.

Steps 4 through to 9 are to test orientation, verbal memory, anomia, visual memory and other cognitive functions, as well as muscle tone.

Postictal testing consists of the patient describing the seizure while you assess cognitive, motor and other postictal features.

Try to do the same testing before and an hour after the seizure.

Thank you for watching.

**Key words for video research on [www.epilepticdisorders.com](http://www.epilepticdisorders.com)**

*Phenomenology:* behavior (altered), seizure recognition, semiology

*Localization:* not applicable

*Syndrome:* not applicable

*Aetiology:* not applicable