

LETTER

The need for a pragmatic seizure classification in clinical trials

To the Editors:

We read with interest the report by Steriade et al.¹ of a pragmatic seizure classification based on the International League Against Epilepsy (ILAE) scheme for use in clinical trials. The authors sought to shift the focus to outcome measures that are reliable, interpretable by various stakeholders, and clinically relevant to the development of new antiseizure medications.¹ This is a welcome practical proposal and expands on the importance of pragmatic seizure classification.

The utility of seizure classification categories is critical. Previously, we have noted the limitations of existing seizure classifications based on semantics, syntax, and semiotics of seizures.² For example, “dialeptic seizures” are unnecessarily broad. Steriade et al. recommended utilizing “focal aware with or without observable signs” instead of “focal aware with or without motor signs” and not distinguishing focal unaware with or without motor signs. This modified epilepsy classification will place clinically relevant outcomes at the forefront of randomized controlled trials.

The precision of seizure classification categories must be addressed. Utilizing precise language when describing seizure types is essential for localizing and managing epilepsy medically or surgically and facilitating communication to specific groups.^{2,3} Steriade et al.¹ recommended avoiding the term “drop attacks,” noting that multiple seizure types produce falls. In contrast, the term “tonic-clonic” has a specific definition and does not refer to all seizures with motor activity.³ When classifying seizures, utilizing additional terms appended to standard categories in an extended classification, such as cognitive effects or automatisms, may render diagnosis more specific.³ Incorporating factors such as comorbidities, the changing demographics of epilepsy, brain age, genetic etiologies, and environmental triggers will provide further granularity.^{2,4}

Additionally, existing and emerging technologies should be used to increase the granularity and utility of epilepsy classification. The first ILAE seizure classification was published in 1981 following the development

of video electroencephalography (EEG).⁵ It was recommended to integrate complementary surrogate markers such as short- and long-term EEG data into seizure types with poor self-report reliability.¹ EEG findings may be useful for all seizure types, rather than simply those with poor self-report reliability. Technologies likely to impact future classifications include 7-T magnetic resonance imaging, genome sequencing, and artificial intelligence.²

Additional factors are essential to consider. Epilepsy classification schema must be sufficiently flexible to allow clinically useful classification in a variety of social, political, economic, and cultural contexts in addition to the clinical trial settings proposed by Steriades et al.^{2,4} The classification must be helpful for a variety of stakeholders.¹ Incorporating the epilepsy classification into a comprehensive team-based approach to clinical trials with the input of clinical and nonclinical stakeholders may enhance the clinical relevance of the outcomes under study.^{2,4} In aggregate, these modifications will increase the patient-centeredness of research and empower people with epilepsy.

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CONFLICT OF INTEREST

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Nathan A. Shlobin^{1,2} 
Josemir W. Sander^{2,3,4,5} 

¹Department of Neurological Surgery, Feinberg School of Medicine, Northwestern University, Chicago, Illinois, USA

²*Epilepsy Institutes of the Netherlands Foundation,
Heemstede, the Netherlands*

³*University College London Queen Square Institute
of Neurology, National Institute for Health Research
University College London Hospitals Biomedical
Research Centre, London, UK*

⁴*Chalfont Centre for Epilepsy, Chalfont St Peter, UK*

⁵*Department of Neurology, West China Hospital,
Sichuan University, Chengdu, China*

Correspondence

Josemir W. Sander, Box 29, UCL Queen Square Institute
of Neurology, London WC1N 3BG, UK.
Email: l.sander@ucl.ac.uk

ORCID

Nathan A. Shlobin  <https://orcid.org/0000-0003-2079-6125>

Josemir W. Sander  <https://orcid.org/0000-0001-6041-9661>

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ANNOUNCEMENT**Epilepsia – May 2022 – Announcements****ILAE CONGRESSES****5 – 8 May 2022****2nd North American Epilepsy Congress**

Virtual congress

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Talloires, France

www.ilae.org/wonoep2022**9 – 13 July 2022****14th European Epilepsy Congress**

Geneva, Switzerland

www.ilae.org/eec2022**16 – 23 July 2022****5th Dianalund Summer School on EEG and Epilepsy**

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17 – 20 June 2022

10th Migrating Course on Epilepsy

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Vienna, Austria

<https://www.ilae.org/congresses/8th-congress-of-the-european-academy-of-neurology-ean>

8 – 9 July 2022

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<https://www.ivvy.com.au/event/ESA2022/>

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