

ILAE Commission Report

Glossary of Descriptive Terminology for Ictal Semiology: Report of the ILAE Task Force on Classification and Terminology

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INTRODUCTION

This glossary intends to provide a standard terminology for health care workers to communicate what is observed and what a patient reports during a seizure. As this terminology is descriptive and phenomenologic, its use would not imply or require knowledge of ictal pathophysiology, any pathological substrate, or etiology.

Many terms are adjectives modifying “seizure,” which itself is defined under “general terms.” This pertains to seizures with single or multiple components.

Terms in this glossary (e.g., “seizure,” “ictus,” which have widespread applicability in other fields of clinical neuroscience) are herein defined according to their references to epilepsy.

Some terms of this glossary are “fundamental” (i.e., they encompass other more precise words). These can be used as the sole descriptor when data to characterize a phenomenon more precisely are not available. Such include aura, automatism, experiential, motor, and sensory.

A seizure will often consist of two or more phenomena occurring simultaneously or sequentially and should be described accordingly.

Quantitative terms, such as duration of motor events, are not intended as immutable confines, but as clarifying guides to describe clinically observed events.

Scientific progress dictates an evolution of terms to retain their relevance. However, needs of communication in everyday life require that changes be gradual and evolutionary rather than abrupt and revolutionary. The use of

synonyms in this glossary reflects incidents in which gradual changes are likely.

Terminology in some areas remains unresolved. Therefore we view this glossary as a dynamic process for which feedback will be welcomed.

PRINCIPLES FOR TERMS AND DEFINITIONS

In developing the “lexique” of this report, we adopted and applied the following principles.

Terms and definitions should

1. Contain features that distinguish *or modify* seizure entities.
2. Be descriptive of the phenomena involved.
3. Comply with terminology of clinical neuroscience.
4. Use current terminology and definitions wherever possible.
5. Contain new terms only if necessary.
6. Be easily translatable to other languages.
7. Be readily understood *and used* by potential users.

I GENERAL TERMS

1.0 SEMIOLOGY

That branch of linguistics concerned with signs and symptoms.

2.0 EPILEPTIC SEIZURE

Manifestation(s) of epileptic (excessive and/or hypersynchronous), usually self-limited activity of neurons in the brain.

3.0 ICTUS

A sudden neurologic occurrence such as a stroke or an epileptic seizure.

4.0 EPILEPSY

- a) Epileptic Disorder: A chronic neurologic condition characterized by recurrent epileptic seizures.
- b) Epilepsies: Those conditions involving chronic recurrent epileptic seizures that can be considered epileptic disorders.

5.0 FOCAL (syn. partial)

A seizure whose initial semiology indicates, or is consistent with, initial activation of only part of one cerebral hemisphere.

6.0 GENERALIZED (syn. bilateral)

A seizure whose initial semiology indicates, or is consistent with, more than minimal involvement of both cerebral hemispheres.

7.0 CONVULSION

Primarily a lay term. Episodes of excessive, abnormal muscle contractions, usually bilateral, which may be sustained or interrupted.

II TERMS DESCRIBING EPILEPTIC SEIZURE SEMIOLOGY

These are descriptors of seizures unless specified otherwise.

1.0 MOTOR

Involves musculature in any form. The motor event could consist of an increase (positive) or decrease (negative) in muscle contraction to produce a movement.

Unless noted, the following terms are adjectives modifying “motor seizure” or “seizure” (e.g., “tonic motor seizure or dystonic seizure”), and whose definitions can usually be understood as prefaced by “refers to . . .”.

1.1 ELEMENTARY MOTOR

A single type of contraction of a muscle or group of muscles that is usually stereotyped and not decomposable into phases. (However, see tonic-clonic, an elementary motor sequence).

1.1.1 TONIC

A sustained increase in muscle contraction lasting a few seconds to minutes.

1.1.1.1 EPILEPTIC SPASM (Formerly Infantile Spasm)

Noun: A sudden flexion, extension, or mixed extension-flexion of predominantly proximal and truncal muscles that is usually more sustained than a myoclonic movement but not so sustained as a tonic seizure (i.e., ~1 s). Limited forms may occur: grimacing, head nodding. Epileptic spasms frequently occur in clusters.

1.1.1.2 POSTURAL

Adoption of a posture that may be bilaterally symmetric or asymmetric (as in a “fencing posture”).

1.1.1.2.1 VERSIVE

A sustained, forced conjugate ocular, cephalic, and/or truncal rotation or lateral deviation from the midline.

1.1.1.2.2 DYSTONIC

Sustained contractions of both agonist and antagonist muscles producing athetoid or twisting movements, which, when prolonged, may produce abnormal postures.

1.1.2 MYOCLONIC (adjective); MYOCLONUS (noun)

Sudden, brief (<100 ms) involuntary single or multiple contraction(s) of muscles(s) or muscle groups of variable topography (axial, proximal limb, distal).

1.1.2.1 NEGATIVE MYOCLONIC

Interruption of tonic muscular activity for <500 ms without evidence of preceding myoclonia.

1.1.2.2 CLONIC

Myoclonus that is regularly repetitive, involves the same muscle groups, at a frequency of ~2–3 c/s, and is prolonged. Synonym: rhythmic myoclonus.

1.1.2.2.1 JACKSONIAN MARCH

Noun: Traditional term indicating spread of clonic movements through contiguous body parts unilaterally.

1.1.3 TONIC-CLONIC

A sequence consisting of a tonic followed by a clonic phase. Variants such as clonic-tonic-clonic may be seen.

1.1.3.1 GENERALIZED TONIC-CLONIC SEIZURE (syn. bilateral tonic-clonic seizure) (Formerly “Grand Mal” Seizure)

Noun: Bilateral symmetric tonic contraction and then bilateral clonic contractions of somatic muscles, usually associated with autonomic phenomena.

1.1.4 ATONIC

Sudden loss or diminution of muscle tone without apparent preceding myoclonic or tonic event lasting ≥ 1 to 2 s, involving head, trunk, jaw, or limb musculature.

1.1.5 ASTATIC

Loss of erect posture that results from an atonic, myoclonic, or tonic mechanism. Synonym: drop attack.

1.1.6 SYNCHRONOUS (Asynchronous)

Motor events occurring (not) at the same time or at the same rate in sets of body parts.

1.2 AUTOMATISM

Noun: A more or less coordinated, repetitive, motor activity usually occurring when cognition is impaired and for which the subject is usually amnesic afterward. This often resembles a voluntary movement and may consist of an inappropriate continuation of ongoing preictal motor activity.

The following adjectives are usually employed to modify “automatism.”

1.2.1 OROALIMENTARY

Lip smacking, lip pursing, chewing, licking, tooth grinding, or swallowing.

1.2.2 MIMETIC

Facial expression suggesting an emotional state, often fear.

1.2.3 MANUAL OR PEDAL

1. Indicates principally distal components, bilateral or unilateral.
2. Fumbling, tapping, manipulating movements.

1.2.4 GESTURAL

Often unilateral.

1. Fumbling or exploratory movements with the hand, directed toward self or environment.
2. Movements resembling those intended to lend further emotional tone to speech.

1.2.5 HYPERKINETIC

1. Involves predominantly proximal limb or axial muscles producing irregular sequential ballistic movements, such as pedaling, pelvic thrusting, thrashing, rocking movements.
2. Increase in rate of ongoing movements or inappropriately rapid performance of a movement.

1.2.6 HYPOKINETIC

A decrease in amplitude and/or rate or arrest of ongoing motor activity.

1.2.7 DYSPHASIC

Impaired communication involving language without dysfunction of relevant primary motor or sensory pathways, manifested as impaired comprehension, anomia, paraphasic errors, or a combination of these.

1.2.8 DYSPRAXIC

Inability to perform learned movements spontaneously or on command or imitation despite intact relevant motor and sensory systems and adequate comprehension and cooperation.

1.2.9 GELASTIC

Bursts of laughter or giggling, usually without an appropriate affective tone.

1.2.10 DACRYSTIC

Bursts of crying.

1.2.11 VOCAL

Single or repetitive utterances consisting of sounds such as grunts or shrieks.

1.2.12 VERBAL

Single or repetitive utterances consisting of words, phrases, or brief sentences.

1.2.13 SPONTANEOUS

Stereotyped, involve only self, virtually independent of environmental influences.

1.2.14 INTERACTIVE

Not stereotyped, involve more than self, environmentally influenced.

2.0 NONMOTOR

2.1 AURA

Noun: A subjective ictal phenomenon that, in a given patient, may precede an observable seizure; if alone, constitutes a sensory seizure.

2.2 SENSORY

A perceptual experience not caused by appropriate stimuli in the external world. Modifies “seizure” or “aura.”

2.2.1 ELEMENTARY

A single, unformed phenomenon involving one primary sensory modality (e.g., somatosensory, visual, auditory, olfactory, gustatory, epigastric, or cephalic).

2.2.1.1 SOMATOSENSORY

Tingling, numbness, electric-shock sensation, pain, sense of movement, or desire to move.

2.2.1.2 VISUAL

Flashing or flickering lights, spots, simple patterns, scotomata, or amaurosis.

2.2.1.3 AUDITORY

Buzzing, drumming sounds or single tones.

2.2.1.4 OLFACTORY

Odor, usually disagreeable.

2.2.1.5 GUSTATORY

Taste sensations including acidic, bitter, salty, sweet, or metallic.

2.2.1.6 EPIGASTRIC

Abdominal discomfort including nausea, emptiness, tightness, churning, butterflies, malaise, pain, and hunger; sensation may rise to chest or throat. Some phenomena may reflect ictal autonomic dysfunction.

2.2.1.7 CEPHALIC

Sensation in the head such as light-headedness, tingling or headache.

2.2.1.8 AUTONOMIC

A sensation consistent with involvement of the autonomic nervous system, including cardiovascular, gastrointestinal, sudomotor, vasomotor, and thermoregulatory functions. (Thus “autonomic aura”; cf. “autonomic events” 3.0).

2.2.2 EXPERIENTIAL

Affective, mnemonic, or composite perceptual phenomena including illusory or composite hallucinatory events; these may appear alone or in combination. Included are feelings of depersonalization. These phenomena have subjective qualities similar to those experienced in life but are recognized by the subject as occurring outside of actual context.

2.2.2.1 AFFECTIVE

Components include fear, depression, joy, and (rarely) anger.

2.2.2.2 MNEMONIC

Components that reflect ictal dysmnesia such as feelings of familiarity (*déjà-vu*) and unfamiliarity (*jamais-vu*).

2.2.2.3 HALLUCINATORY

A creation of composite perceptions without corresponding external stimuli involving visual, auditory, somatosensory, olfactory, and/or gustatory phenomena. Example: “hearing” and “seeing” people talking.

2.2.2.4 ILLUSORY

An alteration of actual percepts involving the visual, auditory, somatosensory, olfactory, or gustatory systems.

2.3 DYSCOGNITIVE

The term describes events in which (1) disturbance of cognition is the predominant or most apparent feature, and (2a) two or more of the following components are involved, or (2b) involvement of such components remains undetermined. Otherwise, use the more specific term (e.g., “mnemonic experiential seizure” or “hallucinatory experiential seizure”).

Components of cognition:

- perception: symbolic conception of sensory information
- attention: appropriate selection of a principal perception or task
- emotion: appropriate affective significance of a perception
- memory: ability to store and retrieve percepts or concepts
- executive function: anticipation, selection, monitoring of consequences, and initiation of motor activity including praxis, speech

3.0 AUTONOMIC EVENTS

3.1 AUTONOMIC AURA

A sensation consistent with involvement of the autonomic nervous system, including cardiovascular, gastrointestinal, sudomotor, vasomotor, and thermoregulatory functions (see 2.2.1.8).

3.2 AUTONOMIC SEIZURE

An objectively documented and distinct alteration of autonomic nervous system function involving cardiovascular, pupillary, gastrointestinal, sudomotor, vasomotor, and thermoregulatory functions.

4.0 SOMATOTOPIC MODIFIERS

4.1 LATERALITY

4.1.1 UNILATERAL

Exclusive or virtually exclusive involvement of one side as a motor, sensory, or autonomic phenomenon.

4.1.1.1 HEMI-

A prefix to other descriptors (e.g., hemiclonic).

4.1.2 GENERALIZED (syn. “bilateral”)

More than minimal involvement of each side as a motor, elementary sensory, or autonomic phenomenon.

Motor component: further modified as

4.1.2.1 ASYMMETRIC

Clear distinction in quantity and/or distribution of behavior on the two sides.

4.1.2.2 SYMMETRIC

Virtual bilateral equality in these respects.

4.2 BODY PART

Refers to area involved (i.e., arm, leg, face, trunk, and other).

4.3 CENTRICITY

Modifier describes proximity to the body axis.

4.3.1 AXIAL

Involves trunk, including neck.

4.3.2 PROXIMAL LIMB

Signifies involvement from shoulders to wrist, hip to ankle.

4.3.3 DISTAL LIMB

Indicates involvement of fingers, hands, toes, and/or feet.

5.0 MODIFIERS AND DESCRIPTORS OF SEIZURE TIMING

The following terms are listed in the form (adjective, noun, verb) according to principal usage; as adjective unless specified.

5.1 INCIDENCE

Noun: Refers to the number of epileptic seizures within a time period or the number of seizure days per unit of time.

5.1.1 REGULAR, IRREGULAR

Consistent (inconsistent) or predictable (unpredictable, chaotic) intervals between such events.

5.1.2 CLUSTER

1. Noun: Incidence of seizures within a given period (usually one or a few days) that exceeds the average incidence over a longer period for the patient.
2. Verb: To vary in incidence as above.

5.1.3 PROVOCATIVE FACTOR

Noun: Transient and sporadic endogenous or exogenous element capable of augmenting seizure incidence in persons with chronic epilepsy and evoking seizures in susceptible individuals without epilepsy.

5.1.3.1 REACTIVE

Occurring in association with transient systemic perturbation such as intercurrent illness, sleep loss, or emotional stress.

5.1.3.2 REFLEX

Objectively and consistently demonstrated to be evoked by a specific afferent stimulus or by activity of the patient. Afferent stimuli can be *elementary* [i.e., unstructured (light flashes, startle, a monotone)] or *elaborate* [i.e., structured, (a symphony)]. Activity may be elementary [e.g., motor (a movement)]; or elaborate [e.g., cognitive function (reading, chess playing)], or both (reading aloud).

5.2 STATE DEPENDENT

Occurring exclusively or primarily in the various stages of drowsiness, sleep, or arousal.

5.3 CATAMENIAL

Seizures occurring principally or exclusively in any one phase of the menstrual cycle.

6.0 DURATION

Time between the beginning of initial seizure manifestations, such as the aura, and the cessation of experienced or observed seizure activity. Does not include nonspecific seizure premonitions or postictal states.

6.1 STATUS EPILEPTICUS

A seizure that shows no clinical signs of arresting after a duration encompassing the great majority of seizures of that type in most patients *or* recurrent seizures without interictal resumption of baseline central nervous system function.

7.0 SEVERITY

A multicomponent assessment of a seizure by observers and the patient.

Components primarily of observer assessment include duration, extent of motor involvement, impairment of cognitive interaction with environment intractally, maximal number of seizures per unit of time.

Components primarily of patient assessment: extent of injury; emotional, social, and vocational consequences of the attack.

8.0 PRODROME

A preictal phenomenon. A subjective or objective clinical alteration (e.g., ill-localized sensation or agitation) that heralds the onset of an epileptic seizure but does not form part of it.

9.0 POSTICTAL PHENOMENON

A transient clinical abnormality of central nervous system function that appears or becomes accentuated when clinical signs of the ictus have ended.

9.1 LATERALIZING [TODD'S (OR BRAVAIS')] PHENOMENON

Any unilateral postictal dysfunction relating to motor, language, sensory, and/or integrative functions including visual, auditory, or somatosensory neglect phenomena.

9.2 NONLATERALIZING PHENOMENON

Impaired cognition, amnesia, psychosis.

9.2.1 IMPAIRED COGNITION

Decreased cognitive performance involving one or more of perception, attention, emotion, memory, execution, praxis, speech (cf., Dyscognitive, 2.3).

9.2.1.1 ANTEROGRADE AMNESIA

Impaired ability to remember new material.

9.2.1.2 RETROGRADE AMNESIA

Impaired ability to recall previously remembered material.

9.2.2 PSYCHOSIS

Misinterpretation of external world in an awake, alert person; involves thought disorder of emotion and socialization.

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