

ACNS Standardized Critical Care EEG Terminology 2021: Reference Chart

A. EEG Background									
Symmetry	Background EEG frequency	PDR	Continuity	Reactivity	State Changes	Cyclic Alternating Pattern of Encephalopathy (CAPE)	Voltage	AP Gradient	Breach effect
Symmetric	Delta	Present Specify frequency	Continuous: <1% periods of suppression (<10 μV) or attenuation (≥10 μV but <50% of background voltage)	Present	Present with normal stage N2 sleep transients	Present	Normal ≥20 μV	Present	Present
Mild asymmetry <50% Amp. 0.5-1/s Freq.	Theta	Absent		SIRPIDs only	Present but with abnormal stage N2 sleep transients	Absent	Low 10 to <20 μV	Absent	Absent
Marked asymmetry ≥50% Amp. >1/s Freq.	≥Alpha		Nearly continuous: 1-9% periods of suppression attenuation	Absent	Present but without stage N2 sleep transients	Unknown/unclear	Suppressed <10 μV	Reverse	Unclear
			Discontinuous: 10-49% periods of suppression or attenuation	Unclear	Absent				
			Burst-suppression or Burst-attenuation: 50-99% periods of suppression or attenuation						
			Suppression: >99% periods of suppression or attenuation						

Highly Epileptiform Bursts (Present or Absent) Identical Bursts (Present or Absent)	If Burst-suppression or Burst-attenuation then specify if: <div style="margin-left: 20px;"> ← </div>
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Epileptiform Findings (including Rhythmic and Periodic Patterns)

B. Sporadic Epileptiform Discharges	
Prevalence	
Abundant ≥1/10s	
Frequent ≥1/min but <1/10s	
Occasional ≥1/h but <1/min	
Rare <1/h	

C. Rhythmic and Periodic Patterns (RPPs)	
Main term 1	Main term 2
G <i>Generalized</i> - Optional : Specify frontally, midline or occipitally predominant; or generalized, not otherwise specified.	PD <i>Periodic Discharges</i>
L <i>Lateralized</i> - Optional: Specify unilateral or bilateral asymmetric - Optional: Specify lobe(s) most involved or hemispheric	RDA <i>Rhythmic Delta Activity</i>
BI <i>Bilateral Independent</i> - Optional: Specify symmetric or asymmetric - Optional: Specify lobe(s) most involved or hemispheric	SW <i>Spike and Wave</i> OR <i>Polyspike and Wave</i> OR <i>Sharp and Wave</i>
UI <i>Unilateral Independent</i> - Optional: Specify unilateral or bilateral asymmetric for each pattern - Optional: Specify lobe(s) most involved	
Mf <i>Multifocal</i> - Optional: Specify symmetric or asymmetric - Optional: Specify lobe(s) most involved or hemispheric	

Major modifiers									Minor modifiers			
Prevalence	Duration	Frequency	Phases ¹	Sharpness ²	Absolute Amplitude	Relative Amplitude ³	Stimulus Induced or Stimulus Terminated	Evolution ⁴	Onset	Triphasic ⁵	Lag	Polarity ²
Continuous ≥90%	Very long ≥1 h	4/s	>3	Spiky <70 ms	High ≥150 μV	>2	SI <i>Stimulus Induced</i>	Evolving	Sudden ≤3 s	Yes	A-P <i>Anterior-Posterior</i>	Negative
		3.5/s	3				ST <i>Stimulus Terminated</i>					
Abundant 50-89%	Long 10-59 min	3/s	2	Sharp 70-200 ms	Medium 50-149 μV	≤2	Spontaneous only	Static				Dipole
		2.5/s					1					
Frequent 10-49%	Intermediate duration 1-9.9 min	2/s	1	Sharply contoured >200 ms	Low 20-49 μV							
Occasional 1-9%		1.5/s										
	1/s	Rare <1%	Very brief <10 s	0.5/s								
0.5/s												

Plus (+) Modifiers
No +
+F <i>Superimposed fast activity – applies to PD or RDA only</i> EDB (<i>Extreme Delta Brush</i>): A specific subtype of +F
+R <i>Superimposed rhythmic activity – applies to PD only</i>
+S <i>Superimposed sharp waves or spikes, or sharply contoured – applies to RDA only</i>
+FR <i>If both subtypes apply – applies to PD only</i>
+FS <i>If both subtypes apply – applies to RDA only</i>

NOTE 1: Phases: Applies to PD and SW only, including the slow wave of the SW complex
NOTE 2: Sharpness and Polarity: Applies to the predominant phase of PD and the spike or sharp component of SW only
NOTE 3: Relative amplitude: Applies to PD only
NOTE 4: Evolution: Refers to frequency, location or morphology
NOTE 5: Triphasic: Applies to PD or SW only

D. Electrographic and Electroclinical Seizures

Electrographic Seizure (ESz)
Either: A) Epileptiform discharges averaging >2.5 Hz for ≥10 s (>25 discharges in 10 s), OR B) Any pattern with definite evolution and lasting ≥10 s

Electroclinical Seizure (ECSz)
Any EEG pattern with either: A) Definite clinical correlate time-locked to the pattern (of any duration), OR B) EEG <u>and</u> clinical improvement with a parenteral anti-seizure medication

Electrographic Status Epilepticus (ESE)
An electrographic seizure for either: A) ≥10 continuous minutes, OR B) A total duration of ≥20% of any 60-minute period of recording.

Electroclinical Status Epilepticus (ECSE)
An electroclinical seizure for either A) ≥10 continuous minutes, OR B) A total duration of ≥20% of any 60-minute period of recording, OR C) ≥5 continuous minutes if the seizure is convulsive (i.e., with bilateral tonic-clonic motor activity). <i>Possible ECSE</i> : An RPP that qualifies for the IIC (below) that is present for ≥10 continuous minutes or for a total duration of ≥20% of any 60-minute period of recording, which shows EEG improvement with a parenteral anti-seizure medication BUT without clinical improvement.

E. Brief Potentially Ictal Rhythmic Discharges (BIRDs)
Focal (including L, BI, UI or Mf) or generalized rhythmic activity >4 Hz (at least 6 waves at a regular rate) lasting ≥0.5 to <10 s, not consistent with a known normal pattern or benign variant, not part of burst-suppression or burst-attenuation, without definite clinical correlate, and that has at least one of A, B or C below: Definite BIRDs feature either: A. Evolution (“evolving BIRDs”) OR B. Similar morphology and location as interictal epileptiform discharges or seizures in the same patient Possible BIRDs are C. Sharply contoured but without (a) or (b) above

F. Ictal-Interictal Continuum (IIC)
1. Any PD or SW pattern that averages >1.0 Hz but ≤2.5 Hz over 10 s (>10 but ≤ 25 discharges in 10 s); OR 2. Any PD or SW pattern that averages ≥0.5 Hz and ≤1 Hz over 10 s (≥5 and ≤10 discharges in 10 s), and has a plus modifier or fluctuation; OR 3. Any lateralized RDA averaging >1 Hz for at least 10 s (at least 10 waves in 10 s) with a plus modifier or fluctuation; AND 4. Does not qualify as an ESz or ESE.