

Electrodiagnostic Criteria for Distinguishing Inflammatory Neuropathies

Mark B. Bromberg, MD, PhD

Criteria for Primary Demyelination

- Based on
 - Consensus
 - Expert opinion
 - Modeling
 - Animal or human motor unit waveforms
- Tested on patients with clinical CIDP diagnosis
 - Criteria revised and retested, revised and retested...

Criteria for Primary Demyelination

AIDP¹

- 6+ sets of criteria
- Based on
 - Slowing: DL, CV, F-WL, TD
 - Number of abnormalities
 - Number of nerves involved
- Sensitivity applied to “AIDP” patients = 21%-72%

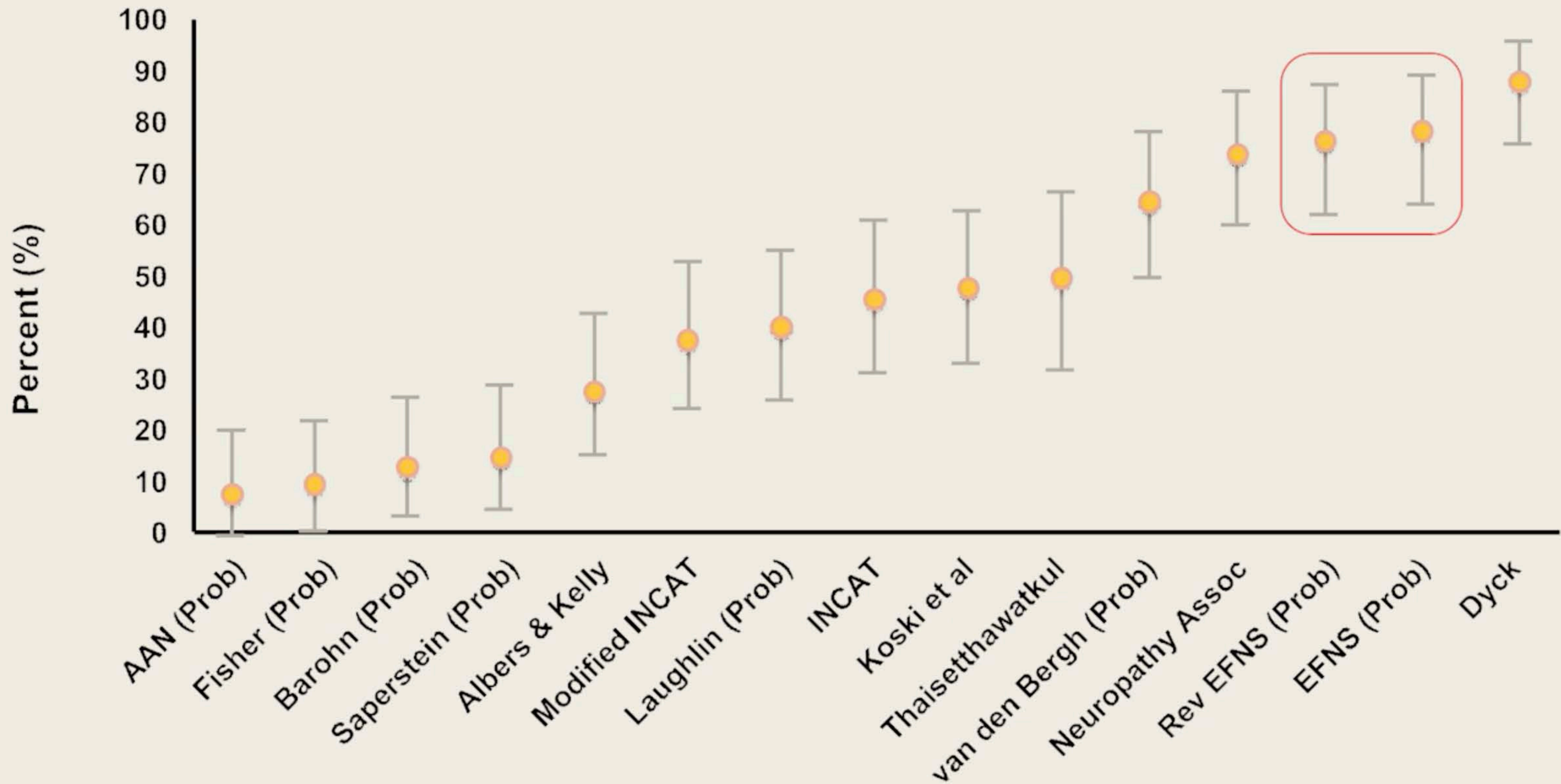
CIDP²

- 16+ sets of criteria
- Based on
 - Slowing: DL, CV, F-WL, TD
 - Number of abnormalities
 - Number of nerves involved
- Sensitivity applied to “CIDP” patients = 11%-95%

Primarily for research, but used in clinic

Criteria for CIDP

Sensitivity of Selected CIDP Criteria



AAN, American Academy of Neurology; INCAT, inflammatory neuropathy cause and treatment; EFNS, European Federation of Neurological Societies.

Reference: Breiner A, Brannagan TH III. *Muscle Nerve*. 2014;50(1):40-46.

Criteria for CIDP

Specificity of Selected CIDP Criteria



AAN, American Academy of Neurology; INCAT, inflammatory neuropathy cause and treatment; EFNS, European Federation of Neurological Societies.

Reference: Breiner A, Brannagan TH III. *Muscle Nerve*. 2014;50(1):40-46.

CIDP Electrodiagnostic Criteria

- EFNS/PNS criteria for “definite” CIDP
- ≥ 1 abnormality in motor nerves

Distal latency	$\geq 150\%$ of ULN in ≥ 2 nerves
Conduction velocity	$\leq 70\%$ of LLN in ≥ 2 nerves
F-wave latency	$\geq 130\%$ of ULN in ≥ 2 nerves if distal CMAP $\geq 80\%$ of LLN $\geq 150\%$ of ULN in ≥ 2 nerves if distal CMAP $< 80\%$ of LLN
Absent F-wave	≥ 2 nerves if distal CMAP $\geq 120\%$ of LLN + ≥ 1 abnormality in ≥ 1 nerve
Partial conduction block	$\leq 50\%$ proximal:distal CMAP amplitude if distal CMAP $\geq 120\%$ of LLN in ≥ 2 nerves or ≥ 1 nerve if ≥ 1 abnormality in ≥ 1 nerve
Abnormal dispersion	$> 130\%$ proximal:distal negative peak CMAP duration in ≥ 2 nerves
Distal CMAP duration	$\geq 6.6/\geq 6.7$ ms median/ulnar; $\geq 7.6/\geq 8.8$ ms peroneal/tibial in ≥ 1 nerve + ≥ 1 abnormality in ≥ 1 nerve

EFNS, European Federation of Neurological Societies; LLN, lower limit of normal; PNS, Peripheral Nerve Society; ULN, upper limit of normal.
Reference: van den Bergh PY, et al. *Eur J Neurol.* 2010;17(3):356-363.

CIDP Criteria

- Lesser criteria for “probable” and “possible” CIDP¹
- Note, attempt to compensate for reduced CMAP (axonal loss)
- Attention to duration markers with very prolonged and complex CMAP waveforms
 - Marking algorithm

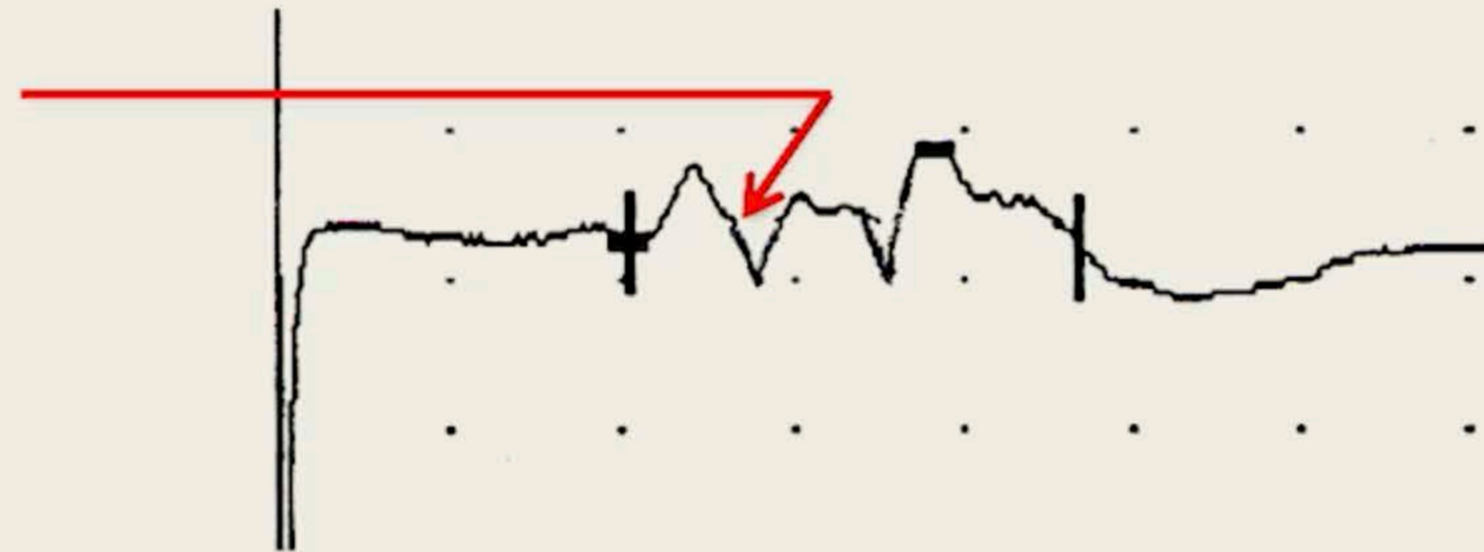


Image courtesy of Mark Bromberg, MD, University of Utah, Salt Lake City, UT.
Reference: 1. van den Bergh PY, et al. *Eur J Neurol.* 2010;17(3):356-363.