PALERMO 5-7 Ottobre
XXVIII CONGRESSO NAZIONALE

European Society of
Regional Anaesthesia
& Pain Therapy
ESRA ITALIA

Il dolore neuropatico centrale: diagnosi differenziale

L. Bertini - Centro di Terapia del Dolore ASL Roma 2

IASP
INTERNATIONAL ASSOCIATION FOR THE STUDY OF PAIN

CELEBRATING | 1974–2024

Definition

CENTRAL NEUROPATHIC PAIN

Pain caused by a lesion or disease of the central somatosensory nervous system.

Neuropathic pain is a clinical description (and not a diagnosis) which requires a demonstrable lesion or a disease that satisfies established neurological diagnostic criteria.

The term lesion is commonly used when diagnostic investigations (e.g. imaging, neurophysiology, biopsies, lab tests) reveal an abnormality or when there was obvious trauma. The term disease is commonly used when the underlying cause of the lesion is known (e.g. stroke, vasculitis, diabetes mellitus, genetic abnormality).

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Focus Article

AAPT Diagnostic Criteria for Central Neuropathic Pain

Eva Widerström-Noga,* John D. Loeser,† Troels Staehelin Jensen,‡,§ and Nanna Brix Finnerup‡,§

history of a nervous system lesion and the distribution of the pain should be compatible with the location of the lesion

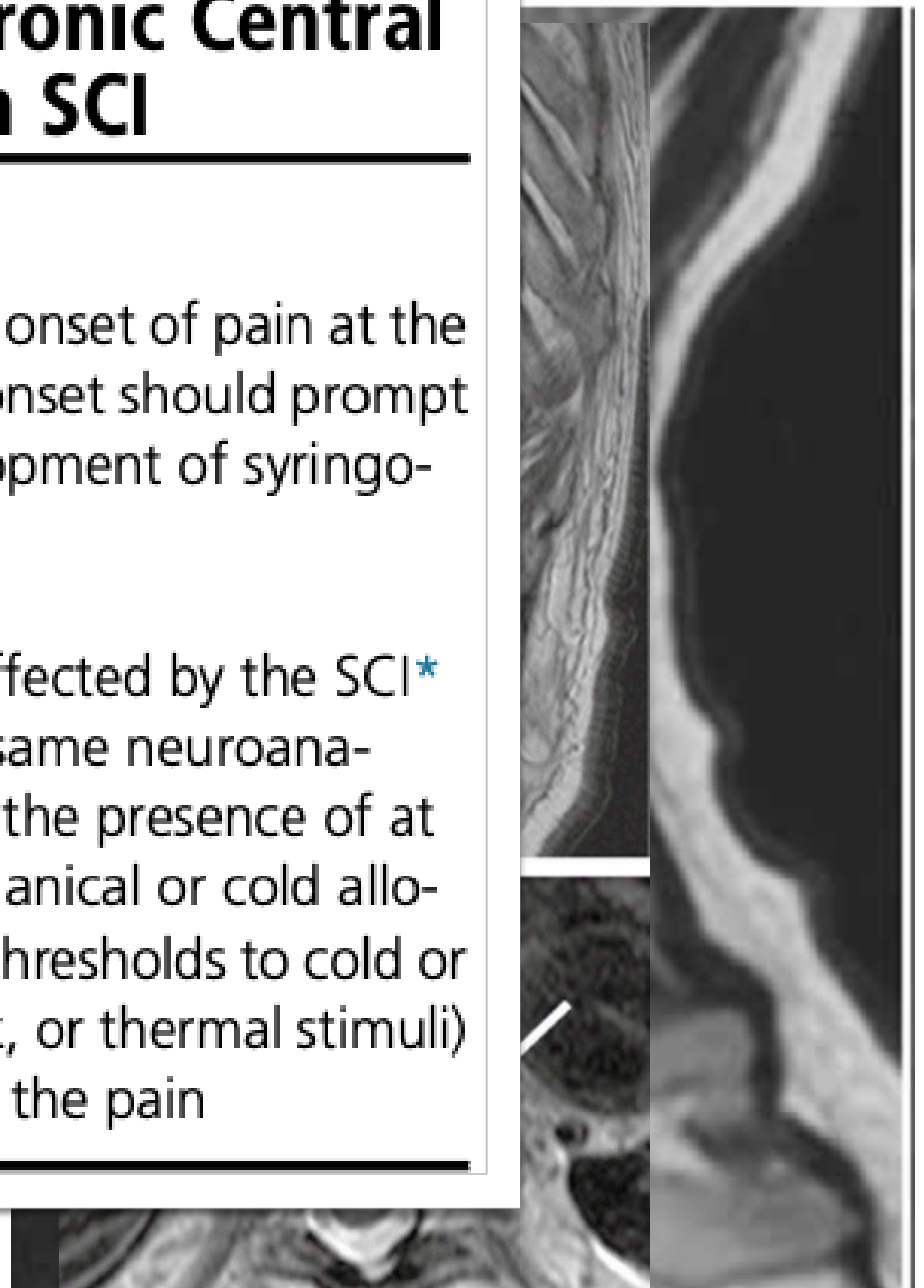
sensory changes in the area of pain compatible with CNS lesion

Central neuropathic pain associated with spinal cord injury, stroke,

- 40-50
- acute
- pain
- evide
- The d

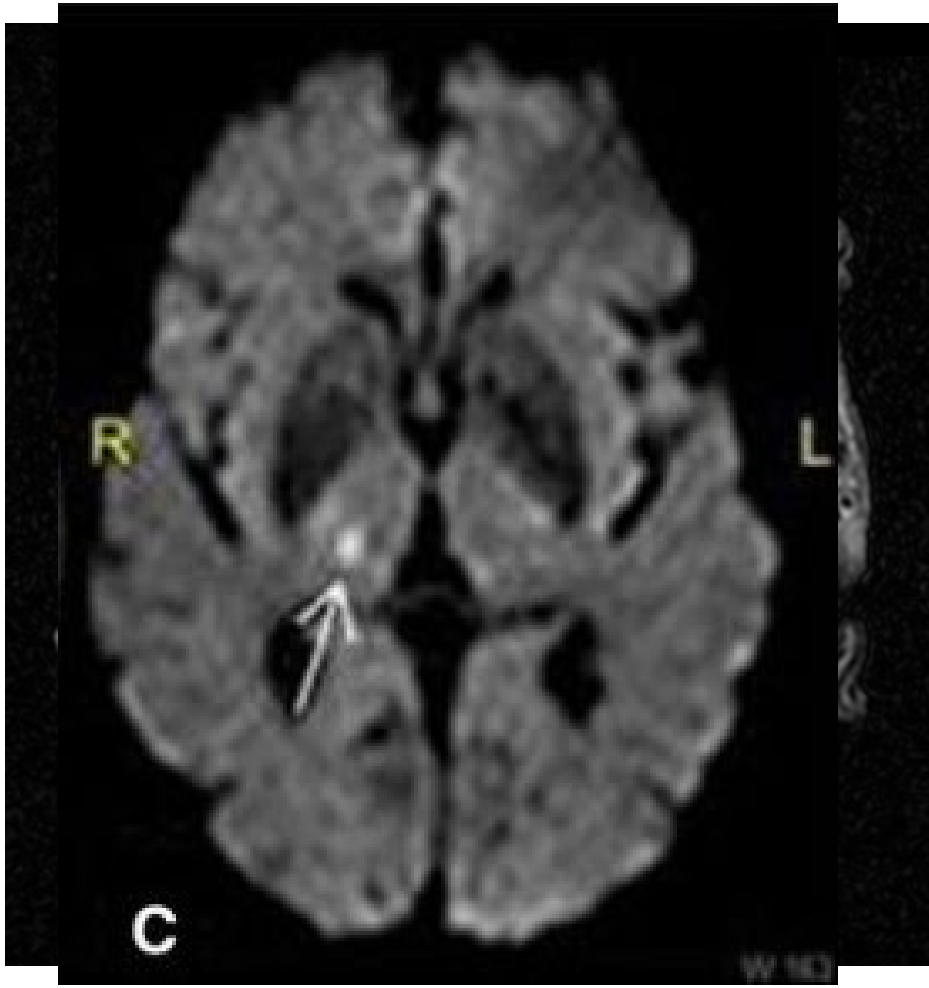
Table 1. Diagnostic Criteria for Chronic Central Neuropathic Pain Associated With SCI

1. Diagnostic test confirming SCI
2. Continuous or recurrent pain after an SCI, with onset of pain at the time of SCI or up to 1 year after SCI. Any later onset should prompt examination of other causes such as the development of syringomyelia
3. Pain duration of at least 3 months
4. Pain is described within the area of the body affected by the SCI*
5. Pain is associated with sensory changes in the same neuroanatomically plausible distribution, as indicated by the presence of at least 1 positive sensory sign (eg, dynamic mechanical or cold allodynia) or 1 negative sensory sign (eg, elevated thresholds to cold or warm or decreased sensation to touch, pinprick, or thermal stimuli)
6. There is no other diagnosis that better explains the pain



Central neuropathic pain associated with stroke

- occurs after a cerebrovascular event including lesions of the brainstem, thalamus, and cerebral cortex
- may affect the hemibody, be multifocal or affect only smaller areas (eg, just the foot or part of the face)
- occurs in approximately 3 to 8%
- onset in the first year
- high prevalence after lateral medullary infarction (Wallenberg syndrome) or ventroposterior thalamus lesions

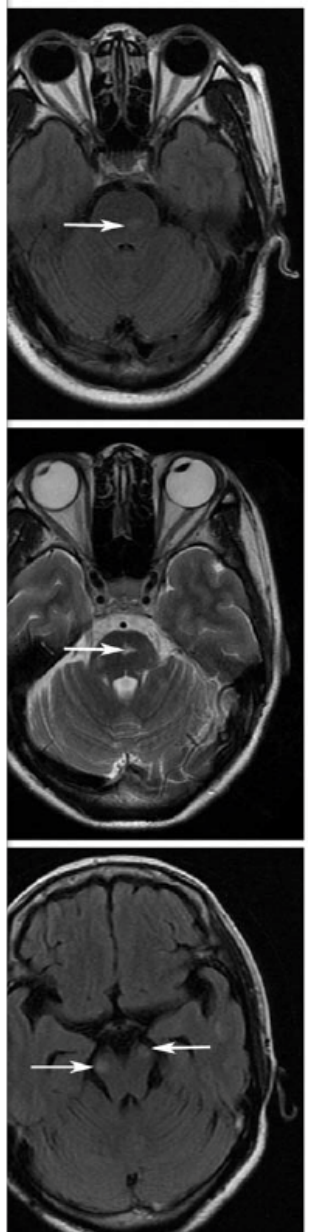


Ce erosis

- 28 pr

Table 3. Diagnostic Criteria for Chronic Central Neuropathic Pain in MS

1. Diagnostic evaluation confirming MS*
2. Continuous or recurrent pain after MS, with onset after established diagnosis of MS
3. Pain duration of at least 3 months
4. Pain is described within the area of the body affected by an MS lesion in the brain or spinal cord
5. Pain is associated with sensory changes in the same neuroanatomically plausible distribution, as indicated by the presence of at least 1 positive sensory sign (eg, dynamic mechanical or cold allodynia) or 1 negative sensory sign (eg, elevated thresholds to cold or warm or decreased sensation to touch, pinprick, or thermal stimuli)
6. There is no other diagnosis that better explains the pain



SYMPOSIUM ON PAIN MEDICINE

MAYO CLINIC

CrossMark

Central Neuropathic Pain Syndromes

James C. Watson, MD, and Paola Sandroni, MD, PhD

tel:18%2038%2015%2012%206%2011

TABLE 1. Temporal Onset of Central Poststroke Pain[a,b]

Stroke type	At time of stroke (%)	Within 1 mo (%)	At 1-3 mo (%)	At 4-6 mo (%)	At 6-12 mo (%)	At >1 y (%)
All types[20]	NR	62	19[c]		19	NR
Thalamic strokes[26]	18	38	15	12	6	11
Lateral medullary infarctions[14]	14	29	43	7	7	NR

[a]NR = not reported.

[b]Central poststroke pain may occur several years after the implicated stroke. This feature is consistent with the long delay in the onset of multiple sclerosis–related and post–spinal cord injury central pain syndromes.

[c]Nineteen percent presented between 1 and 6 months and the study did not break down these time epochs.

MSK pain

spasticity
myofascial shoulder pain,
heterotopic ossification
overuse syndromes

visceral pain,

peripheral neuropathic pain such as carpal tunnel syndrome or spinal nerve lesions

≥ 40

CENTRAL SENSITIZATION INVENTORY: PART A
QUESTIONARIO SULLA SENSIBILIZZAZIONE CENTRALE: PARTE A

Cerchiare la risposta più appropriata posta alla destra di ciascuna affermazione.

1	Al risveglio mi sento stanco e non rigenerato	Mai	Raramente	Ogni tanto	Spesso	Sempre
2	Mi sento i muscoli rigidi e indolenziti	Mai	Raramente	Ogni tanto	Spesso	Sempre
3	Soffro di attacchi d'ansia	Mai	Raramente	Ogni tanto	Spesso	Sempre
4	Digrigno o serro i denti	Mai	Raramente	Ogni tanto	Spesso	Sempre
5	Soffro di diarrea e/o stitichezza	Mai	Raramente	Ogni tanto	Spesso	Sempre
6	Ho bisogno di aiuto per svolgere le mie attività quotidiane	Mai	Raramente	Ogni tanto	Spesso	Sempre
7	Sono sensibile alla luce intensa	Mai	Raramente	Ogni tanto	Spesso	Sempre
8	L'attività fisica mi stanca molto facilmente	Mai	Raramente	Ogni tanto	Spesso	Sempre
9	Ho dolori in tutto il corpo	Mai	Raramente	Ogni tanto	Spesso	Sempre
10	Soffro di mal di testa	Mai	Raramente	Ogni tanto	Spesso	Sempre
11	Sento fastidio alla vescica e/o bruciore, quando urino	Mai	Raramente	Ogni tanto	Spesso	Sempre
12	Non dormo bene	Mai	Raramente	Ogni tanto	Spesso	Sempre
13	Ho difficoltà a concentrarmi	Mai	Raramente	Ogni tanto	Spesso	Sempre
14	Ho problemi cutanei, quali secchezza, prurito o eruzioni cutanee	Mai	Raramente	Ogni tanto	Spesso	Sempre
15	Lo stress peggiora i miei sintomi fisici	Mai	Raramente	Ogni tanto	Spesso	Sempre
16	Mi sento triste o depressa/o	Mai	Raramente	Ogni tanto	Spesso	Sempre
17	Ho poca energia	Mai	Raramente	Ogni tanto	Spesso	Sempre
18	Ho tensione muscolare al collo e alle spalle	Mai	Raramente	Ogni tanto	Spesso	Sempre
19	Ho dolore alla mandibola/mascella	Mai	Raramente	Ogni tanto	Spesso	Sempre
20	Certi odori, quali i profumi, mi provocano vertigini e nausea	Mai	Raramente	Ogni tanto	Spesso	Sempre
21	Ho spesso bisogno di urinare	Mai	Raramente	Ogni tanto	Spesso	Sempre
22	Quando la notte cerco di addormentarmi, provo fastidio alle gambe e sento il bisogno di muoverle in modo irrequieto	Mai	Raramente	Ogni tanto	Spesso	Sempre
23	Ho difficoltà a ricordare le cose	Mai	Raramente	Ogni tanto	Spesso	Sempre
24	Ho subito un trauma da bambina/o	Mai	Raramente	Ogni tanto	Spesso	Sempre
25	Ho dolore nella regione pelvica	Mai	Raramente	Ogni tanto	Spesso	Sempre

painDETECT

PAIN QUESTIONNAIRE

Date: _____ Patient: Last name: _____ First name: _____

How would you assess your pain **now**, at this moment?
0 1 2 3 4 5 6 7 8 9 10
none max.

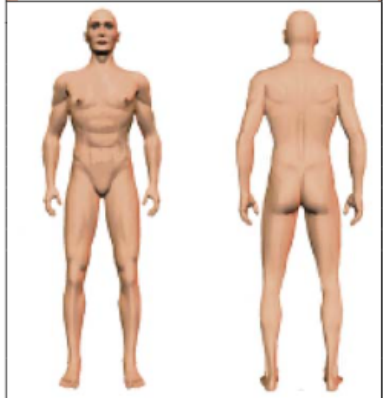
How strong was the **strongest** pain during the past 4 weeks?
0 1 2 3 4 5 6 7 8 9 10
none max.

How strong was the pain during the past 4 weeks **on average**?
0 1 2 3 4 5 6 7 8 9 10
none max.

Mark the picture that best describes the course of your pain:

- **Persistent pain with slight fluctuations** ☐
- **Persistent pain with pain attacks** ☐
- **Pain attacks without pain between them** ☐
- **Pain attacks with pain between them** ☐

Please mark your **main area of pain**



Does your pain radiate to other regions of your body? yes ☐ no ☐
If yes, please draw the direction in which the pain radiates.

1	**Do you suffer from a burning sensation (e.g., stinging nettles) in the marked areas?** never ☐ hardly noticed ☐ slightly ☐ moderately ☐ strongly ☐ very strongly ☐
2	**Do you have a tingling or prickling sensation in the area of your pain (like crawling ants or electrical tingling)?** never ☐ hardly noticed ☐ slightly ☐ moderately ☐ strongly ☐ very strongly ☐
3	**Is light touching (clothing, a blanket) in this area painful?** never ☐ hardly noticed ☐ slightly ☐ moderately ☐ strongly ☐ very strongly ☐
4	**Do you have sudden pain attacks in the area of your pain, like electric shocks?** never ☐ hardly noticed ☐ slightly ☐ moderately ☐ strongly ☐ very strongly ☐
5	**Is cold or heat (bath water) in this area occasionally painful?** never ☐ hardly noticed ☐ slightly ☐ moderately ☐ strongly ☐ very strongly ☐
6	**Do you suffer from a sensation of numbness in the areas that you marked?** never ☐ hardly noticed ☐ slightly ☐ moderately ☐ strongly ☐ very strongly ☐
7	**Does slight pressure in this area, e.g., with a finger, trigger pain?** never ☐ hardly noticed ☐ slightly ☐ moderately ☐ strongly ☐ very strongly ☐
8	(To be filled out by the physician)
9	never hardly noticed slightly moderately strongly very strongly
10	☐ x 0 = 0 ☐ x 1 = ☐ ☐ x 2 = ☐☐ ☐ x 3 = ☐☐ ☐ x 4 = ☐☐ ☐ x 5 = ☐☐
	Total score ☐☐ **out of 35**

- Central pain syndrome is a neurological disorder caused by damage to the sensory pathways of the central nervous system.

Disorder with <u>similar</u> symptoms

- post-herpetic neuralgia
- painfull diabetic neuralgia
- fibromialgia
- CPRS

CPS is unrelated to nociplastic pain that encompasses chronic pain states not characterized by obvious activation of nociceptors or neuropathy

Central Pain Syndrome

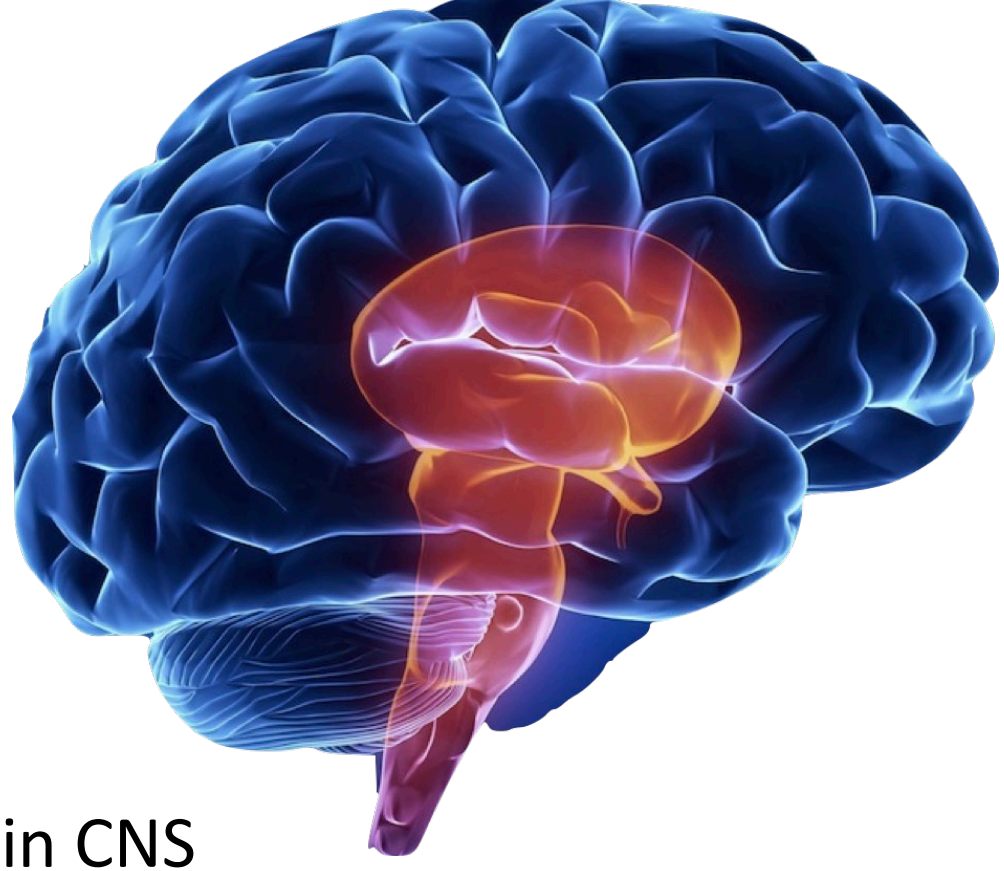
Authors

Alexander M. Dydyk[1]; Amy Givler[2].

Affiliations

[1] Abrazo Central Campus
[2] Ochsner/LSU Health Monroe

Last Update: February 19, 2023.



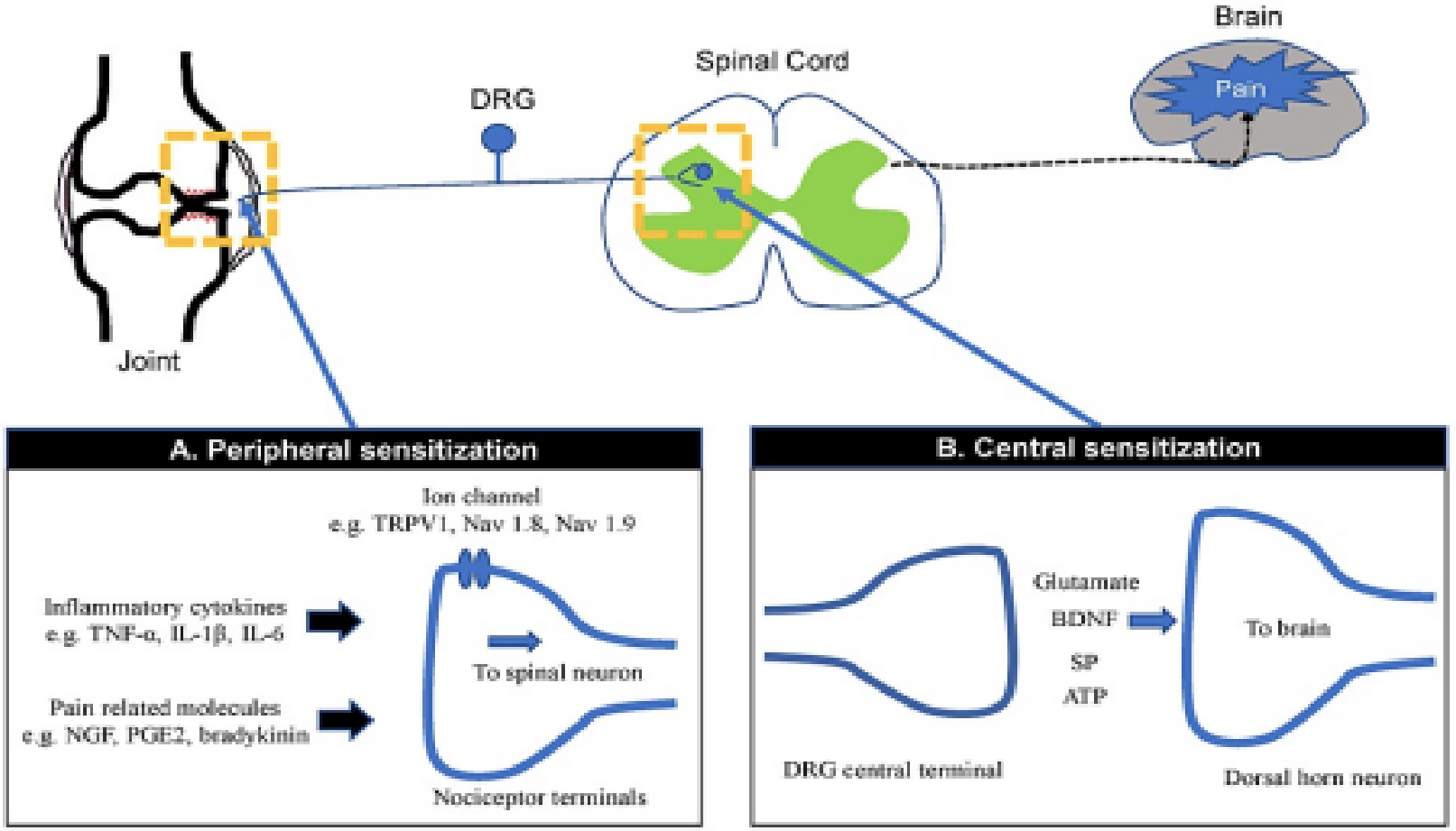
- Central pain syndrome is neuropathic pain in CNS
- It can occur after a stroke or with multiple sclerosis
- It is seen in various chronic rheumatological and muscoloskeletal disorders (up to 40% of pts with rheumatoid arthritis, psoriatic arthritis, osteoarthritis, lupus, fibromyalgia)

- central sensitisation is an amplification of neural signalling within the CNS that elicits pain hypersensitivity
- Central senstitisation is reflected by a new mechanistic descriptor, nociplastic pain,(IASP) to complement the terms nociceptive pain (pain caused by damage to nonneural tissue) and neuropathic pain (pain caused by a lesion or a disease of the nervous system).
- Nociplastic pain is defined as pain that arises from altered nociception with sensitisation as the major underlying mechanism

Mechanisms of Peripheral and Central Sensitization in Osteoarthritis Pain

Review began 01/11/2023
Review ended 02/19/2023

Yoshihisa Ohashi [1], Kentaro Uchida [1], Kensuke Fukushima [1], Gen Inoue [1], Masashi Takaso [1]



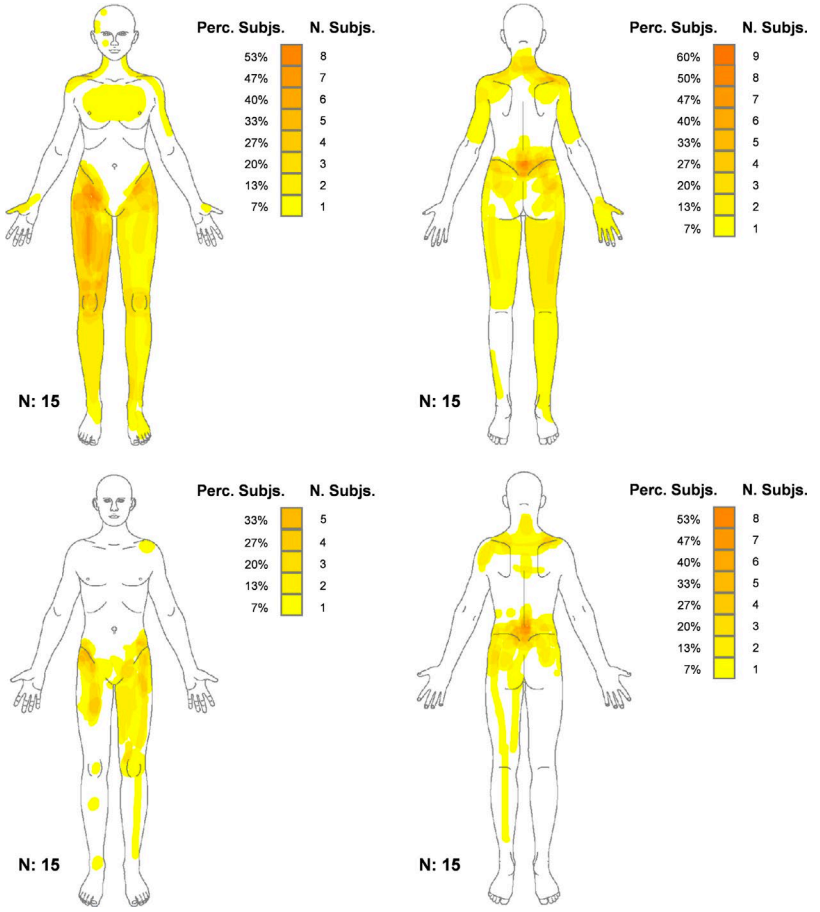
PAIN Practice

Original Article

The Extent of Pain Is Associated With Signs of Central Sensitization in Patients With Hip Osteoarthritis

Matthew J. Willett MSc, Mathias Siebertz MD, Frank Petzke MD, Joachim Erlenwein MD, Alison Rushton EdD, Emiliano Soldini MSc, Marco Barbero PhD, Deborah Falla PhD

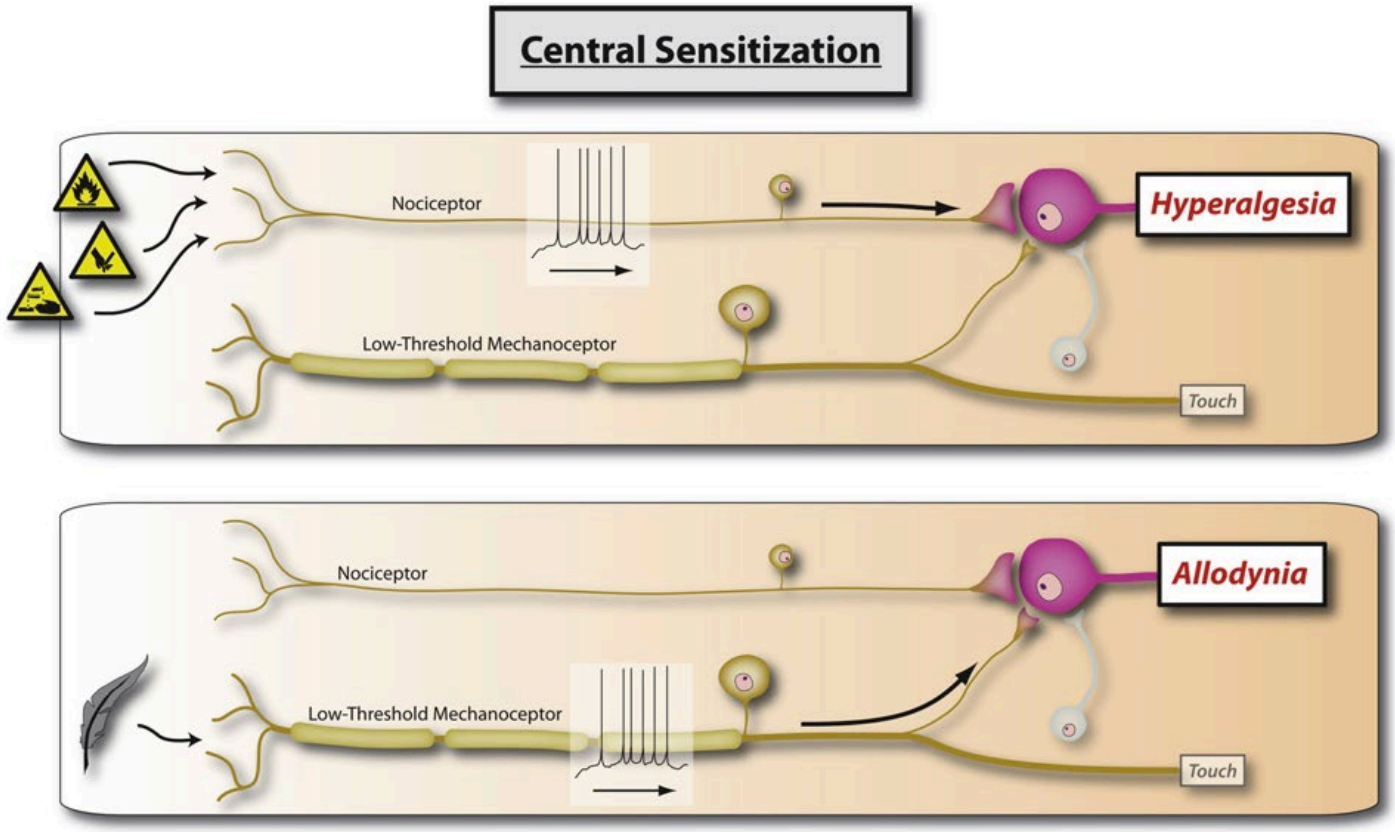
First published: 30 October 2019 | https://doi.org/10.1111/papr.12851 | Citations: 25



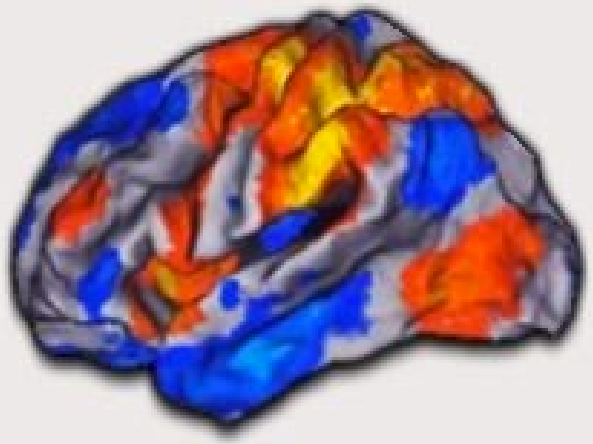
- Greater pain extent was associated with several measures of signs and symptoms of central sensitization in patients with hip OA. These results support the utility of the pain drawing for identifying signs of central sensitization in patients with hip OA.

Diagnosis of Central Pain

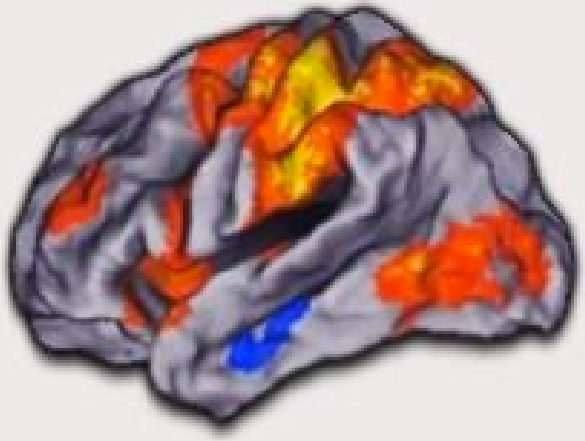
- clinical
- Central Sensitisation Inventory, painDETECT
- MRI and functional neuroimaging
- positron emission tomography , EEG



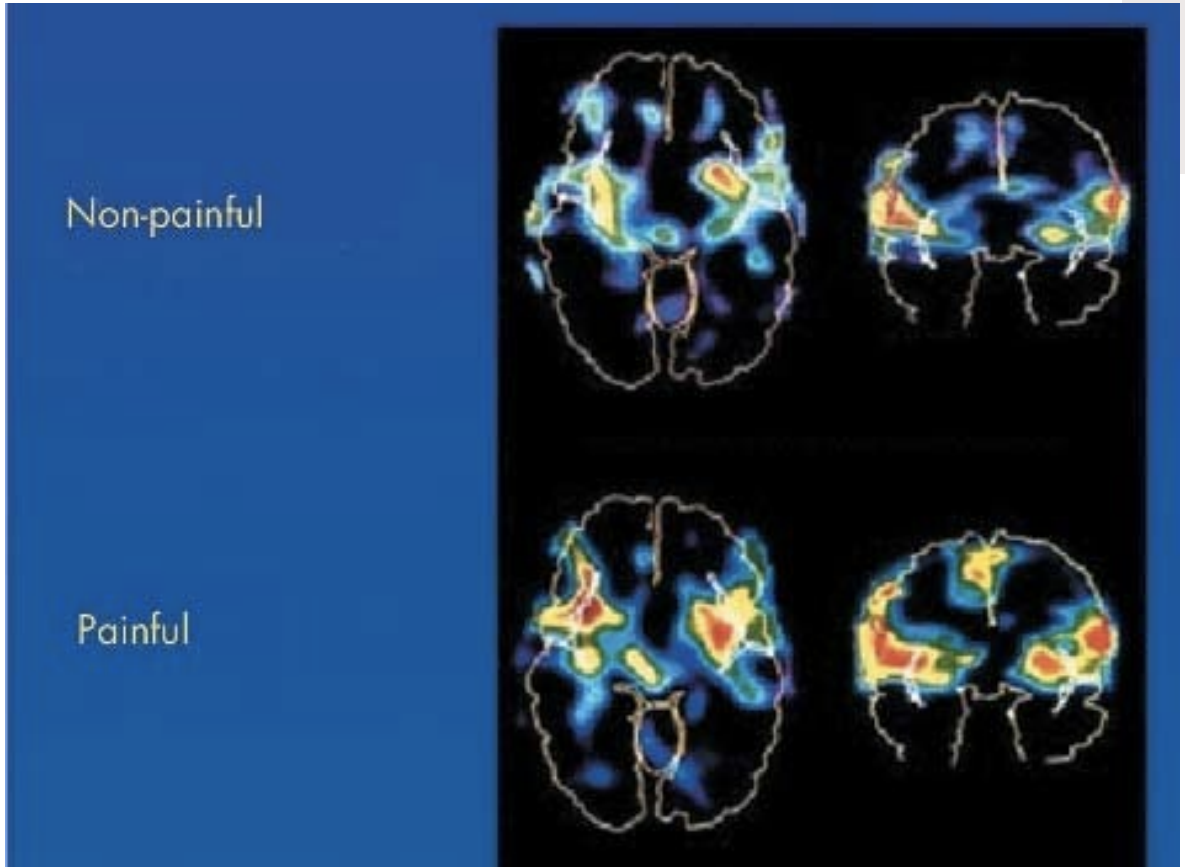
MRI and fMRI



Healthy Brain



Effect of Chronic Pain to the Brain



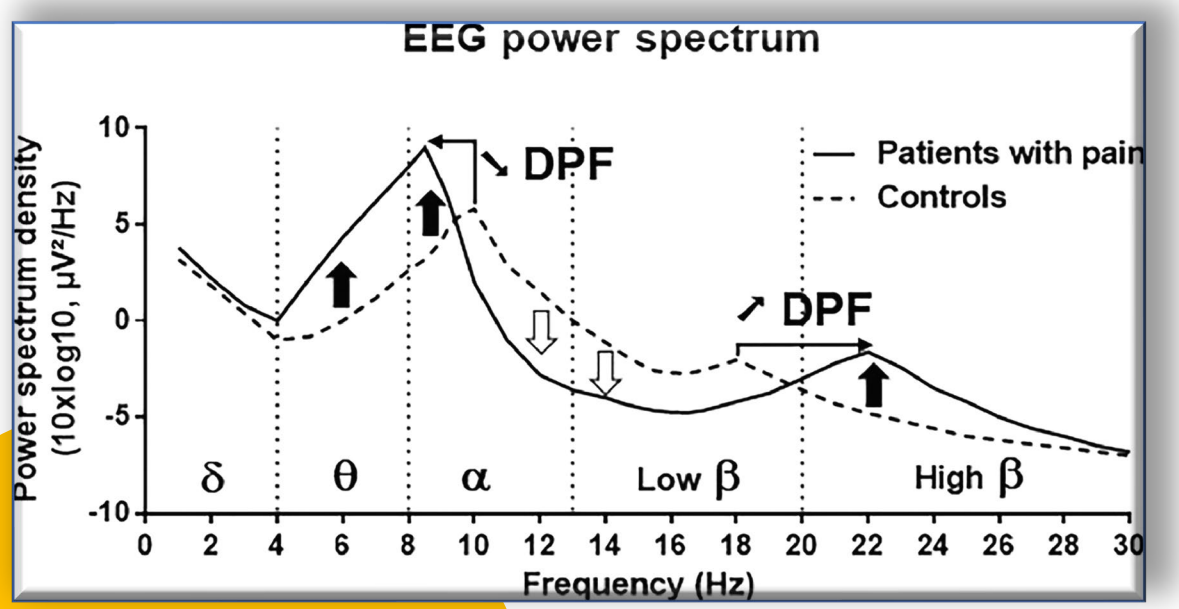
Positron emission tomography studies have not only confirmed the brain structures involved in pain processing and modulation but also have helped elucidate the neural mechanisms that underlie healthy and pathological pain regulation.

NeuroImage
Volume 258, September 2022, 119351

Review

Resting-state electroencephalography (EEG) biomarkers of chronic neuropathic pain. A systematic review

Thibaut Mussigmann [a b], Benjamin Bardel [a b], Jean-Pascal Lefaucheur [a b]

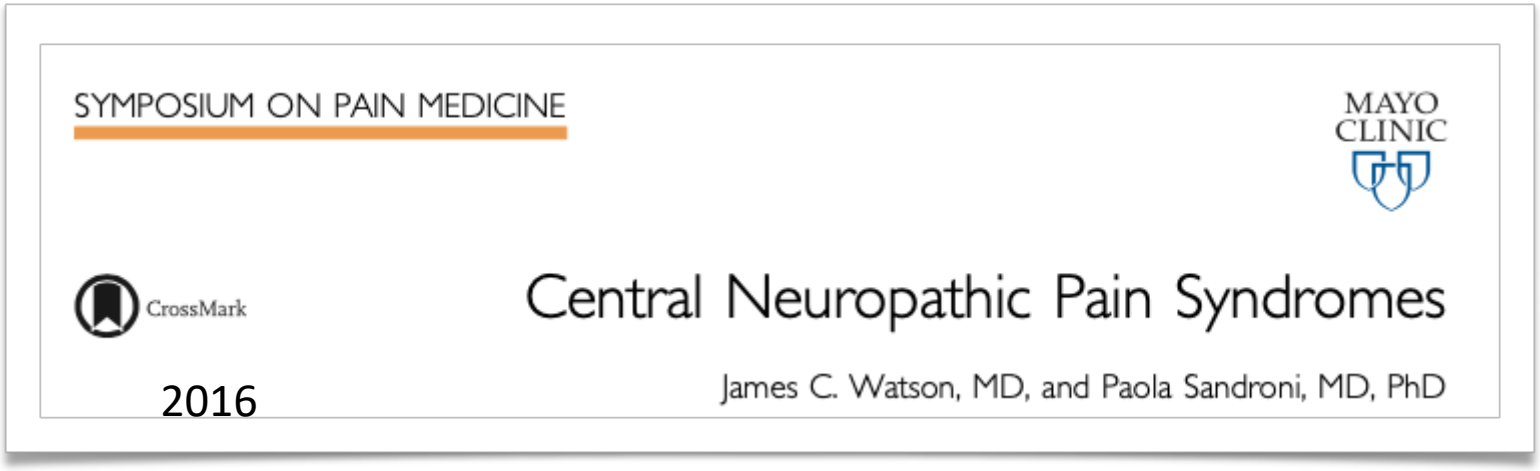


EEG in neuropathic pain

Resting-state electroencephalography (rsEEG) could provide biomarkers of neuropathic pain.

Continuous neuropathic pain was associated with an EEG signal power increase in the θ band and possibly the high-β band, but a decrease in the high-α−low-β band.

Beyond the objective of defining objective biomarkers for the diagnosis of neuropathic pain, the characterization of the cerebral brain rhythms associated with pain as well as their cortical location could be the theoretical basis for the development of therapeutic techniques of neuromodulation



- Central neuropathic pain syndromes should not be confused with central sensitization, which is a sequela of chronic pain

- Central sensitization refers to a situation in which chronic nociceptive afferent input from a peripheral pain generator causes reversible ("plastic") changes of central nociceptive pathways


THANK YOU