# 12th EFIC PAIN SCHOOL NEUROPATHIC PAIN

October 24-27, 2022

AIM | Neuropathic pain is triggered by lesions or disease of the somatosensory system, and in particular of the ascending pain and temperature pathways and their cortical targets. Recent advances in the basic and clinical knowledge of neuropathic pain have led to a re-evaluation of how to impart information on this topic (EFIC Core Curriculum for the European Diploma in Pain Medicine – 3.2.). The EFIC European Federation of Pain School on Neuropathic Pain will help health professionals involved in the management of neuropathic pain to refine their diagnosis and assessment skills, improve their ability to interpret clinical, instrumental and laboratory findings, and establish the most appropriate treatment.

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FACULTY | Nathalie André-Obadia Nadine Attal **Didier Bouhassira** Andrei Brinzeu Jean-Bernard Caillet **Roberto Casale** Daniel Ciampi de Andrade **Elon Eisenberg** Anthony Dickenson Luis Garcia-Larrea Magdi Hanna Per Hansson Lance McCracken Patrick Mertens **Caroline Perchet Roland Peyron** Charles Quesada Andrea Truini Luis Villanueva Ipek Yalcin

# MONDAY – DAY 1 SUSPECT, AFFIRM OR REJECT THE DIAGNOSIS

### 8:30-10:30 What are we referring to?

8:30 - 9:10	<b>Definitions – diagnostic paths - epidemiology</b> Per Hansson   Oslo	An introduction to basic concepts on what is, and what is not, neuropathic pain. The lecture retraces the history of this concept, variations in definitions and diagnostic algorithms, and introduces uncertainties in 'frontier' syndromes to be discussed later in the course.	
9:10 – 9:50	The interview – a patient/doctor dictionary Roberto Casale   Piacenza	The interview is critical to make a first working hypothesis, but the patient's words must be translated into medical meaning. A proper use of the main pain-related descriptors is pivotal to interpret the clinical features of the patient in terms of geography (distribution) and history (development in time).	
9:50 – 10:30	Questionnaires, diaries, et al., When and how Didier Bouhassira   Boulogne- Billancourt	The words used by patients with neuropathic pain are characteristic, and questionnaires are used to collect patients' symptoms (and sometimes the clinical exam) into standardized formats. This lecture will introduce to the rationale and proper use of questionnaires for screening, identification and follow-up of NP patients, but also to their limitations linked to the subjective nature of responses.	
10:30 – 11:00 Coffee break			
		11:00 – 13:00 From words to hands: how to examine your patient	
11:00 - 11:40	Sensory examination in neuropathic pain Per Hansson   Olso	Coexistence of pain and sensory abnormaities is crucial to the diagnosis of NP. Mastering the sensory examination of sensory subsystems is essential to identify and qualify such anomalies, orient diagnosis and avoid misinterpretations.	
11:40 – 12:15	Motor and autonomic examination in neuropathic pain Charles Quesada   Lyon	Motor and autonomic dysfunction may be the presenting signs of conditions leading to NP. Changes in motor function have localising value, can alert to areas of neural entrapment, indicate mixed etiologies and/or suggest the non-neuropathic nature of the pain.	
12:15 - 13:00	Morphological testing: skin biopsy, corneal confocal microscopy Andrea Truini   Rome	Morphological insight into thin-fibre innervation in NP can be achieved with increasingly available tecnniques, the importance but also the limitations of which will be clarified in this lecture.	
13:00 – 14:00 Lunch			

# 14:00 – 16:00 Hands-on sessions: Instrumental assessment of neuropathic pain

14:00 - 14:40	<b>Quantitative sensory testing</b> Caroline Perchet, Andrea Truini and Luis Garcia-Larrea   Lyon, Rome	This hands-on session will demonstrate techniques to examine a broad range of different sensations, including hot, cold, touch, vibration. QST can test for increased or reduced sensitivity, and is an ancillary tool in the diagnosis of NP. It extends and standardises the neurological exam to detect subtle changes in sensory function.
14:40 – 15:20	<b>Electrophysiological testing</b> Caroline Perchet, Andrea Truini and Luis Garcia-Larrea   Lyon, Rome	Electrophysiological testing provides objective evidence of "somatosensory lesion or disease", which is crucial to the diagnosis of NP, and help to objectivise allodynia or hyperalgesia. In this hands-on session participants will learn how these techniques can be applied in common clinical settings, and which are the instances where their role is most important.

### 16:00 – 16:30 Coffee break

16:30 – 17:10	Neither nociceptive nor neuropathic. The 'nociplastic' concept Didier Bouhassira   Boulione- Billancourt	The term "Nociplastic" describes a pain category mechanistically distinct from nociceptive and neuropathic pain. It largelly overlaps with the concept of 'functional' pain, and refers to pain with no obvious organic origin. This lecture will explain the rationale behind the name, and the importance of central hypersensitivity as a core concept to its development.
17:10 - 17:50	Discussion of typical clinical cases using the notions acquired during the day	

## Mechanisms of neuropathic pain (I) – From animal to human

8:30 - 9:10	Pathophysiology of neuropathic pain: what we know; what we suspect; what we ignore Luis Villanueva   Paris	Basic research has identified a number of mechanisms related to the development of chronic neuropathic pain, which will be discussed at this lecture, together with the many unresolved questions and the most promising avenues to develop mechanism-based therapies.
9:10 – 9:50	Can we translate mechanisms (in animals) into symptoms (in humans)? Anthony Dickenson   London	This lecture will cover mechanisms of pain in a translational context to patients. How and to what extent can we develop animal models that are relevant to the understanding of human pain symptoms.
9:50 – 10:30	Can we translate from humans to animals? : human models of neuropathic pain André Mouraux   Brussels	Being able to mimic aspects of neuropathic pain directly in humans has a huge potential to understand pathophysiology. Several human models respond to clinically active medications but not to clinically inactive medications, including some that worked in animals but failed in the clinics. They may inform basic research for new drug development.
10:30 – 11:00 Co	ffee break	
		Mechanisms of neuropathic pain (II) – From human to human
11:00 - 11:40	What functional imaging tells us about NP mechanisms Roland Peyron   Saint-Etienne	Functional imaging has contributed unique insights into the processing of neuropathic pain in the human brain, including functional and morphological reorganisation in central networks and changes in fundamental brain neurochemistry. Future therapeutic strategies should benefit from these findings.
11:40 – 12:20	How neuropathic symptoms help disclose mechanisms Andrea Truini   Rome	Patients with neuropathic pain experience pain of diverse types. Clinical and neurophysiological studies suggest that the various pain types arise through distinct mechanisms, and this lecture will show how mechanism-based approaches could aid the tailoring of therapy to the individual patient, and be useful for drug development.
12:15 – 13:00	Neuropathic pain in neurological disorders: complex pains and complex mechanisms Daniel Ciampi de Andrade   Sao Paulo - Aalborg	Pain with neuropathic and non-neuropathic origins often coexist in neurological disorders. This lecture will discuss the differences in mechanisms, the essentials of diagnosis and the cues to orient the patient toward the most appropriate management.
13:00 – 14:00 Lui	nch	
14:00 - 14:40	Assessing emotions in animal models: lost in translation? Ipek Yalcin   Strasbourg	Identifying complex emotional states such as anxiety or depression in animal models of pain is a challenging but necessary step to ensure their translational value toward human pain. This lecture will show up-to-date methods to investigate emotions in rodent models of NP, as well as the effect that different brain lesions may have on them.
14:40 – 15:20	Emotions, pain and the human brain: a short history Luis Garcia-Larrea	Here we'll explore how human pain sensations are indissolubly allied to emotional drive, how this translates in brain responses to pain, and how it can be used in the clinics, including in the context of placebo effects.
15:20 - 16:00	Discussion on clinical cases. Include cases where simple algorith Luis Hansson, Hanna, Casale, LGL, pl	ams may not work well lus cases brought by attendants

# WEDNESDAY – DAY 3 FROM DIAGNOSIS TO MANAGMENT

### Pharmacological approaches

8:30 - 9:00	Systemic drugs for transduction, transmission & modulation of neuropathic pain Magdi Hanna   London	Systemically administered drugs used for neuropathic pain act upon different targets and entail pain relief via different modes of action, which the practitioner needs to know.	
9:00 – 9:30	<b>Topical medications for neuropathic pain</b> <i>Roberto Casale   Piacenza</i>	Topical drugs administered through the skin induce clinically useful concentrations at the site of application exclusively, without achieving significant systemic levels, hence avoiding systemic adverse effects. Peripheral localized neuropathic pain can be effectively relieved by topical medications.	
9:30 - 10:00	Intravenous and intraspinal approaches for neuropathic pain Andrei Brinzeu   Lyon	While oral or topical medications are first line therapeutic options, more invasive alternatives become necessary in resistant cases. The intravenous and intraspinal approaches (epidural and intrathecal) offer useful routes of drug administration for neuropathic pain resistant to first-line therapies.	
10:00 - 10:30	Functional neurosurgery for neuropathic pain Patrick Mertens   Lyon	Functional neurosurgical procedures aim at modifying the balance between excitatory and inhibitory nociceptive systems by either stimulatoin of minimal lesoining. This lecture will discuss the use of site-specific procedures and appropriate patient selection in drug-resistant NP.	
10:30 – 11:00 Coffee break		Non-pharmacological approaches	
11:00 - 11:40	<b>Cancer neuropathic pain</b> <i>Alon Eisenberg  Haifa</i>	Nervous tissue damage entails neuropathic cancer pain in almost half of cases with cancer pain. Detecting neuropathic pathophysiology may be difficult and criteria are not homogenously applied in clinical practice. This lecture will detail current management options available for NCP and provide insights on new developing treatments.	
11:40 – 12:20	Noninvasive cortical neuromodulation for neuropathic pain Luis Garcia-Larrea and Nathalie André-Obadia   Lyon	Noninvasive techniques of neuromodulation are increasingly used not only to select best candidates to invasive stimulation, but also as analgesic procedures in their own right. Here we'll discuss the evidence supporting the use of most readily available techniques, and the state of the art regarding optimisation of clinical algorithms for their clinical utilisation in NP.	
12:15 - 13:00	Physical medicine: Physiotherapy and allied techniques in neuropathic pain Charles Quesada   Lyon	Nervous tissue damage entails neuropathic cancer pain in almost half of cases with cancer pain. Detecting neuropathic pathophysiology may be difficult and criteria are not homogenously applied in clinical practice. This lecture will detail current management options available for NCP and provide insights on new developing treatments.	
13:00 – 14:00 Lunch			
14:00 - 14:40	"Mental medicine": Psychotherapies in neuropathic pain Lance McCracken   Uppsala	Neuropathic pain induces physical and social suffering and reduces quality of life. Depression, coping strategies and social support predict pain severity, itself associated with depressed mood. This lecture explores the impact of psychotherapy-oriented strategies in NP management.	
14:40 – 15:20	General guidelines for the treatment of neuropathic pain in 2022 Nadine Attal   Paris	Based on the knowledge acquired from the preceding lectures, this lesson proposes a reasoned algorithm of recommended treatments that takes into account both the mechanism of pain and the quality of evidence for each method, and includes both pharmacological and non-pharmacological approaches.	
16:00 – 16:30 Coffee break			

#### 16:30 – 17:30 Practical sessions: noninvasive or minimally invasive procedures:

**Non-invasive cortical stimulation: demonstration rTMS and tDCS** *Nathalie André Obadia, Caroline Perchet and Luis Garcia-Larrea | Lyon* 

**TENS, Botulinum toxin, Capsaicin patches, sphenopalatine ganglion blocks, occipital stimulation,...** *Geneviève Demarquay and Christian Gov | Lyon* 

# **THURSDAY – DAY 4 G**OOD DIAGNOSIS NEEDS UNDERSTANDING

### Practical session and discussion

#### 8:30 – 10:30 Practical session on interventional approaches Jean-Bernard Caillet | Lyon

A manikin-based, interactive anatomical demonstration of invasive techniques for spinal, dorsal ganglion and subcutaneous neuromodulation.

#### 10:30 – 11:00 Coffee break

11:00 – 13:00 Now that you think you know... Current Challenges in Neuropathic pain Managements and Research How to start setting up a 'pain clinic' in your hospital Key diagnostic images you should fix in your head (MRIs, echo, ...) Blood tests for treatable causes of neuropathy How to use algorithms without being their slave Understanding, interpreting and using info in research papers Conceiving and performing clinical research (yes you can)

#### 13:00 End of the course



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# **COURSE VENUE**

Hôpital Neurologique de Lyon 59 Bd Pinel 69677 Bron, France

Tram T6: station "Groupement Hospitalier Est" (terminus) Bus C8 and C9: station "Hôpital Neurologique"

Local logistic support: Caroline Perchet, Juliette Gélébart, Argitxu Caldichoury, Siloé Corvin Graphic design: Amandine Rey







