# Neuropathic pain

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Neuropathic pain is a localized sensation of unpleasant discomfort caused by damage or disease that affects the somatosensory system.

It is a common and debilitating consequence of neuromyelitis optica spectrum disorder (NMOSD) myelitis, with no satisfactory treatment.

The IASP's widely used definition of pain states: “Pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage.”

Neuropathic pain constitutes a significant portion of chronic pain.

Does not involve sympathetic hyperactivity but may be associated with vegetative signs (eg, fatigue, loss of libido, loss of appetite) and depressed mood. People vary considerably in their tolerance for pain.

## Epidemiology

Neuropathic Pain Epidemiology.

### Types

Central neuropathic pain

Refractory Neuropathic Pain

Neuropathic pain may result from disorders of the peripheral nervous system or the central nervous system (brain and spinal cord). Thus, neuropathic pain may be divided into peripheral neuropathic

pain, central neuropathic pain, or mixed (peripheral and central) neuropathic pain.

Peripheral neuropathic syndromes have received greater attention in the research literature than central pain, and studies of syndromes such as postherpetic neuralgia and painful diabetic neuropathy provide the basis for current knowledge of neuropathic pain.

# Etiology

Chemical and mechanical compression of nerve root inflammation is thought to be the source of neuropathic pain [1].

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Peripheral nerve injury is associated with microvascular disturbance; however, the role of the vascular system has not been well characterized in the context of neuropathic pain.

Is caused by damage or disease that affects the somatosensory system.

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Butenschoen et al. presented a large cohort population undergoing different intradural spinal tumor surgery with an assessment of early postoperative and follow-up outcomes, focusing on the occurrence of neuropathic pain. We performed a retrospective monocentric study including all patients treated for intradural spinal tumors between 2009 and 2020. We extracted surgical aspects as well as pre-and postoperative clinical courses from the records. Statistical analysis of potential contributing prognostic factors was performed including matched pair analysis. In total, 360 patients were included for analysis. At a median follow-up of 2 years, 26/360 patients complained of a neuropathic pain syndrome (7.2%) requiring continuous medication. Of these patients, only 50% complained preoperatively of pain. The tumor entity did not significantly influence the incidence of postoperative neuropathic pain ($p = 0.91$). The sacrifice of the tumor carrying nerve root and tumor recurrence also did not increase the risk for this condition. Persistent neuropathic pain requiring continuous treatment occurred in 7.2% of patients undergoing intradural spinal surgery in our cohort. This frequently underestimated postoperative adverse event represents a disabling condition leading to substantial impairment in the quality of life among the affected patients [2].

## Clinical Features

Patients with neuropathic pain are usually more heavily burdened than patients with nociceptive pain. They suffer more often from insomnia, anxiety, and depression. Moreover, analgesic medication often has an insufficient effect on neuropathic pain.

It may be associated with abnormal sensations called dysesthesia, and pain from normally non-painful stimuli (allodynia). Neuropathic pain may have continuous and/or episodic (paroxysmal) components. The latter resemble an electric shocks. Common qualities include burning or coldness, “pins and needles” sensations, numbness and itching. Nociceptive pain, by contrast, is more commonly described as aching.

# Diagnosis

Neuropathic Pain Diagnosis.

# Treatment

see Neuropathic pain treatment.

# Outcome

The presence of neuropathic pain can severely impinge on emotional regulation and activities of daily living including social activities, resulting in diminished life satisfaction. Unfortunately, the majority of patients with neuropathic pain do not experience an amelioration of symptoms from conventional therapies, even when multimodal therapies are used. Chronic refractory neuropathic pain is usually accompanied by severe depression that is prone to incur suicidal events; thus clinical management of chronic neuropathic pain and depression presents a serious challenge for clinicians and patients [3].

Two patients presented with neuropathic pain and severe depression. The patients had different pain symptoms emerging a few months after central or peripheral nervous system impairment. These symptoms were associated with the development of severe depression, social isolation, and a gradual inability to perform daily activities. Both patients were referred for bilateral anterior cingulotomy. After surgery, both patients showed significant progressive improvements in perceived pain, mental health status, and daily functioning.

Bilateral anterior cingulotomy may serve as an alternative treatment for medically refractory neuropathic pain, especially for patients who also experience depression [4].

# Non-systematic reviews

The objective of the study was to perform a non-systematic review of the diagnosis, screening, and quantification of neuropathic pain. For this purpose, a search was conducted of the PubMed/Medline, ScienceDirect, OVID, and SciELO databases for available evidence. The findings highlight the common occurrence of chronic neuropathic pain in clinical practice. However, diagnosing and managing this type of pain pose challenges due to its complexity and the individualized nature of cases. Precise diagnosis is crucial for effective management, involving therapeutic approaches that go beyond traditional pain treatments. It is noteworthy that until recent times, general questionnaires were utilized to assess neuropathic pain, lacking the ability to distinguish it from nociceptive pain or evaluate its broader impact on well-being. Biomarker pain panels hold promise in identifying treatable pain causes and evaluating treatment effectiveness. In conclusion, this review describes the diagnostic methods and tools for screening and quantifying neuropathic pain [5]

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