

ALL ABOUT
PAIN

WHAT IS IT?

Pain is described as an **unpleasant sensory and emotional experience that is associated with a harmful stimulus.**

In people who are suffering from multiple sclerosis (MS), pain is a common symptom.

The prevalence of pain associated with MS (in other words, the number of patients affected by pain at any given time) is approximately 86%, with varying intensities. It has a major impact on quality of life, limiting both daily and work activities. It is correlated with age, duration of the disease, degree of disability, fatigue and depression.



WHAT ARE THE SYMPTOMS?

Pain can be classified based on the mechanisms causing the pain. Based on general traits, pain can be divided into two major types: neuropathic pain (also called neurogenic pain) and nociceptive pain.

Neuropathic or neurogenic pain: Caused by damage to or dysfunction of the nerves

There are different types of neuropathic pain associated with MS:

- **Dysesthetic pain:** Is one of the most common pain syndromes associated with MS. It is described as a **feeling of constant, burning pain, occurring in the absence of external stimuli**, that primarily **affects the legs and feet**. In addition, this pain characteristically worsens at night and with physical activity.
- **Trigeminal neuralgia:** The trigeminal nerve innervates broad areas of the head. Damage to the nerve from MS causes neuropathic pain, the most widely recognized syndrome associated with MS. It is known for causing **episodes of intense pain** felt in the eyes, jaw, forehead, scalp, lips and nose in a bilateral (both sides of the face) manner. These episodes can appear suddenly, often set off by regular daily activities, like brushing your teeth.
- **Lhermitte's sign:** Is a painful sign that is strongly linked to MS. It is described as a **brief bothersome feeling that radiates from the neck** to other parts of the body after flexing or extending the neck.
- **Pain associated with optic neuritis:** Optic neuritis is a condition associated with MS that is caused by inflammation of the optic nerve. It leads to vision changes (blurred vision, double vision, etc). In some people, this inflammation of the optic nerve can also cause **sharp pain when moving the eyes**.

Nociceptive pain: Does not originate from damage to the nerves

Is the pain that results from stimulation of the pain receptors we have distributed throughout our bodies. In this way, the brain is warned of any damage to muscles, bones and any other tissue.

- **Muscle pain:** People who are affected by balance disorders, muscle stiffness, a lack of coordination in the arms and legs or any other change that affects the limbs may have to adopt awkward body positions in order to be able to walk. As a result, **the muscles of the legs or back may become overloaded** which can lead to pain. This pain may also be felt in the neck and arms, also a result of shakes, muscle weakness and other movement conditions.

(•) **Painful tonic spasms:** spasms that result from spasticity are one of the most frequent disorders in patients with MS. **Painful tonic spasms**, also known as **paroxysmal dystonia**, are the characteristic spasms of this disease. They are described as involuntary muscle contractions that occur unexpectedly and cause pain. Generally, they tend to occur several times a day and can be chronic or appear only during recurrent, discrete periods of time.

(•) **Headache**

WHY DOES IT OCCUR?

Neuropathic (or neurogenic) pain occurs due to **malfunction of the transmission of nerve signals** to and from the brain and spinal cord. This type of pain is not a result of any apparent injury to the body, but is instead a result of injury at the neuronal level by the MS and the progressive loss of the myelin sheath, a fundamental characteristic of the disease

In this way, **the effects of the disease on the trigeminal nerve**, one of the most important nerves in the head whose function it is to transmit a sense of touch, temperature and pain from the face to the brain, can also cause pain in MS patients.

Muscle pain is a result of musculoskeletal changes, including rigidity and spasms, that are caused by the disease.

The actual cause of **headaches** in MS patients is not clearly understood, although an association does exist with changes in brain function circuits and damage caused by the disease. In addition, the risk of having headaches seems to increase in patients with more damage.

TREATMENTS

In order to treat pain, it is very important to evaluate the type, intensity and cause of the pain. Following this evaluation, the doctor will be able to select the type of treatment that is best for each case. It is important to keep in mind that pain resulting from MS can be very complex, given the wide variety of changes caused by the disease itself. It is because of this that, for many patients, pain must be treated by employing several different strategies.

Medications

- The medications used to treat **neuropathic pain** include those that modify neurotransmitter function. For example, the most frequently used medications include antiepileptic drugs (carbamazepine, gabapentin and pregabalin), although they are administered at different doses, antidepressants (duloxetine and amitriptyline) and opioids (codeine and morphine). In addition, the use of antispasticity drugs are recommended in order to reduce nociceptive pain associated with spasticity and the resulting spasms.
- Some of the medications that are used to treat MS can have side effects, which is why not all patients can follow the same drug treatment regime. Each person should receive personalized treatment based on their doctor's evaluation and their own progress.



Behavioral Therapy

Behavioral therapies can be combined with drug-based therapies, and may be very appropriate for MS patients that do not respond properly to their medications or who want to supplement their treatment.

- This type of treatment includes all those therapies that aim to **treat the psychological aspects** of a person's disease. It has been widely shown that MS causes not only physical changes, but emotional ones as well. In this way, therapies like **relaxation, meditation, hypnosis** and **support groups**, etc., can be a very effective component of MS treatment. Participating in social activities and having a positive and proactive attitude **helps to minimize pain and improve the quality of life** of patients with MS.



Physical Therapy

- There are also types of **physical therapy** like **physiotherapy, application of cold or heat, the use of tables for moderate physical exercise**, etc., that can help to improve muscle condition and decrease the impact of physical changes caused by the disease, and thereby minimize pain.

Surgery

- It is important to stress that **there is no surgery that will cure the disease. The role of surgery is instead to provide palliative solutions for symptoms, which, in this case, includes pain.**

- (•) To this end, there are surgical procedures that can be useful **for alleviating some types of pain**. For example, patients suffering from trigeminal neuralgia can turn to surgery to try to alleviate the pressure against the nerve, decrease its sensitivity or even completely block the nerve path.
- (•) In any event, these techniques carry certain risks, including, for example, the possibility of increasing the sensitivity of the nerve or temporary difficulty moving the facial muscles. For this reason, surgical intervention to address pain must be considered only **when all other treatment strategies have not be found to work** and there are no other alternatives.

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