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MEDIAPLANET

Neuropathic Pain: Myth or reality?

**To doctors
To patients**

**To neuroscientists
To therapists**

30'000 Genevans, 450'000 Swiss, 450 million human beings suffer day and night from neuropathic pain. If anti-inflammatories don't ease the pain, it may be because your nerves are not functioning properly. Explanations...

The cutaneous nerves form a very complex network just below the skin; their 240 branches are therefore vulnerable to trauma and consequently often injured. Almost 7% of the general population will experience this type of damage.

From simple discomfort to intolerable agony

The physiological consequence of lesions of the tissues responsible for tactile sense is numbness of part of the skin with unclear and diminished feelings, as if blurred. This part of the skin can generate burning, hot, painful cold, even icy sensations. This discomfort is intermittent, progressively incessant, although these internal hot or cold burning sensations are not necessarily connected to low or high temperatures. Additionally this often burning part of the skin is related to sensations qualified as stabbing – screaming – shooting – crazy: these words are often used to describe the symptoms. Spontaneous neuralgias are neither connected to activity nor to rest. They are triggered uncontrollably at any time. But the mechanism of neuronal plasticity allows a reorganisation of these neurophysiological lesions.

Hypersensitive, irritable, nervous: « that's not me »

When you wake up, day after day, from your restless nights, you become less and less accessible to others. Withdrawn, you lose your generosity; little by little you become overwhelmed by your problem; in short: you become unbearable... for yourself and your environment. Pain is a physical and emotional experience; this applies even more to neuropathic pain that can be very exhausting.

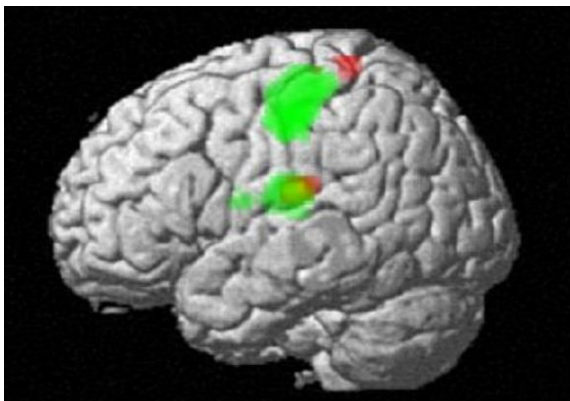
Contrarily to all common sense

One third of patients that suffer from neuropathic pain also have other pain. Neuropathic pain caused by touch – known as allodynia – is contradictory, a paradox, seemingly “illogical”. Every stimulation – from the spray of water in

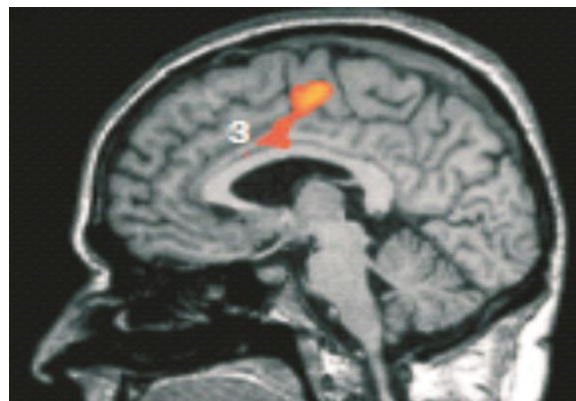
the shower to the contact of clothing, to every touch or even caresses – is not only perceived as blurred or fuzzy but also as painful. The same stimulus will cause stinging as if nails were being driven into your skin for one person, and for another burning, as if a red hot iron were placed on your skin. This pain is wicked: after application of a relatively innocuous stimulus, the painful perception will radiate and spread out all over and will not cease for hours and hours. The first step of the treatment is to minimize all direct contact to the painful area and then to invert the mechanisms of peripheral and cortical sensitization at the origin of this paradox.

Who is to blame? : The somatosensory nervous system

Our nervous system ranges from the receptors in the skin to different nerve centres in the brain. The insular cortex in particular misinterprets the sensation. Deeply situated behind our forehead, it interprets touch as pain. This interpretation can be modified by appropriate re-education.



Spontaneous neuropathic pain
(Freund, 2009)



Touch-evoked neuropathic pain
(Quintal et al., 2013)

English translation by: Sarah RIEDO, OT, CSTP® - Tara L. PACKHAM, PhD, CSTP®, MSc, BHSc (OT) – Sibeles de ANDRADE MELO KNAUT, PhD, pht