Different Types of Pain: Why They Happen and How to Treat Them

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Based upon:
Treating pain based on the underlying mechanisms: are we there yet?
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SUMMARY

In this interesting talk by Dr Clauw, we learned about the different types of pain, how the brain processes them, and why they require different treatments. There are three types of pain: nociceptive, neuropathic and centralized. *Nociceptive* pain is usually sharp and localized: It is caused by inflammation or injury to a part of your body, such as knee pain due to arthritis. *Neuropathic* pain is described as burning, tingling or numbness: it occurs when there is an injury to a specific nerve. *Centralized* pain is more generalized or widespread: it is related to the way your brain processes pain signals and can be accompanied by fatigue and mood changes. In centralized pain, the brain acts as an amplifier and intensifies pain signals. In other words, a little pain feels like a big pain. Fibromyalgia is an example of this.

Mechanistic Characterization of Pain
Variable degrees of any mechanism can contribute in any disease

	Nociceptive	Neuropathic	Centralized
Cause	Inflammation or damage	Nerve damage or entrapment	CNS or systemic problem
Clinical features	Pain is well localized, consistent effect of activity on pain	Follows distribution of peripheral nerves (i.e. dermatome or stocking/glove), episodic, lancinating, numbness, tingling	Pain is widespread and accompanied by fatigue, sleep, memory and/or mood difficulties as well as history of previous pain elsewhere in body
Screening tools		PainDETECT	Body map or FM Survey
Treatment	NSAIDs, injections, surgery, ? opioids	Local treatments aimed at nerve (surgery, injections, topical) or CNS-acting drugs	CNS-acting drugs, non-pharmacological therapies
Classic examples	Osteoarthritis Autoimmune disorders Cancer pain	Diabetic painful neuropathy Post-herpetic neuralgia Sciatica, carpal tunnel syndrome	Fibromyalgia Functional GI disorders Temporomandibular disorder Tension headache Interstitial cystitis, bladder pain

Mixed Pain States

Slide Courtesy of Dr. Daniel Clauw, MD

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Fibromyalgia is a condition that causes people to feel pain all over their body in association to other symptoms. However, Dr Clauw presented a new term he calls “fibromyalgianess.” He used this term to say that the symptoms of fibromyalgia may be present with different severities, rather than being either “present” or “absent.” Thus, “fibromyalgianess” is a way of describing centralization of pain, meaning that pain signals are processed differently by the brain. Then, he explained some of the studies that have been done to show this. In one study, a fibromyalgia questionnaire was given to patients undergoing knee surgery. This survey evaluated the location and severity of their pain and mood symptoms. A score from 0 to 31 was given, depending on their answers. Patients with higher scores required more pain medication and had less pain relief after their surgery, even if they didn’t have a definitive diagnosis of fibromyalgia.

In other studies, scientists have looked at brain images of people with and without chronic pain by performing Functional Magnetic Resonance Imaging studies (fMRI). fMRI is an imaging test that watches the brain in real-time, like a video-recorder, to see what parts of the brain are being used to process information. They found that patients with chronic pain have larger pain-processing areas in their brain. So, why do only some people have this? It may be related to your genes or to experiences you have had throughout your life such as chronic exposure to one of the other types of pain.

Recognizing different types of pain is the first step to decide what the best treatment plan is. We know that having pain for a long time can cause you to have more stress, anxiety, difficulty sleeping, and depression. Nociceptive pain may improve with ibuprofen or opioid medications. Centralized pain, however, requires medications that work at the brain level and non-medication treatments such as exercise and counseling. At the end of his presentation, Dr Clauw talked about the importance of understanding your pain and paying attention to all of its components to improve your symptoms and quality of life.