



# The Gift of Acute Nocioceptive Pain

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Your brain is constantly analyzing whether sensory inputs are pleasant, neutral or unsafe. Pain or discomfort can only exist after your brain interprets an external stimulus. Consider the following sensations:

- Too hot or cold
- Crushing pressure
- Distended stomach or bladder
- Sharp
- Blinding
- Too loud
- Bitter taste
- Rotten odor

This list is endless, but at a certain threshold, your body senses there is a threat and creates anxiety. The sensation of anxiety is intended to be so unpleasant that it compels you to take conscious or unconscious action to resolve the threat. This is how humans evolved and continue to stay alive.

The brain works by association, so pain quickly becomes connected to the situation that caused it. We learn what to do to avoid danger, and then we do the same thing each time we re-encounter that danger. It only takes one time for us to put a hand too close to the flame, feeling the heat, and realizing it can burn us to keep us from ever doing it again.



Our brain, through with what is called the **nociceptive system**, automatically guides our behavior to avoid pain and remain safe. Although you probably don't realize it, when you are sitting on a chair, your body is constantly shifting to avoid damaging your skin. This protective mechanism does not exist in people who are completely paralyzed and pressure sores may occur. Most of the time, we are not aware of the incredible benefits of our pain avoidance system.

Acute pain is the physical link to the environment that is necessary for survival as well as living a functional life. It causes conscious or unconscious anxiety, a signal that you have reached the structural limits of a given body part. People without protective sensations eventually have their joints disintegrate into a "bag of bones." The resulting deformities are severe and crippling. It is most common in diabetics suffering from peripheral neuropathy and patients with leprosy. The survival for those born without pain receptors, a condition called "**Congenital Indifference to Pain**" is about twelve to fifteen years. Parents can do nothing to teach these children how to protect themselves. (1)

Every attempt to replicate the nociceptive system for those who lack a protective pain system has failed miserably. This system is a wonderfully balanced and intricate gift when it functions well and the worst part of the human existence when it has gone awry. (2)

1. Yancey, P and Paul Brand. *Pain: The Gift Nobody Wants*. DIANE Publishing Company (1999).
2. Baliki MN and A Vania Apkarian. "Nociception, pain, negative moods, and behavior selection." *Neuron* (2015); 87: 474-491.