Do You Experience Any Or All Of The Following?

- Snoring
- Excessive Daytime Sleepiness (EDS)
- Poor Concentration
- Morning Headaches
- Weight Gain
- Fatigue
- Forgetfulness
- Sexual Dysfunction

If you answered YES to any of these symptoms of sleep-disordered breathing, please give us a call for a full evaluation. Just because sleep apnea is common, doesn’t mean it’s not serious. We have an easy solution if a CPAP is not required. It’s time to live better.

Call 212.246.8700 or visit sleep.gallery57dental.com

New research shows how the brain can be tricked into feeling pain relief

GIULIANA MAZZONI

Pain is never fun to experience, but it is one of the most useful bodily signals we have. It acts like an alarm system for harmful or potentially fatal conditions—so you know that when you touch that boiling hot pan, you should take your hand away.

Pain is also a highly subjective experience: people can feel different levels of pain in the same situation. While some tend to have a very low threshold for pain—for example, needing anesthetic when having dental cavities filled—for others, it’s no problem.

These individual differences seem to have a genetic basis, but there are also other factors that can “manipulate” the mind and change the way we feel pain, such as a sudden distraction. This could be as simple as making someone laugh, as this shifts attention away from the pain, helping to reduce its perceived intensity and unpleasantness.

And new research shows that in addition to being distracted from pain, the brain can also be tricked into experiencing pain relief.

Expectation plays a big part in how we perceive pain and its intensity.

The Power of Pain

On a brain scan, the areas that light up when pain is felt are in the frontal brain regions. These are the areas of the brain that regulate the intensity and quality of the pain experience. They are also the areas responsible for setting expectations—which is no coincidence. Expectation plays a big part in how we perceive pain and its intensity.

So if you are awaiting for an injection that you are told will be really painful, you are likely to experience it that way. And on the flip side, if something painful happens unexpectedly—such as stubbing your toe—it might take some time before you realize the actual intensity of the pain.

The now famous “rubber hand illusion” reveals the powerful connection between what we see and what we feel. Using a fake rubber hand, psychologists found they could convince people an artificial arm was part of their body. For this to happen, the participants had to hide their real arm from view (under a piece of cloth) and then both their real arm and fake arm were simultaneously stroked.

A few studies have also suggested that pain—not just touch—can be perceived by the rubber hand illusion. And there are countless YouTube videos of people cringing as the rubber hand is threatened by a hammer or pricked with a needle.

Mind Games

New research shows the brain can be fooled into experiencing both pain and pain relief. The recent study involved researchers carrying out the rubber hand illusion, then using a thermometer to deliver intense pain stimulation on selected sites of the real arm. This was done while a visible mock thermometer was attached to the exact same sites of the rubber arm, which then lit up during the stimulation. It was discovered that a large number of participants reported experiencing the pain as if it was coming from the rubber arm. The researchers then used a fake pain relieving cream—in other words, a placebo—on the “painful site” of the rubber arm. This time, people who experienced the rubber hand illusion also reported a decrease in pain intensity.

This shows that people’s minds can be tricked into experiencing both pain and pain relief on a fake hand, where no pain stimulation, or any pain relief, were applied.

But the rubber hand illusion is more than just a great party trick, it reveals one of the most important ideas in brain science. It shows how multisensory perception can influence how we see our own body. It also reveals how what we know to be true can be overridden by the brain.

In the experiment, the brain is being challenged to accommodate the new rubber hand—which is called neuroplasticity. This is the idea that the brain can change in response to experience. 

And in practical terms, these findings could present viable treatment and pain relief for people with chronic pain—such as phantom limb syndrome, in which pain is experienced as if coming from a nonexistent limb. It could even be used in other conditions such as fibromyalgia or complex regional pain syndrome, potentially offering hope to thousands of people whose lives are blighted by real pain on a daily basis.

GIULIANA MAZZONI is a professor of psychology at the University of Hull in England. This article was originally published on The Conversation.