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It makes sense that it hurts when our bodies are burnt, bruised, broken, cut or freezing cold. But we can also feel pain when there's no physical damage at all. "Hurt does not equal harm," writes Dr Monty Lyman in his book "The Painful Truth". Pain, he writes, is made by the brain; it's the brain's unconscious opinion on whether our body is damaged or at risk, and does not depend on the body being damaged. "Pain is messy, it's wonderfully human," he says. Here are just some examples of these strange pains.

Persistent pain

Long after an injury has healed, pain can persist. It's as if your brain simply can't forget the original injury, and becomes super-sensitive to anything that might inflict the injury again. In some cases of chronic back pain your brain, being fearful of repeat damage to the spine, now interprets movement in the back as danger and sends out warning signals, perceived as pain.

Your brain is in this case acting like an overprotective guard dog - an over-sensitive alarm, or, in Monty's words, a 'guardian angel'. But the pain produced is very real.

Dr Abdul-Ghaaliq Lalkhen, pain expert, describes fibromyalgia and complex regional pain syndrome in this way. Some chronic pains are though explained by lasting damage to nerves, for example compressed by cancer or damaged by the shingles virus [5].

Predicted pain

Expecting pain can produce pain, through something known as the 'nocebo effect' [6]. Sometimes you really do find what you're looking for; you experience what you expect and predicted pain presents as real pain.

Dr David Hamilton, scientist and author, explains how the nocebo effect [7] works in the opposite way to the better-known placebo effect. So, if you're given a sugar pill and told that it will relieve pain, it often does – through the

release of your body's own morphine. Expecting the same pills to produce pain blocks your body's natural painkillers, and you feel pain.

Words really matter when it comes to predicted pain. "In general", writes Dr Hamilton, "pain is elevated when doctors or nurses use the words, 'sting,' 'burn,' 'pain,' 'hurt,' or 'bad,' but it is much less when softer language is used."

Period pain

It can certainly feel like serious injury when you're doubled over with searing, stabbing, shooting period pains which spread from the lower abdomen to the back and thighs. Usually though, the cramping pain is produced by powerful muscular contractions of the uterus; doctors are testing whether a drug [8] that cancels these contractions (already prescribed to prevent premature labour) might act as pain relief.

Other times, so-called dysmenorrhoea can indicate disease such as endometriosis [9] (where cells similar to those in the womb also grow elsewhere, perhaps in the bladder and bowel), fibroids or polyps - or it could be that your contraceptive coil has moved. Talk to a doctor if the pain is intense and interfering with your daily life, or if the pattern of your periods changes.

Perplexing pain

What exactly are growing pains? There's no obvious injury, and they often disappear during the day – so what causes them? Why does chilli pepper make your tongue burn when there's no injury? When there's injury to your brain after a stroke, or to your heart after a heart attack, why does your body hurt in places that are distant from the damage?

Growing pains are one of medical science's many mysteries. Stretched muscles, minor strains or mental stress have been blamed for these pains, most commonly located in the legs – but the truth is, no-one really knows.

Chilli peppers trigger nerves in the tongue (or skin) that detect pain, causing a burning sensation. Interestingly, at high doses, and put into a sticky patch on the skin, they may reduce the chronic pain [10] of nerve damage associated with shingles, HIV or diabetes, by making the same nerves insensitive to pain messages.

Post-stroke pain [11] can arise months after the stroke, and is caused by damage to the structures in the brain that interpret pain. Any body part can hurt, even though it's not actually injured. A heart attack, meanwhile, may manifest as pain in the teeth or jaws, causing doctors to look for a dental problem – when in fact the pain is referred [12] from the heart, through complex nerve pathways, to the teeth.

Pictured pain

In 'synaesthesia [13]', there is a fusion of the senses: for example, colour vision can be paired with hearing or taste, so that letters and numbers, or foods, bring to mind different colours. In a rare condition called 'mirror-touch synaesthesia', a person feels touch, or pain, on their body (perhaps on the opposite side), when they see it pictured in another person. The senses of vision and touch are combined; the person really does feel another's pain.

Professor Ramachandran of California University suggests that, in synaesthesia, the normal 'pruning' of brain connections that happens through experience and learning is reduced. The nerve cells remain 'hyperconnected [14]' and the individual inhabits a truly multisensory milieu, where pain is 'contagious'.

Post traumatic pain

Emotional stress [15] can cause physical pain in the form of stomach ache, muscle ache, chest pain, indigestion and headache. What's less well-known is that severe psychological stress, such as that experienced during torture, can lead to persistent pain, in the absence of any lasting physical injury.

'The Painful Truth' describes Evan, a former member of an elite special forces unit deployed to Afghanistan. His toughness transformed by mental torture, Evan now felt pain with the lightest touch or muscle twinge. "If pain can be crudely likened to an outdoor security light that switches on when a human-sized intruder approaches your house at night, Evan's light had become one that is triggered by a leaf blowing in the wind" Monty writes. Evan's brain had been "rewired to be on hyper-alert for any potential threat".

Injury without pain

Just as pain can exist without injury, there can be injury without pain, especially when you are distracted by something else. Immersing yourself in nature, through a virtual reality headset, can distract from pain in the dentist's chair.

Pain is then really strange, being both created by the brain, and, at other times, cancelled by it. It is the strength of this mind-body connection that allows for mind-body therapies [16] such as cognitive-behavioural therapy, deep breathing, meditation and mindfulness to change our perception of pain, and help us take back control of our lives.



Source URL:https://www.helencowan.co.uk/pain-without-injury

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