

Patient information: Module 1

What is chronic pain?

Pain is defined as:

“an unpleasant sensory and emotional experience associated with actual or potential tissue damage.” - (*International Association for the Study of Pain*)

Chronic Pain can be defined as:

“Pain that continues after an injury has healed”.

Pain is the body’s alarm system, warning us that our ‘tissues are under threat’, usually by injury or illness (for example, an acute back ‘strain’ or appendicitis).

The human body and especially the brain and spinal cord have evolved over millions of years to *amplify* pain alarm signals (a bit like a ‘hi-fi’ system) so we don’t ignore them. It’s a good thing when pain warns us of a new injury (such as a broken leg), which helps us to survive.

Unfortunately, in some people with *chronic pain*, this alarm system “keeps on ringing” even though the “emergency” is over and the injury (such as the back strain) has well and truly healed. We now have an alarm system gone wrong!

This ‘alarm system problem’ occurs because of changes in the nervous system (called ‘pain sensitisation’) and changes in the body’s responses to stress, injury and illness, which have ‘amplified’ (turned up the volume on the pain ‘hi fi’) and produced a ‘memory’ of the original pain signals in the brain and spinal cord, even though the injury that caused the pain in the first place has well and truly healed!

This explains why some people have pain even though an x-ray or scan looks “normal” or why a patient with an amputated leg feels pain in his missing limb.

You don’t have to have damaged tissues to experience pain; you could be experiencing a pain memory, like an ‘echo’ of the original pain.

This doesn’t mean there’s anything ‘wrong’ with the brain or spinal cord of patients with chronic pain (there’s no problem with the ‘hardware’); it’s more like a glitch in the ‘software programme’ that processes pain signals in the body.

Treating chronic pain is like ‘re-booting’ a computer hard drive to get the programme working normally again. As with computers, this can sometimes be difficult to do and takes time.

Chronic pain and other symptoms as a response to a ‘multiple stresses’ (‘stress load’) on the body:

In many people who develop chronic pain, exposure to ‘stressors’ that ‘threaten’ the body, such as **injuries** (eg. whiplash, broken bones), **illness** (eg. glandular fever virus, cancer, arthritis) or **‘life-events’** (depression, anxiety, work or relationships problems) cause changes in the whole-body’s nervous, immune and hormone systems, producing a **‘sickness response’** (just like a dose of the ‘flu’), which sometimes doesn’t “switch off” as expected, but continues over the long term (especially if the ‘stresses’ continue).

This ‘sickness response’ not only produces chronic pain in various parts of the body or “all over” (like the aching muscles you feel when you have the flu and are sick in bed), but many other symptoms that go hand-in-hand with pain, like chronic fatigue, poor sleep, difficulty thinking, low mood, anxiety and a lack of energy, appetite, motivation and libido. In some people this response is called the ‘fibromyalgia syndrome’.

Pain is a ‘whole-person’ experience: Pain may affect your general health, ability to work, income, travel, relationships, all aspects of your life. That’s why we often help of other health care professionals such as psychologists or physiotherapists to treat the “big picture” of your pain experience.

Pain is an unpleasant ‘emotional’ experience: Fifty percent of patients with chronic pain suffer with anxiety or depression.

Pain is quite a ‘threat’ and is always associated with increased levels of anxiety and fear. This is quite understandable: there are few things as stressful as living with constant pain!

Pain, depression and anxiety interact in a ‘vicious cycle’. When you experience pain, you may get anxious or depressed which in turn makes it harder to cope with the pain. Brain scans have shown that the parts of the brain controlling emotions and pain are linked together. That is why we pay a great deal of attention to people’s emotions when treating chronic pain.

Physiotherapy and exercise are a vital part of pain management: Back pain is a classic example. People who stop exercising their back because of pain become “de-conditioned”, weakening the “scaffold” of supporting muscles and ligaments which in turn makes the back pain worse.

Exercise boosts your immune system and produces your body’s natural pain killers called “endorphins”; which not only helps ease your pain but also makes you feel better, just like the “high” runners describe after jogging. In this way, exercise is also very effective in treating stress, depression, chronic fatigue (fibromyalgia) and a whole host of pain-related problems.

However people with chronic pain can easily ‘overdo’ their exercises and become exhausted, disheartened, avoid further exercise and get even more unfit; a ‘vicious cycle’. **Pacing physical activities**, by ‘building up’ stamina and endurance a little bit each day, is a key pain management strategy that physical therapists can teach.

Disappointment and frustrations: What many people who live with chronic pain realize is that despite our best attempts with injections, operations or drugs, chronic pain may not be “curable” by medical techniques alone. The chronic pain experience is also very *frustrating*; lots of doctors, therapists, scans and procedures, conflicting information, loss of faith and hope and not much joy!

Procedures and pills: Although procedures and pain killers play a valuable role in pain management, more often than not, a ‘magic’ needle, operation or drug to ‘cure’ chronic pain is not available. Most spinal injections (epidurals, facet joint injections, rhizotomies) and pain killers (eg. morphine, paracetamol, antidepressants, gabapentin, anti inflammatory drugs), only *reduce* pain in about **1 in 5 patients** treated and they all have potential side effects.

Morphine-like pain killers (opioids) such as pethidine, morphine, oxycodone, methadone, codeine or patches: Although some carefully selected patients respond to opioid pain killers without major side effects, a small proportion may become addicted; these patients need a sympathetic approach including careful management of their medications and other life-style factors.

Morphine-like (opioid) pain killers can actually increase pain: The over-use of opioid ‘pain killers’ *decreases* the production of the body’s own powerful pain-relieving chemicals (‘endorphins’), thereby *increasing* pain. This is called **opioid induced hyperalgesia**. Sometimes we have to reduce the dose or change the type of opioid pain killer to overcome this problem.

A ‘ceiling or maximum dose’ is now being used by many pain specialists to limit ever-increasing doses of opioids which can do considerable harm. In general, if an opioid pain killer is going to work, it will do so in low-to-moderate doses; going ever higher in dose will not reduce the pain

further over the long term. Some people's pain simply won't respond to morphine-like drugs, whatever the dose!

Goals of procedures and pills: Procedure and pain medications are rarely a 'cure' for pain, but may provide a 'window of opportunity' of improved pain control, which allows you to engage in the long-term goals of pain management such as improving self-management, physical function, fitness, mood, coping and reducing stress and medication-use.

Managing the whole person in pain: To manage chronic pain successfully, the 'whole-person' needs to be 'engaged' in a wide range of therapies, provided by a team of experts, including persons-in-pain themselves!

Pain management programmes should include;

- Education and information (promoting self-management and ability to make informed decisions about pain management techniques; understanding pain and its mechanisms, thereby taking the 'mystery' and fear and threat out of pain)
- Psychological techniques (stress management, relaxation, mindfulness, hypnosis).
- Physical therapy techniques (activity pacing, fitness, spinal core stability).
- 'Brain power techniques' (mirror box, virtual reality, placebo).
- Lifestyle management (sleep, medication use, workplace and home).
- Relationships management.
- Medical treatments (procedures and medications).

Modern pain management focuses on helping **you** take control and improve **your** quality of life and ability to function and cope. Although this may not sound easy, with help and support it is possible. Everyone's pain experience is unique. That is why **you** are the most important person in successfully managing **your** pain.

This information has been provided by Prof. Eric Visser for PainScience