Bwrdd Iechyd Prifysgol Aneurin Bevan University Health Board

Pain Management Programme

Science of Pain

Chronic Primary Pain and Chronic Secondary Pain

Chronic Primary Pain	Chronic Secondary Pain
Chronic primary pain has no clear underlying condition or is out of proportion to any observable injury or disease. Examples: • Widespread Pain • Fibromyalgia • Complex Regional Pain Syndrome (CRPS) • Chronic Primary Headache • Orofacial pain • Chronic Primary Visceral Pain • Chronic Primary Musculoskeletal Pain • Non-Specific Back Pain	• Chronic secondary pain is a symptom of an underlying condition. • Examples: • Endometriosis • Irritable Bowel Syndrome (IBS) • Osteoarthritis • Rheumatoid Arthritis • Spondylarthritis • Neuropathic Pain

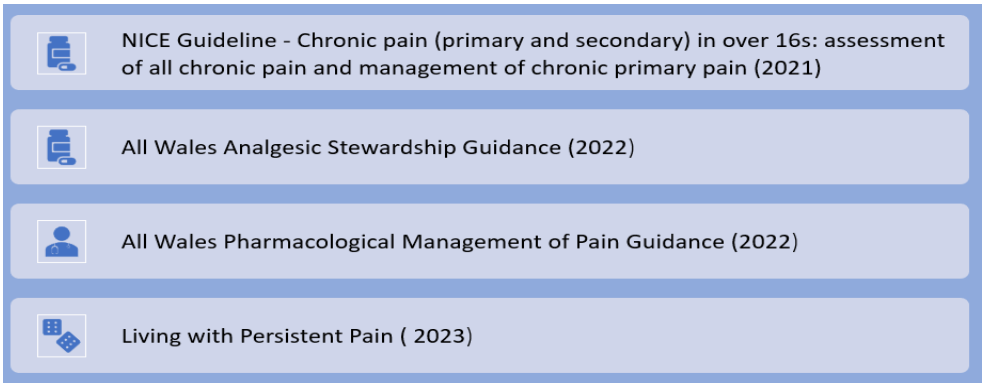
Chronic primary pain has no clear underlying condition or is out of proportion to any observable injury or disease.

Chronic secondary pain is a symptom of an underlying condition.

Chronic primary pain can co-exist with chronic secondary pain in conditions where there is underlying pathology that accounts for some of the symptoms described. Where the two co-exist, clinical decisions about symptomatic management should be guided by the level of emotional distress displayed and the degree to which pain is interfering with functioning

Medication

As a pain management service, we follow the most up to date policies and NICE guidelines to help manage chronic/persistent pain. These are the most up to date guidance, which are:



Chronic primary pain is when there is no clear underlying condition, or the pain (or its impact) appears to be out of proportion to any observable injury or disease.

Secondary pain is (caused by) an underlying condition (for example, osteoarthritis, rheumatoid arthritis, ulcerative colitis, endometriosis).

Types of medication and the evidence

Benzodiazepines - Lorazepam, Diazepam, Valium etc – NICE Guidelines found Limited evidence suggested lack of benefit.

NSAIDs – Ibuprofen, Naproxen, Diclofenac – Evidence suggested that short-term use of NSAIDs made no difference to people's quality of life, pain, or psychological distress. A small amount of evidence suggested that NSAIDs reduced physical function, compared with placebo. In view of the risks of harm with NSAIDs (gastrointestinal bleeding) and the lack of evidence of short-term or long-term effectiveness, the committee decided to recommend against starting NSAIDs for chronic primary pain.

Anti-epileptics, Gabapentinoids, Gabapentin/ Pregabalin – Showed a Lack of benefit for chronic primary pain.

Cannabis-based products - No evidence was identified on the effectiveness of cannabis-based products for chronic primary pain, and some evidence suggested that the treatment could cause adverse events in the short term.

Local Anaesthetics - Evidence for local anaesthetics was limited. A small amount of evidence for short-term use of topical local anaesthetics suggested that there is either no benefit or that their use could result in worse outcomes for pain than placebo.

Intravenous - No evidence was identified, and it was recommended against the use of topical or intravenous local anaesthetics for chronic primary pain. However, local anaesthetics may be useful for people with Chronic Regional Pain Syndrome. (CRPS)

Paracetamol, Ketamine, antipsychotics, corticosteroids - No evidence was identified for paracetamol, ketamine, antipsychotics, corticosteroids, or

anaesthetic/corticosteroid. There was a lack of evidence and possible harms, so they recommended against starting any of these treatments for chronic primary pain.

For Pharmacological treatment for Neuropathic pain, it's slightly different and following an assessment and using a screening tool such as the Leeds Assessment of Neuropathic Symptoms and Signs. Amitriptyline, Duloxetine, Pregabalin, Gabapentin are the medications for this pain that may have been prescribed by your doctor or specialist.

Stopping your Medication

If you wish to stop your medications, then these need to be weaned off and reduced slowly. The most important thing to remember **is never stop taking medicines suddenly**. This is because your body has got used to having the medicines there and stopping them too quickly can make you feel very unwell. If you decide you want to reduce your medicines, then **always talk to a health care professional.**

- **Endometriosis**

Overview | Endometriosis: diagnosis and management | Guidance | NICE

- **Irritable Bowel Syndrome (IBS)**

Overview | Irritable bowel syndrome in adults: diagnosis and management | Guidance | NICE

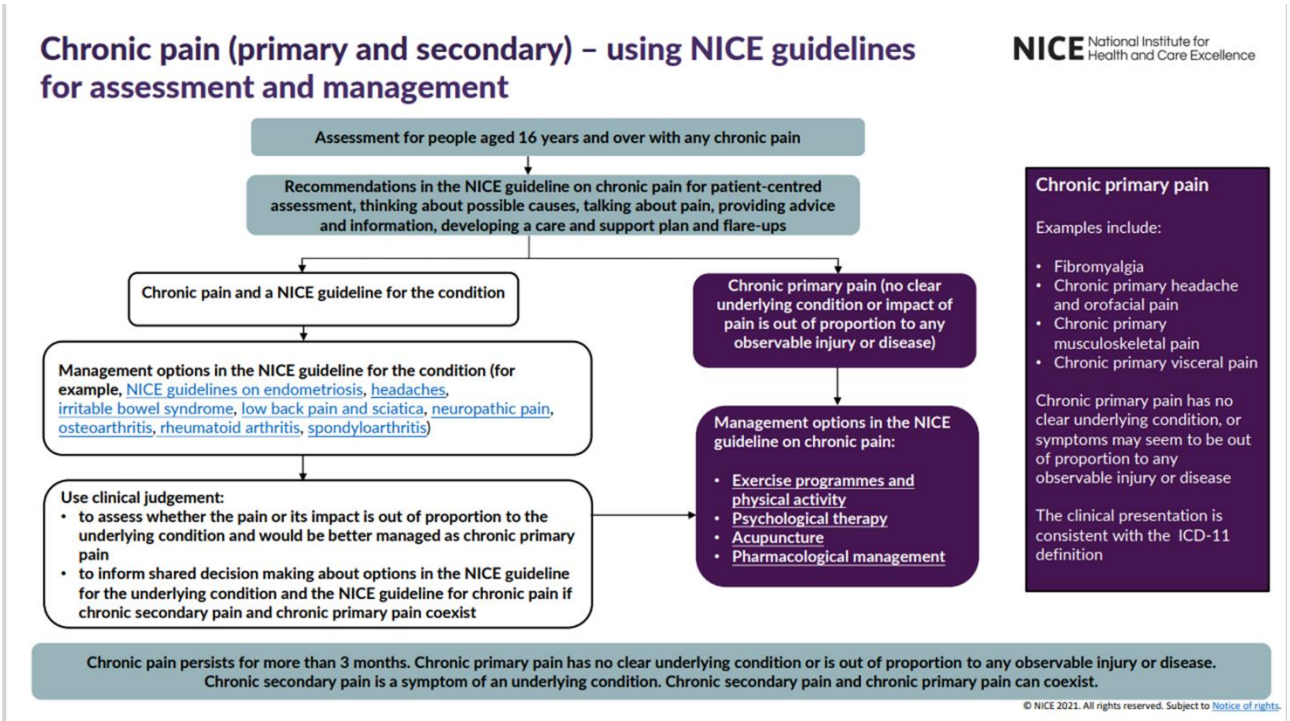
- **Osteoarthritis**

Overview | Osteoporosis | Quality standards | NICE

- **Rheumatoid Arthritis**

- **Overview | Rheumatoid arthritis in adults: management | Guidance | NICE**

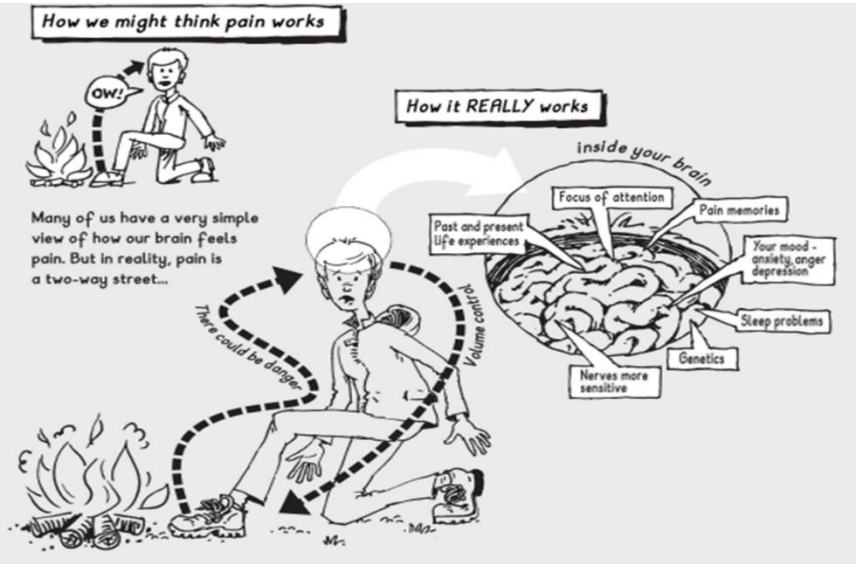
Pain and The Brain



- Pain is one of our protective systems.
- Designed to keep us safe and well.
- Controlled by the brain.
- Our brain decides when to protect us based on the information received from areas of the body.
- It assesses the current situation based on this information.
- It the brain decides it needs to protect; pain will happen.

Persistent pain is very different from the kind of pain you experience when you touch something hot or injure yourself. It goes on long after the original cause. Sensations can feel like the original injury or damage, so it feels as though the damage has not healed when it actually has. It's like a radio switched on permanently with the volume turned up.

How we think pain works and how it really works?



Persistent Pain

Persistent pain can cause:

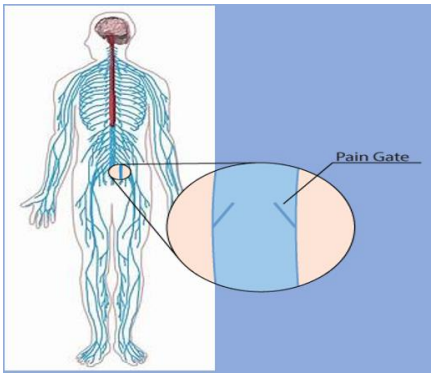
- Excitable nerves – slight pressure around the painful area can cause unpleasant pains and sensations like pins and needles or electric shocks.
- Sensitivity – skin, muscles or nerves can be more sensitive to pressure, stretch, touch and /or heat.
- Faulty brain pain control – the systems that turn down pain don't work reliably.
- Low mood – living with persistent pain can cause strong feelings like anger, frustration, depression and often worry and anxiety too.

Reducing Persistent Pain

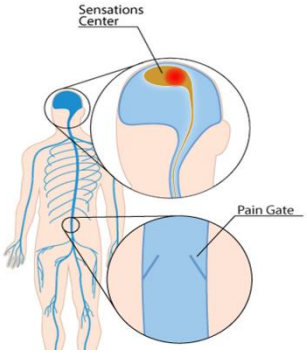
- Retraining your brain.
- More active, balancing your activities.
- Focus on your goals.
- Close the pain gate.

The Pain Gate Theory

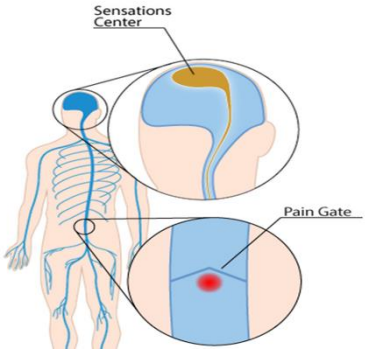
In the late 1960's, scientists developed a new theory of pain called "Gate Control Theory." According to this theory there is a gate located in your spinal cord, right in the middle of the pain pathway. This gate can be opened or closed.



When the pain gate is open, pain signals can travel right through it to our brain's sensation centre.



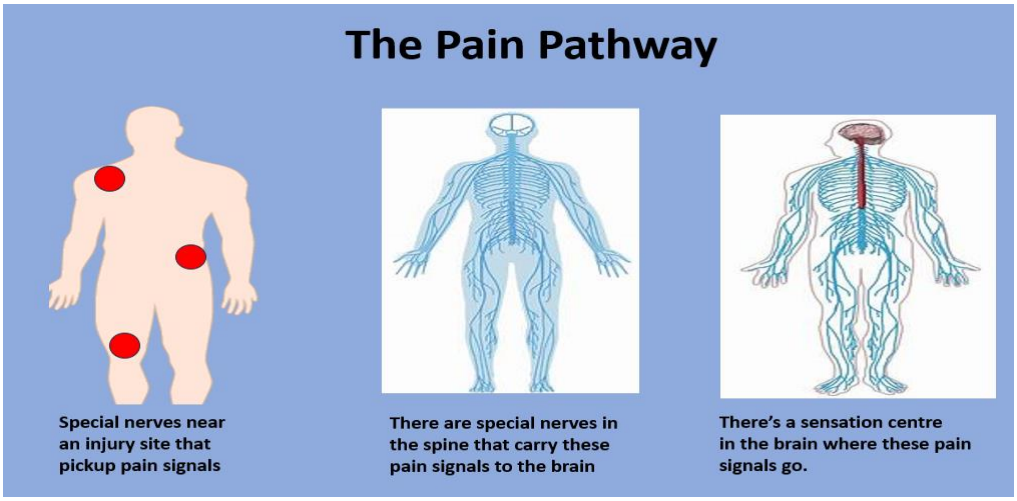
When the pain gate is closed, pain signals can travel up to your spinal cord, but they are stopped at the pain gate.



Endorphins

Scientists have discovered that your body produces its own pain killers, called endorphins. Endorphins are your body's own Morphine. One way your body can close the gate in your pain pathway is by releasing these natural pain killers' 'Endorphins' to help you feel less pain.

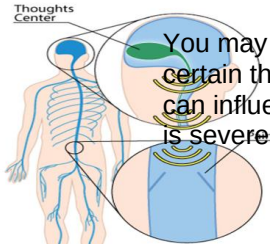
The Pain Pathway and its explanations



In the 1960's, scientists realised the pain pathway explanation of pain needed to be expanded to consider several puzzling pain conditions. They were puzzled by the fact that some people who had major injuries reported no pain. For example, soldiers who had major battle injuries often reported having little or no pain. Even though there was no question that pain signals were being picked up by nerves near their injury and travelling up pain nerves in their spinal cord. These signals somehow did not travel up the pain pathway to reach the sensation centre in the brain. So, the soldiers did not feel pain. That can happen when you're doing something that is challenging or interesting, or something that needs all your attention.

The second reason scientists needed to expand the pain pathway explanation of pain is because it was found that some people who have had a limb amputated often report pain in the limb that is no longer there. These are called phantom pains, and they shouldn't happen because part of the pain pathway is missing. This means the special nerves near the injury or disease are no longer there. This clearly does not fit the early pain pathway explanation of pain. So, to summarize - there were pain conditions that the pain pathway explanation could not explain. It couldn't explain times when people should feel pain but don't, nor can it explain times when people feel pain even though they shouldn't. Over time, your brain will become less overprotective and your pain more manageable.

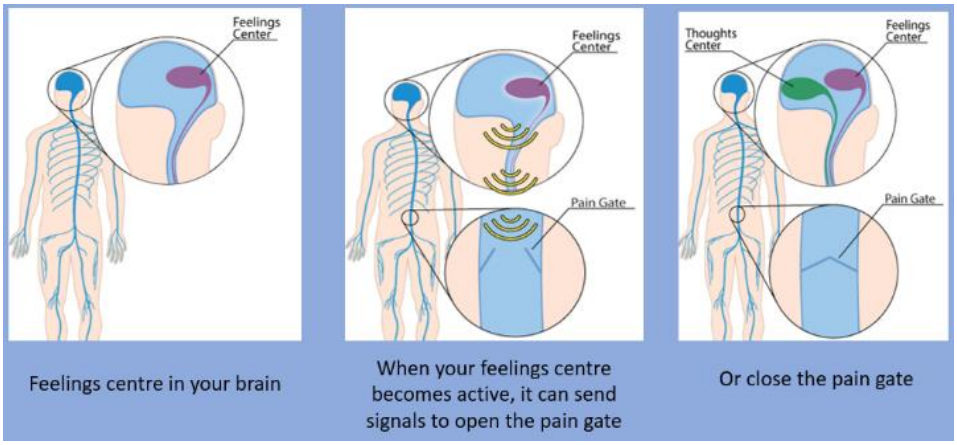
The thoughts centre in your brain



You may have noticed that certain thoughts or memories can influence whether your pain is severe or whether it's not.

Scientists have discovered that a thoughts centre in your brain has its own special nerves leading down to the gate in your pain pathway. When your thoughts centre is active, it can send signals down to the gate to open it or close it.

The feelings centre in your brain



Another thing that scientists have discovered that a feelings centre in your brain also has special nerves leading down to the gate in your pain pathway. When you're feeling centre becomes active it can send signals to open or close the gate. That might be why you don't feel much pain, or none when you have certain positive feelings or emotions.

For Example - Imagine for a moment that you are on holiday, and you are having a really great time. What thoughts might you be having? You are with family and friends and every day has been wonderful. You are looking forward to tomorrow as it will be just as nice as today. Now imagine the FEELINGS you might be having while you're on that holiday. Feelings of joy and happiness. When you are feeling like that, the feelings centre in the brain gets active, like the thoughts centre, it can send signals from your brain down to the gate in your spine and close the pain gate in your own pain pathway. When you're on holiday you are also more active than normal, but you probably are not in pain, like you usually would be. That's because the thoughts and feeling centres in your brain are working to close the gate in your pain pathway.

How Different Centres in The Brain Work Together To Influence Pain?

Scientists are learning how different centres in the brain work together to influence the experience of pain. They can put a person in an imaging machine and use a stimulus to cause the person to feel pain. When the pain signal gets to the brain, the signal causes the sensation centre of the brain to light up. it gets "activated" by the pain. However, many other brain centres light up at the same time. These include the thought centre, feeling centre, vision centre, hearing area, and areas near the feeling centre that react to stress.

Brain imaging show that these different centres form connections so that they can talk to each other. They start working together to cause pain. Scientists call this the brain chain matrix or the pain neuromatrix. So, pain is not just caused by the brain's sensation centre. It is caused by many different areas of the brain working together. Another important finding is that pain causes the brain to build connections between the centres in the brain's pain matrix. These connections get stronger over time. As they get stronger, they also get easier to activate. That's probably why people who have had pain for a long-time notice that when they start to feel pain, they also start to feel stressed and upset earlier, it's because these connections have gotten very, very strong.

This may also be why many people notice that their thoughts and feelings have a major effect on their pain. Using pain coping skills can help these areas talk to each other differently. If they start to talk to each other differently, they can build different kinds of connections that might help to weaken pain responses.

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This document is available in Welsh/
Mae'r ddogfen hon ar gael yn Gymraeg