CQ HAND + UPPER LIMB
SPECIALIST ORTHOPAEDIC SURGEON

PATIENT INFORMATION

How Pain Works

Pain is the body's alarm system — it protects you by making you stop, withdraw and rest while something heals. In the short term it is one of the most useful things the nervous system does. But pain is more complicated than a simple "damage meter," and understanding it genuinely helps, especially when pain lingers: the alarm system itself can become **oversensitive**, so that pain continues, or is felt out of all proportion to what's found on a scan, even after the tissues have healed. A central, evidence-based message runs through this page: **hurt does not always equal harm**. This page explains, in plain language, what pain is and how it works — then, for the curious, goes deeper into the biology of why pain can persist.

What pain is and what it's for

Pain is not measured by a sensor and piped unchanged to the brain like a thermometer reading. It is an **output the brain produces** after weighing many inputs — signals from the body, yes, but also context, past experience, mood, and how threatening the brain judges the situation to be. Its purpose is protection: to grab your attention and change your behaviour so an injury can heal.

This is why the *same* injury can hurt very differently on different days or in different people — and why pain is completely real even when it doesn't match what's visible on an X-ray.

Acute versus chronic pain

- **Acute pain** is the normal alarm: it comes with an injury, it is roughly proportional to the damage, and it settles as healing happens. This pain is doing its job.
- **Chronic pain** is pain that persists beyond the expected healing time (usually defined as more than about three months). Here the problem is often not ongoing tissue damage but an **alarm system that has become over-sensitive and won't switch off**. The pain is real and can be severe — but it is no longer a reliable signal that something is being harmed.

That distinction matters enormously, because the two need different approaches: acute pain is managed by treating the injury and providing short-term relief; chronic pain is managed by gradually **calming and retraining the nervous system**, not by chasing ever-stronger painkillers.

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What helps with pain

- **Understanding it.** Learning that "hurt does not equal harm" genuinely reduces chronic pain and disability — fear and catastrophising amplify pain.
- **Movement and pacing.** Gentle, graded activity desensitises an over-sensitive system; prolonged rest and avoidance usually make chronic pain worse.
- **Sleep, mood and stress.** Poor sleep, low mood and stress all turn the pain volume up; addressing them turns it down.
- **The right medicines for the right pain.** Short courses of simple analgesics help acute pain; chronic pain responds better to nerve-targeted medicines, exercise and psychological strategies than to opioids.

See also

- How nerves work and heal — the wiring that carries pain signals
- Nerve pain medicines — the medicines used for nerve-related and sensitised pain
- Managing pain and opioids after surgery — short-term pain control done well

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