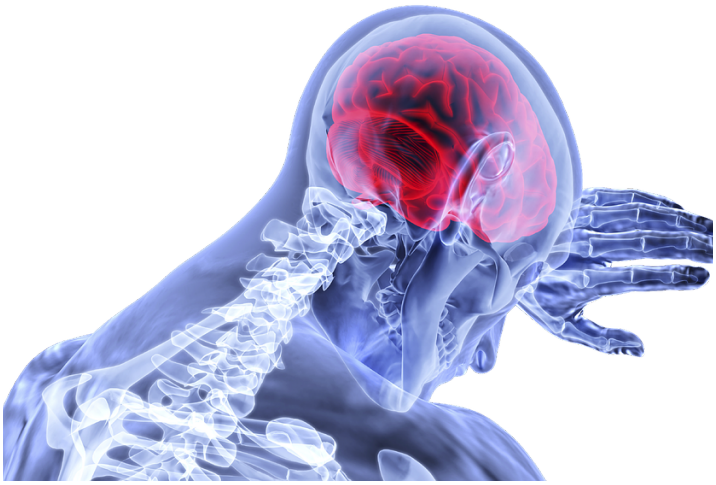
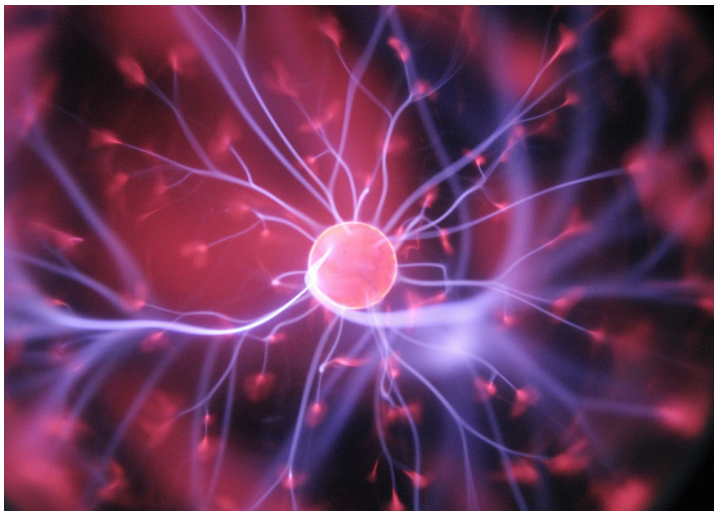
SCIENCE OF PAIN

Hunter Integrated Pain Service





KEY MESSAGES

1. Your pain system can become sensitised or over-protective; pain can then persist after injured tissues have healed or even with no damage at all
2. Learning what triggers or flares your pain system is a useful starting point
3. You may be able to develop new and more helpful ways to respond and quieten your pain system

The pain system

- Allows your brain to process danger and safety messages from bodily structures and the environment
- Protects when your body is judged to be in danger
- Can become over-protective, sensitised or inflamed leading to increased pain
- An over-protective pain system can flare up even when you are safe
- Recovery begins as you notice what triggers your pain system
- Pain shrinks further as you gain confidence and test new ways to calm your pain system

Why?

Acute pain

- Lasts less than 3 months
- Usually linked to tissue damage (e.g. broken bone)
- Helps keep the body safe and directs you to rest and recover
- Usually settles as the body heals

Chronic non-cancer pain

- Pain that persists for 3 months or more.
- This type of pain continues after any injury has healed
- The nervous system, hormonal and immune systems are altered. The pain system becomes over-protective or inflamed and amplifies pain
- An over-protective pain system is no longer helpful in keeping your body safe. It needs careful attention. Check for limiting beliefs, distressing emotions, difficult relationships, poor sleep or problematic ways of moving and eating

There are three different mechanisms that can trigger the brain to produce pain:

- ***Nociceptive pain***: is linked to tissue damage. It is usually the main contributor to acute pain. Nociceptors are nerves that respond to tissue damage and send a danger signal to the brain
- ***Neuropathic pain***: is pain resulting from injury or disease in the nervous system e.g. diabetic nerve injury or phantom limb pain after amputation
- ***Nociplastic pain***: is the result of abnormal processing, inflammation or sensitisation in the nervous system. This is the explanation behind an over-protective pain system.

How?

- Learning new healthy habits can increase safety and make your pain system less protective
- Adopt an active whole person approach to pain recovery. Learn about the limited role of medications and review thoughts, emotions, connection, physical activity and nutrition.
- Use the other factsheets to read more about these aspects of pain treatment

OTHER LINKS

- **Understanding Pain - Brainman chooses:** https://www.youtube.com/watch?v=jIwn9rC3rOI
- **Tame the beast:** https://www.tamethebeast.org/understanding
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