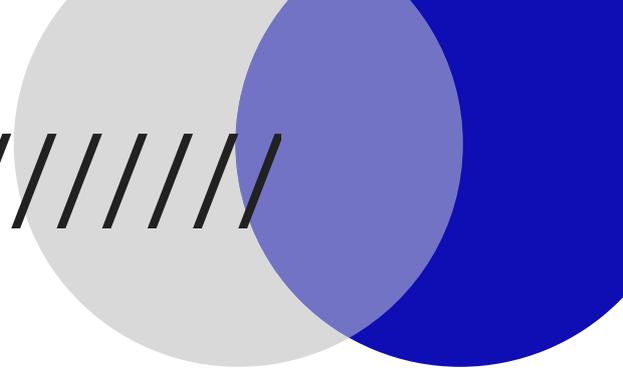


PERSISTENT BACK PAIN
(MORE THAN 3 MONTHS)

BACK PAIN GUIDE

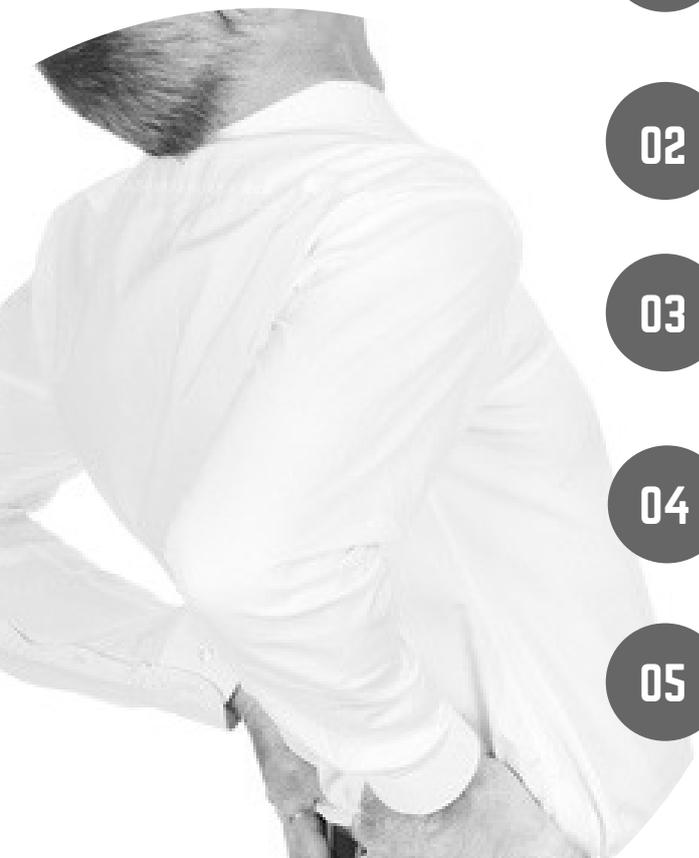




ABOUT THIS GUIDE

Back pain is very common. For most people it will go away, however in many individuals it can persist and linger. Back pain that has been present for more than 3 months is called persistent back pain and it is different to a new onset of back pain that has been present for 6 weeks or less (called acute back pain). The reasons for back pain persisting can be different to what initially caused the pain and the treatment required also varies.

This guide aims to provide information on persistent back pain with guidance on different treatment options based on the latest guidelines and the best research evidence.



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WHAT HAPPENS FOR US TO FEEL BACK PAIN?

The back is made up of lots of different parts. There are bones, joint capsules, ligaments, tendons, muscles, fascia, nerves, blood vessels and skin.

All of these structures are connected to the brain via the nervous system and are constantly giving the brain information about what is happening.

Signals about damage or the potential for damage travel via nerves from these structures to the spinal cord. It then gets taken from the spinal cord to the brain. The brain analyses this information and uses it along with other information from different areas of the brain to determine an appropriate response.

If the brain decides there is danger it will try and protect you and send an output of pain.



01

WHAT HAPPENS FOR US TO FEEL BACK PAIN?

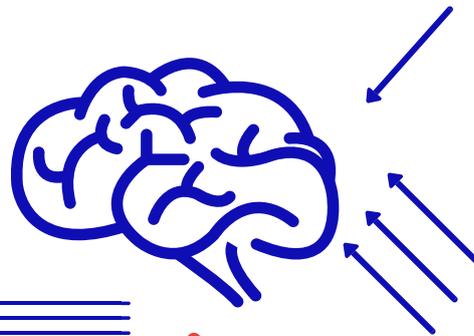
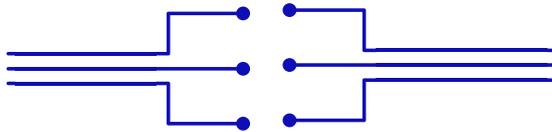
For example: John has just hurt his back lifting a heavy filing cabinet. The cabinet is big and it was a bit of an awkward shape to get around.

1) John would be getting signals from the structures in the back saying they are stretched and under some tension.

2) Then as he lifts it, as a result it causes some damage in the tissues in the back .



3) Nerve endings (called nociceptors) detect damage from these tissues then send the information to the spinal cord. From the spinal cord they go up to the brain.



4) The brain interprets the information along with other information such as the fact he is in his office, he is in an awkward position, his filing cabinet has lots of papers so he knows it is heavy. When the brain receives information of tissue damage along with these other factors it determines that this is dangerous for the body and will cause harm to him if he carries on.

5) It gives an output of pain and causes him to stop.

This pain will last a while to further protect John and allow the tissues to heal.



Whilst this pain is annoying when the system is working well it is good and is there to protect you from harm!

Pain is our bodies alarm system. It gets set off in response to a perceived threat and is there to protect us. It is not always a bad thing.

So what's the problem? Any alarm that keeps going off is a problem

To stop the alarm (pain) it is important to address what is causing it to go off. In the case of back pain that could be getting rid of a back muscle spasm or decreasing the irritation from a joint for example.

However, sometimes alarms can go off for no reason. Such as a car alarm going off randomly. They can be more sensitive than they should be, such as a smoke alarm going off every time I cook toast. Its not a problem with the toaster but a problem with the sensitivity of the alarm.



The same thing can happen with back pain. When back pain has been present for more than three months much of the tissue damage that originally caused it will have healed. However sensitivity within the nervous system can cause pain to persist and can cause us to experience pain that is out of proportion to the amount of tissue damage.

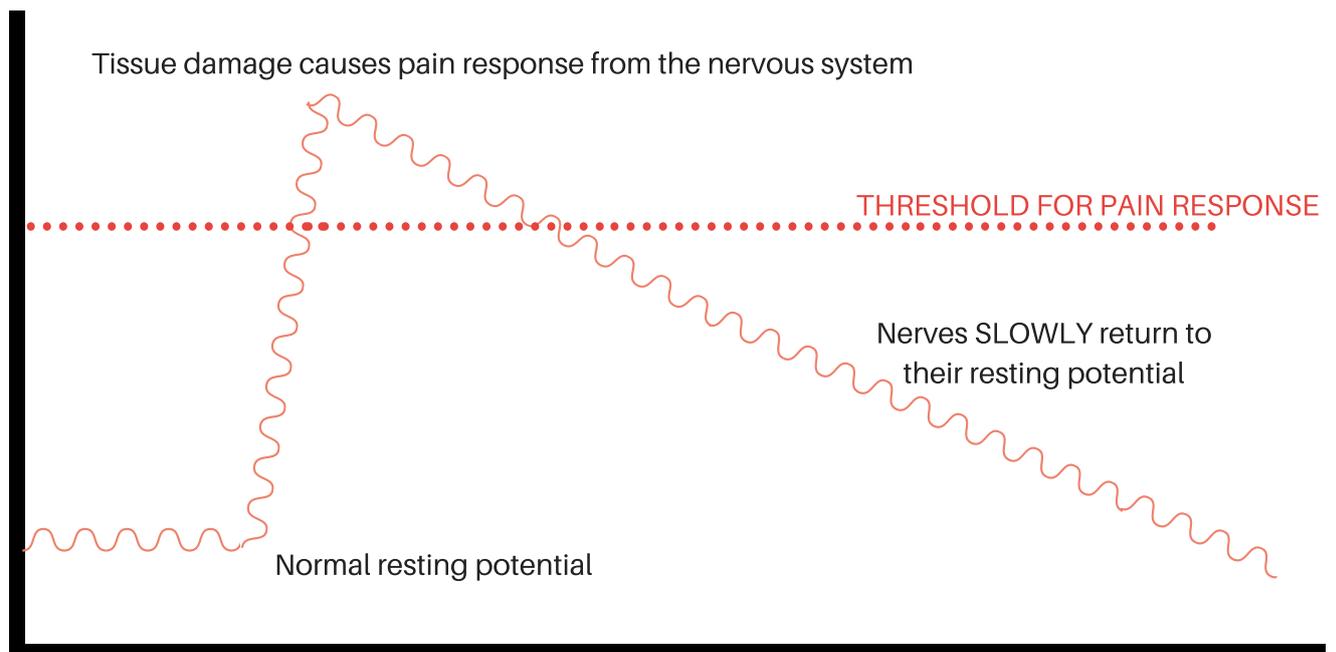
In persistent back pain or pain that has been present for longer than three months, it is not enough to just treat what set off the alarm in the first place.

It is important to address factors that influence the sensitivity and volume of the alarm, not just what is causing that alarm to be set off.

BIOLOGY OF THE SENSITIVE ALARM

It is really important to emphasise at this point that the pain is NOT in your head or that you are being a wimp. There are physical, measurable changes that occur within the nervous system for this sensitivity to occur.

Nerves in the body have a resting state known as their resting potential. If they get stimulated enough through things like movement, temperature or tissue damage this causes a response in the nervous system. After this response has happened it takes time for these nerves to go back to their resting potential.



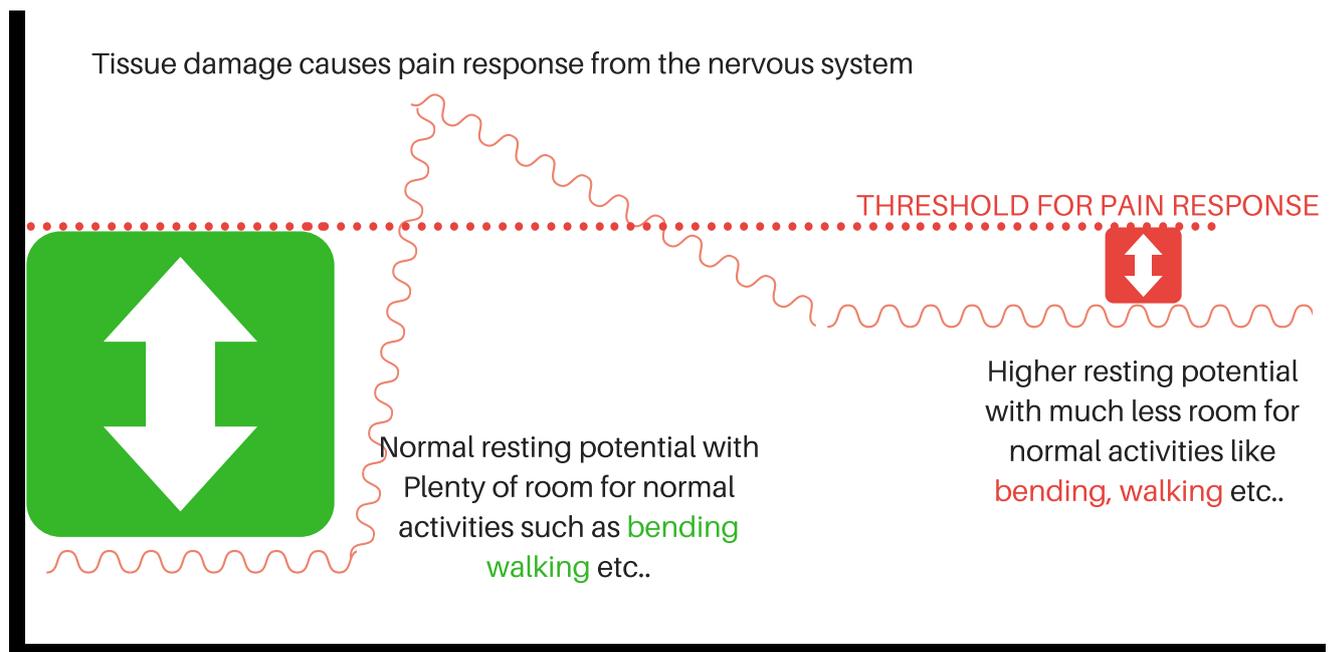
This can be seen when you step on a piece of lego. It really hurts AND it carries on hurting for a few minutes and after a while, the nerves slowly go back to their resting potential.

The reason this occurs is to make sure you protect the body part in case you have caused any damage. If you have caused damage then the area around the injury will also stay sensitive to make sure you protect the area and allow it to heal. In an ankle sprain it is sensitive all over the ankle not just directly over the damaged ligament. This is termed sensitisation and is present so you protect the area and allow it to heal.

BIOLOGY OF THE SENSITIVE ALARM

For one in four people who get lower back pain, the normal resting potential doesn't return back to its baseline. It stays at a level where they constantly feel pain or at a level that doesn't allow room for normal activities without causing pain.

The changes in these thresholds in the nerves can occur throughout the nervous system. In the nerves in the body - known as peripheral sensitisation and also in the nerves in the spinal cord and axons in the brain- known as central sensitisation.



If someone has back pain that persists for more than three months then there is a high possibility that much of the pain is coming from the change in sensitivity within the nervous system and not just a failure of the tissues to heal.

Many of the treatments for back pain are directed purely at the tissues setting off the alarm. However treatment has the potential to be so much more successful if other aspects that address an overly sensitive alarm are also considered.

We will look at how to do this in the next part of this guide.

WHY DID YOUR ALARM STAY SENSITIVE AND WHAT NOW?

This is a very complicated question with many aspects to it and will also be individual to that person.

Some common reasons that contribute to an alarm staying sensitive include stress or anxiety, lack of good quality sleep, sickness or illness. If there was lots going on in your life at the time of the injury it can change your body's response to that injury and cause it to persist. Your body is an ecosystem where everything effects each other.

What do you do now?

As you have read, the biology and physiology of persistent pain is more complicated than that of a new onset of back pain. If we only try to treat what caused the pain in the first place without addressing some of the other issues it is less likely to be effective.

Treatment for back pain has typically centered around treating the tissues that set off the alarm, however more recent research and also the most recent guidelines suggest that for persistent back pain we also need to address the sensitivity within the nervous system.

How do we do that?

One way is by learning about the biology of why we feel pain such as what has been introduced in this guide. Gaining an understanding of this has been shown to help people in pain even without any other treatment. But when it is combined with other treatment has been shown to enhance their outcomes.

In the next section we will look at what treatments the most recent guidelines show to be effective options for Low back pain.



A big study published in the medical journal the Lancet in 2018 summarises what treatment has been shown to be effective for persistent low back pain. It does include therapies such as manipulation, massage and acupuncture.

However it also includes other approaches such as:

- Education
- Mindfulness/meditation
- Cognitive Behavioral Therapy - (to change the way we behave and approach certain situations because of our back pain that could be perpetuating pain)
- Exercise including Yoga, Tai Chi, strengthening exercises.

It also includes certain pain medications but importantly says this should NOT be the first or only line of treatment.

Overall gaining an understanding of what is contributing to your pain with a strategy that is multi-factorial is what has been shown to work best. It has been demonstrated that a combined approach in which you are actively involved in is what is most effective. This approach also needs to take into consideration not just what caused the pain to start with but also what within the nervous system has caused it to persist.



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ABOUT THE AUTHOR



Mark is passionate about decreasing the burden musculoskeletal problems are having on our society, with a special interest and expertise in the field of back pain management and spinal pain. He works as a Chiropractor in Lincolnshire

“Pain can have a huge effect on peoples quality of life, empowering people to lead more fulfilling lives without pain holding them back is something that is very important to me.”

Mark has always had a keen interest in science, the human body and sport which led him to peruse a degree in Chemistry and Sports Science that he completed at Loughborough University, which is regarded as one of the best in the World for Sport Science.

“This gave me a great understanding of human physiology, it is where I first began to learn the importance of exercise and diet and its relationship to health, it’s what ignited my passion in this area”



After completing his first degree he went on to do a 4 year Masters Degree to become a Chiropractor. In his first year of practice he completed a Post graduate Training Scheme with the College of Chiropractors.

Mark has completed further University based post graduate qualifications, gaining a distinction for a post graduate certificate in clinical development. He has a strong interest in research and completed an evidence based practice masters module and presented his research at international conferences.

Mark is a registered Chiropractor with the general Chiropractic Council, a member of the British Chiropractic association and also a member of the Royal college of Chiropractors where he is actively involved in the pain faculty.