Neuropathic pain

What is neuropathic pain? What causes it and how can it be managed? Pain specialist Dr John Lee explains the condition and provides information on the treatment options available

Neuropathic pain is pain that is experienced following damage to nerves. The problem may lie in the peripheral nervous system (the nerves leaving the spinal cord) or in the central nervous system (the brain and spinal cord). Damage to nerves can give rise to sensory (numbness, increased sensitivity, pain), motor (weakness, spasms) and autonomic (colour, temperature, sweating) changes.

Why do I have neuropathic pain?

There are numerous causes of neuropathic pain. Below are some examples:

Common causes of neuropathic pain

- nerve entrapment (pinching of a nerve), where the nerve travels from the spine in the back (sciatica), or as a nerve enters the hand (carpal tunnel syndrome)
- nerve damage after surgery or trauma, such as following thoracotomy (chest wall surgery) where the intercostal nerves are damaged
- diabetes resulting in numbness and pain, usually starting in the feet and hands ('glove and stocking' distribution)
- post-herpetic neuralgia (pain after shingles from herpes zoster infection).

Less common causes

- trigeminal neuralgia (a specific form of facial pain)
- multiple sclerosis
- pain related to cancer (e.g. from the tumour) or from the treatment of the cancer (chemotherapy and radiotherapy)
- infection from HIV or polio
- malnutrition: vitamin B_{12} deficiency, excess alcohol consumption
- phantom limb pain
- blood supply problems (stroke) which can result in pain down one whole side of the body.

When doctors assess people with neuropathic pain, they are going through this list in their minds. Doctors have a saying, though, which helps to guide them: 'common things are common'. So, the most likely cause of your symptoms will be a common condition.

How do we know if I have neuropathic pain?

Your doctor will try to make a specific diagnosis by taking a history, examining you and perhaps by arranging certain blood tests or other investigations, such as nerve conduction studies (where needles are

used to test the flow of small electric currents through your nerves). If a specific diagnosis is established, it may allow the disease or condition to be treated as well as the pain itself. For example, better control of diabetes would also help to improve pain from diabetic neuropathy. However, it is not unusual for neuropathic pain to be present without a specific diagnosis being possible.

Neuropathic pain can be suspected on clinical grounds because it has characteristic symptoms and signs. Screening tools have been developed which allow patients and non-specialists to be more confident in making the diagnosis of neuropathic pain.

People often describe their neuropathic pain as ‘burning’ or ‘electric’, or may experience numbness or sensitivity of the skin, tingling, itching, aching or tightness. These symptoms may be different depending on the time of day (it is often worse at night) or what you are doing at the time.

People often struggle to find the right words to describe their pain. The most important thing is to do your best when you are asked about it. If the pain comes and goes, **it is also helpful to write down a few notes** when it comes so you can remind yourself about it at a later date. This might also help you to see a link between what you are doing and when the pain comes on, so called ‘trigger factors’.

What can be done to manage neuropathic pain?

Management of any type of chronic pain includes a combination of drug and non-drug therapies. Early recognition and early treatment are considered to offer the best chance of optimal pain control.

No two patients are the same. Your doctor will ensure that treatment is tailored to your needs, your wishes and your particular circumstances. It is really important that you understand not only the nature of your pain problem, but also the options available for treatment. There are specialist pain management centres around the UK where expert advice is available.

1. Drug treatments

Regular painkillers do not usually work for neuropathic pain. These include non-steroidal anti-inflammatory drugs or NSAIDs (for example, ibuprofen, diclofenac and aspirin), paracetamol and simple opioid drugs (for example, codeine and dihydrocodeine).

There are classes of drugs that are more likely to help neuropathic pain than the more regular painkillers. These include the recommended ‘first line’ drugs for neuropathic pain (such as amitriptyline and gabapentin).

There is more information about the different types of medication used for neuropathic pain at the end of this leaflet.

Although some people have relief from pain soon after starting neuropathic pain medication, drugs often need to

be taken for several weeks at the appropriate dose in order to deliver optimal pain control. You should be offered regular reviews to find out how well the treatment is working.
If your neuropathic pain is not responding to the first line pain medications, your doctor may consider changing your treatment to one of the other first line treatments, or combining two different drugs together.

If you are finding that your pain is severe or is having a significant effect on your daily life, or if the health problem that has caused your pain has got worse, your doctor should consider referring you to a specialist sooner rather than later.

Drug interactions

These are something both patients and doctors are concerned about. The first line treatments for neuropathic pain and the more straightforward painkillers are generally well tolerated. People with certain conditions like heart, liver and kidney problems, or who are already taking other medications that share the same side effect profile, will need to take special care. It is reassuring to know that many of the trials of neuropathic pain drugs include a good number of older patients.

2. Non-drug treatments

These strategies include general guidance and therapies, such as pain management techniques, physiotherapy and invasive interventions.

General guidance

This involves taking into account your individual preferences and limitations due to medical conditions or other circumstances; providing a package of care which addresses not only pain symptoms but other possible associated problems like low mood, depression, anxiety or distress, sleep problems and functional limitations or disability; and assessing you as a whole person, not just focusing on your neuropathic pain.

Pain management techniques

Many people find using pain management techniques to be an effective way of coping with neuropathic pain.[1] 'Pain management' usually means finding self-help techniques that enable you to live as fulfilling a life as possible and, in many cases, to reach beyond what you imagined your limits might be with your pain condition.

There are **pain management programmes** (PMP) run by many of the larger pain clinics, which can guide you in making the most of life despite your pain. They involve a number of techniques and require intensive training in order to practice and adopt them.

Physiotherapy

Keeping physically active is very important. It is fundamental for enabling you to maintain physical function. Simply being inactive can cause pain. A chronic

[1] NICE, 'CG173 Neuropathic pain – pharmacological management': 1.1.1.

pain physiotherapist will assess your posture and how you move and will give instruction on how you can become more active without aggravating your pain. Sometimes, physical supports or TENS (transcutaneous electrical nerve stimulation) may be used. You can find out more about some of the other non-drug treatments for neuropathic pain at the end of this leaflet.

What if my neuropathic pain comes and goes?

Intermittent pain can be more difficult to manage because many of the recommended therapies are relatively slow to take effect and are long lasting, which is not what is needed. You may have some benefit from techniques that a physiotherapist can teach you, TENS, tramadol and intermittent gabapentin (which is a shorter acting drug for neuropathic pain). A specialist pain management centre will be a good place for advice.

Where can I get more help with understanding neuropathic pain?

The best source of help is likely to be your GP, but if you are also treated by a specialist (like a diabetes doctor or specialist nurse) they are likely to be able to answer many of your questions. If they are unable to help, they should be able to refer you on to a pain clinic. You can find your nearest pain clinic (England and Wales only) here: www.nationalpainaudit.org

Pain Concern is able to take emails and calls to guide you in the understanding of your condition and can also make suggestions as to where you might find more help.

Pain UK has links to over 25 charities which help patients with painful conditions: www.painuk.org

Further resources

The National Institute of Health and Care Excellence (NICE) guideline on 'Neuropathic pain – pharmacological management' – updated in 2013 – gives guidance on drug treatments for neuropathic pain with information for the public: guidance.nice.org.uk/CG173

The National Institute of Health and Care Excellence (NICE) interventional procedure guidance on percutaneous electrical nerve stimulation for refractory neuropathic pain describes this novel technology for the treatment of refractory neuropathic pain with information for the public: www.nice.org.uk/guidance/ipg450

The International Association for the Study of Pain is an international organisation for pain specialists. They produce many useful publications and guidelines, including, 'Pharmacological Management of Neuropathic Pain' (2010): www.iasp-pain.org

The British Pain Society (BPS) has a section of its website for patients and has links to a number of other sites and organisations:

www.britishpainsociety.org/patient_home.htm

The BPS published a neuropathic pain patient pathway in 2013 which is a guideline for the initial management and onward referral of patients with neuropathic pain. It can be viewed at bps.mapofmedicine.com

More about treatments for neuropathic pain

Neuropathic pain medications for non-specialist settings[2]

There are two groups of 'neuropathic pain' medications which will be used in a non-specialist setting (such as a GP surgery) as first line treatments to help with your pain:

a) **Antidepressants**. These are used for their effect on pain, not for their antidepressant effect. They can work for pain at doses much lower than required for depression and can work in patients who are not depressed. Examples in this category are amitriptyline and newer drugs such as duloxetine.

b) **Antiepileptics**. Once again, these are used for pain, not for their antiepileptic effect. They can be very helpful in 'calming' neuropathic symptoms. Gabapentin and pregabalin are most commonly used. The older drug, carbamazepine, is only used for people with trigeminal neuralgia in non-specialist settings.[3]

Both of these groups of drug can cause sedation, so they are started at a lower dose and increased to the most effective dose. People commonly stop taking the medicine because they experience side effects early on and do not feel any benefit. However, if you can persevere, side effects will often reduce or disappear.

If your pain is felt in a localised area, you might benefit from the topical use (applied directly to the painful area) of capsaicin cream (capsaicin is the 'hot' ingredient in chilli peppers).

If your pain is very severe your doctor may prescribe you tramadol for a short time.

You should not be offered cannabis extract, capsaicin patch, lacosamide, lamotrigine, levetiracetam, morphine, oxcarbazepine, topiramate, long-term tramadol or venlafaxine for your neuropathic pain outside a specialist clinic, unless the specialist pain service has advised your doctor to do so.

[2] Information on non-specialist treatments is based on NICE, 'CG173 Neuropathic pain – pharmacological management: The pharmacological management of neuropathic pain in adults in non-specialist settings'.

[3] There is limited evidence for the efficacy of carbamazepine in the treatment of other forms of neuropathic pain. Wiffen P. J. et al. Carbamazepine for chronic neuropathic pain and fibromyalgia in adults. Cochrane Database of Systematic Reviews 2014, Issue 4.

Neuropathic pain medications in specialist settings

This section sets out what you might experience when being treated in specialist pain management services.

Neuropathic pain sometimes benefits from treatment with drugs in the large family of opioids. Most of the opioids are 'prescription only medications' (POM) because they are potent drugs which can be abused or cause harm if used incorrectly; some are available over the counter. Some of the drugs may be familiar:

- codeine
- dihydrocodeine
- compound medications joined with paracetamol (where 'Co-Codamol' is paracetamol and codeine and 'Co-Dydramol' is paracetamol and dihydrocodeine)
- more tightly restricted and controlled drugs which require special security around their storage and prescriptions (such as morphine, oxycodone, buprenorphine or fentanyl). This last group is only recommended for specialist use in neuropathic pain.

The use of opioids to treat neuropathic pain remains controversial. The evidence of benefits is not as clear as originally thought and there are significant concerns amongst doctors that long term benefits might be outweighed by adverse effects.[4] As with any medication, you should have a frank discussion with your specialist about the risks to you and the potential benefits if you are considering starting a medicine in this class. Also be clear about what *you* feel is a good balance between pain relief and side effects.

There are other sorts of neuropathic pain medications that tend to be more for specialist uses but that you may have heard of, such as ketamine (more commonly known as a vet's anaesthetic agent – but which in very low doses can help nerve pain), and some topical agents, such as a capsaicin patch (much stronger than the cream) or a lidocaine patch.

Non-drug treatments

Some types of nerve pain can be managed with complex implants to the brain or spinal cord[5] and there are some surgical techniques for trigeminal neuralgia. These types of treatment are not common and are only considered if pain is not being adequately managed with all of the above drug and non-drug therapies. These interventions are only offered in specialist centres as part of a package of care and do not work on all types of pain.

There is also a relatively non-invasive method of helping particularly difficult to treat neuropathic pain called 'PENS' (percutaneous electrical nerve

[4] McNicol E. D. et al. Opioids for neuropathic pain. Cochrane Database of Systematic Reviews 2013, issue 8.

[5] NICE, 'TA159: Spinal cord stimulation for chronic pain of neuropathic or ischaemic origin'.

stimulation). This involves stimulating your nervous system using a needle probe placed under your skin and a small electrical generator (box). It is recommended by NICE and can be carried out by a team specialising in pain management. It has been proven to be more effective than sham ('pretend') treatment or TENS.[6]

Sometimes a nerve injection can be used to give temporary pain relief. An example of this would be a nerve root injection where a solution of local anaesthetic and steroid is injected into the back around the level where, for instance, a nerve root may be affected by a prolapsed disc. Injections like this are used as a temporary addition to other treatments in order to achieve faster control of the pain. They are not usually a long-term solution.

Dr John Lee, BSc, MSc, MB BS, FRCP, FRCA, FFPMRCA is a Consultant in Pain Medicine.

Thanks go to the Shingles Support Society, Trigeminal Neuralgia Association UK and the people living with pain and healthcare professionals who advised us on the content of this leaflet.

This leaflet has been produced with the support of an unrestricted grant from Pfizer.

[6] NICE, 'IPG450: Percutaneous electrical nerve stimulation for refractory neuropathic pain'.