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## Overcoming the challenges of neuropathic pain

**NS138 Wilson M (2002) Overcoming the challenges of neuropathic pain. *Nursing Standard*. 16, 33, 47-53. Date of acceptance: March 26 2002.**

### Aims and intended learning outcomes

The aim of this article is to examine the causes, characteristics, assessment and treatment of neuropathic pain, including drug therapy and non-pharmacological interventions.

After reading this article you should be able to:

- List the causes of, and conditions that can give rise to, neuropathic pain.
- Describe the pathophysiological processes associated with this disorder.
- Identify the characteristics, typical features and descriptors of neuropathic pain.
- Outline the main treatments available.
- Discuss the key issues involved in supporting patients and family members.
- Appreciate the importance of the psychological impact of neuropathic pain.

### Introduction

Neuropathic pain is a complex and chronic condition that originates from a variety of conditions, such as amputation (phantom pain), tumours and post-viral infections. Nurses have an important role in the review and management of pain, particularly as pain assessment is the first step towards successful treatment.

Pain of any description can have a dramatic effect on all aspects of a person's quality of life. People can develop problems with general mobility and experience difficulty sleeping and loss of appetite. Other effects can be more personal, such as the effect on close relationships, which might deteriorate if the

person's ability to function is affected by pain. A person's performance at work might be adversely affected by pain, especially if he or she finds it difficult to concentrate for long periods of time. Overall, pain can have a devastating impact on a person's life, affecting many aspects of daily living.

Severe pain is morally and ethically unacceptable, and everyone has a humanitarian right to effective pain relief. If pain is not adequately controlled, it can lead to physiological complications, such as immobility and chest infection, and might also have a detrimental psychological effect (Macintyre and Ready 2001). There is a wealth of evidence available on many aspects of pain management (see further reading) and, as this information becomes more accessible to the public, the risk of potential litigation could also increase.

Neuropathic pain is a complex phenomenon. Each neuropathic pain syndrome presents differently and exhibits a wide range of symptoms. The nature of this type of pain can be characterised by burning and occasional shooting pains, accompanied by sensory changes. Neuropathic pain can be difficult to diagnose, as there are many different types of pain, for example, nociceptive pain which results from tissue damage, bone pain and bowel pain. It is estimated that between 20-40 per cent of patients referred to pain clinics have neuropathic pain (Bowsher 1991, Verhaak *et al* 1998).

As well as difficulties associated with defining related terminology and a lack of familiarity with the diagnosis, there is a lack of knowledge regarding the mechanisms underpinning neuropathic pain (Grady and Severn 1999, Munafo and Trim 2000).

### In brief

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#### Summary

Neuropathic pain can originate from a variety of conditions. Early treatment is vital. Nurses have an important role in initiating treatment and providing ongoing pain management and support for patients.

#### Key words

- Drug therapy
- Neurological system
- Pain management

These key words are based on subject headings from the British Nursing Index. This article has been subject to double-blind review.

### Online archive

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In recent years, much work has been undertaken to investigate this condition and there are numerous interventions available to treat neuropathic pain.

The unorthodox nature of this condition, for example, severe pain and the bizarre features of burning and shooting pains, can cause considerable anxiety for patients and carers. The role of the nurse in caring for these patients should not be underestimated. It is not only important that treatment is accessed quickly, but also that patients and carers receive adequate information to allay their fears and reduce the psychological tensions that arise from this condition. This means ensuring that patients and carers have enough information to meet their needs.

### Pathophysiology

Neuropathic pain occurs as a result of damage to neural tissue, either peripherally or via the central nervous system, and can occur if the nerves are injured or cut or as a result of abnormal functioning (Bowsher 1991).

This unique type of pain results in a combination of hypersensitivity, which arises from sensitisation in the periphery (peripheral sensitisation), and sensitisation at a more central level within the dorsal horn of the spine (central sensitisation) (Melzack and Wall 1997).

Subsequently, there is an increase in electrical activity in the nerve, with spontaneous firing of impulses. Sensitised nociceptors or pain receptors induce secondary changes in central processing within the dorsal horn, resulting in prolonged stimulation of A-delta fibres and C fibres. A-delta fibres can become hypersensitive, detecting movement within the normal range, which can lead to pain on movement, for example, acutely inflamed joints. C fibres also become hypersensitive and might show activity at rest. This explains why some patients report pain at rest. Changes in the sensitivity of peripheral nerves are brought about by activation of pain receptors, including the N-methyl-D-aspartate (NMDA) receptors, and the release of prostaglandins and other mediators (Prithvi-Raj 1998).

Central sensitisation occurs following altered nociceptive processing in the dorsal horn of the spinal cord. This leads to increased activity or 'wind-up', which is essentially a hyper-excitability state in the spinal cord. Increased C fibre activity in the dorsal horn results in widespread, prolonged changes in sensitivity of more central nerve fibres. As a result of this activity, complex neural-transmitters are released which increase the sensitivity to non-painful stimuli. Under these circumstances, a gentle touch on the skin could be painful or cause an uncomfortable sensation (Melzack and Wall 1997).

### Causes of neuropathic pain

Examples of neuropathic pain include central post-stroke pain, reflex sympathetic dystrophy and complex regional pain syndrome. There are many causes of neuropathic pain; these might be clinical signs or features of a specific disorder. Conditions that give rise to this type of pain include:

- Trauma – surgery, amputation (phantom pain and stump pain), spinal cord injuries, crush injuries and nerve damage.
- Ischaemia – vascular disease in the lower limbs, for example, gangrene.
- Acute infections – herpes zoster and cellulitis.
- Toxins – chemotherapy and other substances, such as lead poisoning.
- Advanced malignant disease – pressure from a tumour on nerves and organs.
- Compression – of the spinal cord and peripheral nerves.
- Post-viral infections, such as shingles, post-herpetic neuralgia and trigeminal neuralgia.
- Diabetes – diabetic neuropathy.
- Degenerative nerve changes – multiple sclerosis and motor neurone disease.

### TIME OUT 1

Identify which patients in your clinical area might have some of the disorders listed above. Ask them to describe their experiences and feelings about their condition to you. Make a list of the different symptoms mentioned. How do these compare to the typical features listed above?



### Pain assessment

Accurate assessment and diagnosis of pain is the key to successful treatment of this condition. Neuropathic pain manifests in a variety of unique ways, with symptoms such as burning or shooting pains, and, therefore, it is important to obtain an accurate history and description of the patient's pain. The first step in pain management is to assess the patient's pain carefully. Accurate assessment is vital to effective pain relief. Assessment not only allows practitioners to identify the site, intensity and extent of the pain, but also provides an opportunity to identify factors that exacerbate or relieve pain, as well as any related psychosocial problems (Carr and Mann 2000, Munafa and Trim 2000). Some key questions to ask patients during pain assessment are listed in Box 1.

Nurses have a key role to play in the early detection of this disorder. They should be aware of the specific activities or factors that can exacerbate



pain, and plan care accordingly with the patient. The McGill Pain Questionnaire (McCaffery and Beebe 1994, Melzack and Wall 1997) has been widely used and is a useful tool for diagnosing key characteristics and descriptors associated with neuropathic pain. It offers a detailed description of the pain. Groups of words, or descriptors, can be examined by the patient and the nurse, with the patient either choosing or indicating the most appropriate word that best describes his or her pain.

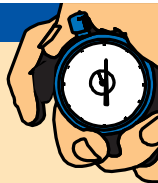
Pain assessment is a vital component of the nurse's role. The impact of pain on the individual can be overwhelming and can be mentally and physically debilitating. Disruptions to daily living activities can be severe, for example reduced mobility, loss of sleep and appetite, depression and anxiety. Actions to manage these activities and promote quality of life should be incorporated at the pain assessment stage, as this will give a strong indication of how the patient is coping physically and mentally (Carr and Mann 2000). Pain responses can be affected by past experiences, cultural background, physical condition, emotional state and the proposed course of the disease. Pain assessment is multifaceted and should be treated as a holistic process to ensure effective pain relief (Box 2).

### TIME OUT 2

Choose one of the textbooks on pain from the reading list and look up the chapter on pain assessment. Examine different pain tools and charts.

Which one do you think would be most useful in your clinical area? List the reasons for your choice, outlining the advantages and disadvantages of the tool you have chosen.

Then discuss this with a colleague. For example, would a simple numerical rating pain scale be adequate to assess the complexity of neuropathic pain?



### Characteristics of neuropathic pain

Patients describe a wide variety of painful symptoms. The unique nature of neuropathic pain produces variable combinations of symptoms in each individual. The patient with neuropathic pain might experience one or more of the following symptoms (Melzack and Wall 1997, Munafo and Trim 2000, Prithvi-Raj 1998):

- Neuralgia – pain in the distribution of the nerve(s), for example, lancinating, shooting or jumping pains, sometimes described by patients as being like 'electricity'.
- Parasthesia – an abnormal sensation, for example, tingling, pins and needles, and prickly sensations.

### Box 1. Key questions to identify neuropathic pain

- Where is the pain?
- What does the pain feel like?
- Can you describe it?
- How severe is the pain?
- How long does it last for?
- What makes the pain better?
- What makes it worse?

Assess function, that is, mobility in chair and/or in bed, and breathing. Check for non-verbal signs of pain

(Carr 2000)

### Box 2. Pain assessment

- Ask the right questions
- Look for non-verbal signs of pain
- Use a suitable pain tool or chart
- Examine the clues – physical, psychological, daily activities and normal functioning
- Re-evaluate and plan care and treatment

- Dysaesthesia – a painful parasthesia, for example, numbness, cramp, burning and hot sensations like a 'hot poker'.
- Tight feeling – a vice-like tightness, gripping, cramping, squeezing and crushing sensations.
- Allodynia – localised hypersensitivity or pain produced by a usually non-painful stimulus, such as a gentle touch. The patient will experience a severe uncomfortable pain sensation when skin is slightly touched.

Typical nociceptive pain or wound pain, for example, has a different nature and mechanism to neuropathic pain. Neuropathic pain involves the action of more complex neurotransmitters, such as NMDA agonist. Classic pain descriptors for wound pain would be a throbbing, gnawing, grating, constant or nagging pain, which are different from the descriptors of neuropathic pain. Nociceptive pain responds well to traditional analgesics, such as opioids, non-opioid analgesics, such as paracetamol, and non-steroidal anti-inflammatory drugs (NSAIDs), such as diclofenac and ibuprofen. It is essential that nurses are able to differentiate between the symptoms of each type of pain to achieve effective pain relief for patients with neuropathic pain.

### Treatments

There are many treatments available to manage neuropathic pain, ranging from invasive regional blocks to drug treatments and non-pharmacological



### Box 3. Invasive treatments for neuropathic pain

#### Nerve blocks are indicated:

- When patients are unable to tolerate opiates, for example, because of confusion or drowsiness
- If patients are in severe pain and have a poor response to conventional methods
- For patients with underlying chest or heart disease

#### Single nerve blocks

Single nerve blocks are performed by an anaesthetist using a nerve stimulator to identify the nerve to be blocked. Examples are femoral, sciatic or brachial plexus nerves. Once identified, strong local anaesthetic is injected into the nerve sheath. The effect can last for 12-24 hours

#### Nerve catheters

The same process as in single nerve blocks is used (see above) but a fine catheter is sited, to lie adjacent to the nerve within the nerve sheath. Nerve catheters are usually indicated pre-operatively for patients facing amputation, where pain has been severe and difficult to control and when the patient has experienced severe side effects from opiates. Intermittent 'top-ups' can be given two to three times daily. Catheters can remain *in situ* for approximately seven to ten days, or longer if needed

#### Chemical sympathectomy

This treatment is indicated for patients who require long-term pain management where surgery is not an option. Nerve ablation is carried out with an alcohol-based preparation, which is injected under image intensifier. The effect can last for three to six months

#### Epidural and intrathecal (spinal) analgesia

These are specialised techniques, which are managed by anaesthetists and acute pain teams. Epidurals are used to infuse a combination of local anaesthetic and opioids into the epidural space, and 'soak' the nerve roots, blocking the transmission of pain. The same drug mixture is used in intrathecal analgesia or spinal analgesia, but in much smaller quantities as it infuses and mixes with the cerebrospinal fluid (CSF) in the subarachnoid space. These techniques can be associated with serious side effects, such as hypotension and motor block. Careful patient monitoring is required for the safe use of these techniques, particularly in general ward environments

(Hobbs 1996)

methods. This article examines drug treatments and non-pharmacological methods. Some invasive techniques are summarised in Box 3.

#### Drug therapy

Neuropathic pain usually responds well to antidepressant medication, such as amitriptyline, and anticonvulsant therapy, for example, gabapentin, carbamazepine and sodium valproate (McQuay and Moore 1998). If the pain has an inflammatory component, such as infection or tissue damage, traditional analgesics including paracetamol and NSAIDs can also be of benefit.

**Antidepressants** These drugs have an analgesic effect on neuropathic pain, by altering monoamine neurotransmitter activity at the synapse. Antidepressants are non-addictive hypnotics and anxiolytics, and can be used in conjunction with opiates, if required. Long-term use of antidepressants is generally safe,

but withdrawal should be gradual to avoid insomnia and abdominal discomfort (Munafa and Trim 2000). Information on amitriptyline is provided in Box 4.

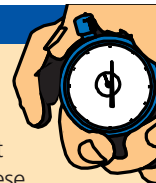
**Anticonvulsants** This group of medicines stabilises excitable cell membranes and is useful in treating shooting neuropathic pain. Commonly used in conjunction with antidepressants, the combination is thought to provide a synergistic effect, that is, the analgesic effect is better when these drugs are used in combination. Most patients develop a rapid tolerance. As the drug is metabolised quickly, the dose should be increased every couple of days, depending on the level and severity of the pain, until the maximum dose is reached. Patients should be monitored carefully for side effects – the dose of the drug might need to be decreased if severe side effects occur. Further details on anticonvulsant therapy are provided in Boxes 5 and 6.

**Other drug treatments** There are many drugs available, but some have particularly serious side effects and should be prescribed only on the advice of specialist practitioners within the pain team.

Mexiletine (oral lignocaine) and ketamine act on the NMDA receptors at the dorsal horn. NMDA receptors are involved in the process of wind-up within the dorsal horn of the spinal cord. These drugs have a direct effect on these receptors, reducing pain. They have been found to be beneficial in patients who have had poor responses to initial drug treatments (Boxes 4, 5 and 6). Mexiletine and ketamine should only be prescribed on the advice of members of the pain team. Drugs such as tramadol and methadone act on the dorsal horn and opioid receptors. Capsaicin cream, which is made from dried pods of chilli peppers, is absorbed transdermally and stabilises peripheral nerve membranes (McQuay and Moore 1998, Munafa and Trim 2000).

#### TIME OUT 3

Are any of the patients in your clinical area currently taking any of the medications listed in Boxes 4, 5 and 6? Try to find out more information on each of these drugs by reading the appropriate section in the *British National Formulary* (BNF) or by visiting the BNF website on <http://bnf.org.uk> Make a list of the most common side effects associated with each drug.



As a nurse, you are in a prime position to identify neuropathic pain and monitor the patient's response to drug treatment. Older and frail patients generally do not tolerate drugs well and regular revision of their medication regimens is essential. Some patients might develop side effects, such

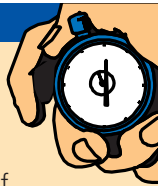


as sedation, or have a poor response to the prescribed medication. The severity of the patient's pain might not diminish, which would indicate the need for further review of the patient's medication. Other problems could develop, concerning the metabolism of various drugs, which can affect liver or renal function.

Most hospitals in the UK have either a designated pain specialist or a team who deals with acute, chronic or palliative pain relief, such as an acute or chronic pain service or palliative care Team.

#### TIME OUT 4

Contact the pain team in your clinical area and discuss the management of neuropathic pain. Summarise the main points identified during this discussion. If there is no pain team in your local hospital or community, find out who is responsible for specialist pain relief in your clinical area. It might be beneficial to arrange to spend some time with him or her to learn more about pain management.



#### Non-pharmacological interventions

The complexity of pain with its physical, emotional and cognitive components has been highlighted (Carr and Mann 2000). Non-pharmacological approaches should, therefore, be used to complement drug therapies and to ensure a comprehensive approach to pain management. Drug treatments when used properly can prove effective, but they should not be used in isolation. As part of a multimodal approach, non-pharmacological strategies can be used in conjunction with a drug regimen, which can enhance the effectiveness of analgesics and the psychological reserves of the patient (Main and Spanswick 2000). A recent report on national pain services recommended that non-pharmacological interventions should be an essential aspect of practice (CSAG 2000).

The first step in providing non-pharmacological interventions should be to address common issues that exist from the patient's perspective: namely the fear of the unknown. There is a strong link between anxiety and pain intensity (Carr 2000, Munafo and Trim 2000), therefore, it is essential that strategies to reduce anxiety and stress are implemented. This involves providing information and counselling, talking to patients and discussing their feelings (Carr and Mann 2000, Horn and Munafo 1997), which can increase patient confidence and control. The involvement of staff from the clinical psychology department is extremely beneficial and can help patients and families to

#### Box 4. Prescribing notes on amitriptyline

##### Dosage

Maximum dose is 150mg daily. Start with 10-25mg at night, one or two hours before sleep. If the patient is frail, very old or predisposed to side effects, start with 10mg. This should be monitored and increased every few days by 25mg, or 10mg if this was the starting dose. If unacceptable side effects prevail, maintain or decrease the current dose, depending on the nature and severity of the problem. Most patients develop a rapid tolerance

##### Side effects

Sedation, 'hangover' effects, dry mouth, increased heart rate, blurred vision and occasionally urinary retention

##### Contraindications

Caution in patients with recent myocardial infarction

#### Box 5. Prescribing notes on carbamazepine and sodium valproate

##### Dosage

Maximum dose is 1.0-1.2g/day (dosage is the same for both drugs). Starting dose is 100mg orally every 12 hours or at night, or 50-100mg at night for people who are very old or frail. This should be monitored and increased every few days by 100mg, or 50mg if this was the starting dose. If unacceptable side effects prevail, maintain or decrease the current dose, depending on the nature and severity of the condition

##### Side effects

Sedation, blurred vision, ataxia and vertigo

Sodium valproate is less sedative than carbamazepine

#### Box 6. Prescribing notes on gabapentin

Gabapentin is a membrane stabiliser and anticonvulsant. It is being used increasingly as a first-line treatment by pain teams for neuropathic pain. It has fewer interactions and effects on liver function than sodium valproate or carbamazepine

##### Dosage

Maximum dose is 1800-2400mg daily. Starting dose: day 1 – 300mg once daily; day 2 – 300mg twice daily; day 3 – 300mg three times a day

##### Side effects

No major side effects – caution should be exercised with older people who tend not to tolerate the drug well

##### Contraindications

Gabapentin is usually contraindicated in patients with renal failure, however, smaller doses can be given less often. For example, 100mg might be given on alternate days in patients with renal impairment

Antacids reduce the effect of gabapentin and, therefore, it should be given two hours after antacid medication



### Box 7. Summary of non-pharmacological interventions

- Information giving, counselling and discussion of feelings
- Clinical psychology – relaxation, coping strategies and goal setting
- Relaxation techniques
- Breathing exercises
- Visualisation
- Distraction – television, music, reading, talking
- Positioning
- Mobilisation
- Heat and cold therapy
- Complementary therapies
- TENS

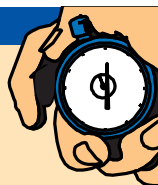
(Wilkinson 1996)

deal with issues around relaxation, coping strategies and setting realistic goals.

Other non-drug related methods of pain relief might include relaxation, breathing exercises, visualisation and distraction, heat and cold therapy, complementary therapies and transcutaneous electrical nerve stimulation (TENS). These techniques use the principles of the gate control theory, which are very effective in the treatment of neuropathic pain, particularly as an adjunct therapy (Melzack and Wall 1997). Massage, heat and cold therapy, distraction and imagery techniques, and complementary therapies, have a positive effect on reducing pain (Carr and Mann 2000, Wilkinson 1996). Munafo and Trim (2000) advocate the use of hypnotherapy and relaxation in conjunction with other standardised analgesic practices. Some of the more simple interventions can have a very powerful synergistic effect when used with traditional methods of pain relief. These interventions (Box 7) can be used easily within the ward setting, particularly if combined with care that focuses on promoting patient comfort. For example, ensuring pain relief and support for amputated limbs could be combined with a relaxation technique.

### TIME OUT 5

Many non-pharmacological interventions are based on the Gate Control Theory (Melzack and Wall 1997). Choose one of the textbooks on pain from the reading list and examine this theory. Write a brief description explaining how non-pharmacological interventions work in relation to this theory. For example, what action does heat or rubbing have on specific groups of nerves?



### Education and support

Emotional support is important for patients and carers. Coming to terms with many sensitive issues associated with neuropathic pain can take time and difficulties might be related to:

- Changes in perceived body image.
- Effects on relationships.
- Rehabilitation and loss of independence.
- Fear of losing the other limb if the underlying disease indicates cancer or peripheral vascular disease.

It can also be difficult to come to terms with the bizarre sensations of neuropathic pain, and this is one of the main reasons for poor reporting of this type of pain (Horn and Munafo 1997).

Nurses have an important part to play in patient education regarding medication. It must be made clear to patients that the drugs used (Boxes 4, 5 and 6) have some potential to reduce pain, but that they are not typical analgesics, and must be taken on a regular basis to have a predictable effect. It is important to explain the rationale for using these drugs to patients and family members. Patients might be concerned that these drugs are being used for pain relief, rather than for their primary function as antidepressants and anticonvulsants. Patients should be made fully aware of side effects of prescribed medication.

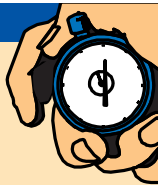
Common concerns focus on the amount of medication taken and the number of tablets. In the author's experience, patients will often report not taking medicines because they were not in pain at the time. Education and support for patients and carers is an important aspect of the nursing role. This will help to relieve anxiety and ensure compliance with medication, which is a major factor in the management of neuropathic pain. Pain will not be adequately controlled if medication is not taken as prescribed.

It is important to ensure that all patients and family members are fully informed and understand the nature of neuropathic pain. This can help to reduce potential misconceptions, which might make the patient vulnerable if family disputes develop around the nature of pain. Providing information verbally, and reinforcing this with user-friendly patient leaflets, might help patients to cope better with this unusual and complex pain.

### Conclusion

Neuropathic pain is a complex and distressing phenomenon that requires a rapid multi-modal approach. A thorough and accurate assessment of pain is essential to treat neuropathic pain. This requires the nurse to ask the right questions and


## TIME OUT 6



Consider the support you and other members of the nursing team offer patients who are experiencing pain. Then try to answer the following questions:

- Are patients seen by you or other healthcare professionals pre-operatively and post-operatively to discuss their pain?
- Are patients who have been diagnosed with complex pain offered any follow-up care?
- If you are based in hospital, do you liaise with community staff regarding pain problems a patient might have experienced while in hospital?
- Is the use of analgesics explained? Do you offer any formal or informal education to patients or significant others regarding pain management?
- Are there any support groups that you could refer these patients to, such as phantom or chronic pain groups or breast care support groups?
- Do you have any written documentation that you give to patients concerning pain management?
- Are there any supporting leaflets available in your clinical area?
- Is there a strategy for pain management or a pain link nurse in your area of practice?

to obtain the descriptors of the pain from the patient, while assessing the impact of pain on the individual. There is a lot of information available and resources to treat this pain range from invasive techniques and specific drug therapies to non-pharmacological interventions. Working with specialist pain practitioners who can initiate and manage the more complex treatments can enhance pain management.

Nurses have a key role in the management of patients with neuropathic pain and can focus care on the accurate and early assessment of pain. This unique position not only helps to ensure swift treatment but also provides the vital psychological support for patients and carers, which enhances understanding in the normal aspects of neuropathic pain and general emotional wellbeing. Pain responses can be dependent on past experience, cultural background, physical condition, emotional state and the proposed course of the disease. A holistic assessment of the individual is, therefore, vital to ensure effective pain relief. Help is available and progress in this area of pain relief should offer patients and nurses hope 

## TIME OUT 7



Now that you have completed the article, you might like to write a practice profile.

Guidelines to help you are on page 55.

## Useful websites

- **American Pain Society**  
[www.ampainsoc.org](http://www.ampainsoc.org)
- **American Society of Pain Management Nurses**  
[www.aspmn.org](http://www.aspmn.org)
- **Amputee website**  
[www.farabloc.com](http://www.farabloc.com)
- **Bandolier (Oxford pain site)**  
[www.jr2.ox.ac.uk/bandolier](http://www.jr2.ox.ac.uk/bandolier)
- **BMJ Collected Resources Pain**  
<http://bmj.org/cgi/collection/pain?page=1>
- **Department of Health**  
[www.doh.gov.uk](http://www.doh.gov.uk)
- **International Association for the Study of Pain**  
<http://www.iasp-pain.org>
- **Neuropathic pain**  
[www.priory.co.uk/anaes/neuropathic](http://www.priory.co.uk/anaes/neuropathic)
- **Pain Society**  
[www.painsociety.org](http://www.painsociety.org)
- **Pain Relief Foundation**  
<http://www.painrelieffoundation.org.uk/html/foundation.html>
- **UK Pain Network**  
[www.painnetwork.co.uk](http://www.painnetwork.co.uk)

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