



The subject of chronic pain management is vast...

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1. Pharmacological (drugs e.g. paracetamol)
2. Physical (e.g. physiotherapy)
3. Psychological.

The most important thing to remember is that each patient's treatment is individualised as pain is a subjective sensation and what works for one person may not necessarily work for the next even though the diagnosis is the same.

Low Back Pain

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Fibromyalgia

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LOW BACK PAIN

Low back pain, both acute and chronic, has been the subject of many research papers, books and reports.

This is because it is extremely common and most importantly extremely costly in terms of both lost work hours and medical treatment. The cost of treating back pain is approximately 1% of the total UK NHS budget.

Back pain is assessed in the pain clinic to exclude serious and life-threatening causes such as tumours and aortic aneurysms. Back pain may also be felt secondary to a more significant pain in another area. The pain clinic will refer you to the appropriate doctor/surgeon if such a condition is found.

When the pain is primarily from the back then it may be either confined to that area or associated with pain in the legs, groin or abdomen or even further up the back even as far as the neck, shoulders and head. This latter pain is called referred pain

Simple low back pain. This is pain felt in the back alone. It is important to treat this early and effectively and exclude sinister causes as mentioned above. Bed rest and immobility are not recommended for more than 2 to 3 days. Continuation of a normal life style using regular over-the-counter painkillers and careful goal-targeted exercises suffice for the majority. If this is insufficient then your G.P. can refer you to a physiotherapist and prescribe stronger pain killers such as codeine-containing drugs.

Patients with low back pain with referred symptoms may have prolapsed discs compressing nerves, ligament damage, inflammation in the joints between the bones of the vertebral bodies (facet joints), arthritis or degeneration in the same bones with resulting nerve compression. This nerve compression results in sciatica, that is shooting pains in the legs.

The majority of patients with low back pain who come to the pain clinic are many weeks down the road from its onset. Sinister causes still have to be ruled out. Often they will have seen other Consultants and have had investigations such as MRI scans and X-rays. Treatment in all cases follows the lines as mentioned above i.e. pharmacological, physical and psychological.

Physical treatments

Ligament Sclerosant

It may be felt that your main problem is laxity in the ligaments in the lower back.

Ligaments go from bone to bone and act as stabilisers. The main ligament to become damaged is the **ilio-lumbar ligament** which connects the lowest two lumbar vertebrae to the pelvis. It may be damaged by degenerative changes in the vertebral column itself or following external trauma. The attachments to bone may be weakened and stretched.

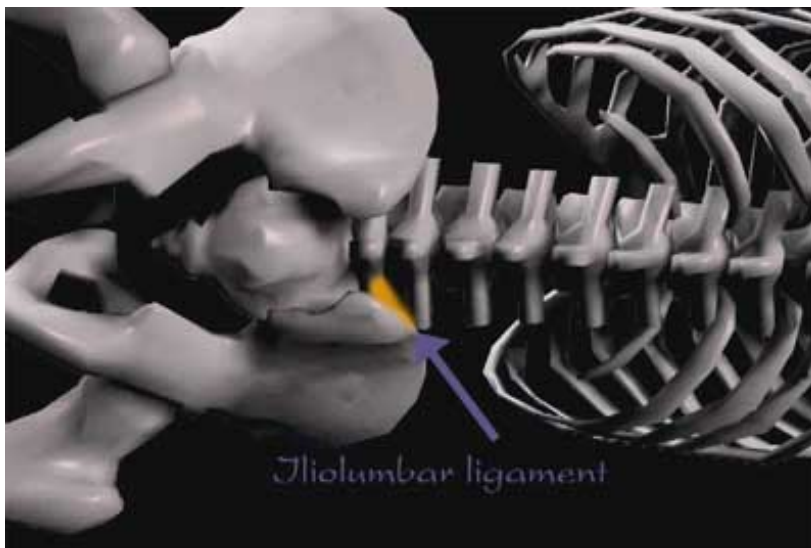
Injection treatment with sclerosant solution (a phenol, glycerol, glucose combination) at these damaged edges causes scarring and strengthening of the ligament once more and can relieve pain.

A series of these injections can be undertaken if the response to the first one is positive. Pain relief can be life-long but more often than not further injections are required in the future. Very rarely the injections may make no difference or even may cause a worsening of pain.

A test injection of local anaesthetic and steroid alone can be predictive of a positive response. Other rare side-effects include infection (1 in 17000 risk) and damage to the ureter (urine-carrying tube) so an X-ray machine is used to reduce this risk.

Other pelvic ligaments can also cause pain.

The [posterior sacro-iliac ligament](#) can irritate a muscle called the piriformis muscle and this can lead to sciatica-like symptoms in the absence of a slipped disc. Sclerosant therapy can be used here as well.



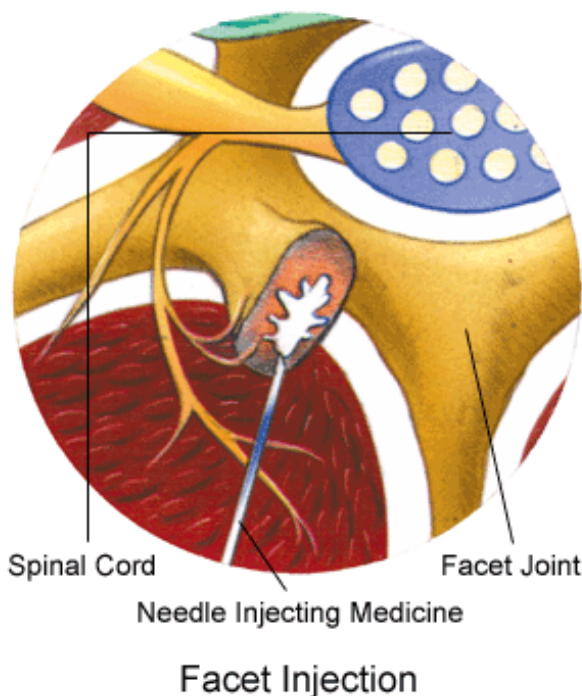
Facet Joint Injections

Your symptoms and signs may suggest that the facet joints (the joints between the vertebral bodies) are the source of your pain.

Sitting, stretching backwards and turning to the side are often painful here. These joints can be injected with very small doses of steroid and a positive response (pain relief for weeks/months) can be followed up with an injection therapy known as rhizolysis where the nerves that supply the joints are destroyed with radiofrequency waves which cause local heating hopefully giving a long period of pain relief. These nerves can regenerate so causing a return of the pain some months/years later but the procedure can be repeated if necessary.

Epidural with local anaesthetic and steroid Slipped discs will often give rise to both local and referred symptoms. Most commonly it occurs in the [lumbar spine](#) and gives rise to aching or shooting pains in one or both legs.

Slipped discs also occur less commonly in the neck with associated arm pain and even less commonly in the thoracic vertebral area with associated chest or groin pains. Similar symptoms may arise if a **spondylolisthesis** occurs.



This grand sounding term describes the slippage of one vertebra on another. This can lead to narrowing of the space available for the spinal cord and the nerve roots. Narrowing of the spinal space is called spinal stenosis. MRI scans are excellent diagnostic tools in this area.

If spinal stenosis leads to excessive interference with peripheral sensation or power or interferes with bowel or bladder function, then an operation is necessary.

Where spinal stenosis is causing symptoms but no operation is deemed necessary then performing an epidural with depot steroid can help the peripheral symptoms. The depot steroid can reduce the symptoms due to inflammation and nerve compression.

As a rule of thumb, with slipped discs, the shorter the time of symptoms then the greater the chance of prolonged pain relief. Steroids are not licenced to go in the epidural space but the procedure has been performed for many years with the benefits outweighing the risks for most people. The main risks are infection, blood clot formation with nerve compression and inadvertent spinal tap. I perform epidurals using an x-ray machine to make sure the needle is in the right place and to minimise the risk of spinal tap.



MRI scan demonstrating lumbar spinal stenosis, narrowing of the spinal canal causing nerve compression.

Other aspects to management of back pain

There are many other ways of managing back pain using physical, pharmacological and psychological methods as injections are certainly not suitable for everyone and in those deemed suitable sometimes they do not work sufficiently.

These other methods can be discussed in the pain clinic itself but include the use of [TENS machines](#), analgesic drugs including topical painkillers, physiotherapy, psychotherapy and pain management programmes. It is the long term aim in [Shrewsbury](#) to set up a local multidisciplinary pain management programme.

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THE CHRONIC PAIN MANAGEMENT CLINIC IN SHREWSBURY

The aim of this web site is not to blind you with science.

It is to provide you with information on the common problems seen in the pain clinic and about the chronic pain service provided at the [Royal Shrewsbury Hospital](#) and the [Shropshire Nuffield Hospital](#).

I have worked in Shrewsbury only since April 2002 and the service here is therefore still in its relative infancy. Nevertheless, there is still a lot that can be done locally. In addition the Walton Centre in Liverpool is nearby and has a long established pain service and pain management programme and they are happy to take referrals from me for complex problems that can not be treated locally.

If you are one of my patients then I hope that you will find this site useful as a reference and reminder to the information given to you in the clinic about your pain problem. If you have found this site using an internet search then you may also find it useful as an information site.

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FIBROMYALGIA

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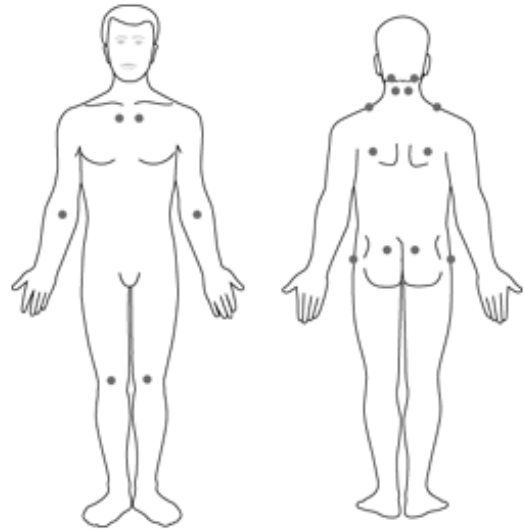
It is defined as symmetrical body pain present above and below the waist line and present in at least 11 out of 18 defined points.

Patients have often spent many years looking for a cause for their pain with multiple investigations revealing no organic abnormalities. Classically pain is felt as sensitive skin and sore muscles and connective tissues.

If you [run an internet search using fibromyalgia as the key word](#) then you will find some useful information on this condition. One such site is www.tidalweb.com.

Classical painkillers (e.g. codeine, brufen, paracetamol) do not work well in this condition. Perhaps one in five people respond positively to low doses of tricyclic antidepressants such as dothiepin and amitriptyline.

Patients more often than not also give associated depressive symptoms such as poor sleep and crying spells. Multidisciplinary pain programmes and self-help groups are also useful.



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Complex Regional Pain Syndrome (CRPS)

This is a common condition and describes a group of symptoms occurring together in a painful part of the body. If there is NO associated nerve damage then the condition is called **CRPS type1**. If there IS associated nerve damage then it is **CRPS2**.

Both conditions give the same symptoms and both conditions more often than not affect a foot or hand but any area of the body that has been injured in some way may give rise to the condition. The condition can occur spontaneously, especially in children. More often than not actual tissue damage e.g. surgery, is the cause.

The symptoms are:

- Pain arising from a stimulus which is not normally painful
- Excessive pain arising from a stimulus which is not normally that painful.
- Spontaneous, intermittent swelling
- Spontaneous, intermittent skin colour changes
- There may be excessive hair growth and changes in nail quality and bone X-rays may reveal some osteoporosis.

It is very important to remember that painful movement in this condition is not causing damage to the affected area. The earlier the condition is recognised the more likely it is to respond to treatment. Unfortunately not everyone responds and some people have life-long suffering.

The treatment in children is basically education that pain is not damage and maintenance of activity with graded physiotherapy. Psychotherapy may also help. Gabapentin is a drug which is licensed to treat this kind of pain. It is one of a range of such medications but is the best tolerated of all of them and may also be useful.

In adults the above is also true where both gabapentin and physiotherapy can help and indeed physiotherapy is the only proven method to beat CRPS1. In addition, however, a drug called Guanethidine can also be injected into the circulation in the affected area.

This area is first isolated with a tourniquet to prevent the initial spread of the Guanethidine. The drug may be diluted in local anaesthetic to reduce the pain of the technique. If there is a positive response then the technique can be repeated as many times as is necessary. Side-effects of Guanethidine include flushing, low blood pressure and headache but the tourniquet is kept inflated for at least 20 minutes so that the dose escaping from the treated area is minimal.

Guanethidine injections using the tourniquet technique are fine if the CRPS1 affects a hand or forearm or foot or leg below the knee. Higher problems in the upper arm and knee and thigh may need separate treatments. A treatment called lumbar chemical sympathectomy may be used for thigh and knee CRPS1. A stellate ganglion block may be used for upper arm and shoulder CRPS1. The details of such treatments with their associated chances of success and failure can be discussed in the clinic.

The take home message is that successful treatment of CRPS1 depends on early presentation and adequate pain

relief to allow intensive physiotherapy.

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DRUGS PRESCRIBED IN THE PAIN CLINIC

Patients frequently come to the pain clinic on medications which are either simply not working on their pain or are giving them inadequate pain relief.

There may be many reasons for this and the simplest one and probably most common one is non-compliance; that is they are not taking the drugs regularly as prescribed. If the body has a constant, adequate level of a drug then it fights pain much more effectively.

Another reason for a painkiller not working is because it is not the right painkiller for the job. Pain may be felt coming from the tissues and organs e.g. muscles, bones and liver and this is nociceptive pain which responds well to classic painkillers such as aspirin, paracetamol, codeine and morphine. Pain may be felt from nerves and this is called neuropathic pain and is frequently poorly responsive to aspirin, paracetamol, codeine and morphine.

The pain clinic often therefore will prescribe painkillers because it is felt that the pain described is neuropathic in nature. These painkillers are usually used for other purposes such as treating epilepsy or depression. In common with their normal modes of treatment, they stop nerve cells firing spontaneously and this is basically what is happening in neuropathic pain.

The symptoms of neuropathic pain are quite distinct and include such descriptive words as burning, shooting, sensitive, cramping, itchy, lancinating.

Drugs for neuropathic pain include the antiepileptics such Gabapentin and Tegretol (Carbamezepine) and the Antidepressants such as Amitriptyline and Dothiepin. The greatest problem with using these medications is that they give patients unpleasant side-effects much more frequently than aspirin, paracetamol etc. To this end Gabapentin is the only one which is licensed for all neuropathic pains and is the one which is most agreeable with patients as its side-effects are the ones most tolerated by the majority. Exact doses and information on side-effects can be given in the clinic but the most effective dose appears to be at least 600mgs. three time a day and common side-effects include tummy upset, headaches, sleepiness and rashes.

Drugs for nociceptive pain are those most commonly thought of as painkillers, that is paracetamol, aspirin etc. There are the weaker painkillers as already mentioned and the stronger pain killers such as morphine, oxycodone and palladone. Massive controversy exists over their use in patients without cancer as they are widely thought of as having a great potential for addiction and abuse. Slowly but surely the medical world is coming round to seeing that where a patient has pain which is not due to cancer and where the weaker drugs are ineffective, then there is very little addiction and abuse potential if the drugs are being used as painkillers alone. The greatest risk with long term use is of the body getting used to a particular dose with a worsening of pain and a need therefore to increase the dose. This whole area is extremely complex and needs a great deal of trusts between clinician and patient.

Another, less controversial area where there has been recent advances in painkiller therapy is the advent of safer aspirin-like drugs. Aspirin, Ibuprofen, Voltarol, Mefanamic Acid, Ketoprofen etc. are known as the non-steroidal anti-inflammatory drugs (NSAIDS). They are very useful in nociceptive pain but can cause severe side-effects such as gastric ulcers and kidney damage. The newer drugs Celecoxib and Rofecoxib have fewer such side-effects but

care is still needed with them. Glucosamine is a medication that can be bought over the counter. It appears that research has shown it to be effective in reduces the pain of knee arthritis alone in a dose of 1500mgs per day.

Drugs may also be effective when applied as creams or in patches. Capsaicin cream comes in 2 strengths (0.025% and 0.075%). The lower strength can help the pain of arthritis and the stronger solution can help some neuropathic pains such as scar pain and that of postherpetic neuralgia. The problem with this cream is that it can burn and irritate before it works and more often than not it will stop working if its use is stopped.

Lidoderm patches can also be useful in scar pain and postherpetic neuralgia. These patches are impregnated with local anaesthetic. They do not make the skin greasy and stop working after they are removed so constant use may be needed.

NSAIDS are also available in creams and apart from being effective, cause almost negligible damage to the stomach and kidneys. They help approximately 1 in 3 people who use them regularly.

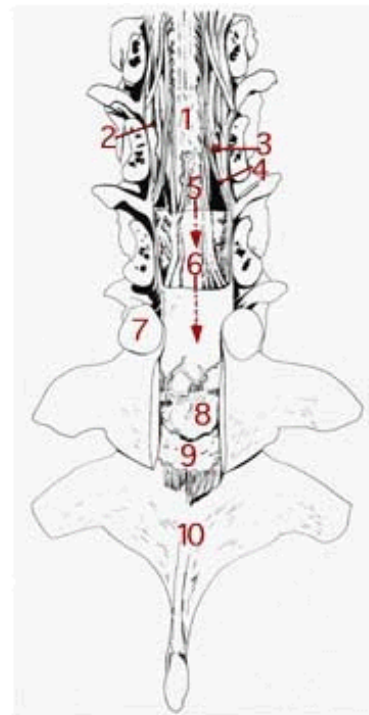
Patches containing the strong painkillers fentanyl and buprenorphine are also available and may help in both cancer and non-cancer pain unresponsive to weaker painkillers. Both are licensed for use in patients with chronic non-cancer pain.

Delivery of drugs to the body

Most people take drugs by mouth. Increasing numbers of people absorb drugs using patches. There are of course other ways of delivering drugs to people. These ways are used because not everyone can swallow drugs and even if they do, the dose required is higher than that achieved. Other routes include into muscles, directly into veins and under the skin, under the tongue, inhaled through the nose and lungs and also via the back passage.

The **most effective** way of delivering drugs, however, is by putting them directly into the nervous system as this where the drugs actually do most of their work. This is done by 'tapping' into the space around the spinal cord as already talked about in the section on [low back pain and epidurals](#).

Tapping a little further leads to the subarachnoid (item 5 in the picture) or spinal space where the spinal cord and cerebrospinal fluid are. In both areas a catheter or hollow tube can be left and drugs infused into it. It has to be stressed that this is a highly specialised area of drug delivery and only the very basics can be explained without tremendous background detail being required. It is also used in very few patients with chronic non-cancer pain is has a greater place in the treatment of cancer pain.



1. Pia mater
2. Denticulate ligament
3. Motor root of 7th thoracic nerve
4. Sensory root of 7th thoracic nerve
5. Subarachnoid space
6. Subdural space
7. Superior articular process of 9th thoracic vertebra

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PHANTOM SENSATIONS AND PAINS

Phantom sensations occur after loss of a part of the body, most commonly a limb.

The person feels that the part of the body is still there. If it is painful as well then it is known as phantom pain. This latter scenario is more likely to occur if the part of the body that has been lost was painful prior to its loss. Phantom pain is also more likely if the part is lost as a result of a painful, traumatic accident.

The symptoms given are neuropathic in nature and are often accompanied by sympathetic signs as seen in [CRPS1 and 2](#).

More common than phantom pain with a lost limb is pain at the end of the stump. This is usually a result of the cut nerves giving off painful signals in the absence of an ongoing painful stimulus, but may also be due to the presence of infection or inadequate initial surgery and the stump may need to be refashioned by a surgeon in both scenarios.

Examination is important in stump pain to also rule out the presence of the overgrowths of the nerves in the stump. These overgrowths are called neuromas and can be cut out by a surgeon. They are a common cause of stump pain. Other common causes are ulceration of the skin and pain in the stump scar.

Phantom sensations and pains are thought to be due to a rewiring of the central nervous system which occurred while the now absent part was still attached. When this part is removed the memory of pain in the brain remains. This memory is subconscious and can not be controlled and is also thought to be recorded in more than one area of the brain and spinal cord at the same time. This makes treatment difficult but recent work has shown a good response in these patients to Gabapentin. In addition, other neuropathic agents may be just as successful in any individual, side-effects permitting. Some patients respond to [TENS machines](#). Some people respond poorly to all the basic treatments and may need to be put forward for a trial of a spinal cord stimulator.

Phantom-like pains may also be described by patients where a limb is still attached but the major nerve supply to the limb has been permanently damaged. In this case the pains are called *deafferent* pains and again are neuropathic in nature.

Arachnoiditis is a condition where the arachnoid covering of the nerve roots at the lower end of the spinal cord have been damaged. Causes include back surgery and infection. Leg pain is constant and neuropathic. The condition is easily diagnosed with an MRI scan of the spine. Here again the pains are phantom-like but the legs are attached and functional to varying degrees.

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PAIN RELIEF BY ELECTRICAL STIMULATION

This includes acupuncture, electroacupuncture, transcutaneous electrical nerve stimulation (TENS) and spinal cord stimulation.

All of these will give pain relief but not all will work for everyone they are tried. All are directed at interrupting the pain signal in the spinal cord. The theory basically is that there is a nerve gate which can be closed so preventing the brain from receiving the painful signal. This gate is closed by stimulation of certain nerves which normally remain inactive until the electrical signal from the [TENS machine](#) etc. is propagated. The most basic level of this gate closing phenomenon is with massage which is used to relax the body and reduce pain.

Acupuncture involves putting very fine needles into muscular trigger points to 'break up' the spasm. Traditional Chinese acupuncture is used for many maladies as well as pain and areas far from painful points may be needed.

[TENS uses gel-covered pads](#) attached to a box from which a current is emitted. The pads are placed over the painful area. The current can be high or low frequency and its strength can also be altered using dials. If TENS does work for a patient then they often find that the longer it is used the greater the effect (at least 2 hours each day).

Spinal cord stimulation is an invasive technique.

It is often used where all else has failed as far as pain treatment is concerned. The only area where it has proven effectiveness is the treatment of angina pain which is secondary to a poor blood supply to the heart.

There are people with pain which is not angina and in whom all else has failed to help them adequately. Specifically patients with neuropathic pain from a phantom limb or traumatic nerve damage, in patients where the blood supply to a limb is inadequate but an operation is not possible, arachnoiditis and [CRPS 1 and 2](#) which have not responded to other treatments.

Some enthusiasts will also use spinal cord stimulation on patients who have chronic back pain resulting from multiple surgical procedures.

Whatever reason is given, undertaking this technique involves a tremendous amount of interaction between a pain clinic and the patient. If an initial temporary trial is successful, insertion of a permanent stimulator requires a multidisciplinary hospital team to do so and to look after it afterwards as the patient and the pain clinic become very dependent on each other. This is why only certain pain clinics in the UK will undertake this work.

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MYOFASCIAL PAIN

This is pain affecting muscles and connective tissue which is more localised than fibromyalgia.

It is associated with trigger points. These are string-like areas of muscle which one can literally roll ones finger over. They are rather painful.

Myofascial trigger points are most frequently palpated in the shoulder, neck and back muscles. They often indicate underlying problems such as ligament damage in the neck and may be present for many years after severe injuries such as whiplash. The trigger points are more than likely a combination of chronic inflammation, neuropathic pain (pain related to spontaneous nerve activity) and muscle spasm.

Treatments include trigger point injections with local anaesthetic and steroid which are most successful where the trigger points are related to inflammation and neuropathic pain.

If muscle spasm is the main cause then steroid injections are of little help and the trigger points can then be injected with a very, very dilute muscle paralysing agent called pancuronium. If pain relief occurs then occasionally it is long term.

More often than not, however, pain relief is transient, and one can then proceed to trigger point injections with Botox. Botox is of course more commonly known to be used for treatment of wrinkles and excessive sweating. It is a muscle relaxant which will last for some 3 months. Treatment can be repeated as necessary. It is very expensive so groups of patients who responded transiently to Pancuronium are treated together. It may take up to 2 weeks to work.

There are many other treatments for this including topical creams with e.g. ibuprofen, acupuncture, [TENS](#), osteopathy, physiotherapy.



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BODY SURFACE PAIN

This refers to postherpetic neuralgia, scar pain and other tender points and trigeminal neuralgia. Any nerve in the body that conveys sensation may also cause similar pain.

Postherpetic neuralgia needs a little explanation as people do get confused about it and shingles.

The chickenpox virus does not leave the body completely after causing chickenpox. Instead it lies dormant in nerve cells called dorsal root ganglion cells. It may reawaken at any time later in life causing an irritating rash called shingles. This rash lies along the sensory area supplied by the dorsal root ganglion cells where the virus has revived itself. The virus then destroys the dorsal root ganglion cells. The skin area supplied is called a dermatome.

More often than not the shingles rash disappears within a few days with the use of Zovirax cream. Although the rash has disappeared, pain sensations may remain in the dermatome and this is called postherpetic neuralgia. The pain is characterised by being present constantly. The reason the pain sometimes stays is because the dorsal root ganglion cells have been destroyed and they in turn cause neuropathic pain. Common symptoms are; skin depigmentation, touch-sensitive pain, burning and tingling.

More often than not the pains diminish over time but in some they remain for many years. Treatments are varied and include gabapentin, morphine, lidoderm patches and capsaicin cream.

Trigeminal neuralgia is rare condition affecting some 1 in 100,000 of the population. It affects the face which has its sensory supply from the trigeminal nerve. This nerve has three main branches so the upper, middle or lower parts of the face may be affected alone or in combination. It is characterised by being intermittent in nature with attacks being severe and the pain is sharp and lancinating. A brain scan may find [a small vessel wrapped around the trigeminal nerve](#) at its origin from the brain and if this vessel is destroyed then it is curative in the majority of patients.

Treatment can also be with drugs e.g. carbamazepine, gabapentin.

Any nerve in the body can give rise to neuropathic pain, especially if it is damaged or ensnared with scar tissue or excessively stretched e.g. with sudden unopposed limb movement. This is common with surgery involving groin hernia repairs and kidney operations.

The incidence of such pain after groin hernia repair is some 5 to 6%. Pain clinicians have to be careful too as should they destroy a nerve to reduce a pain sensation then it may actually return more severely than before at a later date. This is known as *deafferent* pain.

Treatment can often be successful using nerve blocks with local anaesthetic with or without added steroid. Repeated destruction of a nerve may be necessary. Agents used include radiofrequency lesioning as with facet joint medial branch rhizolysis, glycerol and phenol. Other treatments are drugs; either oral e.g. gabapentin or topical e.g. lidoderm.

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