

Patient Information Leaflet

Radiofrequency Denervation Procedures

(Including diagnostic nerve blocks such as medial branch nerve blocks)

Introduction

Musculo-skeletal joint pain is a common problem that we encounter and often there isn't a surgical solution. However, in some cases these joint pains are easy to treat because they are supplied by a small single nerve that can be switched off (denervation) with a small heat treatment using electrical energy in the form of radiofrequency (AM radio waves). These treatments have been undertaken for decades by Pain Medicine doctors and the modern kit that we now use has made this a simple and safe solution for many of our patients.

Which joint pains can be treated?

This treatment can be effective for a few conditions such as pain coming from the spinal facet joints in the spine (via the medial branch nerves), the sacro-iliac joints at the back of the pelvis (via the posterior sacral nerves) and the shoulder (via the suprascapular nerve). Sometimes other small peripheral nerves can also be treated in this way for certain conditions such as scar pain in the abdominal wall.

How do I know if I need this sort of treatment?

You will have pain in the area of the affected joint or nerve and certain movements will trigger the pain. For example, facet joint pain in the low back comes on when stood and leaning forwards, such as washing up. Sacro-iliac pain can affect how you can sit and shoulder pain can be caused by reaching upwards. Abdominal pain can come on with movement or pressure over the area.

How am I assessed for this treatment?

Firstly, it is important to meet you and take a history. I would want to know more about your condition and how it affects you, i.e., where do you feel the pain and what aggravates and relieves the pain and what treatment and investigations have you had. Clinical examination is helpful to assess your joint movements to see which movements are restricted and painful. I would also record how bad the pain is (on a numerical scale from 0-10 where 0 = no pain and 10 = worst possible pain). I would also want to know about your past medical history and list of medication and allergies.

Often you would have seen other specialists and had scans (MRI, CT, X-Ray) and all of this helps me understand the cause of your pain and how we can address it.

If I find that one of the above joints is causing your pain, then we can talk about testing this by undertaking some diagnostic nerve blocks with local anaesthetic.

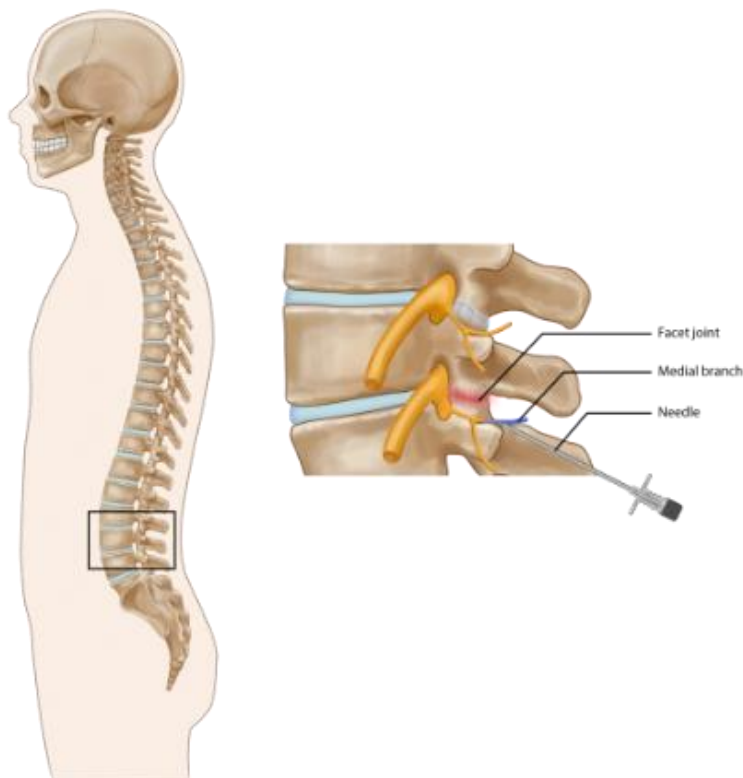
What are diagnostic nerve blocks?

These are targeted injections of local anaesthetic onto selected nerves: these are done using X-Ray or ultrasound guidance and local anaesthetic is carefully used to numb the skin at the start.

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Local anaesthetics are drugs that block nerve signals temporarily for a few hours. We can block nerves by injecting local anaesthetic next to the nerve to temporarily switch off the nerve. This will anaesthetise the area that this nerve supplies, such as the affected painful joint/s for a few hours.

If the nerve block/s stop your pain, then this tells me that you are likely to benefit from a radiofrequency denervation procedure.



Lumbar Medial Branch Nerve Blocks

For example, the facet joints of the spine are supplied by the Medial Branch nerves and if you inject local anaesthetic onto these nerves, it will switch off the sensation from the facet joints for a few hours: If this stops your pain, then it confirms that your facet joints are causing your pain. If your pain stays the same, then it suggests that some other part of your spine is causing the pain.

The sacro-iliac joint is supplied by three small nerves that run across the back of the sacrum (at the bottom of the low back) and the shoulder joint is supplied in part by a nerve called the suprascapular nerve that runs over the shoulder blade. The abdominal wall is supplied by nerves that are inside the abdominal wall muscles. All of these can be blocked with local anaesthetic as a diagnostic test.

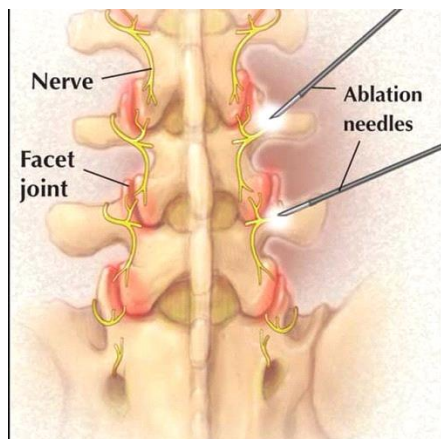
After the nerve blocks you will be asked about your pain, it is important to assess if it has reduced and if so by how much. The numerical scale to score pain from 0-10 is useful here to record the outcome. You will also be asked to do those movements that usually aggravate your pain to see if these have now become less painful – this helps evaluate the diagnostic nerve blocks.

What is the next step?

If the diagnostic blocks have significantly helped with your pain, then we can consider a radiofrequency denervation procedure. If the diagnostic blocks have not helped your pain, then a radiofrequency denervation may not help you.

How does a Radiofrequency denervation work?

Similar to the nerve blocks, this is done under X-ray or ultrasound guidance and the local anaesthetic is used to numb the skin. A special needle is placed next to the nerve and then a very small electrical current is used to stimulate the nerve, this is not painful but usually produces a pressure or tapping sensation. It helps to check the needle is close to the nerve. Local anaesthetic is then injected onto the nerve and after that a heat lesion is made that alters the structure of the nerve and stops it from being able to send pain signals.



- Lumbar facet Radiofrequency Denervation

How effective is this treatment?

The results are variable. Generally, about 75% of people will see their pain reduce, but only a minority will be pain free.

The duration of pain relief can vary from about 4 – 18 months, for most it will be about 1 year. Return of pain can be due to regeneration of the treated nerve and/or advancement of the underlying condition.

Occasionally, the treatment can be repeated but the results from repeat treatments may not be as effective.

The variation in outcome is explained by the fact that the causes of pain are complex and that this is a relatively simple form of treatment.

How safe is this treatment?

This treatment is considered safe and routine but like any medical treatment, doctors would wish to inform you of any potential risks, which include:

- Flare up of pain – commonly there is some pain after the procedure and this can last from a few days to a few weeks. Often there is a 'burning pain' over the area.
- Dysaesthesia - an area of numb skin with altered sensation which can feel numb or tender. This is usually mild but can last a few months.
- Failure of pain relief (25%).
- Worsening of pain (less than 5%).

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- Temporary numbness / limb weakness from the local anaesthetic (only lasts a few hours).
- Spinal nerve injury: this is very rare but can cause pain, numbness, or weakness in an arm or leg. It can be temporary or permanent.
- Infection: this is again very rare but can cause pain, redness, wound discharge, swelling and fever. It should be medically assessed promptly and antibiotics might be required.
- Bleeding and bruising (rare)
- Drug reaction (very rare)

In general, apart from some post-procedural pain, very few problems are seen and I have not personally seen a serious complication from a denervation procedure.

How is the procedure undertaken?

It is done in a special treatment room using X-ray or ultrasound imaging. The skin is cleaned and local anaesthetic is used to numb the skin to allow placement of the specialised needle(s) onto the nerve to be treated. Once the needle is in position, I can check how close to the nerve it is by stimulating the nerve with a small electrical test current - this is not painful and I would ask if you can feel a pressure or twitching feeling. After this, I would use radiofrequency energy to heat the nerve which switches the nerve off. Usually this is painless, but sometimes you can feel some warmth or discomfort. There can be anything from 1 to 6 nerves that need treating. It usually takes up to 45 minutes to perform and we will keep you afterwards for up to 30 minutes to check you are feeling well enough to be discharged.

General advice:

- There is no need to avoid food or drink on the day as it is all done under local anaesthesia.
- Do not drive or operate machinery afterwards. It is best to go home and rest.
- You should let us know if you are on any blood thinning drugs (apart from Aspirin 75mg) beforehand so we can advise you accordingly.
- Avoid strenuous activity for the next few days. Expect some light bruising over the injection sites.
- Pain relief may not happen for up to 4 weeks, so continue to take your pain killers if needed.
- It is best to wear clothing that can be adjusted to uncover the area to be treated, or we can provide a gown to wear when you attend.
- Any problems afterwards should be reported to the team:

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