

## The Pain Clinic - Patient Information - Radiofrequency Facet Joint Denervation

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Why do I need this treatment ?

- Your doctor thinks that you have back or neck pain caused by inflammation of the spinal facet joints.
- These joints can cause spinal pain and also referred pain to the arms or legs.
- This treatment can produce longer lasting pain relief than other techniques.
- It is usual to have a positive response to either diagnostic facet joint injections or medial branch nerve blocks prior to going ahead with this treatment.
- In some cases, where an MRI scan has suggested the facet joints are the cause of the pain, denervation may proceed without a diagnostic injection first, especially if technical difficulties are anticipated e.g. excessive obesity, osteoporosis, anatomical abnormalities.

What is Radiofrequency (RF) Facet Joint Denervation and how does it work ?

- Each of the spinal joints has its own nerve supply, the medial branch nerve, which normally carries information about the state of the joint to your brain e.g. pain caused by inflammation, joint position etc.
- The aim of this treatment is to interrupt the nerve supply to the affected facet joint(s) on a permanent or semi-permanent basis, thereby preventing the passage of pain signals to the rest of the nervous system.
- The medial branch nerve is located by using a combination of real time x-ray pictures, and a specially designed needle, connected to a radiofrequency generator machine. This machine performs a series of electrical tests, allowing the doctor to get the tip of the needle as close to the nerve as possible.
- Once the needle is in the correct position, a final electrical test is done to make sure that the needle tip is well away from the main spinal nerve to your leg / arm, thereby improving the safety of the procedure.
- When the doctor is happy with the needle position, a high frequency (radiofrequency) electrical signal is passed down the needle for 90 seconds, causing the tip to heat up to about 80 degrees C. The tissues within 2 mm of the needle tip, including the medial branch nerve, are coagulated, just like when the white of an egg turns white when you cook it.
- To treat the facet joints on one side of the spine, 3 medial branch nerves are coagulated. To treat the facet joints on both sides of the spine, 6 medial branch nerves are coagulated.
- After each coagulation lesion, the area is injected with a mixture of local anaesthetic and steroid, to help reduce discomfort afterwards.

How long will the pain relief last for ?

- It is not possible to answer this question on an individual basis.
- Pain relief can be as follows:-
  - The denervation eliminates the pain never to return again
  - The denervation reduces the pain for several weeks, the pain returning but not as bad.
  - The denervation reduces the pain for several weeks, but it returns as bad as ever afterwards.

How is the treatment performed ?

Question	Answer
Is the treatment done as a day case ?	Mostly
Is a hospital day case bed needed ?	Yes
Is a driver required to take me home afterwards ?	Yes
Does the treatment require x-ray guidance ?	Yes
Do I need to fast for 4 hrs before hand ?	Yes
Can I take my normal medications with sip of water ?	Yes
If I am diabetic - do I need separate instructions ?	Yes
Is an intravenous cannula needed for this treatment ?	Yes
Is intravenous sedation needed for this treatment ?	Yes

- A small cannula will be sited on the back of your hand, and increments of a short acting sedative given into a vein until you feel relaxed and comfortable. You may need to have oxygen administered during the procedure.
- Lumbar RF facet joint denervation is performed lying face down, whilst cervical RF facet joint denervation is done lying on your back.
- The spinal area to be injected is cleaned with anti-septic solution, and the skin in the area numbed with some local anaesthetic - this stings a little at first.
- Using x-ray guidance, a fine needle is inserted to where the medial branch nerve normally lies. The final position of the needle is determined by a series of electrical tests. During these tests you may notice some of your spinal muscles twitching, and your normal spinal pain may be reproduced as well for a short time.
- When the doctor is happy with the needle position a radiofrequency lesion is made - you may notice some discomfort in the area for about 90 seconds. It's important not to move during this time so that the needle position is not disturbed.
- The other levels in the spine are then treated in a similar fashion.

What happens after the treatment ?

- At the end of the procedure the sedative is reversed with another drug, and then you will be allowed to recover in a day case bed until you are fit to return home (usually the same day). Most people can go home after a few hours, accompanied by a responsible adult, once they have recovered from the intravenous sedation. Occasionally a stay overnight is required to ensure good pain relief or due to social reasons (e.g. those who live alone).
- Your blood pressure, pulse and oxygen levels will be checked afterwards.
- Pain relief may be very good initially due to the effects of the injected local anaesthetic during the procedure. This will wear off after 6 hours or so.
- There may then a period of worse pain which lasts a variable time - anything from 2 - 6 weeks. Paracetamol and codeine (cocodamol) plus ibuprofen is a reasonable mixture of pain killers that you buy over the counter. If you require anything stronger, then your GP should be able to advise.
- A follow up appointment will be automatically arranged so that the effects of the treatment can be assessed by your consultant.

What are the risks and complications of the treatment ?

- Local soreness / bruising at the injection site - usually settles in a few days.
- No pain relief - the commonest complication would be that the treatment did not help the back pain. The causes of this include incorrect placement of the needle, and wrong diagnosis i.e. the back pain had some other cause.
- Worse pain - like any other treatment, the pain can be worse afterwards rather than better. The commonest reason for this is increased muscle spasm in the area of the injection. The needle has to pass through some of the spinal muscles to get to the nerves. These occasionally react by going into spasm, but in most cases this resolves spontaneously.
- Injury to the main spinal nerve - this is a rare complication and can be minimised by using x-ray guidance,

electrical stimulation tests, and keeping very still during the treatment. Despite these precautions, nerve damage can occur and may cause tingling, numbness, weakness and nerve type pain in the leg when the lumbar spine is treated, and in the arm when the neck is treated. Most cases recover spontaneously, but some are permanent. Nerve pain blocking drugs like gabapentin or pregabalin may help the nerve pain.

- Infection - introduction of infection can cause a paraspinal abscess. Infection can be minimised by performing the procedure under sterile conditions. Sometimes infection can spread through the blood to the paraspinal area from other distant sites. The injection should therefore not be done when there is overt infection elsewhere in the body. Diabetics are more prone to staphylococcal infections generally.
- Anaphylaxis - severe allergic reaction to the components in the injection mixture - more common to local anaesthetics but rare with lignocaine. Please tell your consultant before the treatment about all of your drug allergies.

**Should you have any further questions, then please discuss them with your consultant prior to starting the treatment.**

**For more information please go to [www.PainClinic.org](http://www.PainClinic.org)**