PROCEDURE

Radiofrequency ablation for chronic pain

Radiofrequency ablation uses heat to interrupt selected pain-carrying nerves.

PURPOSE
Reduce chronic pain from selected sensory nerves

PROCEDURE TYPE
Therapeutic, minimally invasive

WHERE IT IS DONE
Outpatient clinic or hospital procedure suite

ANAESTHESIA
Local anaesthesia, sometimes moderate sedation

HOW LONG IT TAKES
About 30 to 90 minutes

PREPARATION
Medication review; fasting if sedation is planned

RECOVERY
Same day; arrange transport and follow driving restrictions

MAIN RISKS
Pain flare, bleeding, infection, nerve injury

RESULTS
Pain relief assessed over days to several weeks

Overview

Radiofrequency ablation for chronic pain uses radiofrequency energy to heat a small area of nerve tissue. This reduces the nerve's ability to carry pain signals.

The procedure is usually used for pain coming from specific joints or sensory nerves. Common targets include nerves supplying the small joints of the neck or lower back, the sacroiliac joint near the pelvis, or certain joints such as the knee.

Radiofrequency ablation does not repair arthritis, a damaged joint, or another underlying condition. It aims to reduce pain so that movement, sleep, daily activities, or rehabilitation may become easier.

The treated nerve can grow back. Pain relief may therefore wear off over time. The procedure does not help everyone, even when testing suggests that a particular nerve is causing the pain.

Why the procedure is performed

Radiofrequency ablation may be offered when chronic pain has not improved enough with options such as exercise-based therapy, activity changes, or medicines.

Before treating nerves around the spinal joints, your healthcare team may perform one or more diagnostic nerve blocks. During a block, a small amount of numbing medicine is placed near a suspected nerve. Clear but temporary pain relief supports the idea that the nerve is an important source of your pain.

The goal of radiofrequency ablation may be to:

The amount and duration of relief cannot be guaranteed.

- Reduce pain for longer than a numbing injection
- Improve movement, sleep, or everyday function
- Make physical rehabilitation easier
- Reduce reliance on pain medicine when appropriate

Who should and should not have it

You may be considered for radiofrequency ablation when your pain can be linked to a specific nerve target. For spinal joint pain, a helpful response to diagnostic nerve blocks is often part of the selection process.

It may not be the right procedure if the source of your pain is unclear or the planned nerve blocks did not provide meaningful temporary relief. Widespread pain, pain caused mainly by nerve compression, or pain from a condition requiring different treatment may not respond.

The procedure may be avoided or delayed if you have:

Tell the team if you have a pacemaker, defibrillator, spinal cord stimulator, or other implanted electrical device. These devices do not always prevent treatment, but special planning may be needed.

- An infection near the treatment area or a significant current illness
- A bleeding problem that has not been controlled
- Blood-thinning treatment that cannot be safely managed around the procedure
- A medical condition that makes positioning or sedation unsafe
- Pregnancy when X-ray guidance would be used, unless the benefits justify proceeding

How to prepare

Your treating facility's own instructions take priority because preparation differs according to the treatment site, medicines used, and whether sedation is planned.

Give the team a current list of your medicines and supplements. Make sure they know about blood thinners like warfarin or apixaban , diabetes medicines, medicine allergies, pregnancy, bleeding problems, infections, and implanted devices.

Do not stop a blood thinner unless the clinician who manages it and the procedure team have given you a specific plan. Stopping it without guidance can be harmful.

You may be told not to eat or drink for a set period if sedation is planned. If only local anaesthetic is being used, fasting may not be required. Follow the facility's instructions exactly.

Arrange for an adult to take you home if you will receive sedation or if the facility requires an escort. Wear comfortable clothing and leave valuables at home.

What happens during the procedure

You will usually lie on your stomach, side, or back, based on the nerve being treated. Staff may monitor your blood pressure, heart rate, and oxygen level.

The skin is cleaned, and local anaesthetic is injected to numb the area. This can sting briefly. Sedation may be offered, but it is often kept light enough for you to answer questions during testing.

Using X-ray or ultrasound guidance, the clinician places a thin needle near the target nerve. X-ray guidance may involve a small amount of contrast dye to confirm the position.

A mild electrical test may be used before treatment. You may feel pressure, tingling, or a brief muscle twitch. This helps confirm that the needle is close to the intended nerve and away from nerves controlling important movement.

Radiofrequency energy then heats a small area at the needle tip. More than one nerve may be treated. The needles are removed, and small dressings are placed over the skin.

Recovery and what to expect afterward

Pain: The treatment area may feel sore, bruised, numb, or sunburned. A temporary pain flare or muscle spasm can occur. Use pain relief, ice, or heat only as instructed. New pain is not proof that the procedure has failed.

Eating: You can usually return to your normal diet after local anaesthetic alone. After sedation, begin with fluids or light food if you feel nauseated.

Activity: Gentle walking is generally reasonable. Avoid strenuous exercise, heavy lifting, and soaking the puncture sites for the period listed in your discharge instructions. Gradually return to exercise or physical therapy.

Driving: Do not drive yourself home. If you received sedation, do not drive for at least the period stated by your facility, commonly the rest of that day or 24 hours. Pain, weakness, numbness, or sedating medicine may require a longer restriction.

Work: Many people return to desk-based work within a day or two. A physically demanding job may require more time. Follow instructions based on your treatment site and how you feel.

Risks and possible complications

Temporary soreness, bruising, numbness, or increased pain around the treatment area can occur. Some people notice temporary weakness or altered sensation from local anaesthetic.

Other possible complications include:

Radiation exposure from X-ray guidance is kept as low as practical. Tell the team if you could be pregnant.

A serious complication is uncommon, but no procedure is risk-free. Your personal risk is affected by the treatment location, health conditions, medicines, and technique used.

- Bleeding or a collection of blood under the skin
- Infection
- A burn or skin injury
- Unintended injury to a nearby nerve
- Persistent numbness, weakness, or nerve-type pain
- An allergic reaction to medicine or contrast dye
- Sedation-related breathing, blood pressure, or heart problems

Results and follow up

Pain relief is not always immediate. Local anaesthetic may provide brief relief on the day, followed by returning pain or a short flare. The benefit from radiofrequency treatment may take several days to a few weeks to become clear.

Keep track of changes in pain, sleep, walking, work, and other activities that matter to you. Improvement in function can be as important as a lower pain score.

Relief may last for months, but the treated nerve can recover. Pain can also continue because another joint, nerve, or condition is contributing. If the procedure was helpful and the pain later returns, repeat treatment may be considered after reassessment.

Routine follow-up is used to review your recovery, level of relief, and rehabilitation plan. Contact the team at the planned time even if the procedure did not help.

Alternatives

You do not have to choose radiofrequency ablation. The most appropriate alternatives depend on the source of your pain and what you have already tried.

Ask what each option is expected to achieve for your particular pain, not just whether it is available.

- Exercise and physical therapy: Avoid needles and can improve strength and function, but progress may be gradual and pain relief may be incomplete.
- Pain medicines: May reduce symptoms without a procedure, but some have side effects or are unsuitable for long-term use.
- Joint or nerve injections: Can provide temporary relief and may help identify the pain source, but usually do not last as long as successful ablation.
- Continuing current care: Avoids procedural risks, although pain and activity limits may continue.
- Psychological pain-management approaches: Can improve coping, sleep, and function but do not remove a specific physical pain source.
- Surgery: May treat certain structural problems, such as severe nerve compression or joint damage, but is more invasive and is not an alternative for every type of pain.
- Neuromodulation: Devices that alter pain signals may be considered for selected nerve-related pain conditions, but require specialist assessment and often a trial procedure.

When to call your healthcare team

Contact the procedure team promptly if you have increasing redness, warmth, swelling, drainage, or worsening pain at the needle site. Also call for a fever, persistent vomiting, a

severe headache, or new numbness or weakness that is not settling as expected.

Seek emergency help for trouble breathing, facial or throat swelling, chest pain, fainting, rapidly worsening weakness, loss of bladder or bowel control, or numbness around the groin. Do not wait for a routine appointment for these symptoms.

Mild soreness or a temporary pain flare can be part of routine recovery. Mention symptoms that persist, interfere with activity, or concern you during follow-up.

Common questions

Will I be asleep?

Usually not. Local anaesthetic numbs the treatment area, and some facilities offer moderate sedation. You may remain awake enough to respond during nerve testing.

Can I drive home?

No. Arrange a ride home. Sedation, temporary numbness, discomfort, or facility policy may make driving unsafe.

How painful is it?

You may feel a sting from the numbing injection, pressure during needle placement, and warmth or tingling during testing. Soreness afterward is common, but tell the team immediately if you feel severe or unexpected pain.

When will I know if it worked?

The effect may become clear within several days, but it can take a few weeks. Judge the result by both pain relief and your ability to do important activities.

How long will the relief last?

Relief may last for months, but it differs from person to person. Nerves can recover, and other pain sources may remain.

Can the procedure be repeated?

It may be repeated if it previously gave meaningful relief and reassessment supports treating the same nerves again.

Sources

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