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Cervical Radiculopathy

Home Based Rehabilitation Programme

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What is Cervical Radiculopathy?

Cervical radiculopathy is a neck condition that causes compression or irritation of the nerves that supply the shoulders, arms and hands. It usually affects only one side, but it can more rarely affect both sides.

What are the symptoms?

Common symptoms are neck pain, pain in the shoulder blades and pain radiating the arm and sometimes into the hand. Depending on the severity of the problem, you may also experience heaviness, weakness and tingling sensation of the affected arm/hand.

What are the causes?

This condition can be due to different factors e.g. an injury to the neck (whiplash type injury), tightness of neck and shoulder muscles (myofascial tightness) and/or age related spinal wear and repair changes of the discs and ligaments around the small joints at the back of the neck (facet joints).

What causes nerve irritation?

Your spine is made up of many segments of bone (vertebrae) with discs between. At each vertebral level of the spine one nerve comes out on each side (nerve roots). (Figure 1.1).

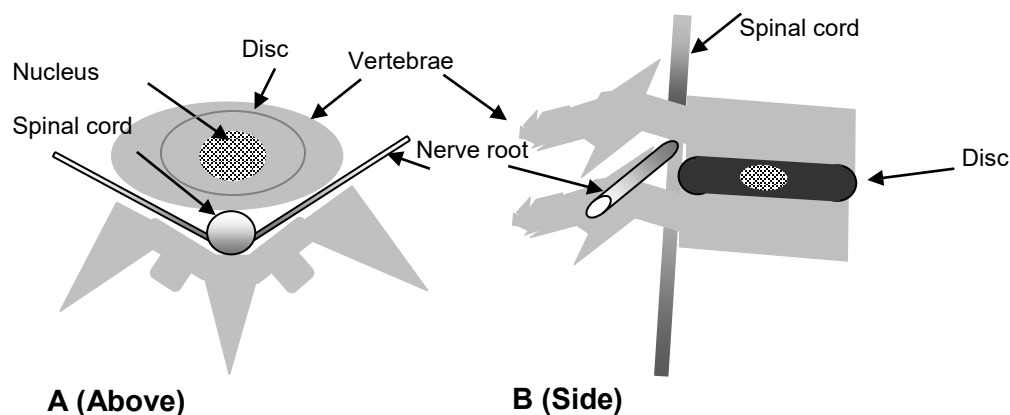


Figure 1.1 Nerve roots coming from the spinal cord viewed from A) above and B) the side

If something irritates a nerve root then you will experience pain and/or pins and needles in the area which the nerves supplies. If the nerve becomes compressed then you can also experience numbness or muscle weakness in the arm supplied by the nerve.

The most common cause of nerve root pain is that the canal where a nerve exits from the spine is narrower than normal. The canal can be narrowed by something soft like a disc bulge or something hard like bony changes due to age. If the nerve has

been getting irritated for a while, then it is likely that the nerve will be inflamed. Inflamed nerves tend to swell and therefore get squeezed in the canal as it exits from the spine (Figure 1.2).

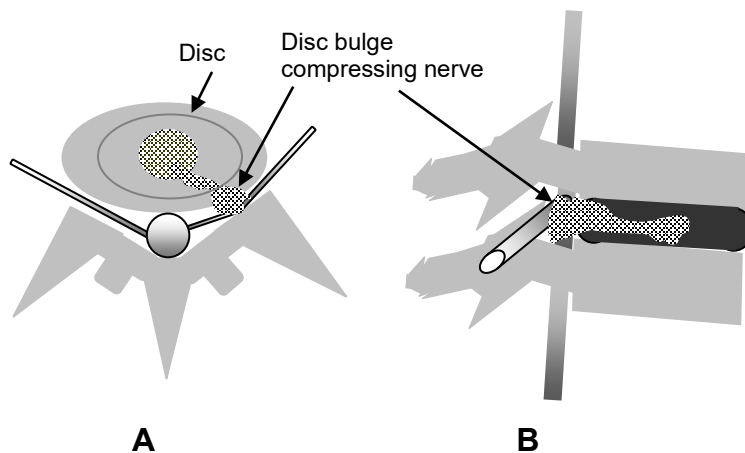


Figure 1.2 Nerve root compression viewed from A) above and B) the side

Depending on which nerve gets compressed you can experience different patterns of pain. These patterns of pain often help your doctor or physiotherapist identify where the symptoms come from (Figure 1.3).

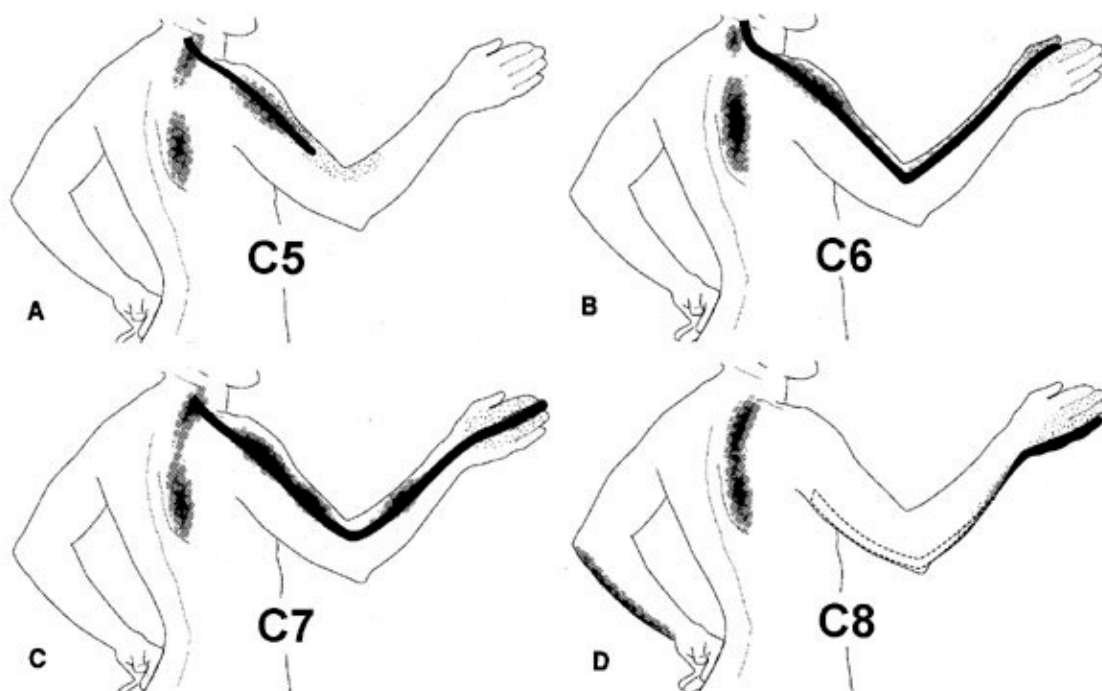


Figure 1.3: Cervical referred pain patterns depending on nerve affected

How is it diagnosed?

Cervical radiculopathy is diagnosed by physical examination and by your signs and symptoms.

Should I Have an X-ray or scan?

An x-ray of your neck will not help identify the cause of pain, unless you have had a fall or direct injury. Discs, nerves, muscles and ligaments do not show up on x-ray.

Magnetic Resonance Imaging (MRI) scans are not normally required in the early stages of cervical radiculopathy, but sometimes MRI scans are needed if you are not improving after 6 to 8 weeks. It is important to bear in mind that most people will recover naturally within 3 to 6 months. Discuss with your physiotherapist or doctor if you feel you are not progressing as you would expect.

What is the Prognosis?

Seventy five percent of patients will see some improvement within 4 to 6 weeks. Some people can experience mild and ongoing symptoms for several months.

You should seek medical help immediately, if you experience any of the following symptoms:

- Vertigo (sensation that you, or the environment around you, is moving or spinning)
- Changes to eyesight (e.g. double or blurred vision)
- Difficulty in speaking or swallowing
- Metallic taste in the mouth
- Numbness of your face
- Severe headaches
- Changes to walking pattern
- Unexplained trip or falls
- Loss of hand dexterity (control in performing fine hand tasks)
- Significant loss of grip strength

Should I be concerned?

In very rare cases a disc bulge could result in a cluster of symptoms that require immediate attention. This is termed myelopathy. Although very rare, it is important to act on these symptoms as an emergency, to avoid permanent symptoms.

Myelopathy is the result of compression of the spinal cord in your neck. This could cause:

- Having pins and needles or numbness on both sides in your hands or feet
- Loss of dexterity (control in performing fine hand tasks), arm/hand weakness and control of the arm or legs.
- Walking with legs wider apart than normal (broad based gait/walking)

If you think you are experience any of these symptoms you should seek urgent medical advice or call NHS 111.








What can I do to help?

Medication: You can use medication to manage your pain to help keep active. It is recommended that you take your medication regularly with the prescribed dosage rather than waiting until the pain is at its worst. It is best to speak to your GP, pharmacist or other qualified healthcare professional about which medications are best to take for you.

Posture: Ensure you have a good neck and arm position that minimises the arm discomfort as much as possible. These are usually positions that minimise or reduce the 'stretch' or 'pull' on the arm nerves.

	<p>It is not uncommon to experience heaviness of your arm at rest, supporting your affected arm on a pillow can ease that sensation.</p>
	<p>If you prefer side lying, lie on your unaffected side or back with your affected arm resting on pillows.</p> <p>Adjust the height and the position of the pillows to get adequate comfort. Some people may only need one pillow instead of two pillows.</p>
	<p>If sitting is uncomfortable a hard straight backed chair with or without a cushion or pillow at your back may be better than a soft, low armchair. It is useful to support the affected arm by placing a pillow across your lap.</p> <p>Try not to keep your spine straight and rigid at all times. This can increase muscle tension and cause further stiffening of spine.</p> <p>It is important you avoid staying in one position for any length of time.</p>



Staying Active: Exercising with nerve pain may seem daunting. It is one of the most important elements of managing neck and arm pain. It is important to keep yourself active as much as you can. Prolonged periods of rest can cause stiffening of spine which in turn can cause further irritation of the nerves. New evidence suggests that sedentary behaviour can slow your recovery. There is no evidence that one type of exercise is better than another. Improving your flexibility, strength and overall level of fitness is important in helping you manage your symptoms.

Going for short walks or gentle exercises which increases your heart rate can help your symptoms. You may wish to consider exercising on a static bike or cross trainer to maintain your fitness levels. Breaststroke swimming, however, can sometimes aggravate neck symptoms due to the extended position of the neck.

It is important to drink plenty of water to stay hydrated. Maintaining good levels of hydration has shown to improve the functioning of nervous system.

Relaxation: Pain is a complex phenomenon; it is quite common to experience increased levels of stress and changes in mood during recovery. It is therefore vital to incorporate relaxation techniques to speed up recovery. You may wish to consider relaxation techniques such as mindfulness, Tai Chi, or simple controlled breathing exercises. Please visit www.moodcafe.co.uk if you wish to explore various other self-management strategies to improve your mental health.

Sleep Pattern: Ensuring good sleep pattern is key for recovery. Please contact your GP if your pain is at worse at night or if symptoms disturb your sleep pattern.

Pacing and Activity Modification: It is common for the pain levels to fluctuate during recovery. You may notice spells of intense pain without any apparent trigger, these are called flare-ups. You can reduce flare-ups by planning your day, modifying your activity levels and by taking regular breaks. In the early stages, it is best to avoid strenuous activities such as heavy lifting and excessive reaching of affected arm. You may also want to avoid activities that tip your head in a backwards or sideways position for any length of time, this can sometimes trigger arm symptoms.

Heat Pads: Gentle application of heat (heat pad or hot water bottle with an insulated cover) for 5 to 10 minutes over the neck muscles can provide short term pain relief. Mild heat can reduce muscle spasm associated with pain. You must avoid direct application or excessive application of heat. Some people find alternating hot and cold shower (contrast bath) over neck muscles can reduce the intensity of pain.

Avoid Smoking: Smoking increases the sensitivity of nerves, which can lower your pain threshold; this can cause higher levels of pain. Smoking can also slow down your recovery and increases the release of stress hormones. It is important to cut down or avoid smoking to facilitate recovery. Please get in touch with your GP if you require assistance to stop smoking.

What treatments are available?

This type of pain generally improves over time. In the early stages, there is no specific treatment, which has been shown to benefit this type of pain apart from the advice given above. If there is no improvement after 4 to 6 weeks, you should seek the



advice of a healthcare professional. If your pain does not settle, you may be referred for further assessment and treatment as appropriate. In 9 out of 10 cases, pain resolves without specialist treatment.

If your symptoms remain unacceptable, despite trying the advice enclosed, then further investigations and possibly surgery may be considered. This will need to consider the risks and benefits of surgery, including your general health and fitness. Surgery is most likely to benefit nerve pain in the arm, however, it is not particularly helpful for neck pain. Spinal decompression involves removal of the bone or tissue that is compressing the nerves to give the nerves more room.

How can physiotherapy help?

Your Physiotherapist will provide a targeted rehabilitation program that can assist you as you go through the different stages of recovery. Your initial exercises will be targeted to maintain mobility of neck and upper limb muscles. Gentle stretching of neck and shoulder muscles will help to reduce muscle spasms. Muscle spasms can cause excessive tension on the pinched nerve.

As you improve, you will be asked to focus on improving the strength of neck and upper limb muscles. It is important to note that exercises should not aggravate your arm symptoms. Please get in touch with your physiotherapist if you are not able to tolerate any of the exercises given on this leaflet. The physiotherapists will be able to advise a different technique or a different exercise, which can achieve the same goal.

It is important that you have an active role in the management of your condition and work with your physiotherapist to help improve your condition.

If the arm pain is very painful initially, you may need to rest and find postures/positions that ease the discomfort as described earlier.

The key recovery factors to recovery are maintaining or restoring normal movement generally, not just in the neck and arm. Choosing to follow the exercises enclosed and progressing from one level to the next is one route to follow. If, however, you are able to tolerate gentle general exercise you may prefer to undertake more general fitness type exercises e.g. Pilates, Tai Chi or general light gym exercises. As long as you do not experience worsening pain you are likely to make a good recovery. You might find that the severity of your symptoms suits one approach more than the other.

For more specific exercises you might try the exercises below. If the exercises increase your arm pain please reduce the range of movement, the number of exercise repetitions or choose a different exercise outlined, then gradually increase or reintroduce these as the pain allows. If your arm pain increases and lasts several hours after doing them then you may need to leave for a few days before trying again.

Level 1 Exercises


Aims:


1. Improve postural awareness
2. Reduce pain
3. Prepare muscle for reactivation.

Note: Level 1 Exercises are a set of 'imagery' exercises i.e. you think and visualise the movement, but do not actually move the head. There are two parts to this exercise. The first part is you will be asked to visualise moving your neck in a specific direction. The second part is to follow that 'imagery' movement with your eyes. The main aim of this exercise is to activate the activity of deep neck muscles. To isolate these muscles properly, you must maintain neck in a neutral position. It may help to do this by placing a rolled up towel under the neck. You should not point your head forwards or backwards. If you do point your head forwards to backwards it can cause excessive tension in the neck muscles. Do not tense your jaw muscles. Keep your lips slightly apart with your tongue relaxed i.e. not touching the roof of your mouth. Please do not physically move your neck. These exercises should not provoke neck pain. It may also help to concentrate on your breathing by breathing slowly in through your nose and gently out through your mouth.

Start doing these exercises for 5 repetitions, three times a day. As you improve, gradually increase the number of repetitions to about 10 to 20 repetitions. To begin with, you do these exercises by lying on your back. Once you can memorise and maintain the correct technique in the lying position, you may progress to do these exercises in an upright sitting position.

Level 1 Exercises

1. Neck Flexion (gentle forward tipping of head)		<p>Lie on your back with your neck fully supported, with one or two pillows, and the neck slightly tipped forward (flexed) and a pillow under your knees. You may need to support the painful arm also with a pillow.</p> <p>In this exercise, imagine you are bending your head forwards (nodding).</p> <p>Follow this imaginary movement by rolling your eyes looking down to your chest; maintain this position for 5 seconds. Do not physically move your neck during this exercise.</p> <p>Repeat 5 times.</p>
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<p>2. Neck Rotation</p>		<p>Lie on your back with your neck fully supported, with one or two pillows, and the neck slightly tipped forward (flexed) and a pillow under your knees. You may need to support the painful arm also with a pillow.</p> <p>In this exercise, imagine rotating your head from neutral to the left side. Follow this imaginary movement by rolling your eyes from midline to the left side, maintain this position for 5 seconds. Repeat the same steps on the opposite side. Repeat 5 times.</p>
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Level 2 Exercises




Criteria for progression onto Level 2:

- Arm pain easing at rest
- Better awareness of your spinal posture
- No worsening of arm symptoms with previous exercises

Aims:

1. Maintain tone of the neck muscles
2. Improve activity of deep neck muscles
3. Improve postural awareness.

Level 2 Exercises

<p>1. Isometric Neck Extension</p>		<p>Lie on your back with your neck fully supported, with one or two pillows, and the neck slightly tipped forward (flexed) and a pillow under your knees. You may need to support the painful arm also with a pillow.</p> <p>Gently push the middle of the back of your head against the bed/floor. You should feel slight tension in your neck muscles. Your head position should not move. Do not let the chin tip back. Roll your eyes up/back for 5 seconds while you maintain the tension in your neck muscles. Repeat 5 times.</p>
<p>2. Resisted Neck Flexion</p>		<p>Lie on your back with your neck fully supported, with one or two pillows, and the neck slightly tipped forward (flexed) and a pillow under your knees. You may need to support the painful arm also with a pillow.</p> <p>Place both hands on your chin. Try to nod your head while resisting the movement with your hands. Your head position should not move. Roll your eyes towards the chest while you are doing this exercise, maintain this position for 5 seconds. You should avoid pointing your chin forwards. Repeat for 5 times.</p>
<p>3. Resisted Neck Rotation</p>	 <p>(viewed from above)</p>	<p>Lie on your back with your neck fully supported, with one or two pillows, and the neck slightly tipped forward (flexed) and a pillow under your knees. You may need to support the painful arm also with a pillow.</p> <p>Place your hand on side of your head. Try to turn your head to the side as you are resisting this movement with your hand. Your head position should not move. Roll your eyes to the same side and maintain this position for 5 seconds.</p> <p>Repeat the same steps on the other side. Repeat 5 times.</p>



Level 3 Exercises

Criteria for progression onto Level 3:




- Mild neck and arm pain at rest
- Better awareness of your spinal posture
- No night pain/no severe sleep disturbance
- No worsening of arm symptoms with previous exercises
- No pain during initiation of neck movement.

Aims:

1. Improve grip strength
2. Improve mobility of the shoulder blades and shoulder girdle.

Note: Aim to do these exercises three times a day. You must avoid any activity or exercise which aggravates your arm symptoms. Please do not push through the pain, especially any arm pain.

Level 3 Exercises

<p>1. Scapula Exercises</p>		<p>In sitting.</p> <p>Move your shoulder blades gently back and up (small movement).</p> <p>Hold the contraction for 5 to 10 seconds.</p> <p>Repeat 5 times.</p>
<p>2. Grip Strengthening</p>		<p>In sitting.</p> <p>Support your forearm on a table and hold a soft ball.</p> <p>Push your thumb and index finger together.</p> <p>Repeat 5 times</p>
<p>3. Shoulder Girdle Exercises</p>		<p>In sitting or standing</p> <p>Lift your shoulders and hold for 1 to 2 seconds. Then relax the shoulders again.</p> <p>Repeat 5 times.</p> <p>To make this harder, shrug your shoulders by keeping both hands on your waist.</p>

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Level 4 Exercises

Criteria for Progression onto Level 4:

- Ongoing improvement of neck and arm pain
- Able to move neck in all directions without eliciting arm symptoms
- No night pain/sleep disturbance

Aims:

1. Improve flexibility of neck muscles
2. Improve end range of movement of cervical spine.
3. Improve mobility of thoracic spine
4. Improve strength of upper limb muscles
5. Restore functional use of affected arm.

Note: Aim to do your exercises three times a day. You must avoid any activity or exercise which aggravates your arm symptoms. Please do not push through pain.

Level 4 Exercises

<p>1. Upper Trapezius Stretch</p>		<p>In sitting.</p> <p>Tilt your head toward one shoulder until you feel the stretch on the opposite side. Using your hand gently pull your head further to the side. Hold the stretch for approximately 10 seconds.</p> <p>Repeat 5 times on each side.</p>
<p>2. Scalene Stretch</p>		<p>Sitting on a chair. Hold on to the chair as shown.</p> <p>Lean your head and trunk away from the fixed arm.</p> <p>Repeat 5 times on each side.</p> <p>If this causes or increases your arm pain then stop.</p>

<p>3. Neck Rotation</p>		<p>Sitting.</p> <p>Turn your head to one side until you feel a stretch. Using your hand gently push your head further round.</p> <p>Hold approximately 5 to 10 seconds.</p> <p>Repeat 5 times on each side.</p>
<p>4. Wall Press Ups</p>		<p>Stand facing a wall with your arms straight and hands on the wall.</p> <p>Do push-ups against the wall keeping your body in a straight line.</p> <p>Repeat 5 times.</p>
<p>5. Thoracic (Mid) Spine Mobilisation</p>		<p>Crawling position.</p> <p>Hollow your back. Keep your neck long and elbows straight.</p> <p>Repeat 5 times.</p>
<p>6. Upper Limb Strengthening</p>		<p>Sit or stand holding your hands on your chest with ½ to 1 kg weights in your hands.</p> <p>Alternating arms lift the weights from your chest straight up and bring back down.</p> <p>Repeat 5 times on each side</p>

General return to activities of daily living

There are no specific timeframes regarding when you can return to activities of daily living. It is common for the arm to feel weak during recovery. You may need to avoid activities that involve excessive reaching of your affected arm, until the arm pain has significantly reduced, and you have adequate strength in the arm. You may also want to take regular breaks, if you are holding your affected arm, at or above shoulder height. You should take regular breaks if you are driving for long periods of time. It is advised that you aim to gradually build up the exercises enclosed and then gradually return to your activities as able.

Guidance for return to work

If you are off work with this issue, timeframes for returning to work will depend on the type of work you do. You should return to work when you feel confident that you can perform the agreed tasks expected of you safely. It is advised that you communicate regularly with your employer to facilitate this.

Useful Information

NHS Inform – www.nhsinform.scot/illnesses-and-conditions/muscle-bone-and-joints

NHS Inform Helpline: 0800 224488

Chartered Society of Physiotherapy – www.csp.org.uk/conditions/managing-your-bone-joint-or-muscle-pain

For free and confidential advice about work call the Healthy Working Lives Advice line on **0800 019 2211** www.healthyworkinglives.com