



DR VANESSA SAMMONS

NEUROSURGEON



Guide to

## FOREARM NERVE COMPRESSION SYNDROME

Anterior Interosseous Nerve Syndrome

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## KEY FACTS

- Forearm Nerve Compression Syndrome is a rare, painful nerve entrapment condition that arises due to inflammation or compression of the anterior interosseous nerve of the arm
- It can be caused by fractures, trauma, an enlarged biceps tendon bursa, and a change of position of the pronator teres muscle
- Symptoms are localised pain in the forearm, along with difficulty making a fist, making the “OK” sign, and the inability to button shirts
- Soft tissue massage, stretching exercises, mobility exercises, and physiotherapy can relieve pain and symptoms. For some patients, surgery is needed.
- Surgery requires a minimum of two weeks recovery time

## WHAT IS THE ANTERIOR INTEROSSEOUS NERVE?

The AIN (Anterior Interosseous Nerve) is one of several nerves in the arm. It's the terminal motor branch of the median nerve, extending to the proximal forearm just below the elbow joint. It supplies nerve signals to the deep muscles in the anterior forearm.

## WHAT IS FOREARM NERVE COMPRESSION SYNDROME?

Anterior Interosseous Nerve Syndrome (AINS) is a condition characterised by partial or complete loss of motor function in the muscles that receive its impulses.

## WHAT ARE THE SYMPTOMS OF FOREARM NERVE COMPRESSION SYNDROME?

People with AIN compression experience symptoms similar to patients with Pronator Teres Syndrome (PTS), but with one key difference. Symptoms include:

- Forearm discomfort
- Motor weakness
- Inability to form an 'o' with the thumb and index finger
- Inability to make a fist

Unlike patients with PTS, AIN patients do not experience numbness or sensory deficits in the hand and arm.

## WHAT CAUSES FOREARM NERVE COMPRESSION SYNDROME?

Injury to the forearm is the most common cause of forearm nerve palsy. Swelling that occurs in response to trauma puts pressure on the nerve, causing uncomfortable symptoms. Other causes include:

- Forearm fracture
- Elbow dislocation
- Penetrating injury, such as a stab-like wound

## WHEN SHOULD I CONSULT A DOCTOR?

Nerve compression syndrome can worsen if not treated. You should be seen right away if:

- You have an acute injury to your arm
- You experience severe swelling and pain in the forearm
- It is difficult and painful to turn your arm from palm up to palm down

Even if your symptoms are not dramatic, it's never too soon to seek advice from your doctor. Another problem may be the cause, and early diagnosis can lead to a more beneficial treatment outcome.

## HOW IS FOREARM NERVE COMPRESSION SYNDROME DIAGNOSED?

A physical examination and discussion of your medical history provide the first clues to identifying a nerve problem. As AIN is a motor, rather than a sensory problem, your doctor may ask you to:

- Make an 'o' sign using your thumb and index finger
- Make a fist
- Flex your fingers
- Rotate your arm from palm up to palm down

Beyond these in-practice tests, other diagnostics that may be called into use are:

- Electromyogram
- Nerve conduction studies
- MRI
- X-ray

The tests are non-invasive and generally well-tolerated by patients. The results are used to develop a treatment plan that will alleviate problems related to forearm nerve compression.

## WHAT ARE THE TREATMENTS FOR FOREARM NERVE COMPRESSION?

AIN syndrome may simply resolve over time, particularly if it's related to blunt trauma or nerve irritation. When the symptoms of AIN are mild to moderate, conservative treatment modalities may be recommended:

- Rest
- Splinting of the elbow near 90 degrees of flexion
- Anti-inflammatory medication
- Corticosteroid injections

Conservative treatments may not be sufficient to alleviate the pain of forearm nerve compression. If the symptoms are severe and/or have been present for a prolonged length of time, surgery may be required to relieve the pressure.

## WHAT IS FOREARM NERVE DECOMPRESSION?

Forearm nerve decompression is a surgical procedure to relieve pressure on the anterior interosseous nerve. It has a high rate of success. Medical literature reports "75% or greater positive outcomes following surgery."

Forearm nerve decompression surgery can be performed using general or local anaesthesia, with or without sedation, to address each patient's comfort needs. An incision of 3-4 inches in the arm allows the AIN to be viewed, accessed and freed

from compression. When the work is complete, the skin is closed with absorbable sutures. The surgery takes under an hour to perform and does not require an overnight stay in hospital.

## WHAT CAN I EXPECT AFTER FOREARM NERVE DECOMPRESSION SURGERY?

After surgery, you will be taken to a recovery room and observed for a period of time. When you wake up you will likely feel drowsy and experience numbness at the surgical site. Most patients are able to return home the same day in the company of a friend or family member for safety.

## WHAT SHOULD I DO AFTER SURGERY?

The days after surgery are an important part of recovery. Dr Sammons will provide you with a list of guidelines to follow. Among the things you may be asked to do:

- Monitor your progress. Should you experience an increase in pain or swelling prior to your follow-up appointment, contact your doctor immediately.
- Keep arm elevated for 24-48 hours to reduce swelling
- Wear a bandage for a week to prevent injury
- Resume everyday activities within one to two weeks

Recovery times vary from patient to patient due to factors including age, health, and the extent of the compression problem. You can expect symptoms to improve quickly, but full recovery may take as long as six months.

## SHOULD I FOLLOW UP WITH DR SAMMONS AFTER SURGERY?

Yes. You will be contacted by a practice nurse during the first week after surgery to set up your appointment which is usually around six weeks after surgery. If you have any concerns prior to your appointment, do not hesitate to contact Dr Sammons for guidance.

## DOES FOREARM NERVE COMPRESSION SYNDROME COME BACK?

Forearm nerve decompression surgery has a high success rate. Most patients regain full range of motion. A small number of patients may experience a persistence of symptoms, making a second surgery necessary.

Please call our rooms if you have any additional concerns or questions.



Hello!

I'm a Neurosurgeon at North Shore Private Hospital, Gosford Private Hospital, Brisbane Waters Private Hospital and the Sydney Adventist Hospital. I treat all neurosurgical conditions, but with a particular interest in Peripheral Nerve Surgery. I pride myself on providing personalised and thoughtful patient care and utilising my skills to achieve the best outcome possible.

I believe that a great neurosurgeon will ensure you feel listened to, will ensure that you understand what your surgery involves, and should also work together with your GP to achieve the best outcome for you.

*Dr Vanessa*

MBBS (Hons) MPhil FRACS (Neurosurgery)



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