



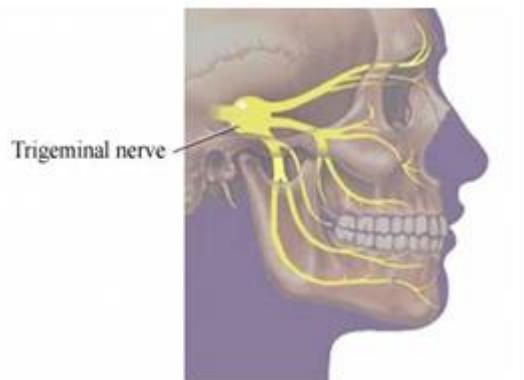
## Trigeminal neuralgia – patient information

### What is trigeminal neuralgia?

Neuralgia is the name given to a severe pain coming from a nerve. Trigeminal neuralgia is a disorder of the fifth cranial (trigeminal) nerve. This nerve is responsible for sending impulses of touch, pain, pressure, and temperature to the brain from the face, jaw, gums, forehead and around the eyes. Trigeminal neuralgia causes sudden, severe facial nerve pain often described as stabbing, shooting or electric shock like. In most cases it affects one side of the face while 3% of people with trigeminal neuralgia have pain on both sides of the face.

Trigeminal neuralgia is a relatively rare condition affecting four to five people per 100,000 people on a yearly basis. It affects twice as many women as men, is more common with age and is unusual among people under 40 years of age.

Trigeminal neuralgia is a persistent condition which often gets worse over time. Its symptoms can be treated with medications but sometimes surgery is required.



### What causes trigeminal neuralgia?

The trigeminal nerve has three branches running through the face: the upper branch (ophthalmic), the middle branch (the maxillary) and the lower branch (the mandibular). The pain of trigeminal neuralgia may occur in any of these branches but it is usually the middle and lower branches.

The causes of trigeminal neuralgia are not clearly understood and in some cases it is not possible to identify a clear cause. In 80-90% of cases it is believed to be caused by a blood vessel pressing on the trigeminal nerve which triggers the nerve to send messages of severe pain to the brain when the face is touched, when eating or brushing teeth.

Rarer causes of trigeminal neuralgia include tumours (a growth or lump) or multiple sclerosis (a chronic condition which affects the brain and the spinal cord. In this instance trigeminal neuralgia is thought to be caused by the layer of insulation around the nerve becoming damaged).



## Symptoms of trigeminal neuralgia

- severe, stabbing pain in the face that comes on suddenly
- spasms may last from a few seconds to two minutes
- pain usually felt in the lower jaw, upper jaw, eye, cheek and forehead
- pain on one side of the face although may be felt on both sides of the face (rare)
- pain on the inside of mouth and on face
- numbness or tingling in face before pain develops
- ache or burning sensation in face after an attack has finished

People with trigeminal neuralgia may experience regular spasms of pain for days, weeks or months at a time. In severe cases, people may experience spasms of pain hundreds of times a day. If attacks are very severe some people find themselves avoiding actions such as washing and eating (leading to weight loss) to try to prevent the pain from occurring. It may also bring on feelings of anxiety and depression.

It is possible for the pain of trigeminal neuralgia to disappear and not reoccur for months or even years.

## Diagnosis of trigeminal neuralgia

If the symptoms a person describes are suggestive of trigeminal neuralgia a doctor will need to examine their face to see which areas are painful and to rule out any other conditions which may cause pain such as an infection of the sinuses or tooth decay. They may also order a magnetic resonance imaging (MRI) scan. This scan is able to assist in the diagnosis of trigeminal neuralgia and can also reveal if the trigeminal neuralgia is caused by another condition such as multiple sclerosis.

## Treatment of trigeminal neuralgia

Some people with trigeminal neuralgia find that certain triggers make the pain worse such as wind or a draught. Avoiding sitting near open windows or in the direct line of an air conditioner and wearing a scarf around the face during windy weather may be helpful. Food and drink that is hot or cold may also set off the pain of trigeminal neuralgia. Using a straw to drink warm or cold drinks may be helpful in preventing liquid from coming into contact with painful areas of the mouth.

Over-the-counter medications for pain such as paracetamol, ibuprofen and Panadeine have little effect on the pain of trigeminal neuralgia however there are other medications available which can help.



A group of medications known as ‘anticonvulsants’ (originally designed to treat epilepsy) have been found to be a useful treatment for the nerve pain of trigeminal neuralgia. The most commonly prescribed anticonvulsant for this condition is called carbamazepine. Potential side effects include dizziness, light headedness, nausea or vomiting. If carbamazepine is not effective or causes side effects that are not tolerated then another type of anticonvulsant medication, such as gabapentin, may be used and these generally have less side effects.

A person may require specialist treatment for their trigeminal neuralgia if:

- they have pain in their face between the spasms of trigeminal neuralgia
- anticonvulsants are not effective in controlling the pain
- anticonvulsants are causing severe side effects
- they are less than 40 years of age

## Other treatments

If anticonvulsants do not ease the pain of trigeminal neuralgia or they cause severe side effects then surgery may be recommended. A doctor may order a special scan - either a tomo-angiography or MRI scan - to reveal the position of blood vessels and whether they are pressing on the trigeminal nerve. If this is the case there are several procedures which can be carried out to lift the vessel away from the nerve:

- **microvascular decompression**

The most effective operation for trigeminal neuralgia is a procedure called a microvascular decompression. This operation releases the pressure of the blood vessels that are pressing on the trigeminal nerve and it is carried out through a small opening in the skull behind the ear. A Teflon implant is inserted to keep the nerve and blood vessel separated. The operation requires a general anaesthetic and a hospital stay. In most cases the operation gives people permanent pain relief however it can cause complications including damage to hearing in one ear, facial weakness and double vision.

- **Rhizotomy**

Rhizotomies are procedures which destroy part of the trigeminal nerve in the face or nerve structures deeper in the skull which prevents pain messages from reaching the brain. A needle is inserted through the cheek into a natural hole at the base of the skull and the nerve structures can be destroyed using a number of different methods:



- a glycerol rhizotomy is carried out under local anaesthetic and involves injecting glycerol to damage the nerve. This procedure usually causes facial numbness.
  - a balloon compression rhizotomy is carried out under general anaesthetic. A balloon is inserted through a needle and inflated which presses down on the nerve and damages it. This procedure usually causes face numbness.
  - radiofrequency thermocoagulation or diathermy uses an electrode inserted through a needle to burn the nerve. This procedure is carried out under a mixture of local and general anaesthetic. The patient is required to be awake for part of the procedure to in order to confirm that the electrode is in the correct position. This treatment is often temporary but can be repeated. This procedure usually causes face numbness.
- **targeted radiotherapy or gamma knife treatment**

This is a new treatment that is in development and does not require an operation and results to date indicate that this is an effective treatment for trigeminal neuralgia. The nerve is damaged using a beam of radiation from outside the head onto the nerve. It does not require any local anaesthetic or cuts to the skin. It may take several weeks before the nerve pain eases. This treatment may sometimes cause facial numbness or tingling.

## Support services

A support group offering advice and support for people with trigeminal neuralgia and their families is provided by:

Trigeminal Neuralgia Association Australia: [www.tnaaustralia.org.au](http://www.tnaaustralia.org.au)