

## Patient information from the BMJ Group

# Trigeminal neuralgia

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## Trigeminal neuralgia

Trigeminal neuralgia is a very painful condition affecting the face. There is no cure, but there are lots of treatments that may help the symptoms.

We've brought together the best research about trigeminal neuralgia and weighed up the evidence about how to treat it. You can use our information to talk to your doctor and decide which treatments are best for you.

## What is trigeminal neuralgia?

Trigeminal neuralgia is a rare condition that causes attacks of bad pain in your face. Although it's difficult to live with, it's not dangerous. There are lots of treatments that you may find helpful.

If you have trigeminal neuralgia, you get sudden, short attacks of bad pain in your face. They usually affect just one side of your face, and they keep coming back. Trigeminal neuralgia is sometimes called **tic douloureux**.<sup>[1]</sup> 'Tic douloureux' just means 'painful tic' in French.

Neuralgia means pain coming from a nerve. In trigeminal neuralgia, the pain comes from the **trigeminal nerve**. That's one of the largest nerves in your head. It carries feelings of touch, pain, pressure, and temperature from your face to your brain.<sup>[2]</sup>

It also controls the muscles you use for chewing.<sup>[3]</sup>

The trigeminal nerve has three branches (also called divisions). They carry feeling to your brain from these three areas:<sup>[4]</sup>

- Your eye, upper eyelid, and forehead (doctors call this the **ophthalmic division** of the nerve)
- Your cheek, lower eyelid, nostril, upper lip, and upper gum (the **maxillary division**)
- Your jaw, lower lip, lower gum, and some of the muscles used for chewing (the **mandibular division**).

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You can feel the pain of trigeminal neuralgia in any or all of these areas. <sup>[5]</sup>

- About 66 in 100 people with trigeminal neuralgia feel pain in the cheek area.
- About 50 in 100 feel pain in the jaw area.
- About 20 in 100 feel pain in both cheek and jaw areas.
- Pain around the eye is less common. Less than a fifth of people feel pain in this area.
- About 1 in 100 people with trigeminal neuralgia get pain in all three areas.

You are more likely to get trigeminal neuralgia if you: <sup>[5]</sup>

- Are a woman
- Are aged over 50
- Have **high blood pressure** .

We don't know exactly what causes trigeminal neuralgia. Some doctors think the pain is caused by blood vessels pressing on the root of the trigeminal nerve, at the base of the brain. Doctors think this may be the cause for most people with trigeminal neuralgia. <sup>[4]</sup>

There are some other things that we know can cause trigeminal neuralgia. But they are not very common. They include the following. <sup>[4]</sup>

- A tumour pressing on the nerve. This is almost always a non-cancerous (benign) tumour.
- A **stroke** . If you have a stroke, you might have a blood clot affecting the lower part of your brain, where the trigeminal nerve enters your central nervous system.
- **Multiple sclerosis** . This is a condition affecting the nervous system that can damage the trigeminal nerve. But it's very unlikely that facial pain would be the first symptom you'd notice if you had multiple sclerosis. If you have trigeminal neuralgia but no other symptoms, you are not likely to have multiple sclerosis.

### What are the symptoms of trigeminal neuralgia?

Trigeminal neuralgia is a very painful condition. Some people live in fear of the next flare-up. But the individual attacks are short and you may have long periods without any pain at all.

## Trigeminal neuralgia

The main symptom of trigeminal neuralgia is pain. It is a sudden, severe, stabbing pain. Some people describe it as feeling like an electric shock shooting through their face. <sup>[6]</sup>

Most people feel pain in or around the cheek or jaw areas. This can include your lower eyelids, nostrils, lips, and gums. Some people feel pain around the eye or forehead, but this is less common. <sup>[7]</sup>

The pain can last from a few seconds to a couple of minutes at a time. <sup>[8]</sup>

It usually affects just one side of your face. But about 3 in 100 people get pain on both sides. <sup>[9]</sup>

### Triggers

Attacks of pain can come on without warning. But they can be triggered by particular actions involving the part of your face where you feel pain. You may find that some of these things trigger pain for you: <sup>[10]</sup>

- Touching your face
- Talking
- Eating and drinking
- Brushing your teeth
- Brushing or combing your hair
- Showering
- Kissing
- Shaving
- Putting on make-up
- Smiling
- Facing into a breeze or wind
- Walking.

Your attacks may come one straight after another, or they might come and go throughout the day. You might have a series of painful attacks lasting for days, weeks, or even months. Or you might find they go away for a long time, sometimes for years. <sup>[6]</sup>

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But even during long pain-free periods, you may find it difficult to lead a normal life, because you are worried about doing anything that might bring the pain back. <sup>[6]</sup>

There is no special test for trigeminal neuralgia. Your doctor will make a diagnosis from what you tell him or her about the pain. <sup>[10]</sup>

### Getting a diagnosis

These are some of the things your doctor may do to diagnose trigeminal neuralgia. <sup>[10]</sup>

- Ask you to describe your pain: how bad it is, what parts of your face are painful, how long the attacks of pain last, whether anything in particular seems to set them off.
- Examine your face. This may involve touching your face to find out exactly where the pain is. This will help your doctor work out which branches of the trigeminal nerve are affected.

Because there is no test for trigeminal neuralgia, it is often confused with other conditions. You may need to be checked for these before the doctor can be sure that you have trigeminal neuralgia.

Some of the conditions that may be confused with trigeminal neuralgia include: <sup>[11]</sup>

- Dental problems like tooth decay
- Temporomandibular joint syndrome (a problem where the hinge of your jaw is painful because of wear and tear or misalignment)
- Infection of the sinuses (the air-filled spaces in some of the bones around your nose)
- Problems that cause pain to the eye
- Temporal arteritis (inflammation of the arteries under the scalp)
- Migraine.

### Having a scan

If your doctor is not sure about the diagnosis, he or she may suggest you go to hospital for an **MRI scan**. MRI stands for magnetic resonance imaging.

MRI scanning uses a powerful magnet to take pictures of your brain. It can show whether you have blood vessels pressing on the root of your trigeminal nerve. Some doctors think this is what causes trigeminal neuralgia.

An MRI scan can also rule out a more serious cause for your pain, like a stroke, a brain tumour, or multiple sclerosis. <sup>[9]</sup>

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MRI scanning is a very safe test. You have to lie still on a moveable bed for about 30 minutes. The bed slides inside a tube. The machine then takes the images.

If you have MRI in an enclosed scanner, you might feel a bit claustrophobic. But some of the newer units have a more 'open' design, which helps. And some MRI centres allow you to have a friend or relative with you in the examination room. <sup>[12]</sup>

You don't have to stay in hospital, and when the test is done you are free to go home. <sup>[13]</sup>

### How common is trigeminal neuralgia?

Trigeminal neuralgia is a rare condition.

It's hard to say exactly how many people get trigeminal neuralgia. That's because it's not always diagnosed in the same way.

One study in the UK found that doctors diagnosed 27 in 100,000 people with trigeminal neuralgia each year. <sup>[14]</sup>

However, other studies have been stricter about diagnosing the condition. They found that there were about 4 or 5 new cases each year for every 100,000 people. <sup>[15]</sup> <sup>[16]</sup>

Women are more likely to get trigeminal neuralgia than men. <sup>[16]</sup> Most people are over 50 when they get it. It is rare to get it when you are younger, but it's possible. <sup>[17]</sup>

### What treatments work for trigeminal neuralgia?

There are lots of different treatments for trigeminal neuralgia. But unfortunately there's not a lot of research to show which treatments work best. You'll probably be offered a drug first. If that doesn't work, you may need an operation.

### Key points about treating trigeminal neuralgia

- A drug called carbamazepine gives good relief from pain but causes side effects. Many people find the drug no longer stops their pain after a few years.
- We can't say for sure whether any of the other drugs prescribed for trigeminal neuralgia work. There hasn't been enough good-quality research. But doctors think that a drug called oxcarbazepine is also likely to work.
- An operation called microvascular decompression is likely to work. There are no high-quality studies, but it is widely used. Some studies show it helps relieve pain.
- We can't say for sure whether any of the other operations used for trigeminal neuralgia work. There hasn't been enough good-quality research.

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- There are some things you can do yourself that might help. For more information, see [What can I do to help myself?](#)

We've split the treatments into drug treatments and surgery treatments:

- [Drug treatments for trigeminal neuralgia](#)
- [Surgical treatments for trigeminal neuralgia](#) .

All operations have risks as well as benefits. It can be quite complicated deciding whether to have them. For some questions to ask before you decide, see [Should I have surgery for trigeminal neuralgia?](#)

### Treatment Group 1

#### Drug treatments for trigeminal neuralgia

There are several drug treatments you can try for trigeminal neuralgia.

- A drug called carbamazepine is likely to relieve your pain.
- There's not enough good evidence to be sure that other drug treatments work.
- A drug called oxcarbazepine is often used if you get bad side effects from carbamazepine.

Which drug treatments work best for trigeminal neuralgia? We've looked at the research and given a rating for each treatment according to how well it works.

#### Drug treatments for trigeminal neuralgia

##### Treatments that are likely to work

- [Carbamazepine](#)
- [Oxcarbazepine](#)

##### Treatments that need further study

- [Baclofen](#)
- [Lamotrigine](#)
- [Tizanidine](#)
- [Other drugs](#)

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## Treatments that are unlikely to work

- [Proxymetacaine eye drops](#)

## Treatment Group 2

### Surgical treatments for trigeminal neuralgia

There are lots of different types of operation for trigeminal neuralgia. The operations are done at different points along the nerve. This affects how long they can give you pain relief.

- An operation called microvascular decompression is likely to relieve your pain.
- Operations on the root of the nerve may give pain relief for 10 years or more.
- Operations at the point where the three nerve branches meet may give pain relief for four to five years.
- Operations at the end of the nerve, where the pain starts, may give pain relief for up to a year.

Which surgical treatments work best for trigeminal neuralgia? We've looked at the research and given a rating for each treatment according to how well it works.

All the operations have risks as well as benefits. It can be quite complicated deciding whether to have them. For some questions to ask before you decide, see [Should I have surgery for trigeminal neuralgia?](#)

### Surgical treatments for trigeminal neuralgia

#### Treatments that are likely to work

- [Microvascular decompression](#)

#### Treatments that need further study

- [Stereotactic radiosurgery](#)
- [Nerve block](#)
- [Cryotherapy](#)
- [Surgical treatments at the ends of the nerves](#)

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## Other surgical treatments

We haven't looked at the research on these treatments in the same detail we have for most of the treatments we cover. (To read more, see Our method.) But we've included some information because you may have heard of them or be interested in them.

- [Glycerol injection](#)
- [Balloon compression](#)
- [Electric current](#)

## What will happen to me?

You may have long periods free of pain. But trigeminal neuralgia is a long-term condition that often gets worse with time.

There are medicines that may help. If these don't work or stop working, your doctor may suggest you have an operation to relieve the pain.

Trigeminal neuralgia affects different people in different ways. It can be very worrying to think about your condition getting worse. But remember that you are an individual, and no one can say for sure that you will get worse.

You will probably get periods when painful attacks come on often. This is called a **flare-up**. There will also be times when you don't have any pain. This is called a period of **remission**.<sup>[18]</sup>

During a really bad flare-up, the attacks can come so often that you feel you are in constant pain. If this happens, you can feel completely wiped out by the pain and unable to take part in any of your normal activities.<sup>[19]</sup>

You may also get no pain at all for months or even years.<sup>[19]</sup>

As you get older, trigeminal neuralgia attacks tend to get more frequent and more painful. The pain-free intervals become shorter.<sup>[20]</sup>

Some people who've had trigeminal neuralgia for a while start to get a constant background pain. Your face may ache or feel numb. This is often called **atypical trigeminal neuralgia**.<sup>[21]</sup>

Trigeminal neuralgia can have a bad effect on your life, not just because of the pain itself but because of the steps you may take to avoid it.

Some people become so afraid of triggering attacks that they stop doing normal things like talking, smiling, enjoying social activity, brushing their teeth, or even eating.<sup>[21]</sup>



## Trigeminal neuralgia

If your doctor thinks you have trigeminal neuralgia, he will probably start you on drug treatment. This often eases or even stops the pain.<sup>[20]</sup> Taking medicine works for about 7 in 10 people.<sup>[21]</sup>

Several medicines are prescribed for trigeminal neuralgia, and if one doesn't work for you, switching to another may help.

The drugs prescribed for trigeminal neuralgia are usually given in low doses at first. The doctor will increase the dose gradually until your pain is under control, without you getting bad side effects.

You need to take these drugs regularly for them to work. But the dose can be reduced or stopped completely during periods of remission.<sup>[22]</sup>

Unfortunately, the medicines don't work for everyone. You may get unpleasant side effects. Or you may find that a medicine that controlled your pain at first works less well over time.<sup>[20]</sup> This is because the pain gets more intense over time.

If this happens, your doctor may suggest you have an operation. This can either deaden or relieve pressure on your trigeminal nerve. This should stop the pain. But it can leave you with loss of feeling or tingling in the face where the nerve has been deadened.

Most people with trigeminal neuralgia eventually need to consider having surgery of some kind for their condition.<sup>[21]</sup>

Having an operation is a big decision. Because there are so many different types, it can be quite complicated deciding what is right for you. For some questions to ask your doctor, see [Should I have surgery for trigeminal neuralgia?](#)

For more information on which drugs and operations work best, read [What treatments work for trigeminal neuralgia?](#)

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## Treatments:

### Carbamazepine

In this section

There's some good evidence to show that carbamazepine can relieve your pain. Most doctors think it's the first drug you should try.<sup>[24]</sup>

Carbamazepine belongs to a group of drugs called anticonvulsants. They are usually used to treat epilepsy. But they can also be used for trigeminal neuralgia.

Carbamazepine comes as a tablet or liquid. Brand names include Carbagen SR, Tegretol, and Tegretol Retard.

One summary of the research (a [systematic review](#)) found three good-quality studies ([randomised controlled trials](#)). They looked at 161 people in total. They showed

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carbamazepine was much better than a dummy drug ( placebo ) at relieving the pain of trigeminal neuralgia. <sup>[25]</sup>

- Almost 6 in 10 people got good or excellent pain relief from carbamazepine.
- Between 1 in 10 and 2 in 10 people got good or excellent pain relief from the placebo.

But the summary also showed that people taking carbamazepine got lots more side effects than people taking the placebo. Another study showed that between a quarter and a half of people taking carbamazepine got some side effects. <sup>[26]</sup>

The most common side effects are: <sup>[25]</sup>

- Drowsiness
- Dizziness
- Constipation
- Unsteady movements.

Some people get other, less common, side effects from carbamazepine. These include skin rashes, changes in blood cells, and problems with how their livers work. <sup>[27]</sup>

Rarely, some people taking carbamazepine get a very bad rash. This can be serious, or even life-threatening. But the risk is fairly small. Between 1 in 10,000 and 6 in 10,000 people who take carbamazepine get this rash. <sup>[28]</sup>

There's a bigger risk of getting a serious rash if you have a particular genetic type. Nearly all people with this genetic type are from Asian backgrounds. Doctors are advised to offer Asian people a blood test to check for their genetic type, before prescribing carbamazepine. <sup>[28]</sup> It's especially important to have the test if you come from a Han Chinese, Hong Kong Chinese, or Thai background.

Carbamazepine can decrease the number of blood cells produced by your body. Very rarely, the blood cells are affected enough to cause serious health problems. <sup>[29]</sup>

We don't know for sure whether carbamazepine works in the long term. There hasn't been much good-quality research. One study found that only about a third of people still found the drug worked well several years after starting it. <sup>[30]</sup>

There is a very small risk that taking carbamazepine might make you more likely to think about suicide or harming yourself. <sup>[31]</sup> If you are worried about any thoughts or feelings you have, see your doctor straight away.

## Oxcarbazepine

In this section

Oxcarbazepine is often used if [carbamazepine](#) doesn't work, or if it causes too many side effects.

It's a drug that's usually used for epilepsy. It can also be used for trigeminal neuralgia. You take it as a tablet or a liquid. The brand name is Trileptal.

There is not much good-quality research into this drug. One long-term study lasting 15 years suggests it does work for many patients. <sup>[32]</sup> But there are problems with the study that mean it is not completely reliable. A few trials suggest that oxcarbazepine might work just as well as carbamazepine. <sup>[33]</sup>

Oxcarbazepine can cause side effects, including stomach upsets and drowsiness. <sup>[34]</sup>

There is a very small risk that taking oxcarbazepine might make you more likely to think about suicide or harming yourself. <sup>[31]</sup> If you are worried about any thoughts or feelings you have, see your doctor straight away.

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## Baclofen

In this section

There's not enough good-quality evidence to say whether baclofen can help relieve pain for people with trigeminal neuralgia. But most doctors agree it works for people with [multiple sclerosis](#) who also get trigeminal neuralgia.

Baclofen belongs to a group of medicines known as muscle relaxants. It works by relaxing the muscles, to prevent painful spasms. It is available as tablets, liquid, or injections. One brand name is Lioresal.

Baclofen is also used to treat people with multiple sclerosis. So doctors tend to use it for people with multiple sclerosis who also get trigeminal neuralgia.

One summary of the research found three small studies, but they were too small to be reliable. <sup>[35]</sup>

Baclofen can sometimes cause drowsiness, dizziness, muscle weakness, confusion, and an upset stomach.

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## Lamotrigine

In this section

There's not enough good-quality evidence to say whether lamotrigine works to relieve pain for people with trigeminal neuralgia.

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Lamotrigine belongs to a group of drugs known as anticonvulsants. They are normally used to treat epilepsy. But they are used for other conditions as well. Lamotrigine comes in tablet form. It's prescribed under the brand name Lamictal.

A review of the research looked at whether lamotrigine could help with nerve pain in general, not just with trigeminal neuralgia.<sup>[36]</sup> There weren't many studies, but overall the review found that lamotrigine was unlikely to help with pain.

One small study in the review looked at people with trigeminal neuralgia.<sup>[37]</sup> The study suggested that lamotrigine improved symptoms for about 8 in 10 people. Only 6 in 10 people improved while taking a dummy treatment (a placebo). But there were problems with the way the study was set up, and it looked at only 14 people. This makes it hard to rely on the results.

Half the people in the study had side effects. These included dizziness, constipation, feeling sick, and drowsiness. But half the people taking a placebo got side effects as well, so it's hard to know which were actually caused by lamotrigine.

Lamotrigine can cause serious skin rashes and allergic reactions if the dose is increased too quickly.<sup>[38]</sup> Doctors often prescribe lamotrigine for people who can't take [carbamazepine](#). They usually raise the dose of lamotrigine gradually to avoid skin rashes. So it may not relieve pain straight away.

There is a very small risk that taking lamotrigine might make you more likely to think about suicide or harming yourself.<sup>[31]</sup> If you are worried about any thoughts or feelings you have, see your doctor straight away.

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## Tizanidine

In this section

We don't know whether tizanidine relieves the pain of people with trigeminal neuralgia. There's not enough good-quality evidence.

Tizanidine is a drug that relaxes the muscles. It comes as a tablet. The brand name is Zanaflex.

One summary of the research (a systematic review) found two small studies looking at tizanidine. They showed that tizanidine did help a small amount, but the benefits didn't last.<sup>[35]</sup>

Tizanidine can cause side effects. Some common ones include feeling sick, dizzy, or drowsy, or getting a dry mouth.<sup>[39]</sup>

Tizanidine can damage your liver.<sup>[39]</sup> If you take it, you'll need tests to make sure your liver is still working properly. See your doctor if you get flu-like symptoms, feel sick, feel unusually tired, don't feel like eating, or get a yellow tinge to your skin or eyes. These could be a sign of liver problems.

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Tizanidine reacts badly to other common medicines, including some antibiotics. Always tell your doctor about any other medicines you are taking. <sup>[40]</sup>

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## Other drugs

In this section

Doctors have tried a lot of other drugs for trigeminal neuralgia. But we don't know whether they work, because there hasn't been any good-quality research. These are some of the drugs that doctors sometimes try:

- Clonazepam
  - Gabapentin
  - Mexiletine (no longer widely available in the UK)
  - Phenytoin
  - Sodium valproate
  - Topiramate.
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## Proxymetacaine eye drops

In this section

Proxymetacaine (also called proparacaine) eye drops are sometimes used for people with trigeminal neuralgia. But they don't seem to give much relief from pain.

We looked at one good-quality study of 47 people with trigeminal neuralgia. Half the people in the trial used the eye drops while the other half used dummy (placebo) drops. They put the drops once only into the eye on the affected side of their face. But the study found they didn't get much relief from pain. <sup>[41]</sup>

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## Microvascular decompression

In this section

Microvascular decompression is the most common operation for trigeminal neuralgia. It aims to stop blood vessels pressing on the root of the trigeminal nerve. Some doctors think this pressure causes most cases of trigeminal neuralgia.

Most people have an **MRI scan** first to see whether the blood vessels are pressing on the nerve. <sup>[42]</sup>

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The operation is done in hospital by a brain surgeon (neurosurgeon). You will need a **general anaesthetic**, and you will have to stay in hospital for several days afterwards. <sup>[43]</sup>

The doctor makes a small cut behind your ear and through your skull. He or she uses a microscope and very tiny instruments to move blood vessels away from the nerve root. The doctor then puts some padding around the nerve root to protect it in future. <sup>[43]</sup>

If microvascular decompression doesn't work, you can have a second operation. But if you have it again, you are more likely to get problems from the operation. <sup>[44]</sup>

There's not much good-quality evidence to show that this operation works to relieve pain in trigeminal neuralgia. A few studies show it works well for many people. But it is a major operation and has some serious risks. <sup>[45]</sup>

There aren't any studies looking at how well microvascular decompression works compared with other types of treatment, or compared with not having the operation. But we found one study where 220 people who'd had the operation were asked how satisfied they were with the result.

About 9 in 10 people said they were satisfied, and 8 in 10 said the results were better than they'd expected. <sup>[46]</sup>

In another long-term study, more than 1,000 people were followed up for several years after having microvascular decompression. <sup>[47]</sup>

Ten years after the operation, 7 in 10 people were free of pain and didn't need medication.

Microvascular decompression is a major operation. Some people get problems (complications) from the operation, although these don't happen very often.

These complications include: <sup>[48]</sup>

- Losing the hearing in one ear
- Weakness of the face muscles
- Feeling numb in the face
- Double vision.

More seriously, some people have strokes or die after the operation.

A study looking at more than 1,000 people found that: <sup>[47]</sup>

- Two people died shortly after the operation

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- One person had a stroke
  - 16 people lost their hearing.
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### Stereotactic radiosurgery

In this section

Stereotactic surgery is one of the newest treatments for trigeminal neuralgia. It uses radiotherapy to deaden the nerve. But we don't know how well stereotactic radiosurgery works, because there hasn't been much good-quality research.

Stereotactic surgery is also known as gamma-ray knife surgery. The surgeon sends a highly focused beam of radiation to the trigeminal nerve root to deaden the nerve.

The treatment is painless and usually done without anaesthetic. You don't have any cuts made in your face or head.<sup>[49]</sup> You have a frame attached to your head so that the beam can be aimed at the right part of the nerve. Then you have to stay very still inside a machine while the treatment is carried out.

We found one study of 87 people who had stereotactic radiosurgery for trigeminal neuralgia. The study looked at different ways of carrying it out. The study showed:<sup>[50]</sup>

- About 6 or 7 in 10 people had complete relief from pain three years later
- About 2 in 10 people had some relief from pain
- About 2 in 10 people had little relief from pain.

You might not feel the benefit of this kind of surgery straight away after the operation.<sup>[51]</sup>

After the operation, 11 people were left with facial numbness, nine had mild tingling sensations, and one had severe tingling.

In the UK, the National Institute for Health and Care Excellence (NICE), which advises the government on which treatments work best, has decided that stereotactic radiosurgery is safe enough and works well enough to be used in the NHS.<sup>[52]</sup> But NICE says each case must be discussed by a panel of experts. And NICE has told doctors to discuss all the benefits and risks of this treatment with their patients beforehand.

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### Nerve block

In this section

We don't know whether this injection treatment works to relieve the pain of trigeminal neuralgia. There hasn't been enough research.

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If you have a nerve block, the doctor injects a **local anaesthetic** near the nerve, to block pain. Injections are usually repeated several times over weeks or months. This may give you longer-term pain relief. <sup>[53]</sup>

We found two small good-quality studies ( **randomised controlled trials** ) that looked at whether this treatment worked. But they didn't produce enough evidence one way or another. <sup>[54]</sup>

In one of the studies, 1 in 10 people found the injections painful. Some people refused to have further injections. <sup>[55]</sup>

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### Cryotherapy

In this section

We don't know whether cryotherapy works to relieve pain for people with trigeminal neuralgia. There hasn't been any good-quality research.

If you have cryotherapy, you'll first have a local anaesthetic to numb the area, and a sedative to help you relax. The surgeon will cut through the skin to the trigeminal nerve, then use chemicals to freeze the nerve.

There are no good-quality studies of this treatment. But the small amount of research that has been done shows that it only relieves pain for a few months. <sup>[56]</sup>

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### Surgical treatments at the ends of the nerves

In this section

Doctors have tried lots of treatments for trigeminal neuralgia that aim to affect the ends of the nerves. But we don't know whether they work, because there has been no good-quality research.

Treatments carried out at the ends of the nerves, rather than at the root of the nerve, are unlikely to give long-lasting pain relief. Options include:

- Acupuncture of the face
- Injecting alcohol into the ends of the nerves
- Injecting a substance called phenol to damage the ends of the nerves
- Cutting the ends of the nerves (neurectomy)
- Using radiation to damage the ends of the nerves (peripheral radiofrequency thermocoagulation).



We didn't find any good-quality studies that looked at these treatments.

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### Glycerol injection

In this section

Doctors call this operation a **percutaneous glycerol rhizotomy**. It is done under a short-acting general anaesthetic, so you'll be asleep during the operation. You probably won't need to stay in hospital afterwards.

The doctor puts a thin needle through your cheek and through an opening in your skull, to the point where the three nerve branches join. He or she then injects a small amount of a chemical called glycerol into the space around the nerve. This is to damage the nerve and block pain signals. <sup>[57]</sup>

This operation can be repeated if it doesn't work. You are likely to be left with some permanent numbness or tingling in your face afterwards. <sup>[57]</sup>

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### Balloon compression

In this section

This operation is done under general anaesthetic. The doctor guides a needle through your cheek to near the trigeminal nerve root. Then he or she threads a thin balloon through the needle. The balloon is then inflated so that it presses on the nerve and stops it working. This should block the pain signals. <sup>[58]</sup>

Most people get some facial numbness after this operation. It often causes temporary or lasting weakness of the muscles you use to chew. <sup>[57]</sup>

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### Electric current

In this section

Doctors call this operation **percutaneous stereotactic radiofrequency thermal rhizotomy**. The doctor puts a needle through the cheek. Then he or she threads an electrode through the needle until it rests against the trigeminal nerve root. An electric current is passed through the electrode, to damage the nerve. <sup>[57]</sup>

With this operation you are given a sedative drug, not a general anaesthetic. This means you can be partially conscious during the procedure, but not in pain. This will help the surgeon find the exact location of the pain. People often get some permanent facial numbness afterwards.

### Further informations:

#### Should I have surgery for trigeminal neuralgia?

There are lots of different operations for trigeminal neuralgia. Unfortunately there's not a lot of evidence to show which treatments work best. All the procedures have risks. You'll need to balance the risks against the chances of getting long-term relief from your pain.

Here are some questions you might want to consider before deciding to have an operation. Your doctor should be able to help you answer them.

- How many people who have this operation find their pain goes away afterwards?
- How many people who have this operation get problems (complications) afterwards?
- What sort of problems might I get from this operation?
- If the operation makes my pain go away, how long can I expect this to last?
- Is there anything else I can try before I have an operation?
- Will I need to stay in hospital for this operation? How long before I can go home and get back to normal?

#### What can I do to help myself?

You've probably noticed some things that trigger an attack of pain for you, like eating, drinking, or being exposed to the wind.<sup>[23]</sup> There may be some things you can do to avoid these triggers, without restricting your life too much.

These ideas haven't been studied to the same scientific standards that we usually use to judge treatments. (To learn more, see Our method.) But they may be worth trying.

- Avoid sitting in the direct blast of an air conditioning unit or fan.
- Put a scarf around your face to protect it when you go out in windy or cold weather.
- Avoid very hot or very cold drinks or food.
- Try using a drinking straw. This can help you avoid getting a hot or cold drink on the area of your mouth that causes pain.

# Trigeminal neuralgia

- During a flare-up, take advantage of pain-free periods to make sure you eat and take any necessary medicines, to keep as well as possible.
- Ask your doctor for help if you're feeling depressed. It's not surprising that many people who have painful conditions that last a long time get depressed. But there are some good treatments for depression that can help.

## Glossary:

### high blood pressure

Your blood pressure is considered to be high when it is above the accepted normal range. The usual limit for normal blood pressure is 140/90. If either the first (systolic) number is above 140 or the lower (diastolic) number is above 90, a person is considered to have high blood pressure. Doctors sometimes call high blood pressure 'hypertension'.

### stroke

You have a stroke when the blood supply to a part of your brain is cut off. This damages your brain and can cause symptoms like weakness or numbness on one side of your body. You may also find it hard to speak if you've had a stroke.

### multiple sclerosis

Multiple sclerosis (MS) is a disease that damages the walls of your nerves. No one knows for sure what causes it. If you have multiple sclerosis, you may lose feeling in certain parts of your body. You may also have trouble with your vision or problems controlling your movements.

### MRI scan

A magnetic resonance imaging (MRI) machine uses a magnetic field to create detailed pictures of the inside of your body.

### systematic reviews

A systematic review is a thorough look through published research on a particular topic. Only studies that have been carried out to a high standard are included. A systematic review may or may not include a meta-analysis, which is when the results from individual studies are put together.

### randomised controlled trials

Randomised controlled trials are medical studies designed to test whether a treatment works. Patients are split into groups. One group is given the treatment being tested (for example, an antidepressant drug) while another group (called the comparison or control group) is given an alternative treatment. This could be a different type of drug or a dummy treatment (a placebo). Researchers then compare the effects of the different treatments.

### placebo

A placebo is a 'pretend' or dummy treatment that contains no active substances. A placebo is often given to half the people taking part in medical research trials, for comparison with the 'real' treatment. It is made to look and taste identical to the drug treatment being tested, so that people in the studies do not know if they are getting the placebo or the 'real' treatment. Researchers often talk about the 'placebo effect'. This is where patients feel better after having a placebo treatment because they expect to feel better. Tests may indicate that they actually are better. In the same way, people can also get side effects after having a placebo treatment. Drug treatments can also have a 'placebo effect'. This is why, to get a true picture of how well a drug works, it is important to compare it against a placebo treatment.

### general anaesthetic

You may have a type of medicine called a general anaesthetic when you have surgery. It is given to make you unconscious so you don't feel pain when you have surgery.

### anaesthetic

An anaesthetic is a chemical that blocks the ability to feel sensations like pain or heat. A local anaesthetic blocks the feeling in a specific area of the body. For example, your dentist uses a local anaesthetic like lignocaine in your gums so that you don't feel the pain of having a cavity filled. A general anaesthetic makes you completely unconscious and is usually used only in a carefully controlled environment like an operating room.

### local anaesthetic

A local anaesthetic is a painkiller that's used to numb one part of your body. You usually get local anaesthetics as injections.

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This information is aimed at a UK patient audience. This information however does not replace medical advice. If you have a medical problem please see your doctor. Please see our full [Conditions of Use](#) for this content. For more information about this condition and sources of the information contained in this leaflet please visit the Best Health website, <http://besthealth.bmj.com> . These leaflets are reviewed annually.

