

Facial pain can come from a variety of sources and diagnosing the cause is sometimes very complex. Therefore, patients often see many types of doctors, including dentists, ear, nose and throat (ENT) specialists, pain specialists, neurosurgeons and neurologists. This can be confusing and time-consuming for patients

Nerves fall into two categories; those of the Peripheral Nervous System and those of the Central Nervous System. The nerves of your brain and spinal cord make up the Central Nervous System while all other nerves are considered Peripheral Nerves. Autonomic, motor, and sensory nerves are all peripheral nerves including those found in your arms and legs, and your face and your tongue. In a healthy environment peripheral nerves that have been damaged can regrow, central nerves cannot.

POSSIBILITIES AND CAUSES OF FACIAL PAIN, NUMBNESS FROM MY RESEARCH WHEN I ENCOUNTERED IT

Anxiety

Acoustic Neuroma Facial numbness and tingling with possible, though rare, paralysis of a facial nerve

B vitamins deficiency (B12 B6 B1)

Bell's Palsy (drooping one side)

Blood Flow test

Blood Pressure

Calcium

Cholesterol

Deficiencies

https://www.tankonyvtar.hu/hu/tartalom/tamop425/0019_2A_Neurologia_angol/AN_III_11_7.pdf

Dental - trigeminal nerve - neuropathic pain ?

Diabetes - trigeminal nerve - neuropathic pain ?

disc disease or spinal arthritis the nerve roots are compressed (radiculopathy) leading to paresthesia that is felt according to the level of affection.

Drug Induced Lupus (Seizure Meds)

Epilepsy

Facial nerve compression

facial skin cancer

facial zoster or "shingles" rash

Hormones

Hypocalcaemia

Hysterical/Psychiatric

Injury

infections (encephalitis)

Leptomeningeal carcinomatosis (LC), sometimes called neoplastic meningitis

Lyme

M.S.

Magnesium

Medications

<https://www.foundationforpn.org/what-is-peripheral-neuropathy/causes/other-drugs/>
<https://www.uspharmacist.com/article/druginduced-neurologic-conditions>

Neuropathy

neurofibromatosis are genetic disorders of the nervous system

Neurofibromatosis

Paraneoplastic Disorders of the Nervous System

Paresthesia is a peculiar sensation of numbness and tingling feeling

Paresthesiae of the mouth

Partial Sensory Seizures - These seizures originate in the sensory cortex. Usually cause sharp tingling sensations in the face, arms, and legs of the opposite side.

Percutaneous stereotactic rhizotomy (PSR) for facial pain

Perineural Tumor Invasion of the Infraorbital Nerve

Peripheral Artery Disease: angina, tingling numbness arms, elbow and wrist

Peripheral Neuropathy

Persistent idiopathic facial pain (PIFP)

Pesticides

SENSORY SEIZURE?-simple partial, change in sensation

silent sinus syndrome

Sinusitis

SKIN VIRUS

SUNCT syndrome - Short-lasting unilateral neuralgiform headache with conjunctival injection and tearing

Sodium

Spinal Cord

Stress

Stroke/pre-stroke

surgery or injury to the face, teeth, or gums, but it persists without any demonstrable local cause

T4 syndrome upper thoracic spine 4th thoracic vertebra

TIA's or mini-strokes

Tolosa-Hunt syndrome with facial nerve involvement (rare)

transverse myelitis

Trigeminal nerve

trigeminal nerve neuralgia (fifth cranial nerve)

Trigeminal neuralgia (TN)/Neuropathic Face Pain also called tic douloureux (one side of face)

Tumor

susac-syndrome (numbness & seizures)

I had the following series of tests to rule out certain things and to identify the cause and whether surgery was needed or not

Glossary

diplopia: double vision.

dysesthesia: troublesome or bothersome numbness.

dysphagia: difficulty in swallowing.

electrode: a conductor that carries current. It is passed through a hollow needle called the electrode introducer.

fluoroscope: uses x-ray or other radiation to view structures in the body.

ganglion: a group of nerve cell bodies.

keratitis: inflammation of the cornea.

neuralgia: severe nerve pain.

percutaneous: through the skin.

radiofrequency: radiant energy of a certain frequency.

rhizotomy: section of the nerve roots for the relief of pain.

trigeminal neuralgia: a painful disorder of the fifth cranial nerve, called the trigeminal nerve. Irritation of this nerve can cause intense pain that usually affects one side of the face usually in the forehead, cheek, jaw, or teeth.

trigeminal nerve: a nerve originating within the brain that supplies feeling and movement to the face. The trigeminal nerve has three divisions: the ophthalmic (V1) division gives sensation to your forehead and eyes; the maxillary (V2) division gives sensation to your cheek, under your eye, around your nose; and the mandibular (V3) division gives sensation to your jaw.

radiology department: rooms designed for examining the body by using x-rays.

stereotaxis: a precise method for locating deep brain structures by using 3-dimensional coordinates.

trigeminal neuralgia Type 1 (TN1): Trigeminal neuralgia, type 1, (TN1): facial pain of spontaneous onset with greater than 50% limited to the duration of an episode of pain (temporary pain).

trigeminal neuralgia Type 2 (TN2): Trigeminal neuralgia, type 2, (TN2): facial pain of spontaneous onset with greater than 50% as a constant pain.

trigeminal neuropathic pain (TNP): Trigeminal neuropathic pain, (TNP): facial pain resulting from unintentional injury to the trigeminal system from facial trauma, oral surgery, ear, nose and throat (ENT) surgery, root injury from posterior fossa or skull base surgery, stroke, etc.

trigeminal deafferentation pain (TDP): Trigeminal deafferentation pain, (TDP): facial pain in a region of trigeminal numbness resulting from intentional injury to the trigeminal system from neurectomy, gangliolysis, rhizotomy, nucleotomy, tractotomy, or other denervating procedures.

symptomatic trigeminal neuralgia (STN): Symptomatic trigeminal neuralgia, (STN): pain resulting from multiple sclerosis.

post herpetic neuralgia (PHN): Postherpetic neuralgia, (PHN): pain resulting from trigeminal Herpes zoster outbreak.

atypical facial pain (AFP): Atypical facial pain, (AFP): pain predominantly having a psychological rather than a physiological origin.

nervus intermedius neuralgia (NIN): Nervus intermedius neuralgia (NIN) sometimes known as Geniculate Neuralgia involves recurring attacks of severe pain deep in the ear, that may spread to the ear canal, outer ear, mastoid or eye regions and involves the nervus intermedius, which is the somatic sensory branch of the seventh cranial nerve.

glossopharyngeal neuralgia (GPN): Glossopharyngeal neuralgia involves recurring attacks of severe pain in the back of the throat, the area near the tonsils, the back of the tongue, and part of the ear and is believed to be caused by irritation of the ninth cranial nerve.

temporomandibular joint disorder (TMJ): Pain due primarily to temporomandibular joint dysfunction.

updated > 4.2016

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Links

Trigeminal Neuralgia Association (TNA) www.tna-support.org

American Pain Society www.ampainsoc.org

Facial Neuralgia Resources facial-neuralgia.org

<https://www.iowaclinic.com/webres/File/trigeminal-neuralgia.pdf>

Mayo Clinic Connect: [GroupsBrain & Nervous System facial numbness](#)

<https://connect.mayoclinic.org/discussion/facial-numbness/>

Diagnostic Questions

<https://neurosurgery.ohsu.edu/tgn.php> questionnaire

<https://www.doctorslounge.com/neurology/forums/backup/topic-12010.html>

Treatment:

Tegretol® (carbamazepine), Neurontin® (gabapentin), Lioresal® (baclofen), Treleptal® (oxcarbazepine), Topamax® (topiramate), Zonegran® (zonisamide), or any other anticonvulsant medication for your pain?

trigeminal nerve surgery for your pain? (e.g., neurectomy, RF rhizotomy/gangliolysis, glycerol injection, balloon compression, rhizotomy, MVD, gamma knife)

<https://www.beckersspine.com/spine-lists/item/36349-340-spine-surgeons-to-know-2017.html>

Paresthesia is a peculiar sensation of numbness and tingling feeling. This kind of abnormal feeling can occur in hands, legs and in any part of the body. This is described as “pins and needles” and prickling sensation. Sensations of pressure and temperature are at its peak in the tongue when compared with skin. If the tingling sensation affects the sense of taste it is described as dysgeusia. In case the peculiar sensation causes burning pain or numbness feeling or tingling sensation it is known as paresthesia. Since nerves are responsible for carrying any sensation to the brain the nerve receptors are affected largely due to paresthesia. Certain parts of the brain are vital in processing the signals received from the tongue. The taste receptors generate electrical impulse when exposed to certain stimuli which would travel through the path of lingual nerve reaching specific parts of the brain for decoding.

That is how one can feel any sense of taste like sweetness, bitterness or sourness. When these taste receptors are subjected to intense pressure due to stimuli it can generate high degree of electrical impulses enough to collapse the taste receptors which gives the feeling of tingling or burning sensation. Any problem with the nerve receptors gives wrong signal to the brain. Sometimes nerve receptors get stimulated even without any stimulus giving a sense of heat, cold or pressure. Tingling or prickling feeling can be felt due to problems in the nerve receptors. Nerve might have got damaged or inflamed or even compressed causing such sensations. Wrong signals are sent to the brain which perceives it as tingling feeling or numbness depending on the intensity of electrical impulse generated. Paresthesia in the tongue can be described as tingling sensation or prickling feeling. For some people it triggers such feeling suddenly even without any specific stimulus. Some people may not feel anything giving a numb feeling and they will not be able to sense specific tastes due to damaged taste receptors.

Causes Of Tongue Numbness and Tingling :

- **Substance Abuse and Medications :**

Overuse of certain toxic substances like heroine and similar drugs can largely affect the sensations of nerve receptors of the tongue. Certain kinds of alcohol and narcotics can also produce same reaction. Taking certain kinds of medications and topical anesthetics can produce abnormal sensations on the tongue. Some of them can affect the nerve receptors temporarily and others can damage them permanently causing tingling or numbness feeling on the tongue. Lastly side effect of certain strong prescription drugs can affect the nerve receptors of the tongue.

- **Food Poisoning and Toxic Effect :**

Paresthesia of the tongue can occur due to ingestion of various toxic substances. Artificial toxins and certain kinds of natural toxins like ciguatera toxin (found in specific kinds of fishes) can certainly affect the tongue. Fishes like sea bass, eel, and barracuda may contain toxic materials which can affect the nerve receptors of the tongue. Some people may develop tingling sensation on the tongue after eating decayed fishes or undercooked fishes. Fugu fishes are known to contain tetrodotoxin which is deadly and lethal. In spite of affecting the tongue it may also get deposited in various parts of the body causing complications. Certain metals can also cause tingling and prickling sensation on the tongue.

- **Dental Procedure :**

Topical anesthesia applied before dental procedures can produce tingling sensation on the tongue. In most of the cases the issue is only temporary and resolves to normalcy after the tissue heals properly. But in some people nerve damage can occur during the dental surgery and procedures like root canal and dental implants causing permanent tingling sensation on the tongue.

- **Injury :**

Sudden injury or **trauma** can affect the tongue largely causing inflammation. [Tongue piercing](#) and eating very hot or spicy food items and drinking certain beverages can produce tingling sensation on the tongue. Taking very cold items can also produce similar effect. Exposure to radiation therapy and other kinds of therapy during mouth cancer can affect the tongue. Nerve receptors and small tissues of the tongue may get affected during such treatments. Temporary numbness can occur while chewing tobacco or betel nuts.

- **Infections :**

Tongue infections caused by virus and other microorganisms can cause [paresthesia](#). [Herpes simplex](#) virus or [chicken pox](#) virus or **herpes zoster** can cause infection on the tongue. [Candida](#) or [oral thrush](#) is another kind of infection affecting the oral cavity including tongue.

- **Vitamin Deficiency :**

Deficiency of certain minerals like calcium or sodium or potassium can produce tingling sensation on the tongue. Deficiency of vitamin B12 can cause such feeling which gets resolved after taking sufficient vitamins. Disorders and [diseases](#) like **multiple sclerosis**, **hypothyroidism**, and **stroke**, **brain tumor**, **burning mouth syndrome**, **facial palsy** and **migraine** can cause **numbness on the tongue**. [Burning mouth syndrome](#) can cause sudden burning sensation of the lips, gum and tongue now and then causing severe pain.

Symptoms Of Tongue Tingling (Numbness) :

Paresthesia of the tongue can cause symptoms including burning pain or tingling sensation or numbness for some time. If you have such signs continuously you need to seek medical care. If there are other symptoms like breathing difficulty, severe headache, facial weakness, change in the level of consciousness, neck pain and numbness on one side of the body you need to seek immediate medical help.

Treatment :

Treatment for tingling sensation of the tongue can be given after diagnosing the cause. Avoid eating special kind of fishes and decayed fishes. If you are allergic to certain food items it is better to avoid them permanently. Choose the right doctor for dental procedures. Restrict the intake of alcohol since it can damage the nerve receptors gradually. Ask about the side effects of medications with your doctor.

<http://www.epilepsywarriors.org/resources/epilepsy-seizures/different-types-of-seizures-known/>

Different Types of Seizures Known

Benign Rolandic Epilepsy: Benign Rolandic seizures is one form of epilepsy. With this condition, seizures affect the face and sometimes the body. As a result, the disorder causes problems for some children. It almost always disappears, though, by adolescence.

Sylvan Seizures (Rolandic Epilepsy): A typical attack involves twitching, numbness, or tingling of the child's face or tongue (a partial seizure), which often interferes with speech and may cause drooling.

Unusual presentations of acoustic tumours.

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Author information

Abstract

A series of 238 consecutive patients with acoustic neuromas, operated on in Paris has been studied to identify unusual presentations and varied symptomatology. The most common history was that of a progressive unilateral hearing loss (in 68.1%), with tinnitus (in 49.1%) or disequilibrium (in 49.1%) or both. Sudden hearing loss (in 14.7%) or fluctuating hearing loss (in 6.3%), and a single or repeated episodes of acute vertigo (in 8.8%) were seen less commonly. **Headaches occurred as an associated symptom in 10.5%, tinnitus was the sole symptom in 2.8% and other uncommon symptoms included otalgia, facial nerve palsy, facial or ocular pain, altered sensation in the face or eye, or tingling of the tongue.** Some 11.3% of patients presented with normal pure tone auditory thresholds and a 100% speech discrimination score and of these patients acoustic reflex thresholds were normal in 53% and brainstem auditory evoked responses were suggestive of the retro-cochlear abnormality in only 76.2%. Amongst the less common presentations, the initial symptoms mimicked such diagnoses as Menière's disease, benign positional vertigo, vertebro-basilar migraine, vertebro-basilar insufficiency, Bell's palsy and Trigeminal neuralgia. Overall, 20.6% of patients had unusual initial presenting symptoms, 36.5% of the symptoms were unusual and these were found in isolation in 11.8% of patients. An awareness of the spectrum of more subtle symptoms of acoustic tumours may lead to the correct diagnosis at an earlier stage.

<https://www.healthlibrary.in/numbness-tingling-sensation-tongue/>

Numbness or tingling sensation in the tongue, also known as paresthesia is an alteration in the sensitivity of the tongue. Numbness is the reduction or a loss of sensation to changes in temperature, pressure or pain. Tingling sensation is a feeling of presence of pins-and-needles on the tongue. Most people have tingling sensation while others have numbness in the tongue. Generally, numbness and tingling in the tongue is not dangerous but needs evaluation by the doctor to rule out any possible life-threatening conditions.

What are the Symptoms of Tingling Tongue ?

The symptoms which may be experienced by the person having numbness or tingling tongue are:

- Loss of taste or changes in the perception of taste
- Facial weakness
- Changes in vision or eye pain
- Swelling of lips
- Swelling of tongue
- Changes in the color of the tongue to blue or pale or very red

What causes Tingling Tongue ?

Numbness or tingling sensation of the tongue can occur when there is any problem with the receptors on the tongue or when the signal transmission between the tongue and brain is not normal. These receptors include thermoreceptors (which detect temperature changes), mechanoreceptors (which detect changes in pressure and texture) and nociceptors (which detect changes in pain).

The most common causes of tingling sensation include:

- An accidental ingestion of topical anesthetics and certain highly dangerous substances and certain prescription medicines
- Ingestion of natural and artificial toxins such as heavy metal intoxication from the consumption of fishes
- An injury or trauma to the tongue due to accidental biting or tongue piercing or blows to the face, etc. which can damage the receptors
- Local anesthetics used for dental procedures such as tooth extraction or root canal
- Infections resulting from accidental biting or tongue piercing or a poor oral hygiene. These may include most commonly Herpes simplex viral infections, and Varicella zoster virus infections
- Diseases such as glossitis which cause swelling and pain can alter the function of the sensory receptors on the tongue
- Migraine headache which produces tingling on tongue, lips, arms and face as a warning sign
- Deficiency of nutrients such as vitamin B12 and iron which are required for the supply of adequate oxygen to the muscles of the tongue
- Raynaud's phenomenon which may sometimes reduce the blood flow to the lips and tongue

When to consult the doctor?

Consult the doctor when there is a tingling sensation or when there is a loss of sensation to the temperature or pressure or pain. The doctor will best assess the condition and understand the cause.

Immediate medical attention is needed if the below life-threatening symptoms are present along with numbness or tingling of the tongue:

- Changes in the level of alertness
- Head injury
- Changes in behavior such as confusion, hallucinations, delusions and lethargy
- Weakness or numbness on one side of the body
- Sudden changes in vision or eye pain
- Urinary incontinence
- Uncontrolled movements

What are the medical treatment for Tingling Tongue ?

Usually the numbness or tingling in the tongue goes away by itself in some days. Treatment focuses on removing the underlying cause. Treatment approaches include:

- Supplementations of vitamin B12 or foods which are rich in the vitamin such as eggs, leafy vegetables may help in treating minor cases of numbness
- Medications and counseling to manage tobacco and alcohol misuse
- Medications to treat underlying causes such as migraine headache and Raynaudd's phenomenon
- Antidotes to eliminate the toxic substances which are accidentally ingested

Self care

The below self care measures can provide relief from numbness or tingling tongue:

- Drinking warm water or any warm fluids
- Relaxing for some time to get relief from stress

Prevention

Numbness or tingling can be prevented to a large extent by taking the below precautions:

- Avoiding the consumption of decayed fishes
- Avoiding foods to which an allergic response was produced
- Limiting the intake of alcohol
- Choosing a right doctor for undergoing dental procedures
- Knowing the side effects of medicines before using them

Conditions Treated

We provide care for all types of orofacial pain disorders affecting the head and neck, including:

- Temporomandibular joint disorder (TMJD or TMJ): A complex condition that can be caused by a number of problems in the hinge of the jaw. The pain can originate in the joint, bone, muscles, nerves, tendons, ligaments, connective tissue, or teeth.
- Masticatory (chewing) or jaw musculoskeletal pain: An abnormal stress on the muscles that control chewing, and opening and closing the jaw. This can be caused by tension, spasm, or fatigue of the muscles, and can result from teeth problems or from clenching the jaw.
- Cervical (neck) musculoskeletal pain: Neck pain that is most likely the result of mechanical problems caused by trauma or degenerative processes in the cervical spine.
- [Headaches](#): Migraines, hemicrania continua, paroxysmal hemicranias, and cluster headache are all specific types of headache that can mimic facial pain.
- Neuropathic (nerve) pain: This pain is caused by damage to the nerves, that causes them to fire constantly.
- Sleep disorders, depression, and anxiety: These conditions can occur with unremitting orofacial pain.
- Orofacial and cervical [dystonias](#): Involuntary, repetitive, or spasmodic muscle contractions in the tongue, lower face, jaw, or neck muscles. They frequently cause migraines and tension headaches.
- Intraoral, intracranial, extracranial, and systemic disorders: Disorders in the skull, sinuses, mouth, or internal organs can cause orofacial pain.
- [Trigeminal neuralgia](#): A pain condition characterized by intermittent, intense, shooting, or stabbing pain that typically occurs on one side of the face. Trigeminal neuralgia often occurs when a nearby artery or vein puts excessive pressure on the nerve.
- Glossopharyngeal neuralgia: Nerve pain characterized by repeated, brief episodes of severe jabbing or stabbing pain on one side of the tongue or in the back of the nose or throat, ear, or tonsils.
- Geniculate neuralgia: Uncommon disorder characterized by sudden and brief stabs of pain deep in the ear canal of one ear.
- Occipital neuralgia: The pain is often a sharp or jabbing electrical-type shock in the back of the head or neck, or it can be aching, burning, or throbbing pain that starts at the back of the head and radiates to the scalp.
- Post-herpetic neuralgia: Pain due to nerve damage following an episode of shingles (herpes zoster infection).
- Red ear syndrome: Rare disorder in which the external ear turns red and feels like it is burning or on fire. Red ear syndrome is often associated with migraines or other headaches.
- Otalgia: Pain in the ear can either be classified as primary, meaning that it originates in the ear, or referred, meaning that it originates outside of the ear.
- Stomatodynia or glossodynia (burning mouth syndrome): Pain that can affect the tongue, lips, gums, hard and soft palate, throat, or the inside of the cheeks and throat. The pain can include burning or tingling in the mouth or throat.

- Persistent idiopathic facial pain (atypical facial pain): Defined as any pain in an area of the face innervated by the trigeminal nerve that does not fit into the classification of other cranial nerve pains.

Facial Problems, Noninjury

Facial problems can be caused by a minor problem or a serious condition. Symptoms may include pain, swelling, or facial weakness or numbness. You may feel these symptoms in your teeth, jaw, tongue, ear, sinuses, eyes, salivary glands, blood vessels, or nerves.

Common causes of facial problems include infection, conditions that affect the skin of the face, and other diseases.

Infections

- Bacterial infections such as [impetigo](#) and [cellulitis](#) can cause facial pain and oozing blisters or sores.
- Viral infections such as [shingles](#) may affect nerves in the face or head, causing severe facial pain or eye problems (keratitis).
- An infected or blocked [salivary gland](#) or a salivary stone (sialolithiasis) may cause facial swelling or pain, especially in the parotid gland (parotitis), which is located near the ear.
- [Lyme disease](#) is an infection that is spread by the bite of ticks infected with bacteria. It may cause facial pain, headache, stiff neck, or paralysis of the facial nerves.

Skin conditions

- [Rosacea](#) is a chronic skin condition that causes redness on the face, usually on the cheeks, nose, chin, or forehead.
- [Acne](#) commonly occurs on the face, especially in teens and young adults.
- [Seborrheic dermatitis](#) causes red, itchy, flaky skin patches along the eyebrows, nose, and mouth.

Other conditions and diseases

- [Sinusitis](#) causes a feeling of pressure over the [facial sinuses](#). Sinusitis can follow a cold or may be caused by hay fever, asthma, or air pollution. It is more common in adults, but it can occur in children as an ongoing (chronic) stuffy nose.
- Dental problems, including infections, can cause facial pain and swelling in and around the jaw area. Jaw pain may be caused by a [temporomandibular \(TM\) disorder](#). This condition can cause pain in the [TM joint](#) (located in front of the ear), in the ear, or above the ear.
- Headaches, such as [migraines](#) or [cluster headaches](#), can cause severe pain around the eyes, in the temple, or over the forehead. [Giant cell arteritis](#) generally affects older adults and may cause headache and pain and may lead to blindness if not treated. For more information, see the topic [Headaches](#).
- [Trigeminal neuralgia](#) is a condition that causes abnormal stimulation of one of the facial nerves. It causes episodes of shooting facial pain.
- [Closed-angle glaucoma](#) causes vision changes and severe, aching pain in or behind the eye.
- Conditions that cause problems with the muscles or nerves in the face include:
 - [Bell's palsy](#), which is caused by paralysis of the facial nerve. Weak and sagging muscles on one side of the face is the most common symptom. It also may cause an inability to close one eye and mild pain in the facial muscles.
 - [Multiple sclerosis](#), which may affect facial muscle control and strength, affect vision, and cause changes in feeling or sensation.
 - [Myasthenia gravis](#), which causes facial muscle weakness leading to drooping eyelids and difficulty talking, chewing, swallowing, or breathing.
 - Facial paralysis from a [stroke](#).
- [Lupus](#) causes inflammation, fatigue, and a butterfly-shaped rash across the cheeks.

Treatment depends on what is causing your facial problem. In many cases, home treatment may be all that is needed to relieve your symptoms.

The 'T4 syndromc is a term used by clinicians for patients whose varied problems seem to be derived from the upper thoracic spine, and may be helped by treatment and exercises directed at that region. Properly it should perhaps be called the upper thoracic syndrome

<https://lifeinthefastlane.com/investigations/hypocalcaemia/>

[Home](#) | [Investigations \[tests\]](#) | **Hypocalcaemia**

Hypocalcaemia

Clinical Cases

- [What is Calcium?](#)

Causes of HYPOcalcaemia

Commonest causes: Hypoalbuminemia and HYPERventilation

1. **Factitious (commonest)**
 - Low albumin
2. **Metabolic (transcellular as for potassium)**
 - Primary respiratory alkalosis (HYPERventilation)
 - Chronic alkalosis
3. **Endocrine** (Decreased Ca uptake, increased excretion)
 - Reduced **PTH** (associated raised PO₄ as cannot excrete)
 - Hypoparathyroidism (raised PO₄)
 - Pseudohypoparathyroidism (raised PO₄)
 - Thyroid or parathyroid surgery
 - Increased **calcitonin** (decreased Ca and PO₄)
 - Medullary thyroid carcinoma
 - Decreased **Vitamin D** (decreased GIT calcium absorption (small))
4. **Increased PHOSPHATE** (precipitates calcium in serum)
 - Tumour lysis syndrome ($\uparrow K^+$, $\uparrow PO_4$, $\downarrow Ca^{++}$)
 - Rhabdomyolysis
 - Chronic renal failure
5. **Excessive CITRATE in circulation** (precipitates calcium)
 - Whole blood transfusion
 - Plasmapheresis
6. **Increased bone formation and turnover** (Osteoblastic activity)
 - Malignancy (Breast, lung, thyroid, kidney, prostate)
 - Osteomalacia (Increased alkaline phosphatase)
7. **Other**
 - Sepsis and Toxic shock syndrome
 - Pancreatitis (PO₄ normal)
 - Overhydration
8. **Drugs**
 - B blocker OD, phenytoin, gentamicin, heparin
 - Cimetidine, Ca channel blocker

Clinical

Calcium is excitable membrane stabiliser. Neuromuscular excitability and irritability is predominant

• **Neurological**

• **Hyperreflexia and seizures**

• **Paraesthesia of extremities and face (Digital and peri-oral)**

• **Confusion, hallucinations, dementia**

• **Muscular**

- Laryngospasm, stridor, tetany
- Muscle spasm, cramps and tetany
 - Chvostek's (Facial nerve tap....twitch corner of mouth)
 - Trousseau (BP cuff on arm for 3mins induces carpopedal spasm)
- **Cardiac**
 - Decreased myocardial contractility and heart failure

Complication

- Arrhythmia
- ECG changes
- QTc prolongation (With low K, Mg, Ca)
- T wave inversion
- Complete HB
- Torsades de Pointe

Correction

- Assess and treat underlying cause
- Correct acidosis and hypomagnesaemia
- Replace Calcium

Asymptomatic

- Oral Calcium supplements and Vitamin D rich milk

Symptomatic

- Parenteral Calcium
 - Calcium chloride (10ml 10% 13.6mEq)
 - Calcium gluconate (10ml 10% 4.6mEq)



About Mike Cadogan

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Causes Of Tingling In The Face and Back Of The Head :

Many factors can cause numbness of head and face. It can be grouped broadly under 3 categories namely **neurological disorders**, **circulatory disorders** and **psychological problems**.

- **Problems Of Neurology That Causes Numbness**

Several neurological diseases including [epilepsy](#), [multiple sclerosis](#) and certain infectious disorders can affect the nerve fibers leading to numbness at the back of head.

- **Multiple Sclerosis**

Multiple sclerosis is a progressive disease in which the immune system of the body attacks and destroys the outer protective layer of the nerve fibers of the central nervous system. Around 2.5 million people are living with MS the symptoms of which include vision problems, thinking and memory problems. Multiple sclerosis can cause numbness in the face and head.

- **Epilepsy**

Epilepsy is a kind of neurological problem affecting the brain causing sudden seizures due to increased electrical activity. Epilepsy can cause temporary numbness in the tongue and back of the head.

- **Shingles**

[Shingles](#) is an infectious disorder caused by **Herpes Zoster virus** which affects the nerve endings of trigeminal nerves after the infection. Shingles can cause tingling and numb feeling on one side of the body along with other symptoms like fever, blurred vision, headache and change in taste. Other infectious diseases like [Lyme disease](#) and post herpetic neuralgia can also cause tingling and numbness sensation on the back of your head.

- **Trigeminal Neuralgia**

It is a kind of **neurological disorder** that causes severe pain on the face suddenly. It creates sudden shock like pain on the face, which lasts for few seconds. The pain can occur anytime when the person is involved in brushing his teeth, shaving his face or just laughing or talking to someone. Trigeminal neuralgia can cause tingling sensation on the face and the symptoms are severe when it appears. Trigeminal neuropathic pain can occur due to dental procedure or chronic diseases like diabetes causing dull burning pain on the face before numbness or tingling sensation. Nerves belonging to trigeminal area get compressed causing such symptom.

- **Anesthesia Dorosa**

Anesthesia is injected to the patient suffering from trigeminal neuralgia and it can cause complications like facial numbness and loss of feeling on the back of the head. It can also cause throbbing pain now and then on the face.

- **Guillain Barre Syndrome**

This is a rare kind of immunity disorder that attacks the peripheral nerves of the person who had been to food poisoning earlier. The signs of this disorder may occur few hours or even up to 2 months after the episode of poisoning. Some of the symptoms of GB syndrome include tingling sensation and numbness starting from feet till the head, difficulty in controlling bowel, reduced heartbeat, difficulty in eye movements and speaking and shortness of breath.

- **Psychological Problems**

Many kinds of psychotic problems can cause tingling and numbness on the back of your head. Disorders like anxiety attacks, bipolar disorder and manic episodes can cause symptoms like racing pulse, trembling, feeling of fear, shortness of breath, hot flashes, **feeling of tightness, tingling sensation** in several parts of the body like face, lips, tongue, arms and legs.

- **Being Anxious**

When a person becomes worried or anxious the body triggers stress response discharging many hormones into the blood. This can cause various psychological and physiological changes and in this process the metabolism would reduce blood supply to certain vital organs like brain and spine resulting in tingling feeling and numbness. It takes sufficient time for the body system to recover from the induced stress feeling and emotional changes and this can keep the body in hyperstimulated state pouring in more of hormones and enzymes. This in turn can affect the nervous system and nerve cells begin to send/receive erratic impulses resulting in tingling feeling. You may experience some bizarre feelings and sensations on such occasions.

- **Food Poisoning**

Food allergy and eating poisonous foods can cause tingling feeling on the tongue, lips, face and itching of skin. Fish poisoning like eating ciguatera fish or shellfish can also cause similar symptoms.

- **Circulatory Problems**

Interrupted oxygenated blood supply to the major artery of the brain can cause serious complications like stroke and ischemic attack. Part of the brain gets damaged due to sudden blockage of blood caused by thrombosis or atherosclerosis or aneurysm. Transient ischemic attack or mini stroke may occur if the blood supply to the brain is stopped abruptly causing symptoms like confusion of thought, reduced alertness, slurred speech, dizziness and trouble in walking. Very often the symptoms improve within few hours when the blood supply is restored.

Sometimes blood supply to the cerebellum or brainstem can get disrupted or blocked in the arteries leading to vertebrobasilar circulatory problems. This can cause symptoms of partial or complete loss of vision, tunnel vision, vertigo, numbness or sudden tingling sensation of the head. When blood supply to the heart suddenly gets blocked it can cause symptoms like tightness in the chest, sharp pain below the breast bone, and a feeling of numbness in the jaw, left shoulder and arm. This condition is known as angina pectoris and the symptom lasts for few minutes to an hour. Numbness in the back of the head can be caused due to blocked blood supply to the nerve fibers due to inflammation of arteries. Conditions like vasculitis, polyarteritis nodosa, granulomatosis and thoracic outlet syndrome can cause numbness.

- **Trauma**

Sudden head injury can affect the nerve fibers causing sudden numb feeling on the face and back of the head. A sharp blow on the head or face or cuts/punctures on the head can compress the nerve causing such symptoms. Spinal cord injury in the C4 nerve can also cause numbness on the face and head and even on many other parts. Spinal problems like **spondylitis, bulging disc, osteoporosis** and **degenerative disc disorder** can cause sudden tingling or numb feeling on the face and head.

Brain Tumor can certainly compress the nerve endings affecting the face and head. Abscess occurring in the ears, nose or sinus or parotid glands or spinal cord can cause numbness on the face and back of the head. Increased secretion of serotonin can cause tingling sensation in many parts.

- **Metabolic Diseases**

Some of the metabolic disorders like hypocalcemia (high levels of calcium) in blood, hypokalemia (excess of potassium), and certain vitamin deficiency like thiamine, B12 and B6 can cause tingling sensation. Very low blood sugar level, doing heavy exercises for long and starving for long periods can also cause numbness. Amyloidosis. Porphyrin, menopause and thyroid hormone problems can cause tingling and numbness in specific parts of the body.

- **Medications**

Taking epilepsy drugs for long, medications like colistimethate, dimercaprol, riluzole, thallium, metronidazole and certain kinds of antipsychotic drugs and excess of lidocaine can induce numbness.

- **Cancer Treatment**

Undergoing chemo therapy and radiation treatment for cancer can cause tingling feeling as side effect.

- **Alcohol Abuse and Withdrawal**

Taking too much of alcohol daily can affect the nerve signals causing paresthesia. Similarly withdrawal of alcohol treatment can cause a feeling of numbness and “pins and needles” in certain parts of the body.

- **Other Causes**

Certain types of blood related problems like polycythemia Vera, leukemia, chronic disorders like arthritis, fibromyalgia, systemic lupus, and immune related disorders can affect the nerve fibers leading to tingling and numbness.

Diagnosis :

Based on the symptoms, your doctor would first collect the medical history and order for neurological exam, followed by laboratory testing like blood culture, electromyography test, nerve conduction test and other neurological tests to detect the cause. For some people imaging tests like MRI is recommended for diagnosing the cause.

Treatment :

Underlying cause of the disorder is to be treated first. Tingling sensation caused due to vitamin deficiency can be corrected by taking vitamin supplements. Most of the neurological disorders can be kept under control by taking proper medications. Anti-inflammatory drugs like NSAID's can be taken regularly or for some people steroids are prescribed for managing symptoms of numbness. Making lifestyle changes, reducing alcohol intake and practicing yoga can help in overcoming the symptoms. Doing relaxation breathing each day will gradually bring down the tingling feeling along with stress producing hormones and finally the symptoms are gone.

<https://www.foundationforpn.org/what-is-peripheral-neuropathy/causes/other-drugs/>

Neuropathy is a common side effect of certain medications, especially those used to treat HIV/AIDS and those used in chemotherapy, to fight cancer.

In some people, these medications may cause nerve damage that results in a loss of sensation or movement in part of the body. Although uncomfortable and perhaps painful, this condition is not life threatening. Peripheral neuropathy will often go away if these drugs are changed or discontinued, or if the dose is reduced. It can take several months for peripheral neuropathy to completely heal after discontinuing these drugs, but the patient may start to feel better within a few weeks. In extreme cases, however, the nerve damage may be permanent.

Some of the drugs that may cause peripheral neuropathy include:

- Anti-alcohol drugs (Disulfiram)
- Anticonvulsants Phenytoin (Dilantin®)
- Cancer medications (Cisplatin)
- Vincristine
- Heart or blood pressure medications (Amiodarone)
- Hydralazine
- Perhexiline
- Infection fighting drugs (Metronidazole, Flagyl®, Fluoroquinolones: Cipro®, Levaquin®)
- Nitrofurantoin
- Thalidomide
- INH (Isoniazid)
- Skin condition treatment drugs (Dapsone)

For a more extensive list [click here](#).

Symptoms & Signs

(Not all symptoms and signs may be present.)

- Numbness
- Loss of sensation
- Tingling
- Abnormal sensations
- Sensations usually first occur in feet or hands
- Weakness

Evaluation & Tests

(Not all evaluation and tests may be necessary.)

- Physical examination
- [Neurological exam](#)
- [Electromyography](#)
- [Nerve conduction velocity test](#)
- [Blood tests](#)

Treatment & Therapy

(Not all treatments and therapies may be indicated.)

Therapies focus on treating the symptoms, including:

- Medications causing the neuropathy may be stopped or altered
- Over-the-counter pain medication for mild pain.
- For severe pain, take over-the-counter pain medication or prescription drugs used for peripheral neuropathy, on a regular basis—rather than waiting until nighttime when symptoms can become more severe.
- Antidepressants (for pain control)
- Take safety measures to compensate for loss of sensation
- Ask your doctor about special therapeutic shoes (which may be covered by Medicare and other insurance).