

Trigeminal neuralgia classification

The symptomatic trigeminal neuralgia type is secondary to the presence of different pathologies such as [cerebellopontine angle tumors](#), arteriovenous malformations, otolaryngology diseases, and more frequently, [multiple sclerosis](#). In the idiopathic form, no apparent cause is identifiable. In MS patients, TN is the most frequent form of [neuropathic pain](#), with a prevalence ranging from 1.9% to 6.3% ¹⁾



[Atypical trigeminal neuralgia.](#)

[Classical trigeminal neuralgia.](#) or [typical trigeminal neuralgia.](#)

[Idiopathic trigeminal neuralgia.](#)

[Mixed trigeminal neuralgia.](#)

[Recurrent trigeminal neuralgia.](#)

[Multiple sclerosis related trigeminal neuralgia](#)

Burchiel classification

Trigeminal neuralgia can be subdivided according to the Burchiel scheme into trigeminal neuralgia types 1, 2a, and 2b. Such classification is important because it is predictive of surgical success.

see [Trigeminal neuralgia type 1](#)

Patients with type 2b trigeminal neuralgia have a more insidious onset of pain. Rather than experiencing a “lightning bolt out of nowhere,” patients may initially believe that they have a tooth or sinus ache for many months before the pain is determined to be neurologic. The pain is often described as being dull, boring, constant, aching, or throbbing. Like type 1 trigeminal neuralgia, the symptoms are extremely disabling. The prognosis following surgical treatment of patients with type 2b trigeminal neuralgia is less favorable than in patients with type 1 trigeminal neuralgia. However, patients who respond favorably to anticonvulsant medication may still benefit from an operation.

Type 2a trigeminal neuralgia is the diagnosis applied to patients who have type 1 symptoms early in the disease course and transition, over time, to a more constant pain consistent with type 2b

trigeminal neuralgia. The outcomes of these patients following a surgical treatment is thought to be more favorable than in patients with type 2b trigeminal neuralgia but less favorable than in patients with type 1 trigeminal neuralgia.

type 1 [trigeminal neuralgia](#) (TN) (typical)

Atypical trigeminal neuralgia (ATN), or type 2 trigeminal neuralgia

type 2a TN (chronic)

type 2b TN (atypical)

The scheme incorporates descriptions for so-called [atypical trigeminal neuralgias](#) and facial pains but minimizes the pejorative, accepting that the physiology of neuropathic pains could reasonably encompass a variety of pain sensations, both episodic and constant. Seven diagnostic labels result: trigeminal neuralgia Types 1 and 2 refer to patients with the spontaneous onset of facial pain and either predominant episodic or constant pain, respectively. Trigeminal neuropathic pain results from unintentional injury to the trigeminal nerve from trauma or surgery, whereas trigeminal deafferentation pain results from injury to the nerve by peripheral nerve ablation, gangliolysis, or rhizotomy in an intentional attempt to treat either trigeminal neuralgia or other facial pain. Postherpetic neuralgia follows a cutaneous herpes zoster outbreak (shingles) in the trigeminal distribution, and symptomatic trigeminal neuralgia results from multiple sclerosis. The final category, atypical facial pain, is synonymous with facial pain secondary to a somatoform pain disorder. Atypical facial pain can be suspected but not diagnosed by history and can be diagnosed only with detailed and objective psychological testing.

This diagnostic classification would allow more rigorous and objective natural history and outcome studies of facial pain in the future ²⁾.

[Trigeminal neuralgia](#) can be subdivided according to the Burchiel scheme into trigeminal neuralgia types 1, 2a, and 2b. Such [classification](#) is important because it is predictive of surgical success.

Patients with type 1 TN experience a memorable onset of symptoms often described as a “lightning-bolt of pain that came out of nowhere.” The pain, while severe, tends to last for only seconds at a time and may occur many times per day. Even though attacks become more frequent, the pain is always shock-like and never constant or dull. Although attacks often occur spontaneously, patients with type 1 TN usually report certain triggering factors such as cold wind, eating, drinking, or using a washcloth. Additionally, patients with type 1 TN tend to have spontaneous remissions of symptoms lasting days to weeks early in the course of the disease with these pain-free intervals becoming shorter and less frequent as time passes. Patients with type 1 TN have the most favorable outcomes following any treatment modality.

In contrast, patients with type 2b trigeminal neuralgia have a more insidious onset of pain. Rather than experiencing a “lightning bolt out of nowhere,” patients may initially believe that they have a tooth or sinus ache for many months before the pain is determined to be neurologic. The pain is often described as being dull, boring, constant, aching, or throbbing. Like type 1 trigeminal neuralgia, the symptoms are extremely disabling. The prognosis following surgical treatment of patients with type 2b trigeminal neuralgia is less favorable than in patients with type 1 trigeminal neuralgia. However,

patients who respond favorably to anticonvulsant medication may still benefit from an operation.

Type 2a trigeminal neuralgia is the diagnosis applied to patients who have type 1 symptoms early in the disease course and transition, over time, to a more constant pain consistent with type 2b trigeminal neuralgia. The outcomes of these patients following a surgical treatment is thought to be more favorable than in patients with type 2b trigeminal neuralgia but less favorable than in patients with type 1 trigeminal neuralgia.

TN is often classified as type 1 (TN1) when pain is primarily paroxysmal and episodic or type 2 (TN2) when pain is primarily constant in character. [Diffusion tensor imaging](#) (DTI) has revealed microstructural changes in the symptomatic trigeminal root and root entry zone of patients with unilateral TN.

Noninvasive [DTI](#) analysis of patients with TN may lead to improved diagnosis of TN subtypes (e.g., TN1 and TN2) and improve patient selection for surgical intervention. DTI measurements may also provide insights into prognosis after intervention, as TN1 patients are known to have better surgical outcomes than TN2 patients ³⁾.

¹⁾

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²⁾

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³⁾

Willsey MS, Collins KL, Conrad EC, Chubb HA, Patil PG. Diffusion tensor imaging reveals microstructural differences between subtypes of trigeminal neuralgia. *J Neurosurg*. 2019 Jul 19:1-7. doi: 10.3171/2019.4.JNS19299. [Epub ahead of print] PubMed PMID: 31323635.

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