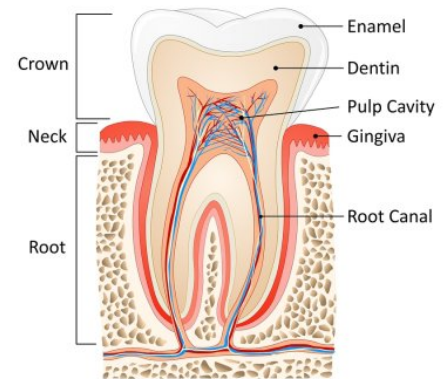


Teeth Nerve Pain

The nerves in the teeth are located in the pulp cavity which contains the bundle of nerves and blood vessels at the center of the tooth. Teeth nerve pain typically falls into two categories; Pulpitis which causes pulpal sensitivity and dentinal sensitivity. Teeth pain due to pulpitis are usually caused by a cracked, chipped, or broken tooth, tooth decay or cavities, repetitive trauma from teeth grinding or infection. The pain is focused on one individual tooth. The most common cause of pulpitis occurs when bacteria irritate the dental pulp through an area of tooth decay.



Dentinal sensitivity refers to pain in the teeth that is more widespread. This type of pain in the teeth occurs when the tooth enamel is damaged or eroded away and, therefore, external stimuli such as heat, cold, and acid can reach the nerve endings through the dentin layer. The most common cause is a receding gum line which exposes the roots of the teeth. Physical wear of the gums and tissue inflammation are the chief reasons for recession.

In TCM, the kidney governs bones, teeth, and gums. Deficient kidneys result in poor immunity in the mouth, and reduced activities of bone, teeth and gum regeneration and repair causing weak teeth and gums. Pathogenic heat and toxins, either internal or external, then may invade teeth and gums, causing inflammation or infection.

Gum Infections: Gingivitis and Periodontitis

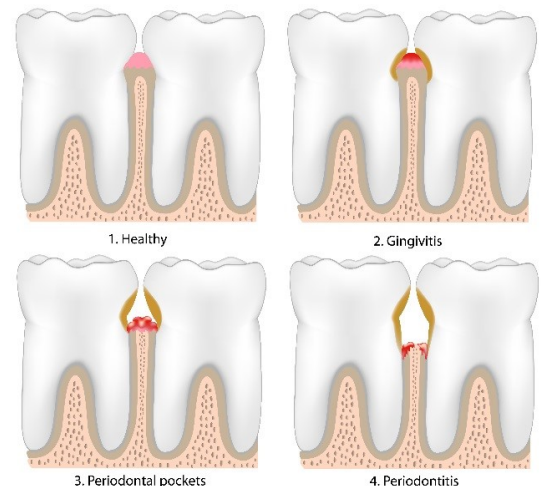
Gingivitis is the mildest form of periodontal disease. It causes the gums to become red, swollen, and bleed easily. Patients may experience a bad smell coming from their mouth and may also experience drooling during sleep. There is usually little or no discomfort at this stage.

Factors that may contribute to gingivitis include stress, inadequate nutrition, puberty, hormonal fluctuations, pregnancy, substance abuse, infection, and certain medication use. Other factors including smoking, aging, genetic and systemic diseases such as allergies and diabetes.

The most common cause of gingivitis is the accumulation of bacterial plaque between and around the teeth. The plaque triggers an immune response, which, in turn, can eventually lead to the destruction of gingival, or gum, tissue. Dental plaque is a biofilm that accumulates naturally on the teeth. It is usually formed by colonizing bacteria that are trying to stick to the smooth surface of a tooth. These bacteria might help protect the mouth from the colonization of harmful microorganisms, but dental plaque can also cause tooth decay, and periodontal problems such as gingivitis and chronic periodontitis, a gum infection.

Untreated gingivitis can advance to periodontitis. With time, plaque can spread and grow below the gum line. Toxins produced by the bacteria in plaque irritate the gums causing gum inflammation. Chronic gum inflammation can cause tissues and bone that support the teeth to break down and be destroyed. Then the gums become separated from the teeth, forming pockets (spaces between the teeth and gums) that become infected with pathogenic bacteria. As the disease progresses, the pockets deepen and more gum tissue and bone are destroyed. Often, this destructive process has very mild symptoms.

The stages of periodontal disease



The bacteria associated with periodontal diseases are predominantly gram-negative anaerobic bacteria and spirochetes. The initial microbiota of acute gingivitis consists of gram-positive rods, gram-positive cocci, and gram-negative cocci. The transition to chronic gingivitis is evident by inflammatory changes and is accompanied first by the appearance of gram-negative rods and filaments, then by spirochetal and motile organisms. Oral spirochetes are related to periodontitis, among them, *Treponema denticola*, have been associated with periodontal diseases such as early-onset periodontitis, necrotizing ulcerative gingivitis, and acute pericoronitis.² The spirochetes release toxic substances and enzymes that cause damage to the gum tissue. The gram-negative anaerobic bacteria associated with gingivitis and periodontitis cause bad breath by their proteolysis, which produces foul-smelling volatile sulfide compounds.

Grinding Teeth

Chronic teeth grinding can result in a fracturing, loosening, or loss of teeth. Not only can severe grinding damage teeth and result in tooth loss, it can also affect the jaw, cause or worsen TMJ, and even change the appearance of the face. The most common causes of teeth grinding are stress and anxiety.

For adults, scientific literature shows a significant relationship between stress levels and teeth grinding. People who grind their teeth report more anxiety and depression symptoms than those who don't grind. Teeth grinders also tend to be more stressed and suffer from clinical depression and anxiety disorders. One 2019 study showed people who suffer from teeth grinding have higher levels of stress hormones such as cortisol and adrenaline in their bodies which increase blood sugar levels and the heart rate. Recent research has found that before a person enters a grinding episode, their brain activity and heart rate may rise, implying the nervous system participation in teeth grinding.¹

All stressors set off a chain of reactions that lead to an increase of stress hormones like cortisol, which affects the brain by changing neural activity to mobilize responses to the stressor. In some cases, stress-related chemicals like adrenaline might trigger the fight-or-flight response in the body, which causes physical responses like sweaty palms, fast heartbeat, and even a clenched jaw at night.¹ Stress increases adrenaline, which mobilizes energy in the body which can manifest in teeth grinding when the body is not moving.

Stress can also disrupt the neurochemicals like serotonin and dopamine that regulate sleep, which can lead to sleep-related disorders like insomnia along with teeth grinding. Oftentimes, the disruption in the neurochemicals due to chronic stress not only cause sleep abnormalities but also increase teeth grinding.

Brain Spirochete Infections

Oral anaerobic *Treponema* (T) spirochetes are predominant periodontal pathogens that are highly prevalent in the population. These spirochetes can also infect the brain through blood circulation and cause Alzheimer's disease. Using species specific PCR, studies have detected six different periodontal pathogen spirochetes, specifically, *T. denticola*, *T. pectinovorum*, *T. vincenti*, *T. amylovorum*, *T. maltophilum*, *T. medium* and *T. socranskii* in the brains of Alzheimer's disease patients. An analysis of a total 680 brain and blood samples found that Spirochetes were detected in Alzheimer's disease at more than 91.1% (451/495) of the samples, while the 185 control samples were negative for Spirochete presence. These important results indicate that periodontal pathogen spirochetes have the ability to invade the brain, persist in the brain, and cause dementia. They also indicate that co-infection by several spirochetes occurs in Alzheimer's disease. It is likely that bacteria toxins may induce inflammation and cause damage to the small blood vessels in the brain. The resulting ischemia activates amyloid-processing enzymes and other proinflammatory factors that eventually compromise neuronal functions, leading to lesions and amyloid formation. Patients may experience symptoms of poor memory, brain fog and headache in the early stages which may become worse if left untreated.

Wellness Recommendation

Teeth Nerve Pain

The wellness recommendation includes Apro and Talgia. Apro helps reduce inflammation and infection of the gum and nerve root to alleviate pain and swelling. Herbal ingredients in Apro have been shown to significantly decrease swelling and inflammation as well as reduce inflammatory cell infiltration and inflammatory mediators such as nitric oxide and TNF- α .⁸ Talgia nurtures Kidney Yang and teeth nerve roots to alleviate nerve root pain, reduce nerve root

hypersensitivity and repair nerve root damage. Herbal ingredients in Talgia have been shown to regulate the functions of the kidney and liver as well as improve blood circulation and increase renal blood flow.⁷ Patients can experience symptom improvement in 1-3 days. 1 to 2 weeks of the protocol is required for significant improvement. Dental visits and treatment may also be necessary to address the cause of the teeth nerve pain if the patient has developed decay, cavity, crack, abscess or other teeth damages.

Gum Infections

The wellness recommendation includes Gumgen and Apro. Gumgen helps clear Damp Heat toxins in the gums. It helps clear infections caused by pathogenic gram-negative bacteria and resolve the gum pain, swelling and other related symptoms. Herbal ingredients in Gumgen have been shown to prevent biofilm (plaque) formation and bacterial infections caused by gram-negative bacteria.⁹ They have also been shown to not only directly kill bacteria but also work against the regulation of bacterial adhesion, inflammation, cytotoxicity.¹⁰ Apro is also required to help reduce inflammation and infection within the head and mouth. Patients can experience symptom improvement in 3 days. 4 weeks of the protocol is required for significant improvement.

If the gum infection also involves spirochetes with symptoms of bleeding gums, Spiromin is also required in addition to the recommended Gumgen and Apro. Spiromin helps clear Damp Heat toxins and infections caused by spirochetes. Herbal ingredients in Spiromin have been shown to have very strong antibacterial and microbial effects as well as anti-inflammatory.¹¹ Compared with other commonly seen antibacterial drugs, these herbs exhibit a broader antimicrobial spectrum, more powerful antibacterial activity, and inhibition of drug-resistant bacteria.¹¹ They also exhibit immunoregulatory effects as well since spirochetes trigger a broad immune response. Patients can experience symptom improvement in 1 month. 3 months of the protocol is required for significant improvement.

Brain Spirochete Infections

If the patient has developed a neurodegenerative condition linked to a periodontal spirochete infection, Spiromin-R is also recommended in addition to the recommended Spiromin, Gumgen, and Apro. Spiromin is able to clear the spirochetes that infect the brain through bigger brain blood vessel, while Spiromin-R helps clear Brain Damp Heat toxins and infections in the brain deeper through smaller cerebral blood vessels. Herbal ingredients in Spiromin-R have been used for neuroinflammatory diseases in TCM for centuries.¹² They contain both anti-inflammatory and neuroprotective effects.¹² Patients can experience symptom improvement in 1 month. 3 months of the protocol is required for significant improvement.

Teeth Grinding

The wellness recommendation includes Hepavin, Brown, and LC Balancer. Hepavin helps remove liver Heat and quenches liver yang rising. Stress hormones such as cortisol and adrenaline can cause an overproduction of chemokines by the liver Kupffer cells. Hepavin helps to reduce the liver's exaggerated response to stress hormones and reduce the production of inflammatory chemokines. Many of the herbs in Hepavin have been shown to have anti-hepatotoxic, hepatoprotective, anti-inflammatory, immunomodulatory, and neuroprotective effects.^{3,4} Brown nurtures liver Yin. Brown helps improve overall liver health and repair liver damage. Herbal ingredients in Brown have been shown to improve general wellbeing and immune functions.⁵ LC Balancer nurtures kidney Yin. LC Balancer helps enhance microcirculation by improving microcapillary structure which improves overall blood flow and nutrient absorption to help diminish symptoms of fatigue and tiredness. American ginseng, one of the main ingredients in LC Balancer, has been shown to have many effects on the nervous system including increasing hippocampal excitability which helps reverse impairment from stress.⁶ Stress and anxiety symptoms and the resulting teeth grinding can become notably better within the first one to two weeks and one to six weeks is recommended for sustained results.

Protocol Summary

Condition	Recommendation
Teeth Nerve Pain	Apro, Talgia
Gum Infections	Gumgen, Apro
Gum Infections with Spirochetes	Gumgen, Apro, Spiromin
Brain Spirochete Infection	Spiromin-R, Gumgen, Apro, Spiromin
Teeth Grinding	Hepavin, Brown, LC Balancer

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