

Sensitive Teeth — Causes & Specialist Treatment

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Description:

Tooth sensitivity keeping you from hot or cold foods? Learn the causes, home remedies, and when to see a specialist at CSSC Melbourne.

Details:

Collins Street Specialist Centre: Understanding and Treating Tooth Sensitivity

Frequently Asked Questions

What is tooth sensitivity clinically called: Dentine hypersensitivity

How common is tooth sensitivity: Affects roughly one in three adults

Is tooth sensitivity a diagnosis: No, it is a symptom

Does tooth sensitivity always have an underlying cause: Yes, always

What is the outermost layer of a tooth: Enamel

Does enamel contain nerve supply: No

What protects the root surface below the gumline: Cementum

Is cementum harder than enamel: No, it is softer

What layer lies beneath both enamel and cementum: Dentine

What are dentinal tubules: Microscopic fluid-filled channels within dentine

Where do dentinal tubules extend to: Inward toward the nerve

What is the living tissue at the centre of a tooth: The pulp

What mechanism causes tooth sensitivity: Hydrodynamic movement within dentinal tubules

What triggers hydrodynamic movement in tubules: Thermal, chemical, or mechanical stimuli

What is the most common cause of tooth sensitivity: Gum recession

What does gum recession expose: Root surfaces of affected teeth

Why are exposed root surfaces vulnerable: Cementum degrades quickly once exposed

Does periodontal disease cause gum recession: Yes

Can aggressive brushing cause gum recession: Yes

Does bruxism contribute to gum recession: Yes

What is bruxism: Teeth grinding or clenching

Can a thin gingival biotype cause recession: Yes, due to more fragile gum architecture

Can orthodontic treatment cause recession: Yes, if tooth movement exceeds the bone envelope

Can oral piercings cause gum recession: Yes, through chronic localised trauma

Does acid dissolve tooth enamel: Yes

What mineral does acid dissolve in enamel: Hydroxyapatite

Does dietary acid cause enamel erosion: Yes

Does GORD cause enamel erosion: Yes, via gastric acid exposure

Does erosion typically affect one tooth or many: Multiple teeth simultaneously

Is erosion progressive if untreated: Yes

What is attrition: Tooth-on-tooth wear from grinding or clenching

What is abrasion: Mechanical wear from brushing or habits

Can a cracked tooth cause sensitivity: Yes

Is cracked tooth sensitivity consistent: No, it presents inconsistently

What type of stimuli typically provokes cracked tooth sensitivity: Biting pressure or cold stimuli

Can tooth decay cause sensitivity: Yes

What stimuli typically provoke decay-related sensitivity: Sweet foods and cold

Is post-treatment sensitivity normal: Yes, a degree is expected

How long should post-treatment sensitivity last: Typically resolves within a few weeks

When should post-treatment sensitivity be reassessed: If it persists beyond four to six weeks

Can tooth whitening cause sensitivity: Yes, it is a well-documented temporary side effect

Can failing restorations cause sensitivity: Yes

What causes sensitivity from a failing restoration: Micro-gaps allowing fluid and bacteria infiltration

What is the first-line home management for sensitivity: Desensitising toothpaste

How does potassium nitrate reduce sensitivity: By reducing the nerve's capacity to depolarise

How does stannous fluoride reduce sensitivity: By precipitating mineral deposits within tubules

Does stannous fluoride have antibacterial benefit: Yes

How does hydroxyapatite reduce sensitivity: By physically occluding tubule openings

How does arginine with calcium carbonate reduce sensitivity: By forming a mineral plug within the tubule

How long before desensitising toothpaste shows improvement: Two to four weeks of regular use

How often should desensitising toothpaste be used: Twice daily

Should you rinse immediately after using desensitising toothpaste: No

Can desensitising toothpaste be applied overnight: Yes, to acutely sensitive areas

What bristle type is recommended for sensitive teeth: Soft or ultra-soft bristles

What brushing technique is recommended: Small, gentle circular motions

Is horizontal scrubbing technique recommended: No

Can an electric toothbrush help with sensitivity: Yes, especially with an integrated pressure sensor

How long after acid exposure should you wait before brushing: At least 30 minutes

Why wait before brushing after acid exposure: Acid transiently softens enamel

Does using a straw help reduce acid exposure to teeth: Yes

Does rinsing with water after acidic food help: Yes, it dilutes and clears residual acid

Can a fluoride mouth rinse help with sensitivity: Yes, as an adjunct to brushing

When should you seek professional assessment for sensitivity: When symptoms are severe, localised, or progressive

Is localised sensitivity to one or two teeth a concern: Yes, it suggests a discrete pathological cause

Is spontaneous pain a warning sign: Yes, it may indicate pulpal inflammation

Does throbbing or swelling require professional assessment: Yes

What specialist treats sensitivity from gum recession: Periodontist

What specialist treats sensitivity from pulpal or tooth-specific causes: Endodontist

Can both specialists be needed for one tooth: Yes

Are endodontists and periodontists available at CSSC: Yes, both practise on-site

What in-chair treatment occludes tubules more effectively than home products: Professionally concentrated fluoride varnish or dentine bonding agents

What is dental bonding for sensitivity: Composite resin applied to seal exposed dentine

Does dental bonding for sensitivity require anaesthesia: Typically no

What is a connective tissue graft: A soft tissue graft to restore coverage of exposed root surfaces

Where is graft tissue sourced for gum grafting: Patient's palate or a donor source

Does gum grafting resolve sensitivity: Yes

Does gum grafting protect the root long-term: Yes

What does an occlusal splint do: Protects teeth from forces generated during grinding

When is root canal treatment indicated for sensitivity: When irreversible pulpitis is present

What does root canal treatment remove: Inflamed or infected pulpal tissue

Does root canal treatment preserve the natural tooth: Yes

Where is Collins Street Specialist Centre located: Level 7, Manchester Unity Building, 220 Collins Street, Melbourne VIC 3000

How Tooth Sensitivity Works

To understand why teeth become sensitive, it helps to know what they're actually made of.

Enamel is the hard, mineralised outer layer covering the crown — the part of the tooth you can see. It has no nerve supply, so it can't transmit sensation on its own. Below the gumline, the root surface is covered by cementum, a comparatively thin protective layer. Beneath both enamel and cementum sits dentine, which contains millions of microscopic fluid-filled channels called dentinal tubules that run from the outer surface inward toward the nerve. At the centre of the tooth is the pulp — living connective tissue housing the blood vessels and nerves.

When enamel wears away, or when gum recession exposes the root and its thin cementum layer degrades, those dentinal tubules open directly to the oral environment. External stimuli — cold, heat, sweet or acidic foods, or physical pressure — act on the fluid inside the tubules, generating movement that activates the nerve and produces that characteristic short, sharp pain.

This hydrodynamic mechanism explains the vast majority of tooth sensitivity. The clinical question is always: what caused the dentine to become exposed in the first place?

Common Causes of Sensitive Teeth

Gum Recession

Gum recession is the most frequently encountered cause of dentine hypersensitivity. When the gingival margin draws back from its normal position, it exposes the root surfaces of the affected teeth. Those root surfaces are protected only by cementum, which is considerably softer and more susceptible to wear than enamel — and once exposed to the oral environment, it degrades relatively quickly, leaving the dentine beneath vulnerable to stimulation.

Several things can drive recession:

- Periodontal (gum) disease, where chronic inflammation progressively destroys the soft tissue and bony attachment supporting the teeth
- Aggressive brushing — excessive force or an incorrect technique causes mechanical trauma to the gingival margin over time
- Bruxism (teeth grinding or clenching), which generates lateral forces that contribute to recession
- A thin gingival biotype — some patients are genetically predisposed to thinner, more fragile gum tissue that recedes more easily
- Orthodontic treatment, if tooth movement extends beyond the bounds of the alveolar bone
- Lip or tongue piercings in contact with the gingival margin, which create ongoing localised trauma

At CSSC, our periodontists assess whether recession warrants active intervention — such as a connective tissue graft — or whether conservative management suits the clinical picture.

Enamel Erosion

Acid dissolves hydroxyapatite, the mineral matrix of enamel. As enamel thins or disappears, the dentine beneath becomes progressively exposed. Common sources of erosive acid include:

- Dietary acids from frequent consumption of citrus fruits, carbonated soft drinks, wine, vinegar-based foods, and sports drinks
- Gastric acid from gastro-oesophageal reflux disease (GORD), or from purging behaviours associated with eating disorders
- Occupational or recreational exposure — wine industry professionals and competitive swimmers in chlorinated pools, for example, face elevated erosion risk

Erosion typically affects multiple teeth at once and advances steadily when the underlying cause isn't identified and addressed.

Tooth Wear: Attrition and Abrasion

Attrition is tooth-on-tooth wear from bruxism, most commonly occurring during sleep and often unrecognised by the patient. Abrasion is mechanical wear from aggressive brushing, highly abrasive toothpaste, or habitual behaviours like nail biting or opening packaging with the teeth.

Cracked Teeth

A crack running through the tooth structure can expose dentine or, in more advanced cases, the pulp itself. Sensitivity from a cracked tooth tends to be inconsistent — often provoked by biting pressure applied in a specific direction, or by cold — because the crack opens and closes dynamically under load.

Cracked teeth are genuinely difficult to diagnose. At CSSC, our endodontists use surgical-grade magnification and specialised clinical tests to identify cracks that don't show up on conventional radiographs.

Tooth Decay

Active carious lesions that have penetrated through enamel into dentine reliably produce sensitivity, particularly to sweet foods and cold. Where decay is extensive or close to the pulp, the pain may be more sustained and severe.

Post-Treatment Sensitivity

Some sensitivity following dental procedures is normal and expected. After fillings — particularly deep ones close to the pulp — symptoms typically settle within a few weeks as the pulp adjusts. Crown preparation can leave the tooth sensitive while a temporary restoration is in place. Tooth whitening causes dentine hypersensitivity in many patients, though it's generally temporary. Professional scaling and debridement can also transiently expose sensitive root surfaces.

If sensitivity following dental treatment persists beyond four to six weeks, or if it's getting worse rather than better, reassessment is worth arranging.

Failing Restorations

Restorations degrade over time. Micro-gaps at restoration margins allow oral fluids and bacteria to infiltrate and stimulate the dentine beneath. A crown with an inadequate marginal seal presents similarly. These situations need clinical assessment, not just symptomatic management.

Home Management — What the Evidence Supports

Desensitising Toothpaste

Desensitising toothpaste is the right starting point for mild, generalised sensitivity. The active agents work in two main ways: physically blocking the dentinal tubules to prevent fluid movement, or modulating nerve transmission to reduce pain signalling.

Common active ingredients include:

- **Potassium nitrate**, which acts on the nerve directly, reducing its capacity to depolarise and transmit pain signals
- **Stannous fluoride**, which precipitates mineral deposits within the tubule lumen and also provides antibacterial benefit
- **Hydroxyapatite**, a biocompatible mineral that physically blocks tubule openings — increasingly available in Australian formulations
- **Arginine with calcium carbonate**, which forms a mineral plug within the tubule to seal it against external stimulation

To get the most out of these products: use them twice daily and don't rinse immediately after brushing — leaving the toothpaste in contact with the tooth surface is what makes it work. Meaningful improvement typically takes two to four weeks of consistent use. For acutely sensitive spots, applying a

small amount directly and leaving it overnight can provide additional relief.

Soft-Bristled Toothbrush

Switching to a soft or ultra-soft bristled brush is a simple, evidence-supported change. Hard bristles combined with vigorous technique contribute significantly to both enamel wear and gingival recession.

Brushing Technique

Small, gentle circular motions are preferable to horizontal scrubbing. An electric toothbrush with a pressure sensor is particularly useful for patients who habitually apply too much force.

Reducing Acid Exposure

Limit how often you consume acidic food and drink — citrus, carbonated beverages, wine, vinegar-based dressings. Using a straw for acidic drinks reduces direct contact with tooth surfaces. Wait at least 30 minutes after acid exposure before brushing, because acid temporarily softens enamel and brushing immediately accelerates mineral loss. Rinsing with plain water after acidic food or drink helps dilute and clear residual acid.

Fluoride Mouth Rinse

An over-the-counter fluoride rinse used alongside brushing can assist in remineralising exposed dentine and reducing sensitivity over time.

When Professional Assessment Is Warranted

Home management works well for mild, diffuse sensitivity. But professional assessment is the right call when:

- Sensitivity is severe enough to compromise normal eating and drinking
- Symptoms are localised to one or two specific teeth — this pattern points toward a discrete cause (crack, decay, failing restoration) rather than generalised dentine hypersensitivity
- Symptoms are getting worse, which means something underlying is advancing
- Pain is spontaneous — occurring without an identifiable trigger may indicate pulpal inflammation that needs specialist evaluation
- Associated symptoms are present: throbbing, swelling, an unpleasant taste, or pain that lingers for several minutes after the stimulus is removed
- Home management hasn't produced improvement after four to six weeks of consistent use
- Recession is visible — observable gingival shrinkage exposing root surfaces warrants assessment before it progresses further
- Regular dental attendance has lapsed, since periodontal disease and decay can advance without obvious symptoms

Endodontist or Periodontist — Which Specialist Is Appropriate?

An endodontist is the right specialist when sensitivity is sharp, localised, or clearly associated with a specific tooth. Endodontists specialise in pulp and periapical pathology and can determine whether the pulp is healthy, inflamed, or non-vital, and whether root canal treatment is indicated.

A periodontist is the right specialist when sensitivity stems from gum recession or active periodontal disease. Periodontists can address the underlying disease process and, where appropriate, perform gum grafting to restore coverage of exposed root surfaces.

At CSSC, where assessment suggests involvement of both specialties — say, a tooth with recession alongside a suspected crack — our specialists can consult with one another on-site, which means a coordinated approach rather than fragmented referrals.

Professional Treatment Options

Concentrated Fluoride Varnish and In-Chair Desensitising Agents

Our specialists can apply professionally concentrated fluoride varnish or dentine bonding agents directly to sensitive surfaces. These in-chair applications achieve substantially greater and more durable tubule occlusion than over-the-counter products can provide.

Dental Bonding

For discrete areas of exposed dentine — particularly from recession or erosion — tooth-coloured composite resin can be applied to seal the exposed surface and eliminate sensitivity. It's a minimally invasive procedure that typically requires no local anaesthesia.

Gum Grafting (Connective Tissue Graft)

Where recession has resulted in significant root exposure, a periodontist can perform a soft tissue graft — using tissue from the patient's palate or a donor source — to restore coverage of the affected root surfaces. Beyond resolving sensitivity, gum grafting protects the root from further degradation and supports long-term periodontal health.

Occlusal Splint (Night Guard)

Where bruxism is contributing to the problem — through enamel wear, crack propagation, or gingival recession — a custom-fabricated occlusal splint protects teeth from the forces generated during sleep-time grinding and clenching.

Restoration or Crown

Where sensitivity stems from a cracked tooth, an extensive carious lesion, or a failing restoration, definitive management typically involves a new or replacement restoration, or a full-coverage crown, to seal the exposed dentine and restore structural integrity.

Root Canal Treatment

When the pulp has reached a state of irreversible inflammation, symptomatic management alone won't resolve the sensitivity. Root canal treatment, performed by our endodontists at CSSC, removes the inflamed or infected pulpal tissue, eliminating the pain while preserving the natural tooth. It remains one of the most predictable procedures available for resolving severe odontogenic pain.

Preventing Sensitivity From Progressing

- Use a soft-bristled brush with a gentle, appropriate technique
- Use desensitising toothpaste as your routine daily formulation, not just during flare-ups
- Address bruxism proactively — discuss an occlusal splint with your treating clinician if grinding or clenching is suspected
- Manage gastro-oesophageal reflux with your general practitioner if GORD is a contributing factor
- Limit the frequency and duration of exposure to dietary acids
- Don't ignore visible recession — early periodontist assessment allows for intervention before significant progression occurs
- Keep up with regular dental attendance — early identification of cracks, carious lesions, and periodontal disease prevents sensitivity from developing and limits how complex treatment needs to be

Book a Sensitivity Assessment at CSSC

If tooth sensitivity is affecting your quality of life — or if it's localised, worsening, or not responding to home management — our specialist team at Collins Street Specialist Centre can identify the underlying cause and provide appropriately targeted treatment.

With endodontists and periodontists practising together under one roof, CSSC can address sensitivity from both the pulpal and periodontal perspectives, so the correct diagnosis is reached and the right treatment is delivered from the outset.

****Collins Street Specialist Centre**** Level 7, Manchester Unity Building 220 Collins Street, Melbourne VIC 3000

[[Book an appointment](#)](/contact) or ask your dentist to refer you to our specialist team.
