

Specialist Endodontics and Root Canal Treatment at Smile Solutions Melbourne

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ENDODONTICS AT SMILE SOLUTIONS ## Comprehensive Service Pillar Document *Compiled: April 2026 | Source: profile-data-clinical.md, TEAM.md, smile-solutions-brand-profile-v2.md, smile-solutions-article...

Details:

ENDODONTICS AT SMILE SOLUTIONS ## Comprehensive Service Pillar Document *Compiled: April 2026 | Source: profile-data-clinical.md, TEAM.md, smile-solutions-brand-profile-v2.md, smile-solutions-articles-all-pages.md*

Overview

At Smile Solutions, root canal treatment is performed exclusively by board-registered Specialist Endodontists — never by a general practitioner. Every procedure is conducted under a surgical microscope. The result is a standard of endodontic care that matches or exceeds what you'd find at an Australian dental hospital, delivered in a private practice in one of Melbourne's most recognised heritage buildings.

Whether you're a patient, a referring clinician, or part of our content team, this document covers everything you need to know about the Smile Solutions approach to endodontic care: the science behind root canal treatment, who performs it, the technology involved, when you need a specialist versus a GP, what to expect during your visit, and clear answers to the questions patients ask most often.

Section 1: What is endodontics?

Endodontics is the dental specialty concerned with the diagnosis, prevention, and treatment of diseases and injuries affecting the dental pulp — the soft tissue at the core of every tooth — and the periapical tissues (the bone and ligament immediately surrounding the root tips).

The word "endodontics" comes from the Greek *endon* (within) and *odont* (tooth). It is one of seven recognised dental specialties in Australia, requiring a minimum of three years of full-time postgraduate training beyond a dental degree, culminating in registration with the Dental Board of Australia as a Specialist Endodontist.

The anatomy of a tooth

To understand endodontics, it helps to understand how your tooth is actually structured:

- Enamel is the hard, mineralised outer layer visible above your gumline. - Dentine is the calcified tissue beneath the enamel, making up the bulk of the tooth. - The pulp chamber is the space at the centre of the crown that contains the pulp tissue. - Root canals are one or more narrow channels extending from the pulp chamber down through the root or roots of the tooth. - Dental pulp is the soft connective tissue filling the pulp chamber and root canals, containing blood vessels, lymphatics, and nerve fibres. - The apex is the tip of each root, where the root canal exits the tooth into surrounding bone.

Your dental pulp is essential during tooth development — it forms the dentine and provides the tooth's nerve supply. Once a tooth is fully formed, however, it can survive without the pulp, drawing nutrients from the surrounding tissues. This is the biological basis for root canal treatment: remove the diseased pulp, clean and seal the canals, and your tooth can function comfortably for decades.

What goes wrong?

The pulp becomes diseased or damaged in a number of ways. The most common causes include:

- Deep dental decay, where bacteria penetrate through enamel and dentine to reach the pulp - Cracked or fractured teeth, which allow bacterial ingress along the fracture line - Trauma — a blow to the tooth that damages or severs the pulp's blood supply - Repeated dental procedures, where multiple restorations on the same tooth can cumulatively irritate the pulp over time - Severe gum disease, which can in some cases allow infection to track from the gum into the root canal system

Once the pulp is irreversibly damaged, it cannot heal itself. Without treatment, the infection spreads beyond the root tip into the surrounding bone, forming a periapical abscess — a painful, potentially serious condition that can, in rare cases, become life-threatening if left untreated.

Section 2: Root canal treatment — the procedure

Root canal treatment (also called endodontic treatment or, colloquially, a "root canal") is the process of removing diseased or dead pulp tissue, thoroughly cleaning and shaping the root canal system, and then sealing it to prevent reinfection.

At Smile Solutions, this procedure is always performed by a Specialist Endodontist using a surgical microscope — a combination that significantly improves both the precision of treatment and the likelihood of a successful long-term outcome.

Step-by-step: what happens during a root canal at Smile Solutions

1. Diagnosis and treatment planning

Before any treatment begins, your Smile Solutions endodontist conducts a thorough clinical examination, including:

- A review of your symptoms and dental history - Clinical tests (percussion, palpation, thermal and electric pulp testing) - Radiographic assessment — typically periapical X-rays and, where indicated, cone beam computed tomography (CBCT) for three-dimensional imaging

This diagnostic phase matters. Many conditions can mimic pulpal pain — cracked teeth, sinusitis, temporomandibular joint disorders, and referred pain from adjacent teeth — and accurate diagnosis prevents unnecessary treatment.

2. Local anaesthesia

Effective pain control is a priority at Smile Solutions. Our Specialist Endodontists are skilled at achieving profound anaesthesia even in acutely inflamed teeth, which can be more challenging to numb than healthy teeth. You won't be treated until the area is completely numb.

****3. Rubber dam isolation****

A rubber dam — a thin sheet of latex or non-latex material — is placed around your tooth to isolate it from the rest of the mouth. This keeps the tooth dry and free of saliva (which contains bacteria), and prevents irrigating solutions and small instruments from being accidentally swallowed or inhaled. Rubber dam use is standard at Smile Solutions for every endodontic procedure.

****4. Access cavity preparation****

Your endodontist creates an opening through the crown of the tooth to access the pulp chamber. Under the surgical microscope, this opening is made with precision — large enough to provide access to all canals, but conservative enough to preserve as much healthy tooth structure as possible.

****5. Canal location and negotiation****

Using the microscope and fine hand instruments, your endodontist locates all root canals. This is where specialist training and microscope use make a significant difference: teeth frequently have additional canals (accessory canals, fins, anastomoses) that are invisible to the naked eye and easily missed without magnification. Missing a canal is one of the most common reasons root canal treatment fails, and it's a risk our specialists are specifically trained to minimise.

****6. Cleaning and shaping****

The canals are cleaned using a combination of:

- Nickel-titanium (NiTi) rotary instruments — flexible, engine-driven files that shape the canals whilst minimising the risk of instrument fracture or canal transportation
- Irrigation — copious flushing with sodium hypochlorite (NaOCl) solution, which dissolves organic tissue and kills bacteria, followed by EDTA to remove the smear layer from canal walls
- Ultrasonic activation — using ultrasonic energy to agitate irrigants and improve their penetration into lateral canals and isthmuses that instruments cannot reach

****7. Working length determination****

An electronic apex locator is used alongside radiographs to determine the precise length of each canal. This ensures that cleaning and filling extends to — but not beyond — the root tip.

****8. Obturation (filling the canals)****

Once the canals are clean, dry, and shaped, they are filled with gutta-percha — a biocompatible, rubber-like material — combined with a sealer. The most common technique at Smile Solutions is warm vertical compaction, which allows the gutta-percha to flow into lateral canals and irregularities, producing a dense, three-dimensional fill.

****9. Coronal seal and restoration****

The access cavity is sealed with a temporary or permanent restoration. A post-endodontic crown is frequently recommended — particularly for back teeth — to protect your tooth from fracture. The Smile Solutions team works closely with referring dentists and the practice's own restorative specialists to ensure your final restoration is planned from the very outset of treatment.

Section 3: The surgical microscope — why it matters

Every endodontic procedure at Smile Solutions is performed under a surgical operating microscope. This is not standard practice across the dental profession — many general practitioners and even some endodontists work without one — and it's one of the most important distinctions in the quality of care our specialists provide.

What the microscope enables

At up to 25× magnification, structures invisible to the naked eye become clearly visible: fine canal orifices, fracture lines, calcified canals, root perforations. The microscope's coaxial illumination aligns the light source with the optical axis, so the deepest parts of the root canal are illuminated directly with no shadows. Procedures can also be recorded via camera or video, providing a visual record of findings and treatment that can be shared with referring clinicians or used to help you understand your own care.

The practical result is more conservative access cavities, more accurate instrument placement, and earlier detection of complications.

Clinical evidence

The dental operating microscope is associated with higher rates of canal detection, fewer procedural errors, and better outcomes in retreatment cases. Specialist endodontic training programmes in Australia require microscope use as a standard component of training, and it is recognised as best practice by the Australian and New Zealand Academy of Endodontists (ANZAE).

Section 4: Specialist Endodontists at Smile Solutions

Smile Solutions is home to a dedicated team of Specialist Endodontists, each holding postgraduate qualifications in endodontics and registered with the Dental Board of Australia as dental specialists.

What makes a Specialist Endodontist different?

A Specialist Endodontist has completed an undergraduate dental degree (typically five years), followed by a minimum of three years of full-time, accredited postgraduate training in endodontics — encompassing advanced clinical training, research, and formal examinations — and then registered with the Dental Board of Australia as a Specialist in Endodontics.

That training equips our specialists to manage the full range of endodontic complexity: from straightforward single-canal anterior teeth to severely curved, calcified, or previously treated multi-rooted molars, as well as surgical procedures such as apicoectomy.

Referral and direct access

Smile Solutions welcomes both direct patient bookings and referrals from general dental practitioners. Referring dentists receive a detailed written report following treatment, and the Smile Solutions team is available to discuss cases by phone prior to referral. If you're unsure whether you need a specialist, you're welcome to book a consultation — your endodontist will advise you on the most appropriate course of treatment.

Section 5: When do you need an endodontist?

Not every toothache requires a root canal, and not every root canal requires a specialist. There are circumstances where specialist endodontic care is strongly advisable, and others where it is essential.

Signs and symptoms that may indicate pulpal disease

- Spontaneous, unprovoked toothache — particularly pain that lingers after the stimulus (heat, cold, biting) is removed
- Severe sensitivity to heat that is relieved by cold (a classic sign of irreversible pulpitis)
- Pain on biting or chewing
- A visible swelling or "gumboil" (sinus tract) near a tooth
- Tooth discolouration — particularly a tooth that has gradually darkened over time
- A tooth that was previously traumatised and is now symptomatic

If you're experiencing any of these symptoms, book a consultation sooner rather than later.

Cases best managed by a specialist

- Retreatment cases — teeth that have had previous root canal treatment and have failed (persistent infection, missed canals, ledging, separated instruments) - Calcified canals — where the canal space has narrowed significantly due to age or previous trauma, making negotiation extremely difficult - Curved or complex root anatomy — multi-rooted molars, dilacerated roots, C-shaped canals - Separated instruments — a file fragment lodged within the canal that requires microsurgical retrieval - Internal or external root resorption - Surgical endodontics — apicoectomy, retrograde filling, intentional replantation - Cracked teeth — where the extent and prognosis of the crack must be carefully assessed before treatment proceeds - Diagnostic uncertainty — cases where the source of pain has not been definitively identified

General dental practitioners perform root canal treatment routinely and competently on straightforward cases. When complexity increases — or when a previous treatment hasn't resolved — specialist involvement significantly improves the likelihood of a successful outcome and the retention of your natural tooth.

Section 6: Endodontic retreatment

Endodontic retreatment involves removing a previous root filling, re-cleaning the canal system, and resealing it. It is indicated when a tooth that has had root canal treatment develops signs of persistent or new infection — typically evidenced by symptoms such as pain or swelling, or by radiographic findings showing a periapical lesion that has not resolved or has appeared after treatment.

Why does root canal treatment sometimes fail?

The most common reasons include:

- Missed canals — additional canals not identified or treated at the time of original treatment - Inadequate cleaning — residual bacteria or necrotic tissue remaining in the canal system - Inadequate seal — a coronal restoration that has leaked, allowing recontamination of the canal system - Complex anatomy — fins, anastomoses, or lateral canals that were not reached by irrigation - Fractured instruments — a separated file that blocked complete cleaning of the canal - Resistant microorganisms — certain bacteria (notably *Enterococcus faecalis*) are particularly difficult to eliminate and are commonly found in failed cases

Retreatment at Smile Solutions

Our endodontists are experienced in managing failed root canal cases, including the removal of separated instruments, the negotiation of ledged or blocked canals, and the retreatment of teeth with complex anatomy. Where non-surgical retreatment is not possible or has previously failed, surgical endodontics (apicoectomy) may be considered as a pathway to saving your tooth.

Section 7: Surgical endodontics (apicoectomy)

When non-surgical root canal treatment or retreatment cannot resolve a periapical infection — or when the anatomy of your tooth makes it impossible to adequately clean the apex from within the crown — surgical endodontics offers another pathway to tooth retention.

What is an apicoectomy?

An apicoectomy (also called apical surgery or periradicular surgery) involves reflecting a small flap of gum tissue to expose the bone overlying the root tip, then removing a small amount of bone to access

the apex of the root. The apical few millimetres of the root tip are resected — this is the area most likely to harbour persistent infection or anatomical complexity. A small cavity is then prepared in the resected root end (retrograde preparation) using an ultrasonic tip, filled with a biocompatible material (most commonly mineral trioxide aggregate (MTA) or Biodentine), and the gum flap is replaced and sutured.

When is apicoectomy indicated?

- Persistent periapical pathology after adequate non-surgical treatment - A post or crown that cannot be removed to allow retreatment - A calcified canal that cannot be negotiated from the crown - Root fractures or resorptive defects at the apex - Cases where tissue from the periapical lesion is needed for histopathological examination

At Smile Solutions, apicoectomy is performed under the surgical microscope, with ultrasonic retrograde preparation and MTA or Biodentine retrograde fill — the current evidence-based standard for surgical endodontic outcomes.

Section 8: Cracked teeth — a diagnostic challenge

Cracked tooth syndrome is one of the most diagnostically challenging conditions in dentistry. Patients typically present with sharp pain on biting — often on release of biting pressure — that can be difficult to reproduce consistently and may have been present for months or years before a diagnosis is reached.

Types of tooth cracks

Craze lines are superficial cracks in enamel only; they're common, asymptomatic, and require no treatment. A fractured cusp has broken away and is usually restorable. A cracked tooth — a crack extending from the crown toward (and sometimes into) the root — is the most clinically significant category. A split tooth has separated into two distinct segments and usually requires extraction. A vertical root fracture originates in the root, often in previously root-treated teeth, and also usually requires extraction.

Diagnosis

Diagnosing a cracked tooth involves a combination of approaches:

- Selective biting tests using a tooth slooth or Burlew wheel - Transillumination — shining a light through the tooth to visualise the crack - Staining with methylene blue dye - Examination under the surgical microscope - CBCT imaging — to assess the extent of the crack and any associated bone loss

Prognosis and treatment

The prognosis of a cracked tooth depends on the direction and depth of the crack. A crack that has not reached the pulp and does not extend below the crestal bone can often be managed with a cuspal coverage restoration (onlay or crown). A crack that has reached the pulp will require root canal treatment in addition to the restoration. A crack that extends below the crestal bone carries a poor prognosis and may necessitate extraction.

At Smile Solutions, cracked teeth are assessed thoroughly before any treatment is undertaken. The aim is to give you a realistic, honest prognosis and to help you make a genuinely informed decision about your treatment options — no pressure, no surprises.

Section 9: Cone beam CT (CBCT) in endodontics

Cone beam computed tomography (CBCT) is a three-dimensional imaging modality that has significantly advanced diagnostic capability in specialist endodontic practice. Unlike conventional dental radiographs, which produce a two-dimensional image, CBCT provides a volumetric dataset that can be viewed in any plane — axial, coronal, sagittal, or as a three-dimensional reconstruction.

Clinical applications of CBCT in endodontics

CBCT is more sensitive than periapical radiography for detecting early periapical lesions, particularly in posterior teeth where anatomical structures (the zygomatic arch, the inferior alveolar canal) can obscure findings on conventional films. It is also used to identify the number, position, and curvature of root canals prior to treatment; to reveal fracture lines and associated bone loss patterns not visible on conventional radiographs; to assess the proximity of the root apex to the maxillary sinus, inferior alveolar nerve, or adjacent teeth prior to apicoectomy; to determine the extent and location of internal or external resorption; and to identify the cause of previous treatment failure when planning retreatment.

Radiation considerations

CBCT delivers a higher radiation dose than a standard periapical radiograph, so its use is justified only when the clinical question cannot be answered by conventional imaging. At Smile Solutions, CBCT is used selectively and in accordance with the ALARA (As Low As Reasonably Achievable) principle — ordered when the additional diagnostic information is likely to change your treatment plan or meaningfully improve your outcome.

Section 10: Pain management and your experience

One of the most persistent misconceptions about root canal treatment is that it is painful. In reality, the procedure itself — performed under local anaesthesia — should be no more uncomfortable than having a filling placed. The pain associated with "root canals" in popular culture typically refers to the pain of the infection that precedes treatment, not the treatment itself.

Pain before treatment

Acute pulpitis and periapical abscess can be extremely painful. If you're presenting in acute pain, you'll be prioritised at Smile Solutions, with urgent appointments available where possible. In some cases, antibiotics may be prescribed to manage spreading infection prior to definitive treatment — though antibiotics alone cannot resolve pulpal or periapical disease and are not a substitute for root canal treatment.

Anaesthesia during treatment

Achieving profound anaesthesia in an acutely inflamed tooth requires real skill. Inflamed tissue has a lower pH, which reduces the efficacy of standard local anaesthetic solutions. Our Specialist Endodontists are trained in supplemental anaesthetic techniques — including intraligamentary injection, intrapulpal injection, and intraosseous anaesthesia — to ensure your complete comfort throughout treatment.

After treatment

Mild soreness in the days following root canal treatment is normal — the periapical tissues have been disturbed, and some post-operative inflammation is inevitable. This discomfort is typically manageable with over-the-counter analgesics (ibuprofen and/or paracetamol) and resolves within a few days. You'll be given clear post-operative instructions and contact details for the Smile Solutions practice in case you have any concerns.

Anxious patients

Dental anxiety is common, and at Smile Solutions, we take it seriously. Our team is experienced in caring for anxious patients with a calm, unhurried approach, thorough explanation of each step, and — where appropriate — referral for conscious sedation. Share your concerns with us before and during treatment. You're in good hands.

Section 11: Outcomes and tooth survival

What are the success rates of root canal treatment?

The evidence base for endodontic outcomes is substantial. Published survival rates vary depending on study methodology, case selection, and how success is defined, but well-conducted studies consistently report:

- Non-surgical root canal treatment (initial): 85–97% success at 4–5 years when performed to a high standard
- Endodontic retreatment: 75–85% success, depending on the reason for failure
- Surgical endodontics (apicoectomy): 85–95% success using modern techniques (microscope, ultrasonic retrograde preparation, MTA fill)

Your individual outcome is significantly influenced by the quality of the root canal treatment itself, the quality of the coronal restoration (a crown or onlay that seals the tooth effectively), and patient factors including oral hygiene, bite loading, and systemic health.

Root canal treatment vs. extraction and implant

A question we hear often is whether it's better to save a tooth with root canal treatment or to extract it and place a dental implant. The answer depends on the individual tooth and your clinical circumstances, but the general principle — endorsed by specialist bodies including the Australian and New Zealand Academy of Endodontists (ANZAE) — is that saving your natural tooth is preferable to extraction wherever this is clinically achievable and cost-effective.

Your natural teeth have proprioceptive feedback (the ability to sense biting force), integrate with the surrounding bone and gum tissue naturally, and do not require the surgical intervention, healing time, and cost associated with implant placement. A well-treated and well-restored tooth can last a lifetime.

That said, not every tooth is worth saving. Teeth with vertical root fractures, severe bone loss, or insufficient remaining tooth structure for a functional restoration may be better extracted. Our endodontists provide honest, evidence-based advice on prognosis to help you make a genuinely informed decision — one that's right for you.

Section 12: Frequently asked questions

****Does root canal treatment hurt?*** The procedure itself, performed under local anaesthesia, should be comfortable. Most patients are genuinely surprised by how straightforward the experience is. Some post-operative soreness is normal and typically resolves within a few days.

****How many appointments will I need?*** Many root canal treatments at Smile Solutions are completed in a single appointment. More complex cases — including retreatments, cases with active infection, or teeth with particularly complex anatomy — may require two appointments. Your endodontist will advise you clearly at the consultation.

****Can I drive home after my appointment?*** Yes, if you've had local anaesthesia only. If sedation has been used, a responsible adult must drive you home.

****Will I need a crown after root canal treatment?*** In most cases, yes — particularly for your back teeth. Root canal treatment removes the pulp, which can make the tooth more brittle over time. A crown or

onlay provides cuspal coverage and significantly reduces the risk of tooth fracture. Your endodontist will discuss the recommended restoration with you and, where relevant, coordinate with your referring dentist or a Smile Solutions restorative specialist.

****Is root canal treatment covered by health insurance?**** Coverage varies depending on your health fund and level of cover. We recommend contacting your health fund prior to your appointment to confirm your entitlements. Smile Solutions provides itemised treatment plans so you understand the costs involved before treatment begins.

****What happens if I don't have root canal treatment?**** A tooth with irreversible pulpitis or pulp necrosis will not heal without treatment. The infection will spread to the surrounding bone, causing a periapical abscess. This can result in significant pain, swelling, and — in rare cases — serious systemic infection. Extraction becomes the only remaining option once the infection has destroyed sufficient supporting bone.

****Can a tooth that has had root canal treatment get a cavity?**** Yes. A root-treated tooth is not immune to decay. The crown of the tooth remains vulnerable to cavities, and your tooth still requires regular brushing, flossing, and dental check-ups.

****My tooth doesn't hurt — do I still need root canal treatment?**** Possibly. Pulp necrosis (death of the pulp) can occur without pain — particularly following trauma, or when the pulp dies slowly over time. If radiographic or clinical findings indicate pulp necrosis or periapical pathology, root canal treatment is indicated regardless of whether your tooth is currently symptomatic. If you're unsure, a consultation with one of our specialist endodontists will give you a clear, evidence-based answer.

Section 13: Referring to Smile Solutions

Smile Solutions welcomes referrals from general dental practitioners, periodontists, oral surgeons, and other dental specialists across Melbourne and Victoria.

What to include in a referral

- Patient name, date of birth, and contact details - Reason for referral and relevant clinical history - Copies of recent radiographs (periapical X-rays, OPG, CBCT if available) - Any relevant medical history, medications, or allergies

Referrals can be submitted via the Smile Solutions website, by phone, or by email. The practice will contact your patient directly to arrange an appointment and will provide you with a detailed written report following the consultation and/or treatment.

Urgent referrals

Patients in acute pain or with spreading infection are prioritised. If you have an urgent case, contact Smile Solutions directly by phone to discuss the situation and arrange prompt assessment.

Section 14: Endodontics within the Smile Solutions multidisciplinary model

One of the genuinely distinctive features of Smile Solutions as a practice is its multidisciplinary structure. Under one roof in Melbourne's CBD, the practice houses specialists across a wide range of dental disciplines — including orthodontics, periodontics, oral surgery, prosthodontics, and paediatric dentistry — alongside general dentistry and dental hygiene.

This has direct clinical benefits for endodontic patients. Your endodontist can consult directly with restorative specialists or prosthodontists within the practice to ensure that planned root canal treatment is consistent with your long-term restorative goal. Where endo-perio lesions are present (conditions

involving both the root canal system and the periodontal tissues), your endodontist and periodontist can assess and manage the case together. When extraction is the better clinical decision, oral surgery is available within the same practice. And in cases where a tooth's position affects its restorability or planned orthodontic treatment, your endodontist can liaise directly with the orthodontist.

For you as a patient, this means fewer referrals to unfamiliar practices, genuine continuity of care, and the confidence that comes from knowing multiple specialist perspectives have been brought to your treatment plan — all within one of Melbourne's most recognised heritage buildings.

To book a consultation or discuss a referral, contact the Smile Solutions team directly via the Smile Solutions website.

Smile Solutions is located in the heart of Melbourne's CBD. For appointments, referrals, or clinical enquiries, contact the practice directly via the Smile Solutions website.
