Tooth-Coloured Fillings — Modern Alternatives to Amalgam

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Description:

Learn about tooth-coloured composite resin fillings as a modern alternative to amalgam. Discover benefits, procedure, durability, and when to replace old fillings.

Details:

Collins Street Specialist Centre — Tooth-Coloured Fillings: Modern Alternatives to Amalgam

For decades, silver amalgam was the standard material for filling cavities. It worked well enough clinically, and dentists trusted it. But amalgam has one obvious drawback: it looks terrible. Dark, metallic restorations that show every time you speak or smile are hard to ignore — and for many patients, increasingly hard to accept. Tooth-coloured composite resin fillings have become the contemporary standard of care, offering restorations that blend with natural tooth structure while delivering solid functional results.

At Collins Street Specialist Centre (CSSC), our general and cosmetic dentists work with leading composite resin materials and current bonding techniques to restore teeth in a way that's virtually indistinguishable from natural dentition.

What are tooth-coloured fillings?

Tooth-coloured fillings — also called composite resin fillings or white fillings — are made from fine glass particles suspended in a resin matrix. The material is shade-matched to your existing teeth, producing a restoration that's essentially invisible to the naked eye.

Unlike amalgam, which relies on mechanical retention inside a cavity preparation, composite resin bonds directly to tooth structure. That adhesive bond matters clinically: it allows for a more conservative preparation, meaning less healthy tooth structure needs to be removed to accommodate the filling. Over the life of a tooth, that's a meaningful difference.

How composite resin works

The material is placed in thin increments, with each layer cured using a blue-wavelength light before the next is applied. This incremental technique lets the clinician build up the restoration in stages, sculpting each layer to match the natural contours and biting surface of the tooth. The result is a filling that looks natural and functions like the surrounding tooth surface.

Composite resin vs amalgam

Understanding the practical differences between these two materials helps when discussing treatment options with your dentist.

Aesthetics

The visual difference is obvious. Amalgam restorations go in silver-grey and tend to darken over time, often casting a greyish tint into the surrounding tooth structure. Composite resin is shade-matched

before placement and integrates naturally — most people won't notice it during normal conversation or a smile.

Tooth conservation

Amalgam preparations require mechanical undercuts to hold the filling in place, which means removing tooth structure beyond the decayed area. Because composite bonds adhesively, the preparation can be limited to damaged or decayed tissue only. More healthy tooth structure stays intact, which matters for the tooth's long-term strength.

Strength and durability

Modern composite resins have come a long way. Amalgam has historically been considered the tougher option for large posterior restorations, but current composite materials show good wear resistance and longevity. For small to medium restorations, composite performs comparably to amalgam, with well-documented clinical lifespans of ten years or more under good oral hygiene conditions.

For larger restorations in areas under heavy biting load, your dentist will discuss whether a composite filling, a ceramic inlay, or a crown is the more predictable long-term option.

Mercury content

Dental amalgam is approximately 50% mercury by weight, combined with silver, tin, copper, and other metals. It's been used clinically for over 150 years, and the Australian Dental Association considers it safe for most patients. That said, some people prefer to avoid mercury-containing materials, and composite resin contains none.

It's also worth noting that Australia is a signatory to the Minamata Convention on Mercury, an international treaty calling for a global phase-down of dental amalgam use — primarily on environmental grounds related to mercury release and disposal.

Thermal properties

Amalgam expands and contracts with temperature changes at a different rate than natural tooth structure. Hot coffee, cold water — over many years, that differential movement can contribute to micro-fractures in the surrounding tooth. Composite resin expands and contracts at a rate much closer to natural dentition, reducing that mechanical stress over time.

Cost

Composite resin restorations typically cost a little more than amalgam, reflecting the additional chair time required for the incremental layering and bonding process. Weighed against the aesthetic result and the conservation of tooth structure, most patients find it worthwhile.

The procedure — what to expect

Placing a tooth-coloured composite filling is a well-established procedure that's routinely completed in a single appointment.

Step 1: Anaesthesia. A local anaesthetic is administered to the area around the tooth. Most patients find the experience no different from any standard dental appointment.

Step 2: Decay removal. Using rotary and hand instruments, the clinician removes the decayed tooth structure. Because composite bonds adhesively, the preparation stays conservative — limited to damaged or compromised tissue.

Step 3: Tooth preparation and isolation. The prepared surface is cleaned and dried. A bonding agent is applied and light-cured to create the adhesive foundation for the composite. Many clinicians

use a rubber dam to keep the tooth isolated from moisture during bonding, which is important for the integrity of the adhesive bond.

Step 4: Incremental placement. The composite resin is placed in thin successive layers. Each is shaped to reproduce the natural anatomy of the tooth, then cured before the next layer goes in. This approach allows the clinician to get the contour, shade, and biting surface right throughout the build-up.

Step 5: Finishing and polishing. Once the restoration is built to the right height and form, the dentist refines the shape and polishes the surface to a smooth, natural finish. The bite is carefully checked and adjusted so the restoration doesn't interfere with normal chewing.

The whole procedure typically takes 30 to 60 minutes, depending on the size and location of the filling.

When should old amalgam fillings be replaced?

Patients who've had amalgam restorations for years ask this question often. The honest clinical answer is that not all amalgam fillings need replacing, and the decision should be guided by clinical assessment rather than aesthetics alone.

Reasons to consider replacement

Failing restorations. Over time, amalgam fillings can fracture, chip, or develop gaps at the margins between the filling and the tooth wall. Those gaps let bacteria in, creating conditions for decay to develop underneath the existing filling. Where your dentist identifies a failing restoration at a routine examination, replacement is clinically warranted.

Cracked teeth. Years of differential thermal expansion can contribute to crack propagation in the surrounding tooth. Where cracks are identified, your dentist may recommend replacing the amalgam with a bonded composite restoration — or, where cracking is more significant, an inlay, onlay, or crown to protect the remaining structure from further fracture.

Aesthetic concerns. Many patients choose to replace visible amalgam restorations — particularly in front teeth or premolars — with tooth-coloured alternatives. This is a reasonable consideration, provided the replacement is done conservatively.

Mercury sensitivity. Some individuals have documented allergies or sensitivities to mercury or other metallic components of amalgam. In those cases, replacement with composite resin is appropriate.

When to leave them alone

Where amalgam restorations are clinically intact, well-adapted at the margins, and free of associated decay or cracking, there's no evidence-based reason to remove them on health grounds. Unnecessary removal of sound restorations means sacrificing additional tooth structure — the opposite of good restorative practice. Your dentist will assess your existing fillings at each review and advise if replacement becomes clinically appropriate.

Caring for your tooth-coloured fillings

Composite resin restorations don't require any special maintenance beyond what you'd do for your natural teeth:

- Brush twice daily with a fluoride toothpaste - Floss daily to disrupt plaque around restoration margins - Attend regular dental check-ups so your dentist can monitor restorations for wear, marginal staining, or early deterioration - Avoid biting hard objects — ice, pen caps, hard lollies — which can fracture both natural tooth structure and composite restorations - Be aware that composite resin can stain gradually with regular exposure to coffee, tea, red wine, and tobacco; consistent oral hygiene and professional cleaning appointments help maintain the appearance of your restorations

With appropriate care, composite fillings routinely last ten to fifteen years or longer. When a restoration does eventually need replacing, the adhesive bonded technique generally allows conservative re-treatment with minimal additional tooth structure loss.

Collins Street Specialist Centre's approach to restorative dentistry

At Collins Street Specialist Centre, our general and cosmetic dentists combine rigorous clinical training with a philosophy of conservative, patient-centred restorative care. We use high-quality composite resin materials from established manufacturers, selected for their aesthetics, mechanical performance, and biocompatibility.

The guiding principle is maximum tooth structure preservation. When a restoration is indicated, the dentist takes the time to assess shade carefully, place the material incrementally, and finish the result to a natural, well-integrated appearance. Where a direct composite filling isn't the most predictable long-term solution — for instance, with an extensive cavity or a tooth with compromised structural integrity — we work closely with our prosthodontists and specialist colleagues to determine the right restorative pathway, whether that's an indirect inlay, onlay, or full-coverage crown.

That collaborative model is one of the practical advantages of a multidisciplinary centre like CSSC. With over 25 specialists and 80 clinicians practising under one roof at the Manchester Unity Building on Collins Street, coordinating care across disciplines is straightforward when a patient's situation calls for it.

Frequently asked questions

Are tooth-coloured fillings as strong as amalgam? For small to medium restorations, yes — contemporary composite resins perform comparably to amalgam in terms of durability and wear resistance. For extensive restorations in posterior teeth under heavy biting forces, your dentist may discuss alternatives such as ceramic inlays or crowns to provide greater structural support.

How long do composite fillings last? With consistent oral hygiene and regular professional reviews, composite resin fillings typically last ten to fifteen years, often longer. Longevity depends on the size and position of the restoration, dietary habits, and how consistently you maintain your oral hygiene routine.

Can I replace all my amalgam fillings with white fillings? In most cases, yes. Your dentist will assess each restoration individually and recommend replacement only where there's a clear clinical or patient-centred reason to do so. Removing clinically sound, intact amalgam restorations as a routine measure isn't recommended — it involves unnecessary loss of tooth structure.

Do tooth-coloured fillings stain? Composite resin can develop surface staining over time, particularly with regular exposure to coffee, tea, and red wine. Professional cleaning and polishing appointments help maintain the appearance of your restorations. Where staining becomes noticeable, restorations can be selectively polished or, where necessary, replaced.

Is the procedure painful? No. Local anaesthesia ensures complete comfort throughout. Having a composite resin filling placed is no different from having an amalgam restoration, and most patients find it straightforward.

Book your appointment at Collins Street Specialist Centre

Whether you need a new restoration, want to discuss replacing existing amalgam fillings, or are due for a routine examination and clean, our team at Collins Street Specialist Centre can help. Located within the Manchester Unity Building in Melbourne's CBD, the practice is accessible by tram, train, and car.

Contact us to arrange an appointment with one of our experienced general and cosmetic dentists.

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