PROCEDURE

Porcelain inlay

A porcelain inlay is a custom-made ceramic restoration bonded inside a damaged back tooth.

PURPOSE
Restore a damaged tooth while preserving healthy tooth structure

PROCEDURE TYPE
Therapeutic, minimally invasive dental restoration

WHERE IT IS DONE
Outpatient dental clinic

ANAESTHESIA
Local anaesthesia; sedation is uncommon

HOW LONG IT TAKES
About 30-90 minutes per visit

PREPARATION
Usually none; fasting only if sedation is planned

RECOVERY
Same day; no driving after sedation

MAIN RISKS
Sensitivity, bite discomfort, chipping, loosening

RESULTS
Fit checked immediately; comfort assessed over following days

Overview

A porcelain inlay is a solid, tooth-coloured restoration used to repair part of a damaged tooth. It is usually placed in a premolar or molar, where the chewing surface has a cavity or an old filling that needs replacing.

Unlike a standard filling, an inlay is made outside your mouth from an impression or digital scan. It is then bonded into the prepared space. Porcelain is a type of dental ceramic, although dentists may use "porcelain" as a general term for several ceramic materials.

An inlay fits within the raised points of the tooth, called cusps. If the restoration must cover one or more cusps, it is usually called an onlay. A crown covers most or all of the visible tooth.

Some inlays are made in a dental laboratory and require two visits. Others are designed and

milled in the dental office using computer-aided equipment, allowing treatment in one visit.

Why the procedure is performed

You may be offered a porcelain inlay when a back tooth needs more support than a small filling can provide, but still has enough healthy structure to avoid a crown.

Reasons may include:

An inlay does not treat infection inside the tooth. If decay or injury has reached the soft centre containing nerves and blood vessels, called the pulp, other treatment may be needed first.

- Tooth decay that has created a moderate-sized cavity
- A cracked, worn, or leaking filling
- Loss of part of the tooth without damage severe enough to need a crown
- A wish for a tooth-coloured alternative to a metal restoration
- The need to restore the tooth's shape and chewing surface

Who should and should not have it

A porcelain inlay may be suitable if the tooth has enough strong enamel and dentine to support the restoration. Dentine is the firm layer beneath the enamel. The remaining tooth must also allow the inlay to be bonded securely.

It may not be the right choice if too little tooth remains, a crack extends deeply, or the tooth cannot be kept dry during bonding. A crown, onlay, or another restoration may offer better protection in these situations.

Treatment may be avoided or delayed when:

Severe grinding does not automatically rule out an inlay. Your dentist may discuss a different material, broader tooth coverage, or a night guard.

- Decay, gum disease, or a dental infection needs treatment first
- The tooth's nerve is inflamed or infected
- A deep crack makes the tooth unlikely to be repairable
- Teeth grinding or clenching creates an unmanageable fracture risk
- You have a known allergy or sensitivity to a planned bonding material

- A temporary health issue makes dental treatment unsafe at that time

How to prepare

Your treating facility's own instructions take priority because preparation may differ according to your health, planned anaesthesia, and the equipment being used.

Most people do not need to fast for a porcelain inlay performed with local anaesthesia. If sedation is planned, you will receive specific instructions about eating, drinking, medicines, and arranging transport.

Before the appointment:

You can usually eat before treatment with local anaesthesia. Eating beforehand may be useful because chewing is difficult while your mouth remains numb afterward.

- Tell the dental team about your medicines, allergies, pregnancy, and health conditions
- Ask whether to take your usual medicines; do not stop prescribed medicines without instructions
- Brush and floss normally unless told otherwise
- Arrange a lift home if you will receive sedation

What happens during the procedure

The dentist first examines the tooth and may take an X-ray to check the extent of damage. Local anaesthetic is usually injected near the tooth so that the area becomes numb.

The dentist removes decay and any unsuitable filling material. The remaining space is shaped so the inlay can fit securely. A rubber sheet or other suction and isolation equipment may be used to keep the tooth dry.

A digital scanner or putty-like impression material records the shape of the tooth. The inlay is then made in one of two ways.

With a laboratory-made inlay, a temporary filling or inlay protects the tooth while the final restoration is produced. You return for a second appointment.

With a same-day system, computer software designs the inlay and a milling machine shapes it from a ceramic block while you wait.

Before bonding, the dentist checks the inlay's fit, colour, and contact with neighbouring teeth. The tooth and inlay surfaces are prepared with dental bonding materials. Resin cement

secures the inlay, often with a bright curing light. The dentist then adjusts your bite and polishes the restoration.

Recovery and what to expect afterward

Mild gum soreness or tooth sensitivity can occur after treatment. The tooth may react briefly to pressure, cold, or heat. This should generally settle rather than become more intense. A bite that feels high may cause pain when chewing and can usually be adjusted.

Wait until the numbness has worn off before eating so you do not bite your cheek, lip, or tongue. Follow any instructions about avoiding hard or sticky foods, particularly if you have a temporary restoration.

Normal daily activity can usually resume immediately. Avoid testing the numb area by chewing on it.

You can usually drive after local anaesthesia alone. Do not drive after sedation. Arrange for a responsible adult to take you home and follow the dental team's restrictions.

Most people can return to work the same day or the next day. Work involving speaking may feel awkward until the numbness has disappeared.

Risks and possible complications

Porcelain inlays are designed to fit closely and withstand chewing, but no restoration is permanent or risk-free.

Possible problems include:

A porcelain restoration can also wear the opposing tooth if its surface becomes rough. Regular dental checks allow the dentist to examine the edges, bite, and surface of the inlay.

- Short-term sensitivity to temperature or biting
- A high or uneven bite that needs adjustment
- Chipping or fracture of the porcelain
- Loosening or loss of the inlay
- Wear or decay where the inlay meets the tooth
- Irritation of the tooth's nerve, sometimes requiring root canal treatment
- Gum irritation near the restoration

- A reaction to bonding materials, which is uncommon

Results and follow up

The dentist checks the fit and bite before you leave. You can judge comfort more fully after the anaesthetic wears off and you begin chewing normally.

A well-fitting inlay should restore the tooth's shape and allow comfortable chewing. It can last for years, but its lifespan is influenced by the size and location of the restoration, the remaining tooth, grinding habits, oral hygiene, and the bonding process.

Continue brushing twice daily with fluoride toothpaste and cleaning between your teeth. Attend routine dental appointments at the interval recommended for your needs. Your dentist may examine the inlay directly and use dental X-rays when appropriate to look for decay beneath or around it.

Alternatives

The best alternative depends on how much tooth remains and whether the tooth's nerve is healthy.

- Direct composite filling: A tooth-coloured material placed in one visit. It usually preserves more tooth and may cost less, but a large filling may wear, stain, shrink, or fracture sooner than an indirect ceramic restoration.
- Amalgam filling: A metal filling that can tolerate heavy chewing. It is not tooth-coloured, and its use may be limited by local practice, regulations, or individual health considerations.
- Gold inlay or onlay: A strong, long-lasting indirect restoration. It does not match the tooth's colour and may have a higher laboratory and material cost.
- Porcelain onlay: Covers weakened cusps as well as the inner chewing surface. It offers more protection than an inlay but requires treatment of a larger area.
- Crown: Covers most of the visible tooth and may protect a severely weakened tooth better. More natural tooth structure usually has to be removed.
- Root canal treatment followed by restoration: Used when the tooth's pulp is irreversibly damaged or infected. It is more extensive than placing an inlay alone.

- Monitoring: Appropriate only for selected early changes that have not formed a cavity. A damaged or decayed cavity may worsen without restoration.
- Extraction: Considered when the tooth cannot be restored predictably. It removes the tooth and may create a need for a bridge, denture, or implant.

When to call your healthcare team

Contact your dental team promptly if pain is worsening, the inlay feels high when you bite, or sensitivity is not settling. Also call if the inlay chips, moves, or comes out. Keep a loose inlay in a clean container; do not glue it back yourself.

Seek urgent dental or medical care for increasing facial swelling, fever with dental pain, pus, or difficulty opening your mouth.

Call emergency services for trouble breathing or swallowing, rapidly spreading swelling, or signs of a severe allergic reaction. These are emergency symptoms, not routine follow-up concerns.

Common questions

Will I be asleep?

Usually not. Local anaesthetic numbs the tooth while you remain awake. Sedation is uncommon for a single inlay but may be offered for severe dental anxiety or other specific needs.

Can I drive home?

You can usually drive after local anaesthetic alone. You must not drive after sedation and will need someone to take you home.

How painful is it?

The local anaesthetic should prevent sharp pain during treatment, although you may feel pressure or vibration. Mild soreness or sensitivity afterward can occur. Worsening or severe pain needs dental review.

When will I know if it worked?

The fit is checked immediately. You will know more once the numbness wears off and you chew normally. Any persistent high bite or increasing sensitivity should be assessed.

How many appointments will I need?

A laboratory-made inlay usually requires two appointments. A dental office with scanning and milling equipment may make and place it in one visit.

Can a porcelain inlay fall out?

It can loosen if the bonding cement fails, decay develops, or the tooth or inlay fractures. Avoid chewing on it and contact your dentist if it moves or comes out.

Sources

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