



## What type of restoration should I have?

At your examination appointment we found that you needed either replacement fillings or new fillings. So that you are properly informed we wish to detail your options regarding which type of restoration you could have and the advantages and disadvantages of each type. As the patient, it is your right to have which ever type of filling you like, but when you chose an option with inherent disadvantages or higher risk of problems, you need to be aware of it, and be fully prepared to accept the consequences and not think unfavourably of the dentist's workmanship if and when those consequences arise.

### **COMPOSITE RESIN**

These are plastic based materials with fine particles of quartz or glass which are designed to appear like tooth structure.

#### Advantages

- Relatively low cost compared to ceramic.
- Bonds to tooth structure – Although this is somewhat debatable as to its effectiveness in the long term, we can at least say that in the short term a composite resin bonds the two halves of the tooth together, which would logically reduce the likelihood of future development of cracked tooth syndrome or of cusp failure (i.e. where tooth cracks off from the filling).
- Appearance – These restorations generally look like tooth structure, but often they look a slightly different tone to the original tooth.

#### Disadvantages

- Wear resistance is not as good as ceramic, however technology is improving rapidly in this area and the latest generations appear to be improving.
- Strength – Not as strong as other alternatives, but still considered to be satisfactory for routine use. If a filling does break it is not because the dentist did something wrong, it is a simple fact of biting pressure exceeding the cohesive strength of the material and you should not expect to have this filling replaced at no charge. If you wish to have your fillings guaranteed against breakage, we suggest that ceramic would be your best option, but it costs more.
- Shrinkage – All plastics shrink an amount when they polymerize, (cure). Typically this is around 3% by volume and it causes fine white lines between the filling and the tooth which can eventually fill with stain and show as a brown discoloration. Also, shrinkage at the base of the filling can sometimes cause strange symptoms such as sensitivity to biting crunchy foods. This is not due to a crack but due to a shrinkage void under the filling. Most times the dentist can engineer solutions that avoid these symptoms, however, occasionally a problem related to post-operative biting sensitivity can still happen to the best dentist in the world. Do not be shocked if this happens. Usually most dentists will replace this filling at no charge. Post-operative sensitivity has been a massive problem in the dental profession over the last 20 years and the causes and prevention are not fully understood. Although it is generally viewed as being under control, there is the inevitable unpredictable case.
- Shrinkages of composites can also be so severe as to cause a hairline crack to form on the outside of your tooth enamel, i.e. visible in your smile. This is more likely the bigger your filling and the weaker your remaining tooth. Therefore, we recommend alternatives to composite resin when you have a large filling which you would like to be tooth coloured. Composite resins are generally seen as suitable for small to medium sized fillings, although for economic reasons we sometimes use these materials on larger back teeth in the clear knowledge that the patient accepts the limitations and weaknesses inherent in this material.

- Higher risk of creating food traps - Because composite resins are soft, doughy-like materials, your dentist cannot pack them into the cavity with the same pressure as with ceramic. An unfortunate consequence of this can be the creation of a very fine gap between the teeth, which leads in turn to meat and fibrous foods becoming jammed in this crevice. No matter how hard the dentist attempts to avoid this problem, using one or more of the myriad techniques available, they will always end up with a percentage of composite resins that cause this problem. Occasionally these fine gaps will self-correct over the next month or so, but please contact the practice if you are still getting food caught there after three months, as it should be tightened. The tightening filling can sometimes be done as a filling within a filling, so you may not need the entire filling replaced.

## **AMALGAM**

At Anzac Avenue Dental, we do not offer amalgam fillings as an option for a number of reasons which are discussed below.

- Amalgam is a time honored restoration that gives good long term results from a functional point of view. The major problem with amalgam for most people is that it looks grey or black and most of us prefer a more natural tooth colored appearance. Another problem with amalgam is that it does not usually bond to tooth structure and thus allows the long term development of cracks underneath the filling. These cracks start off being small but eventually spread down into the core of the tooth and cause problems. Quite often the side of the tooth will simply snap off one day when you are eating. Other times the crack will penetrate straight down towards the nerve and cause an occasional pain when you chew crunchy foods like grain bread or muesli. This pain comes from microscopic flexing of the tooth causing the crack to open under the filling and stimulate the nerve. It generally requires a crown or onlay to correct it. If you have large amalgams on your molars, it is highly likely that you will end up needing crowns or onlays on many or all of these teeth as you get cracks developing with age and with the associated stress fatiguing of the teeth.
- Another problem with amalgam in some peoples' minds is the presence of mercury. The mercury present in amalgam is bound up with silver and tin and is not readily available. Minute amounts may be liberated when chewing but the amount of mercury from this source has been reviewed by many leading health authorities and deemed to be substantially below any significant health risk. You should probably be more concerned about eating sushi, as there is mercury ingested from eating fish. If you have a personal belief that amalgams are harmful to your health your dentist can happily replace them for you.
- Another problem is the staining that amalgam can cause in your natural tooth structure, i.e. not only does the amalgam look black or grey, but the metallic ions in it can leach out and percolate into the surrounding tooth structure causing it to become slightly grey. When you replace the amalgam with a white filling, the surrounding tooth still looks a little grey.

## **GLASS IONOMER**

This is a type of filling material generally used in children's deciduous teeth or for very small restorations on the outside surface of the tooth.

### Advantages

- Tooth colored - Although they may not match perfectly, at least they are not black, grey or gold.
- Less costly than ceramic due to faster placement.
- Chemically bonds to tooth structure – These materials are unlikely to fall out when adhered to the side of your tooth, unlike other materials. This means that a more conservative and non-retentive cavity can be prepared and you may not need an injection of local anaesthetic.
- Substantial fluoride release - This means there is a very low chance of ever getting decay around or underneath this filling. These materials are excellent for parts of the mouth where it is almost impossible to clean properly.

- Ability to re-harden and reverse some decay – If you have very severe decay threatening the existence of the nerve in your tooth, we may place a glass ionomer in an attempt to heal and reverse the deepest one-third of the decay. This takes approximately one year and you may need to have the filling removed and replaced after this time – but this is a small price to pay compared to root canal therapy.
- Non-shrinking - It is less likely to get cracking of remaining tooth structure or post-operative sensitivity. Because of these factors, we often use these materials as a foundation inside your filling and put a separate topping layer of composite resin to obtain the best of both worlds. Expect these double 'sandwich' fillings to cost slightly more, but they are well worth it.

#### Disadvantages

- Not as wear resistant as any of the other materials, but still acceptable in many situations such as small fillings on the biting surface and any sized filling on the side of the tooth or in between teeth.
- Generally not as smooth on the surface as composite resin, but still smooth enough to give an acceptable mouth feel.
- Appearance can sometimes be a little opaque, i.e. can have slight color miss-match to surrounding tooth structure.
- Medium strength - These materials, although constantly improving, are only still half the strength of composite resins and are not suitable for long term applications in high strength cavity requirements.

### **CERAMIC**

Ceramic restorations can be produced by a dental technician, or at Anzac Avenue Dental we can design and mill you new ceramic restoration in the surgery using CEREC. At this point in time these materials are considered to be the best tooth-colored restoratives available.

#### Advantages

- Superb aesthetics - These restorations look more like a tooth than anything else available.
- Good quality contact points – which means you are less likely to get food trapping between your teeth.
- Wear resistance equal to or better than enamel – These restorations virtually never wear out.
- Bonded in – Reinforces tooth structure and probably causes less long term cracking of the tooth.
- Non-shrinking - Unlike composites, these materials are pre-shrunk before they go into the tooth. They do not shrink any further and do not cause the shrinkage cracks in your enamel. They also have a lower incidence of post-operative biting sensitivity.

#### Disadvantages

- More expensive than composite – Like a crown, ceramic restorations must be designed and milled to the exact shape of your tooth. It is a more involved process than a composite filling, however it will last much longer.
- Occasional fracture – Because ceramic is an inherently brittle material it has to be designed to be a minimum of 2mm thick to resist fracture. Occasionally there is not 2mm of space available and the dentist may have to make a judgment in your best interests. Some peoples' bites are heavier and stronger leading to a higher risk of ceramic fracture or you can just be unlucky. A hard piece in your food can cause a sudden hard impact at a critical point on a ceramic restoration. This may initiate a crack which goes on to grow over the next few months, resulting in a piece of ceramic breaking off from your restoration or crown when you are biting something soft. Once again, this is not the dentist's fault, just an unfortunate incident and you will probably need to pay for a new restoration. At Anzac Avenue Dental we guarantee to replace any ceramic restorations that break or crack providing you do a few things to help look after them.

## **CAST GOLD**

This material is generally considered to be the ultimate in strength and durability for those patients who do not mind the appearance of gold. It is the best material to use for your last back-top-tooth because you virtually never see this and this tooth receives a huge amount of chewing stress because it is closest to the fulcrum, i.e. the jaw joint.

### Advantages

- Wears like enamel - These restorations are often maintenance free and can last 20 to 40 years.
- Strength - Being made of metal, they virtually never break.

### Disadvantages

- Cost – Similar to a crown, but do not be alarmed by the fact that it is made of gold. These restorations are no more expensive than a ceramic restoration.
- Does not bond the tooth structure together and when done as a simple filling, may allow the development of future cracks underneath. However, if done as an onlay or crown the cusps are covered, protected and sealed under the umbrella of the gold, thus stopping the development of future cracks.

## **Will My Restoration Be A Simple Filling Or Will I Need An Inlay, Onlay Or Crown? What is the difference?**

**FILLINGS** - A filling generally refers to a hole which is surrounded in part by sound tooth structure. Sometimes half of the tooth falls off and the 'filling' then doesn't just fill, it has to do the job of that missing portion of the tooth. That means bringing the filling out of the protected valley it was in, to take the pressure of forming the cusp i.e. the mountain peak. This places higher demands on the restorative material and you should expect more to go wrong if you choose the cheaper options. Because there is no cavity to hold the filling material in, we need to provide a better hold on the tooth by either: (1) crowing it, or (2) putting in pins. Each case is unique and your dentist will discuss what they think is best for you.

**INLAYS** - An inlay is a filling which is made outside of the mouth, i.e. by a CEREC machine. Unlike fillings done in the mouth, the cavity has to have a particular shape that enables the inlay to slide in and out, but an inlay serves the same purpose as a filling, usually with a superior result.

**ONLAYS** - An onlay is an inlay with an extension wing that covers over one or more of the cusps. The cusps are the small mountain peaks on the top of the premolars and molars. The extension stops the cusp from splitting away from the main body of the tooth and filling.

**CROWN** - A crown (also known as a cap) is like a hat that goes over the entire tooth – across the top, down the sides and binds it all together, stopping future cracks and cusp breakages and providing very good retention. They are very solid, look good and durable restorations. There are different types of crowns.

Your dentist will advise you what style of restoration is best suited for your situation. In most cases the dentist is able to ascertain what sort of material they are going to use and the style of the cavity preparation before they start. It is very common these days, especially with 'baby-boomers', to remove an old amalgam and to find a substantial crack in the tooth underneath. The dilemma then arises as to which option is best to proceed with. Some form of cusp protection is obviously indicated to stop this crack spreading into the nerve. You can do nothing and wait to see what happens, but unfortunately these cracks usually get bigger and often cause half the tooth to break away or threaten the nerve. If half the tooth breaks away, you may not have enough strength in the tooth to support a crown. Extraction of the tooth is a very real possibility. If the nerve is damaged you may need an expensive and unpleasant root canal therapy, plus a crown anyway. The decision as to which way to go can be complicated and it is best to discuss the options with your dentist, if and when these complications arise. Suffice to say that you should not be surprised if the dentist

has to stop half way through a filling and discuss with you the implications of new information. (These previously hidden internal fractures are not able to be seen on x-rays).

### **Your ceramic restorations are guaranteed**

At Anzac Avenue Dental, we believe that the quality of the dental treatment we provide is of the highest standard. We are pleased to support this belief with a limited warranty that will cover your ceramic treatment for a period of three (3) years.

Regular maintenance of your teeth and gums is vital to ensure the success of your new restoration, so we encourage you to attend your 6 monthly preventive care appointments. Regular maintenance includes a routine restorative and periodontal exam every six months, a clean and polish every six months, and routine radiographs every twelve months.

If your new crown, bridge, ceramic restoration or veneer cracks, chips or breaks during the next three years, we will replace it free of charge, providing you have attended your regular 6 monthly preventive care appointments since the completion of your treatment. You must also have completed all the recommended treatment including a protective night guard if it is advised.

This limited warranty applies to normal wear and tear only and will not apply if your teeth are damaged through any type of accident or injury. Failure to maintain your dental treatment by not attending six monthly preventive care appointments will also void this warranty.

We hope that this information will assist in your informed decision making, but please feel free to discuss these options further with us before we start your treatment.