



Amalgam Restorations

Silver amalgam restorations are the traditional silver filling materials. They have been used with success by all dentists for more than 150 years. Silver amalgam fillings were originally meant to be a low-cost substitute filling material for those patients who could not afford the standard-of-care gold restorations. They can be used to replace small or large amounts of tooth structure lost through decay or fracture. They are not technique sensitive. They are composed of silver, tin, mercury, copper, and other metals. Some of the newer silver amalgam materials are mercury-free. We have no long-term studies on how well these mercury-free amalgams will serve.

The silver amalgams available have a life expectancy of 14 years with a plus/minus deviation of 14 years. They can last a long time or need to be replaced within a year of when they were originally completed. As with resin restorations, the smaller the filling, the longer it can last. This is still the restorative material of choice for many dentists but that number is declining. Most restorations for back teeth, regardless of size, are silver amalgam. With the advent of the newer bonded or composite resin materials, many posterior (back) teeth that previously would have been restored with amalgam are now being restored with the more conservative and more naturally appearing tooth coloured resin and porcelain materials. Silver amalgam fillings can now also be bonded when there is little remaining tooth. This, of course, will add to the total fee charged for the restoration.

Disadvantages of the silver fillings are appearance. It is impossible to have them look natural, and the appearance deteriorates as time goes by. If the surrounding enamel is thin, the gray/black colour of the metal will show through. They can make the tooth turn dark. They add no strength to the tooth (unless bonded). They weaken the tooth because they have a higher expansion/contraction ratio than the surrounding tooth. These forces can, after time, cause the tooth to fracture. They are not considered a conservative restoration because they require more tooth prepared (drilled) than is actually necessary to be removed due to the decay. This extra drilling is strictly to allow the retention of the restoration. In some instances, it might be more cost-effective and better for the gingival (gum) health to place a cast restoration (crown or onlay). This would be the case when the silver filling would be large. When there are extensive amounts of tooth structure to be rebuilt/replaced, it is often quite difficult to establish the proper physiologic contour to the tooth. Remaining tooth structure may be more prone to fracture.

Advantages of the silver amalgam fillings are that they are quick and easy to place, relatively inexpensive, and have a proven record of success.

If finances are a major concern and cosmetics are not important, then this material is well suited for all types of restorations. If the cavity is small or on a previously undamaged portion of a tooth, a more conservative resin restoration would be a better choice.

Fillings (Amalgam & Composites)

Patient Information and Post-Operative Consequences

Composite or Tooth-Coloured Fillings

Tooth-coloured restorations have been used in dentistry for a long time. Several variations of these materials have been used in front teeth for many years. The newest generation of tooth-coloured filling materials (resins) is also used to restore cavities in back teeth. This is especially true when the restoration would be easily visible when you talk or smile. The use of silver amalgam filling materials in small- to medium-sized restorations is declining. These posterior (back) tooth-coloured resins can be expected to last for several years. A reasonable estimate at this time is approximately 10 to 12 or more years. Longevity of the resin fillings (and silver fillings) is a function of the position and size of the filling, the care the patient gives it, and the foods the patient eats.

Resin restorations in back teeth require less drilling than for silver fillings. Because of the filling material itself and the insulating liners and bases used under these resins, there can be fluoride release and a subsequent inhibition of new cavity formation. They are excellent for small one-, two-, and three-surface restorations in premolars and molars. Advantages of the resin restorations include a natural appearance similar to that of your real tooth and the most conservative preparation of your tooth. The less the dentist must drill your tooth, the better off you are and the fewer dental problems you will develop in the future. They also restore a high percentage of the tooth's original strength. When a tooth is prepared (drilled), it becomes weaker. Restoring it with a bonded resin material will help make it strong again. They require only one appointment for completion.

Disadvantages include technique sensitivity, that is, they are harder to place than silver fillings. They also cost about 50% more than silver fillings. They can be used only rarely in patients who have a grinding or bruxing (clenching) habit. They cannot be easily used in areas where there is not a sufficient amount of original tooth structure. They require more time to finish.

Resin restorations are among the most conservative restorations in dentistry today. They require the least amount of drilling. The smaller any filling can be, the longer it will last. They are best for small to medium fillings. In areas where the display of metal from a silver filling would be unsightly, they are of great



Postoperative Advice and Consequences

If you have just had one or more teeth restored (filled) with either silver amalgam or resin (tooth-coloured/bonded/composite) materials, or prepared for an inlay/onlay or crown, how quickly you adjust to the new restoration depends on the size of the restoration and the closeness to the pulp (nerve). The larger the restoration, usually, the longer it will take you to become accustomed to it.

Chewing

If you have been given a local anaesthetic, please do not chew in that area until full feeling returns. When you are "numb," you cannot feel if you are biting your cheek or lip. If you have had a **silver/metal** filling placed, it will require a minimum of 2 hours after you leave the clinic before you can chew on it. If you eat before the silver filling is adequately set, the filling may break and require replacement. If you have had a **resin/composite** restoration placed, the resin sets immediately, and you can eat when the effect of the anaesthetic is completely gone.

Occlusion

The occlusion (bite) of the new restoration has already been adjusted. If you have been anaesthetised, you may not be able to notice if the bite feels normal. Wait until the anaesthesia wears off and then, if the occlusion is not comfortable, call the clinic to have it adjusted. We do not believe in a bite "wearing in," regardless of the material used. If you have had multiple restorations placed, please give yourself time to become adjusted to them before you call the clinic. This may take one or two days.

However, if the bite is off and it is not corrected, you could break the filling or the underlying tooth. We would have checked your occlusion before you left the clinic but your tooth was still anaesthetised, and you may not have been able to feel the bite well. It is often difficult to make the teeth meet as they usually meet under these circumstances. It is not uncommon for the new restoration to need a slight adjustment.

Exposure

When decay and tooth tissue is removed the cavity will always be closer to the living part of the tooth (pulp). When the pulp is seen to be exposed, a medication is placed on the exposure site and there may be healing, but it is probable that endodontic treatment (root canal therapy) will be needed at some time in the future. In either case, expect the tooth to be very sensitive to temperature changes, especially cold, for a few weeks.

Sensitivity

Any time a tooth is prepared (drilled) for a filling, tooth structure is removed very quickly. The natural wear process that occurs in everyone's teeth proceeds much more slowly. The response of a vital, healthy nerve to this wear is to recede and deposit an insulation layer between the nerve and the surface of the tooth. Normally, the wear of the tooth proceeds at more or less the same pace as the nerve recedes and deposits insulation. When a tooth is drilled, tooth structure is removed much more quickly than the nerve can "defend" itself. One response of the nerve is to become sensitive to temperature changes. This will persist until the recession and insulation process can catch up to the rapid removal of the tooth structure caused by the drill. This sensitivity can last from several days to several months. Usually, the more drilling, the more and longer the sensitivity you will experience. Several other factors also contribute to post-op temperature sensitivity, but choice of filling material -silver amalgam or bonded tooth coloured resin filling, is **not** a usual cause. When done correctly, white fillings are no more likely to be sensitive than other types.

Fracture

Once again in the process of preparing the tooth for a filling, tooth tissue will be removed. This will reduce the strength of the tooth and the tooth is more liable to fracture. Where a fracture has occurred, a number of treatment options will exist ranging from just smoothing of the fractured tooth, increasing the size of the filling, root canal treatment or an inlay/crown may be required. Of course a fracture may have been present before the filling was placed and the replacement may exacerbate or increase the consequences of the symptoms. If the fracture is extensive then extraction of the tooth will be necessary.

Oral Hygiene

You may (and please do!) brush and floss your teeth after the local anaesthetic has worn off. There is no need to refrain from your normal, daily oral self-care routine. Continue with your oral hygiene maintenance appointments at the interval we have previously recommended. Problems that might develop around the restorations can be found at an early stage and easily repaired. If you wait too long, the entire restoration may have to be redone.