

Facts on Fillings: Know Your Choices. Know the Difference.

As with any other health choice, before you need a dental filling placed, know and understand your options so you can make an educated choice about your dental health. Advances in dental materials and techniques mean there are more options than just amalgams (silver fillings) and composites (white fillings). Now more than ever, it is important to consider your general health and oral health, where the filling will be placed, and the length of time the filling will last. Before making a selection, talk to your dental professional and weigh the options.

What are the differences between amalgam (silver) fillings, composite or resin (white) fillings and other types of fillings?

Depending on treatment needs, there are several different types of materials available to dentists and patients when considering restorative options. An amalgam filling is simply a chemical mixture of mercury, silver, copper and tin and possibly some other metals used to restore or fill a decayed or fractured area of a tooth. Amalgam fillings can withstand high chewing loads and therefore are very useful in back teeth or in areas where the cavity is difficult to keep dry when the filling is being placed.

A composite filling is a tooth colored combination of a glass or quartz filler and acrylic that is self-hardened or hardened with the use of a special light. Composites are most durable when used in small to mid sized restorations and can be used to restore or fill a decayed or fractured area of the tooth. Composites are often used on the front teeth (they are not as durable as amalgam when used on the back teeth). Composites are also used for cosmetic reasons.

Other filling options now include glass ionomers which are a self-hardening mixture of fluoride containing powder and organic acid, and resin ionomers,

a self or light hardening mixture of a sub-micron fine glass filler and glass powder containing fluoride and acrylic resin. These fillings are tooth-colored but lack the natural translucency of enamel. They are primarily used on the root surfaces of the tooth and if they contain fluoride can release small amounts of fluoride, which can be good for patients who are at high risk for decay.

How are fillings placed?

First, the dentist may give you something to numb the area, like a local anesthetic. Next the dentist will remove the decay from the tooth using a hand piece or drill. The dentist will remove only enough tooth structure so that the decay is removed and the filling material can be placed properly. The amount of tooth structure removed will depend on the size of the cavity and whether an amalgam, composite, glass ionomer or resin ionomer filling is used. Once the decay is removed, the dentist will shape the space to prepare it for the filling.

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Different types of fillings require different shaping procedures. The dentist may also put in a base or a liner to protect the tooth's pulp (where the nerves are).

If amalgam is used, the dentist fills the tooth with amalgam filling, which self sets and hardens. If the dentist is using a light curing composite filling, the material may be placed in layers and a special light is used to bond and harden each layer before the next layer is placed. The dentist then shapes, grinds and polishes the composite for a good fit and a smooth finish.

After a filling is placed, some people experience sensitivity to pressure, air, temperatures or certain foods. This sensation generally goes away within 1-2 weeks. If you experience any of these sensations, try to avoid the cause. If the tooth is extremely sensitive or the sensitivity does not subside in about a two-week period, contact your dentist.

How long do fillings generally last?

The average amalgam filling lasts 10–12 years because of its durability and resistance to breakage and leakage. One of the reasons for the long duration is that the amalgam serves as a bacteriostatic agent which discourages the growth of decay-producing microorganisms. The average life of a composite filling is significantly less, generally about 5-6 years, but with recent material improvements and advancements in placement techniques, this lifespan is increasing. The differences in the longevity are due mostly to the composite material, which is more prone to chipping, breakage and wear. Your dentist will check any fillings at the time of your regular dental visits for cracks and wear. If you see a crack, or a piece of the filling material appears to be missing, or you experience any sensitivity, make an appointment to have the tooth examined by your dentist.

You can extend the life of a filling by visiting your dentist regularly for cleanings and examinations, brushing twice a day with fluoride toothpaste and flossing at least once a day. If you have many fillings or very large fillings and are at high risk for tooth decay, your

dentist may recommend a fluoride gel or rinse you can use that will help strengthen your teeth and prevent future cavities.

Are amalgam fillings safe?

The amalgam filling has an over 150 - year proven track record. It is still one of the most reliable, affordable and safe materials with which to fill a cavity. Over the years concerns have been raised about the use of amalgam because it contains mercury. In the past, it was thought that amalgam fillings were inert, meaning that no mercury was released once the filling was complete. In recent years, sophisticated tests have shown that very small amounts of mercury in the form of vapor can be released as the amalgam wears. The controversy over mercury in amalgam centers on how much mercury is released from fillings and absorbed into the body.

While questions have arisen about the safety of dental amalgam fillings relating to its mercury content, no valid body of scientific evidence have shown that amalgams cause harm to patients with dental restorations, except in rare cases of allergy. Organizations like the U.S. Public Health Service, the National Institute of Dental and Craniofacial Research (NIDCR), the Centers for Disease Control and Prevention, and the World Health Organization have been satisfied that amalgam is a safe, reliable and effective restorative material. Patients who have questions about the potential relationship between mercury and degenerative diseases can be assured that there are no credible studies that demonstrate such a connection. Patients who believe they have a mercury allergy or allergy to some other component of amalgam (usually less than 1% of the population) should be examined by a physician to determine if they actually have an allergy. People allergic to amalgam can receive alternative filling materials. Removal of existing amalgam restorations will not provide any health benefit for people who are not allergic to amalgam fillings. Since there are a very small number of patients who experience allergic reactions to mercury or other components of amalgam,

patients should check with their physician before removing any amalgam fillings.

Questions have also been raised about amalgam's safety in pregnant women and children. Mercury can cross the placenta to an unborn baby. Scientific evidence and research literature in peer-reviewed scientific journals suggest that otherwise healthy women and children are not at an increased risk from dental amalgams in their mouths. There is no credible research that has demonstrated any adverse health effects from amalgam fillings in pregnant women or infants born to women with amalgam fillings. Pregnant women seeking dental care should inform their dentist that they are pregnant and discuss treatment options. Pregnant women who need to have a tooth restored can talk with their dentists about their concerns and about possible alternatives to amalgam. Recently, the NIDCR released the results of two long-term clinical trials which studied the health effects of amalgam in children. One of the studies was conducted in Europe, the other in the United States. Independently these studies reached the same conclusion: children whose cavities were filled with dental amalgam had no adverse health effects.

The American Dental Association (ADA) supports ongoing research about the development of new materials. However, the ADA continues to believe that amalgam is a valuable, viable and safe choice for dental patients.

Are composite fillings safe?

Concern has been expressed about some components and byproduct components generated from some composite resins. However, there is no credible body of scientific evidence that composite fillings cause adverse health effects in the general population.

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What are some of the considerations in deciding which material to fill your tooth with?

See chart on right for a side-by-side comparison of dental filling options.

In conclusion, with newer technological advances and different materials, a consumer has more factors to review when a cavity needs to be filled. As with any dental procedure, a consumer should be familiar with the options available, the advantages and disadvantages, and should rely on the dentist's evaluation and judgment to help make the best treatment decision.

Sources:
www.agd.org
<http://jada.ada.org>
www.cdc.gov
www.nidcr.nih.gov

	Amalgam (silver fillings)	Composite (white fillings)	Ionomer fillings
History	Used for over 150 years	Used for over 30 years	Relatively new
Average Life	10-12 years	5-6 years	Not known
Advantages	<ul style="list-style-type: none"> • Durable • Economical • Highly resistant to wear • Can be placed in one appointment • May help prevent recurring decay • Often used on back teeth because of the increased chewing load • Well tolerated by patients • Self hardening at mouth's temperature 	<ul style="list-style-type: none"> • Matched to tooth color • Can be used for cosmetic purposes • Can be placed in one appointment, although can take longer than an amalgam filling • Cures faster and patient can use right away • Less tooth structure is removed (in smaller fillings) 	<ul style="list-style-type: none"> • Can be matched to tooth color • Often used for small fillings, for non load bearing teeth, cavity liners for crowns and bridges • Less tooth structure is removed • Often used on root surfaces of the tooth or between teeth • Well tolerated by patients • Can release a small amount of fluoride
Disadvantages	<ul style="list-style-type: none"> • Tooth color appears silver or gray • Allergy to mercury (Less than 1% of population) • Early sensitivity to hot and cold is possible 	<ul style="list-style-type: none"> • Cost can be up to 25%-30% more • More prone to wear and breakage (especially when placed in back teeth) • Requires the area to be kept dry when being placed • Not able to withstand as much chewing load • Prone to staining (especially by coffee, tea, wine, etc.) • Patient may experience post-operative sensitivity • More prone to recurrent tooth decay • The technique for placing the filling is more complex 	<ul style="list-style-type: none"> • Not able to withstand as much chewing load • High wear when placed on chewing surfaces • Color may lack natural translucency of enamel