dental fillings *facts*

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Talking With Your Dentist

Your dentist is dedicated to protecting and improving your oral health. Because of the wide variety of dental procedures, it is important to talk openly with your dentist. Let your dentist know of any changes to your health since your last visit. This will help your dentist recommend the best treatment options for you.

This sheet outlines the most common filling options that are available and will help you decide on the right choice for you.

The final choice is between you and your dentist.

Amalgam

Dental amalgam is a mix of approximately 43 – 54% mercury combined with other metals including silver, copper and tin. Dental amalgams have commonly been called "silver fillings" because of their silver color when they are first placed. Today, amalgam is most commonly used in the back teeth. It is one of the oldest filling materials and has been used (and improved) for more than 150 years. Dental amalgam is the most thoroughly researched and tested filling material.

ADVANTAGES:

- *Strong, durable and stands up to biting force;*
- *Can be placed in one visit;*
- *Normally the least expensive material;*
- *Self-sealing with minimal-to-no shrinkage and it resists leakage (leakage occurs when a filing does not completely seal, permitting material to "leak in" and promote new decay behind or beneath the filling);*
- *Resistance to further decay is high;*
- *Frequency of repair and replacement is low;*
- *Amalgam is the only material that can be used in a wet environment, especially important when treating small children or special needs patients.*

DISADVANTAGES:

- *While agencies like the U.S. Food and Drug Administration (FDA), the U.S. Centers for Disease Control (CDC) and the World Health Organization (WHO) have not found evidence of harm from dental amalgam, there are some who have raised concerns about the very low levels of mercury vapor released by amalgam;*
- *Amalgam scrap (waste left over after repairing a cavity) contains mercury and requires special handling to protect the environment;*
- *Amalgam can darken over time as it corrodes. This does not affect the function of the filling, but many find it less attractive than tooth colored materials;*
- *Placement of amalgam requires removal of some healthy tooth;*
- *In rare cases, a localized, allergic reaction, such as inflammation or rash may occur.*

Composite (resin)

Composite is a mix of acrylic resin and powdered glass-like particles that produce a tooth-color filling. This type of material may be self-hardening or may be hardened by exposure to blue light. Composite is used for fillings, inlays and veneers. Sometimes it is used to replace a portion of a broken or chipped tooth.

ADVANTAGES:

- *Color and shading can be matched to the existing tooth;*
- *Composite is a relatively strong material, providing good durability in small to mid-sized restorations that need to withstand moderate chewing pressure;*
- *Composite may generally be used on either front or back teeth;*
- *Fillings are usually completed in a single visit (exceptions noted);*
- *Moderately resistant to breakage;*
- *Often permits preservation of as much of the tooth as possible;*
- *Low risk of leakage if bonded only to enamel;*
- *Does not corrode;*
- *Moderately resistant to further decay, new decay is easy to find;*
- *Frequency of repair or replacement is low to moderate.*

DISADVANTAGES:

- *This type of filling can break and wear out more easily than metal fillings, especially in areas of heavy biting force. Therefore, composite fillings may need to be replaced more often than metal fillings;*
- *Compared to other fillings, composites are sometimes difficult and time-consuming to place. They can not be used in all situations;*
- *Composite generally is more expensive than amalgam;*
- *May require more than one visit for inlays, veneers and crowns;*
- *May wear faster than natural dental enamel;*
- *May leak over time when bonded beneath the layer of enamel;*
- *In rare cases, a localized, allergic reaction such as inflammation or rash may occur.*

Glass Ionomer

Glass ionomers are tooth-colored materials made of a mixture of acrylic acids with fine glass powders that are used to fill cavities, particularly those on the root

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surfaces of teeth. They are primarily used for small fillings in areas that do not need to withstand heavy chewing pressure. Glass ionomers are also used to cement dental crowns.

ADVANTAGES:

- *Tooth-colored so the filling looks more natural;*
- *Can contain fluoride that may help prevent further decay;*
- *Minimal amount of tooth structure removed;*
- *Low incidence of localized allergic reaction;*
- *Usually completed in a single visit.*

DISADVANTAGES:

- *Low resistance to fracture. Use is limited to small areas of decay on non-biting surfaces of teeth;*
- *Moderate cost, similar to composite (costs more than amalgam);*
- *As it ages, this material may become rough and plaque can build up increasing the risk of gum (periodontal) disease;*
- *In rare cases, a localized allergic reaction such as inflammation or rash may occur.*

Resin Ionomer

Resin ionomers are also made from glass filler with acrylic acids and acrylic resins. They harden with exposure to blue light. Resin ionomers are most commonly used in fillings on non-chewing surfaces and fillings in the primary (baby) teeth.

ADVANTAGES:

- *Tooth-colored, more translucent than glass ionomer;*
- *Can contain fluoride that may help prevent further decay;*
- *Minimal amount of tooth structure removed to place it;*
- *Low incidence of localized allergic reaction;*
- *May be used for short-term fillings in primary (baby) teeth;*
- *May last longer than glass ionomer, but is not as durable as composite;*
- *Usually completed in a single visit.*

DISADVANTAGES:

- *Limited use because it is not recommended for biting surfaces in adult teeth;*
- *Moderate cost, similar to composite (more than amalgam);*
- *Wears faster than composite and amalgam;*
- *In rare cases, a localized allergic reaction such as inflammation or rash may occur.*

Porcelain (ceramic)

All-porcelain (ceramic) materials include porcelain, ceramic or glass-like fillings and crowns. They are used in inlays, onlays, crowns and cosmetic veneers. Porcelain fused to metal is another application for this material and has similar properties as described below with the notable exceptions of increased durability due to the metal substructure, the necessity for more tooth removal for that substructure and, in rare cases, a localized allergic reaction may occur.

ADVANTAGES:

- *Tooth-colored with excellent translucency.*
  The color looks similar to natural tooth enamel;
- *Very little tooth is removed when used as a veneer, more tooth is removed for a crown;*
- *Good resistance to further decay if it fits well;*
- *Is resistant to surface wear but can cause some wear on opposing teeth;*
- *Resists leakage because of precise shaping and fitting;*
- *Does not cause allergic reaction.*

DISADVANTAGES:

- *Material is brittle and prone to cracking under biting force;*
- *May not be recommended for molars;*
- *Generally, requires a minimum of two appointments to complete;*
- *High cost, similar to gold.*

Gold Alloys

Gold alloys contain gold, copper and other metals that result in a strong, effective filling, crown or bridge. They are primarily used for inlays, onlays, crowns and fixed bridges.

ADVANTAGES:

- *Excellent durability, does not crack under stress;*
- *Good resistance to decay if it fits well;*
- *Minimal amount of tooth structure needs to be removed;*
- *Wears well, does not cause excessive wear to opposing teeth;*
- *Resistant to corrosion and tarnishing;*
- *Resists leakage because it can be shaped and fit very accurately.*

DISADVANTAGES:

- *Gold is normally the highest cost material;*
- *A minimum of two appointments is required to complete the restoration;*
- *Not tooth colored;*
- *In rare cases, a localized allergic reaction such as inflammation or rash may occur.*