

DENTAL RESTORATIVE MATERIALS FACT SHEET
Risks/Benefits

	GENERAL DESCRIPTION	PRINCIPAL USES	APPEARANCE	RISKS/BENEFITS
PORCELAIN	Porcelain, ceramics and glass-like material. May require two or more visits, cemented or bonded into place.	Crowns (caps) Veneers, Onlays, Inlays	Tooth colored	Brittle, may fracture Well tolerated. Rare sensitivity. No studies to date show harm.
METALS	Alloys of gold or other metals.	Crowns (caps), Bridges, Partial Dentures, Onlays, Inlays	Looks like the metal used	Well tolerated. Rare sensitivity. No studies to date show harm.
PORCELAIN FUSED TO METAL	Porcelain fused to an underlying metal to add strength.	Crowns (caps) and Bridges	Similar to tooth color	Well tolerated. Rare sensitivity. No studies to date show harm.
AMALGAM	Mixture of mercury and silver, copper and zinc powder forming a solid alloy filling. Hardens by a chemical reaction.	Fillings	Color varies as silver darkens with age.	Well tolerated. Rare sensitivity. Exposure to small amount of mercury vapor. Allergies rare. No studies to date show harm.
COMPOSITE	Mixture of glass filler and acrylic. Hardens by a chemical reaction.	Fillings, Sealants and Veneers	Similar to tooth color	Well tolerated. Rare sensitivity. Exposure to small amounts of estrogen-like materials. Allergies rare. No studies to date show harm.
GLASS IONOMERS	Powder/liquid mixture, can contain fluoride, which can self-harden or harden by exposure to light.	Fillings, cavity liners, sealants, and cement for crowns and bridges	Opaque to white yellow	Well tolerated. Rare sensitivity. Low resistance to wear and fracture. No studies to date show harm.

Dental Restorative Materials: The Choices

Dental Restorations

There are two types of dental restorations: *direct* and *indirect*.

Direct restorations are fillings placed into a prepared cavity in a single visit. They are usually soft and are hardened by a chemical reaction or a bright light. Most often these fillings are made of metal or resin.

Indirect restorations (i.e.: inlays, onlays, veneers, crowns and bridges) are large, more involved, often require two or more visits to complete, are cemented or bonded into place, and are usually made of metal, resin or ceramic materials.

The chart on the reverse side of this brochure provides information on all of these restoration techniques. The following discussion focuses on the more common direct restoration techniques.

Amalgam: Environmental and Health Concerns

Amalgam has been used as a dental filling material for more than a century. Dental amalgam is an alloy made by combining elemental mercury with several other metals including silver, tin, and copper. These metals form a relatively stable alloy, which has entirely different physical and chemical properties from mercury alone. However, there has recently been some controversy surrounding the potential environmental and health impacts of the mercury found in amalgam.

Environmental concerns: Mercury in amalgam can contribute to air and water pollution. Amalgam waste is released into the wastewater system when new fillings are put in and when old ones are removed. Mercury in this waste can enter the environment when the wastewater is discharged or when sewage sludge is disposed of. In order to minimize these releases, State law requires all general dentistry offices in NH to install special traps and filters. Although 95% efficiency is required, most dental offices use filters that are 98% efficient in collecting this material for recycling. Mercury in amalgam fillings also enters the environment during the cremation of human remains. Because very small amounts of mercury vapor are released from amalgam fillings and can be absorbed into the body, urine and feces can contain mercury that is released into the environment.

Health concerns: For decades amalgam has been regarded as a safe and reliable dental filling material. However, in recent years dental amalgam has received some attention directed primarily at possible exposures to trace amounts of elemental mercury that may be released from amalgam

fillings. No scientific studies have shown any link between amalgam fillings and any health effects. Organizations including the National Institutes of Health, US Public Health Service, Center for Disease Control and Prevention and the US Food and Drug Administration have all supported this conclusion. Nonetheless, where there is allergy to mercury and in instances where there may be sensitivity to mercury such as in children from conception to the age of six, parents may want to discuss filling material options with their dentists.

Available Filling Material Options

Amalgam and "composites" are the most common dental material options. Composites are mixtures of plastic resins that are normally white or "tooth-colored". In recent years there has been a marked increase in the development of composites. More information on the characteristics and risks and benefits of these materials is presented in the chart on the reverse of this page. Several other less-common dental materials may also be used depending on your particular situation. Your dentist will be happy to discuss these options and can help you make the choice that's best for you.

About this Brochure

In 2002, the NH legislature passed a law that requires dentists to provide patients with information on the benefits and risks of various restorative dental materials, including mercury amalgam fillings and to discuss these options with patients prior to their use. This brochure is designed to help fulfill this requirement. The chart on the reverse side of this brochure is a simple overview and not intended to be all-inclusive. In addition, the applicability of a particular filling material will vary from case to case depending on many factors. Your dentist will discuss the various options available for your particular situation.

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