



## Dental Materials Fact Sheet

### What About the Safety of Filling Materials?

Patient health and the safety of dental treatments are the primary goals of California's dental professionals and the Dental Board of California. The purpose of this fact sheet is to provide you with information concerning the risks and benefits of all the dental materials used in the restoration (filling) of teeth.

The Dental Board of California is required by law\* to make this dental materials fact sheet available to every licensed dentist in the state of California. Your dentist, in turn, must provide this fact sheet to every new patient and all patients of record only once before beginning any dental filling procedure.

As the patient or parent/guardian, you are strongly encouraged to discuss with your dentist the facts presented concerning the filling materials being considered for your particular treatment.

\* *Business and Professions Code 1648.10-1648.20*

### Allergic Reactions to Dental Materials

Components in dental fillings may have side effects or cause allergic reactions, just like other materials we may come in contact with in our daily lives. The risks of such reactions are very low for all types of filling materials. Such reactions can be caused by specific components of the filling materials such as mercury, nickel, chromium, and/or beryllium alloys. Usually, an allergy will reveal itself as a skin rash and is easily reversed when the individual is not in contact with the material.

There are no documented cases of allergic reactions to composite resin, glass ionomer, resin ionomer, or porcelain. However, there have been rare allergic responses reported with dental amalgam, porcelain fused to metal, gold alloys, and nickel or cobalt-chrome alloys.

If you suffer from allergies, discuss these potential problems with your dentist before a filling material is chosen.

### PORCELAIN (CERAMIC)

Porcelain is a glass-like material formed into fillings or crowns using models of the prepared teeth. The material is tooth-colored and is used in inlays, veneers, crowns and fixed bridges.

#### Advantages

- ♥ Very little tooth needs to be removed for use as a veneer; more tooth needs to be removed for a crown because its strength is related to its bulk (size)
- ♥ Good resistance to further decay if the restoration fits well
- ♥ Is resistant to surface wear but can cause some wear on opposing teeth
- ♥ Resists leakage because it can be shaped for a very accurate fit
- ♥ The material does not cause tooth sensitivity

#### Disadvantages

- Material is brittle and can break under biting forces
- May not be recommended for molar teeth
- Higher cost because it requires at least two office visits and laboratory services

### NICKEL OR COBALT-CHROME ALLOYS

Nickel or cobalt-chrome alloys are mixtures of nickel and chromium. They are a dark silver metal color and are used for crowns and fixed bridges and most partial denture frameworks.

#### Advantages

- ♥ Good resistance to further decay if the restoration fits well
- ♥ Excellent durability; does not fracture under stress
- ♥ Does not corrode in the mouth
- ♥ Minimal amount of tooth needs to be removed
- ♥ Resists leakage because it can be shaped for a very accurate fit

#### Disadvantages

- Is not tooth colored; alloy is a dark silver metal color
- Conducts heat and cold; may irritate sensitive teeth
- Can be abrasive to opposing teeth
- High cost; requires at least two office visits and laboratory services
- Slightly higher wear to opposing teeth



## Dental Materials – Advantages & Disadvantages

### PORCELAIN FUSED TO METAL

This type of porcelain is a glass-like material that is “enameled” on top of metal shells. It is tooth-colored and is used for crowns and fixed bridges

#### Advantages

- ♥ Good resistance to further decay if the restoration fits well
- ♥ Very durable, due to metal substructure
- ♥ The material does not cause tooth sensitivity
- ♥ Resists leakage because it can be shaped for a very accurate fit

#### Disadvantages

- More tooth must be removed (than for porcelain) for the metal substructure
- Higher cost because it requires at least two office visits and laboratory services

### GOLD ALLOY

Gold alloy is a gold-colored mixture of gold, copper, and other metals and is used mainly for crowns and fixed bridges and some partial denture frameworks

#### Advantages

- ♥ Good resistance to further decay if the restoration fits well
- ♥ Excellent durability; does not fracture under stress
- ♥ Does not corrode in the mouth
- ♥ Minimal amount of tooth needs to be removed
- ♥ Wears well; does not cause excessive wear to opposing teeth
- ♥ Resists leakage because it can be shaped for a very accurate fit

#### Disadvantages

- Is not tooth colored; alloy is yellow
- Conducts heat and cold; may irritate sensitive teeth
- High cost; requires at least two office visits and laboratory services

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