Materials Used for Tooth Restorations

This information is provided to help you make better decisions about the use of materials as tooth restorations in your mouth. Many types of metals are used in dentistry for the replacement and rehabilitation of oral structures. Most of these metals are considered to be inert when placed in the body, while others have been criticized as potential toxins or allergens to some people. Plastic and ceramics are used commonly as tooth restoratives, and these have not had adverse biologic responses.

Which type of tooth restorations is best for you? The following information is provided to help you make that decision.

Restoration of Parts of Single Teeth ("fillings")
Silver amalgam (an alloy which contains silver, tin, copper, zinc, and about 50% mercury) has been used for about 160 years for the restoration of teeth. It has been a highly successful but unsightly material. Use of mercury in the body has been criticized since its inception, but amalgam used is still supported strongly by the American Dental Association and other groups worldwide. Some few people in the overall population may be allergic to the elements in silver amalgam. However, you do have several options:

Choice for Fillings:
- **Silver Amalgam**: Average longevity about 15 years; silver color; low initial cost; best in small–to medium–sized restorations of posterior teeth.
- **Gold Inlays and Onlays**: Average longevity 20 years to life; gold color; moderate to high initial cost; may be used in any size restoration in any location where metal is displayed; two appointment placement.
- **Resin Composite**: Average longevity 10–15 years; tooth–colored; moderate cost; best used in small to medium–size restorations for any teeth; direct one–day placement.
- **Ceramic Indirect**: Average longevity 10–15 years; tooth–colored; moderate–high initial cost; best in moderate sized restoration for any teeth; two appointment placement

Crowns or Fixed Prosthesis ("bridges")
Gold alloys have been used for many years for the construction of crowns or fixed bridges. They provide excellent strong, long lasting service. Three major types of alloys are now available:

- **High Noble Metal**: mostly gold, also palladium, silver; occasionally platinum, zinc and copper. Cost may be higher due to amount of gold used.
- **Noble Metal**: mostly palladium, also silver and gold. *Commonly used in most dental offices* (PFM)
- **Base Metal**: mostly nickel, also chrome or cobalt and other base metals. Seldom used in our office.

All of the above metals are used either as the sole constituent of the base metals. If you have known porcelain is fired (baked). Most people have no biologic response to the base metals. The cost of those is somewhat higher than base metals. Bridges are strongest when metal is used with or without porcelain on it.

Choices for Bridges:
- **Metal Alone**: (high–noble, noble, or base metal). Longevity 20 years to life; gold or “silver” color; moderate–to–high initial cost; may be used in any area where metal display is not objectionable.
- **Porcelain Fused to Metal**: Longevity 10–20 years; tooth–colored; moderate–to–high initial cost; may be used in any area where extreme stress or grinding habits are not present. *Commonly used in most dental offices*.
- **Ceramic Non–Metal**: no metal used; longevity 10–20 years; moderate–to–high initial cost; may be used in any area mostly front; may be used in any area where extreme stress or grinding habits are not present. Now is available in crowns, bridges and Veneers placed in the front of the mouth.