

Q: I need a broken filling replaced in one of my molars. My dentist offered a choice of filling materials: silver, gold, composite or porcelain. What are the advantages and disadvantages of each?

A: Ah yes, the hole in your tooth, into which we must place some substitute for your natural tooth structure. Unfortunately there is no perfect material but here are some considerations:

Composite is a polymerized resin (i.e. plastic). It is affordable, repairable (can bond to itself), invisible (shade-matched to natural teeth), and moderately durable, depending on the filling size and the prevailing bite forces. A significant advantage is that composite is *bonded* to tooth structure, as opposed to amalgam (silver fillings), so it can strengthen a weaker tooth. The bond strength also means we don't need mechanical undercuts to lock-in the filling, so in preparation we often remove far less healthy tooth structure than for an amalgam filling.

Amalgam is the oldest remedy in the book, replacing tooth structure since 1890 in the US. It is ugly--ranging in color from light grey (fresh) to black (corroded). It does not bond well, relying instead on mechanical undercuts for retention.

It is safe, in my studied opinion, despite the ripples of anti-amalgam hype. Free mercury released to the body from solid amalgam in our mouth is negligible. Amalgam is particularly useful in hard-to-dry areas such as below the gum line, as composite requires a very dry field for success.

Gold is perhaps the most bio-compatible choice, as its wear strength matches enamel. Gold fillings hold up beautifully over many years, and are relatively inert, for chemically sensitive people. Gold is chosen more often for full coverage (crowns) on back teeth than for fillings. It is cemented, not bonded and is...well, gold in color (duh!), which is an obvious disadvantage.

Porcelain is often used for crowns and it can be used as a filling material as well. It is considerably more expensive than a composite filling. Porcelain is glass-like so it has some potential for fracture-- but also bonded in, which lends strength. It is shade-matched for the tooth and can be very long lasting, again depending on the prevailing bite forces. A porcelain filling is most often completed in two visits, but the new cad-cam technology makes it possible in one visit, again at a price.

I encourage you to discuss with your dentist the pros and cons of each of these choices for your particular restoration.