

## Mercury Amalgam Facts

One of the worlds leading authorities on dental materials, Dr. Russell Giordano said: “Amalgam is my least favorite tooth restoration, not because of mercury but because it does nothing to reinforce the tooth and actually, in my opinion, greatly weakens the tooth. When we use amalgam we undercut the tooth structure” (which weakens the tooth)”chipping and leakage as we always see with amalgam over time.” Let’s look at his points more closely, so you, the reader, can fully appreciate his and my opinion of this outdated and overused tooth restorative material.

Dental amalgam fillings are composed from about 55% Mercury, 44% Silver and 1% of trace metals like zinc, copper and tin. One risk is allergic reactions: a number of people have copper allergies, component of some amalgam filling brands. Mercury, a known neurotoxin and disruptor of critical cellular functions, is approved by the FDA for human use as a major component of dental amalgam fillings. The ADA supports the FDA’s views and endorses its’ use as well.

However, dental amalgam’s commonly unknown property is in its capability of weakening and breaking teeth, sometimes so catastrophically that the tooth has to be extracted. The cost of extraction and replacement can be as much as \$7,000. Not to mention the pain and suffering the patient has to endure.

Amalgam fillings were first invented in 1819 as a cheap substitute to cemented gold fillings and crowns. At the time they were the only direct tooth filling material available to dentists. Dental amalgam fillings are used by a majority of American dentists and are the most popular filling material sold in the USA today. Amalgam fillings are not bonded to the tooth. In fact, placing an amalgam filling in a tooth is almost as bad as having an empty hole and a weakened tooth. I said “almost” because it is actually worse: The only technology available in the 1800’s to keep amalgam fillings in place were basic wood working principles. These include a dovetail joint design: the base needed to be wider than the top so the filling would not fall out of the tooth. Since decay creates a bowl shaped hole, the undercutting of healthy cusps is required to maintain the amalgam filling in the tooth. In addition, grooves, pits and boxes are sometimes drilled into a healthy tooth to hold larger fillings in place. For replacing huge fillings, cusp holes are drilled and pins are screwed into the tooth; this can lead to micro crack formation, tooth perforation and even nerve trauma. As a result, root canal treatment is needed. As you can see, amalgam fillings further weaken the tooth by removing additional healthy tooth structure. To make matters worse, silver-mercury fillings expand with time and heat putting outward, prying pressure on the already compromised tooth. This can have dire consequences: catastrophic tooth fracture!

Proponents of amalgam fillings praise the fillings’ longevity. Some can last decades. While this is true, the bigger question is, “at what cost to the tooth?” If that cost is a weakened tooth that cracks, breaks or splits in half and needs root canal treatment or extraction, then perhaps that risk is too great, especially when better alternatives exist today in the 21st century such as **Biomimetic Dentistry**. This type of dentistry is respectful of tooth structure in that it is based upon the usage of new and improved adhesive materials that actually bond to the tooth and mimics the color and strength of the tooth itself. Only old fillings and decay is removed as compared to much good tooth structure needed to be removed in the case of crowns and porcelain veneers. This type of dentistry is a win/win as it:

- Saves natural tooth structure.
- Does not traumatize the dental nerve as is the case with crowns, porcelain veneers, etc., therefore there is much less chance for the tooth requiring a root canal treatment.
- Can be done in one appointment which saves time and expense.