

There are differences between dental **materials** and the individual elements or components that compose these materials. For example, dental amalgam filling **material** is composed mainly of mercury (43-54%) and varying percentages of silver, **tin**, and copper (46-57%). It should be noted that **elemental** mercury is **listed** on the Proposition 65 list of known toxins and carcinogens. Like all materials in our environment, each of these elements by themselves is toxic at some level of concentration if they are taken into the body. When they are mixed together, they react chemically to form a crystalline **metal** alloy. Small amounts of free mercury may be released from amalgam **fillings** over time and can be detected in bodily fluids and expired air. The important **question** is whether any free mercury is present in sufficient levels to pose a health risk. **Toxicity** of any substance is related to dose, and doses of mercury or any other **element** that may be released **from** dental amalgam fillings falls far below the established safe **levels** as stated in the 1999 US **Health** and Human Service **Toxicological** Profile for Mercury Update.

All dental restorative materials (as well as all materials that we come in contact with in our daily life) have the potential to elicit allergic reactions in hypersensitive **individuals**.¹ These must be assessed on a **case-by-case** basis, and **susceptible** individuals should avoid contact with **allergenic** materials. Documented reports of allergic reactions to dental amalgam exist (usually manifested by transient skin rashes in individuals who have come into contact with the material), but they are atypical. Documented reports of **toxicity** to dental amalgam **exist**, but they are rare. There have been anecdotal reports of **toxicity** to dental amalgam and as **with** all dental material risks and benefits of **dental amalgam** should be discussed with the patient, **especially** with those in susceptible populations.

Composite **resins** are the preferred **alternative** to amalgam in many **cases**. They have a **long** history of **biocompatibility** and safety. Composite resins are composed of a variety of complex **inorganic** and organic compounds, any of which might provoke allergic response in **susceptible** individuals. Reports of such **sensitivity** are atypical. However, there are individuals who may be susceptible to **sensitivity**, allergic or adverse reactions to composite resin **restorations**. The risks and benefits of **all** dental materials should be discussed with the patient, especially with those in susceptible populations.

Other dental materials **that** have elicited significant concern among dentists are **nickel-chromium-beryllium** alloys used predominantly for crowns and bridges. Approximately 10% of the **female population** are **alleged** to be allergic to **nickel**.² The incidence of allergic response to dental restorations made from nickel **alloys** is surprisingly rare. However, when a patient has a positive history of confirmed nickel allergy, or when such **hypersensitivity** to dental restorations is suspected, alternative metal alloys may be used. Discussion with the **patient** of the risks and benefits of these materials is indicated.