

SOURCE REFERENCES: METALLIC MATERIALS

The following paper titled, the "Genotoxic Effects of Silver Amalgam and Composite Restorations: Micronuclei-Based Cohort and Case–Control Study in Oral Exfoliated Cells" by Mary et al., concluded the following:

The present study was done to observe and to compare the micronucleus assay among participants with amalgam and composite restorations before and after the restoration. We can conclude from the present study that micronucleus assay in exfoliated cells serves as a specific biomarker of genotoxicity, for studying the genotoxic effects on oral mucosal cells. Our *in vivo* data suggest that restorative dental fillings, to which a huge number of people are continually exposed for long duration, produce DNA damage locally in the oral cavity due to the release of either mercury, or methacrylate. This suggests a greater risk for implication of these materials in human cancer. Hence, more research on a large scale is necessary to study the genotoxic effects of mercury and methacrylate on oral cavity with respect to amalgam and composite restorations, to establish its potential cytotoxic effects. Future research and technical advancements are needed for developing safer materials for use in humans. ([SOURCE](#))

This case-controlled study by Tavangar et al. looked at the relationship between dental amalgam and Multiple Sclerosis and concluded that, "It seems that dental amalgam and the number of involved surfaces are among the factors associated with MS disease such that the number of dental amalgam fillings and the number of filling surfaces were significantly greater, and levels of exposure to amalgam fillings were significantly higher in people affected by MS than in normal people." ([SOURCE](#))

Grube, Tibau, et al. (2019), published a review article titled, "Titanium exposure and Human Health, which was one of the most viewed papers in Oral Science International that year. This is the full abstract and link:

ABSTRACT

Historically, titanium (Ti) has maintained the reputation of being an inert and relatively biocompatible metal, suitable for use in both medical and dental prosthesis. There are many published articles supporting these views, but there is recent scientific evidence that Ti, or its corrosive by-products, may cause harmful reactions in humans. It is important for all medical and dental professionals to understand the implications, complexities, and all potential pathways of exposure to this metal. These exposures are not only from the environment but also through various commonly used products in medicine that are often completely overlooked. These external (intermittent) and internal (constant) exposures have an impact on whole-body health. This review examines possible harmful effects, risks, and often ignored potential complications of Ti exposure to human health.

[SOURCE A](#) [SOURCE B](#)
[SOURCE C](#) [SOURCE D](#)
[SOURCE E](#) [SOURCE F](#)

[SOURCE G](#) [SOURCE H](#)
[SOURCE I](#) [SOURCE J](#)