


# Are dental fillings safe?

## Safety of dental amalgam and alternative dental restoration materials



**Dental amalgam is an often debated topic. Millions of people have this type of dental fillings. Could it pose a health risk, and if so, should people have these fillings removed?**

**And what about alternative dental fillings? Are they safe?**

### → WHAT IS DENTAL AMALGAM?

Dental amalgam is a combination of alloy particles and mercury that contains about 50% of mercury in the elemental form. It is durable, very hard and relatively inexpensive, but has also some disadvantages – its silver colour is visible in the mouth, and it requires drilling a relatively large cavity in the tooth and removing healthy tooth substance to secure it in place.

### → IS MERCURY FROM DENTAL AMALGAM DANGEROUS?

The main concern about dental amalgam fillings is not that patients will end up ingesting minute amounts of mercury – as when they eat food with high mercury content – the principle route of dental amalgam exposure is through the inhalation of mercury vapour.

Mercury vapour produced by dental amalgam is absorbed by the lungs, but most of this quantity is naturally excreted by the body. Traces of mercury coming from dental amalgam, however, can accumulate over time in the brain, but there is no evidence this specific source causes any health problems.

Dentists do not show adverse effects from mercury vapours, even though they are frequently exposed to them.

### → SHOULD PEOPLE HAVE DENTAL AMALGAM REMOVED, JUST TO BE SURE?

In some cases, people develop an allergic reaction to dental amalgam and should have it removed. Except for in these cases, there is no justification for it, since placement and removal of dental amalgam fillings result in a transient peak of exposure to patients as well as to dental personnel, compared to leaving the amalgam intact.

### → IF DENTAL AMALGAM IS NOT HARMFUL, WHY ARE ALTERNATIVES BECOMING MORE POPULAR?

There is growing concern about mercury in the environment, which has led to reducing the use of mercury in general, and a ban in various applications. In fact, what is in the body will also be one day in the ground, the water or the atmosphere. Another reason to use alternatives is that they match the colour of tooth enamel. Finally, although scientific evidence does not support this, patients may perceive dental amalgam as dangerous and ask their dentists not to use it.

### → ARE ALTERNATIVE DENTAL FILLINGS SAFE?

Some alternatives have been used for over thirty years. Recent improvements in the composition and processing of these materials have resulted in smaller amounts of material being released from them and lower exposure levels. However, more research is needed for the development of new materials as well as for an overall safety assessment for some of them.

### → WHAT IS THE BEST CHOICE FOR DENTAL FILLINGS?

The SCENIHR concludes in its updated Opinion that, based on current scientific evidence, neither dental amalgam nor alternative materials are harmful to the health of the general population. From the perspectives of longevity, mechanical performance and economics, dental amalgam is still considered the material of choice. It has played a valuable role in safeguarding dental health for over 150 years.

Patients should be informed about all their options and decide, together with their dentists, on the best solution for their individual needs. The choice of material should be based on patient characteristics, such as primary or permanent teeth, presence of allergies to mercury or to other components of the restorative materials and an eventual decreased renal clearance that affects the elimination of foreign substances from the bloodstream.

As with any other medical or pharmaceutical intervention, caution should be exercised when considering the placement of any dental restorative material in pregnant women.

This fact sheet is based on the opinion of the independent Scientific Committee on Emerging and Newly Identified Health Risks (SCENIHR): 'The safety of dental amalgam and alternative dental restoration materials for patients and users'.

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