

## Occupational Exposure to Electromagnetic Fields Can Increase the Release of Mercury from Dental Amalgam Fillings

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**Abstract :** Electricians, power line engineers and power station workers, welders, aluminum reduction workers, MRI operators and railway workers are occupationally exposed to different levels of electromagnetic fields. Mercury is among the most toxic metals. Dental amalgam fillings cause significant exposure to elemental mercury vapour in the general population. Today, substantial evidence indicates that mercury even at low doses may lead to toxicity. Increased release of mercury from dental amalgam fillings after exposure to MRI or microwave radiation emitted by mobile phones has been previously shown by our team. Moreover, our recent studies on the effects of stronger magnetic fields entirely confirmed our previous findings. From the other point of view, we have also shown that papers which reported no increased release of mercury after MRI, may have some methodological flaws. Over the past several years, our lab has focused on the health effects of exposure of laboratory animals and humans to different sources of electromagnetic fields such as mobile phones and their base stations, mobile phone jammers, laptop computers, radars, dentistry cavitrons, and MRI. As a strong association between exposure to electromagnetic fields and mercury level has been found in our studies, our findings lead us to this conclusion that occupational exposure to electromagnetic fields in workers with dental amalgam fillings can lead to elevated levels of mercury. Studies which reported that exposure to mercury can be a risk factor of Alzheimer's disease (AD) due to the accumulation of amyloid beta protein ( $A\beta$ ) in the brain and those reported that long-term occupational exposure to high levels of electromagnetic fields can increase the risk of Alzheimer's disease and dementia in male workers support our concept and confirm the significant role of the occupational exposure to electromagnetic fields in increasing the mercury level in workers with amalgam fillings.

**Keywords :** occupational exposure, electromagnetic fields, workers, mercury release, dental amalgam, restorative dentistry

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