



Re: Blood mercury concentration in relation to metabolic and weight phenotypes using the KNHANES 2011–2013 data

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Dear Editor,

With great interest, we have read the article by Lee entitled “Blood mercury concentration in relation to metabolic and weight phenotypes using the KNHANES 2011–2013 data” that is published in *Int Arch Occup Environ Health*. 2017 Oct 13. <https://doi.org/10.1007/s00420-017-1269-0>. In this study, Lee has assessed the association of blood mercury concentration with metabolic and weight phenotypes and concluded that blood mercury concentration was associated with both metabolic syndrome and obesity, and the association was dose-dependent across metabolic and weight phenotypes. Although this study addresses a challenging issue, it has some shortcomings. The first shortcoming of this study comes from this point that the author has ignored some major confounding factors such as the size of the dental fillings and the composition of amalgam which significantly affect the accuracy of their findings. If these data were collected in the Sixth Korea National Healthy and Nutrition Examination Survey (KNHANES VI-1), it should be clearly mentioned. Moreover, other factors which cause load over the amalgam restorations such as the pattern of tooth brushing, chewing habits, and bruxism can alter the level of mercury released from amalgam fillings.

Another shortcoming of this study is due to this point that the authors have ignored substantial evidence indicating the role of rapidly increasing human exposures to electromagnetic fields (EMFs) on the accelerated release of mercury from dental amalgam restorations. Our previous studies showed that exposure to EMFs produced in magnetic

resonance imaging (MRI) or by common mobile phones significantly increase the mercury release from dental amalgam restorations (Mortazavi et al. 2008, 2014). These findings were further supported by the studies which aimed at investigating the amalgam microleakage (Shahidi et al. 2009; Yilmaz and Misirlioglu 2013). Furthermore, Kursun et al. have also shown that exposure to X-rays which lie in the more energetic area of the electromagnetic radiation spectrum, may accelerate the release of mercury from dental amalgam fillings (Kursun et al. 2014; Mortazavi and Mortazavi 2015).

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