

### Estimation of cancer risk due to exposure to lead contamination in Joss paper

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Dear Editor,

Contamination of heavy metal is a big concern in public health. Contact with heavy metal might imply the cancer risk. Lead is the heavy metal that is widely mentioned for its contamination and relationship to cancer. In the recent publication, the risk due to contact of lead contaminated in Ayurveda product is reported.<sup>[1]</sup> In real life, the contamination of lead can be seen in several objects. A forgotten object is Joss paper, which is widely used in Chinese communities around the world. The Joss paper is regularly used in religious practice by the Chinese

and exposure to the lead on the Joss paper can be expected. According to a recent report, the level of lead contamination in each Joss paper is equal to 0.58–320.81  $\mu\text{g/g}$  (ppm).<sup>[2]</sup> Here, the authors assess cancer risk from contact with lead contaminated Joss paper using the cancer risk assessment technique as used in the previous publication.<sup>[1]</sup> In the present model, individual lifetime cancer risk is equal to “concentration of contaminated lead in Joss paper  $\times$  lifetime unit risk factor.” As noted in the previous paper “unit risk factor of lead is equal to  $1.2 \times 10^{-5} \text{ m}^3/\mu\text{g}$ ” and “lead density equal to  $11,340 \text{ kg/m}^3$ .”<sup>[1]</sup> According to this basic information, the derived individual lifetime cancer risk is equal to 6882.93–43655.82. This rate is considerable high comparing to the previously estimated rate in case of lead contaminated Ayurveda product.<sup>[1]</sup> Since Joss

paper is widely used around the world, the cancer risk due to this ritual object is of concern.

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### Conflicts of interest

There are no conflicts of interest.

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### References

1. Joob B, Wiwanitkit V. Estimation of cancer risk due to exposure

to lead contamination in Thai Ayurveda products. *Indian J Cancer* 2015;52:550.

2. Chew NK, Lee MK, Mohd MA, Tan CT. Parkinson's disease in occupational exposure to Joss paper, a report of two cases. *Neurol J Southeast Asia* 2003;8:117-20.

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