



**ACMT** | American College  
of Medical Toxicology

**ACMT Position Statement:  
No Evidence that Tampons Cause Metal Poisoning**

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The position of the American College of Medical Toxicology (ACMT), is as follows:

The American College of Medical Toxicology is a professional group for specialists in the treatment of poisoning. As experts in toxicology and pharmacology, we diagnose and treat patients with adverse health effects from metal exposure.

We are aware of the recent paper by Shearston et al that found trace concentrations of 16 metals and metalloids in 30 different tampons from 14 different brands (1). The authors tested 60 material samples from tampons representing 30 individual tampons for arsenic, lead, calcium, and iron. There was a wide range of concentrations found. The median lead concentration, for example, was 173 ng/g.

The authors hypothesized that metals (which are found in soils, plants, and food) may have contaminated the absorbent core materials (cotton, rayon, viscose) used in tampons. The authors acknowledged that they could not evaluate absorption and “cannot speculate on potential harm to the health of menstruators.” The study does not provide any information on bioavailability via the intra-vaginal route or health effects.

Menstrual products protect health by reducing reproductive and urinary tract infection. Access to a variety of products worldwide has led to improved health literacy, access to school, and economic opportunities, especially in developing areas (2,3).

**Limitations**

Metals can be detected at concentrations far lower than that which may cause adverse health effects. There is no evidence that metals are absorbed efficiently through vaginal mucosa in quantities that would cause clinical effects (4). In general, lipophilic substances are more likely to be absorbed through vaginal mucosa than metal ions.

A “toxin” is a natural substance that can cause harm. Toxins only cause injury when they reach target organs (usually via the bloodstream) in sufficient quantities. The paper does not measure

blood concentrations or demonstrate any health outcomes. We are constantly exposed to low concentrations of metals in our environment by multiple routes, and this paper does not demonstrate that any absorption from tampons would represent a significant exposure.

To predict health effects, we would need to understand how the dose delivered compares to the doses where adverse effects are expected to occur. As an example, we looked at concentrations of lead from tampons - and considered this with reference intake levels for lead. The CDC uses a blood lead reference value of 3.5 µg/dL as threshold to determine action. In a “female of childbearing age” the dietary intake of lead corresponding to this reference value is 88 µg/d (5). (For added safety, CDC uses an Interim Reference Level of 8.8 µg/d derived by dividing this by 10) In a tampon weighing 9 g, a median concentration of 173 ng/g would result in 1557 ng (1.557 µg) of lead in total (a similar calculation could be performed for other metals identified in the study). Therefore, even in the extremely unlikely event that the lead was completely absorbed intra-vaginally, it would be a small fraction of dietary lead required to approach dietary intake corresponding to the CDC reference value. This comparison does not consider that vaginal mucosal bioavailability is much less than from the oral route. Averaged over a longer period of time, the predicted average daily “dose” from a tampon becomes lower still when we consider this exposure is intermittent because of the periodic nature of menses. Although the above calculation was for lead, we would expect similarly low doses from other metal exposures in a tampon.

### **Unwarranted Health Concerns**

We are concerned that this paper could result in unwarranted health concerns or use of dangerous or unnecessary therapies, such as chelation.

Media outlets reported on this paper with headlines such as “Tampons contain lead, arsenic, and potentially toxic chemicals” and “Some tampon products found to contain toxic metals in first-time study” (6,7). In some cases, readers who open the link and read articles on this story will see mention of the paper’s limitations. However, other readers may not read past the title or put the limitations in proper context. The impact of a concerning headline is much greater than that of the context provided in the text of the article.

### **Recommendations**

- We do not recommend against the use of tampons at this time, if that is a person’s preferred menstruation hygiene method.
- Further investigation should be conducted to understand whether absorbed doses of metals and metalloids approach harmful concentrations.

## Disclaimer

While individual practices may differ, this is the position of the American College of Medical Toxicology at the time written, after a review of the issue and pertinent literature.

## References (Format for JMT)

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