

## Disclosure of Conflict of Interest Regarding the paper “Per- and Poly-fluoroalkyl Substances (PFAS) Exposure and Risk of Kidney, Liver, and Testicular Cancers

Seyedsalehi and Boffetta, at the bottom of their contribution “Per- and Poly-fluoroalkyl Substances (PFAS) Exposure and Risk of Kidney, Liver, and Testicular Cancers: A Systematic Review and Meta-Analysis” published online in this journal (*Med Lav* 2023;114(5):e2023040; DOI: 10.23749/mdl.v114i5.15065) stated that MSS “declares no conflict of interest” whereas PB “acted as an expert in litigation involving PFAS exposure unrelated to the present work”.

The manuscript was submitted to the Editor on 1 August 2023, quickly accepted on 10 August, and published online on 25 October 2023.

It should be noted, however, that PB, well before the submission of the manuscript, has been hired as a consultant for some managers of the firm MITENI in the ongoing trial at the court of Vicenza (Italy), accused for an extremely large, extended over time, and intense pollution of Per- and Poly-fluoroalkyl Substances, inclusive of PFOA, involving the workers of the factory and no less than 300.000 inhabitants.

As a consultant, PB has already been present during the hearings of the trials several months before the submission of this manuscript and is expected to be heard as a consultant. Thus, the journal’s readers were kept in the dark on the link between the

role of PB in the ongoing trial and the manuscript’s content.

It is important to ensure transparency and accuracy in informing readers about existing conflicts of interest; each item can be evaluated objectively regarding the correctness of the data and the author’s credibility, and this is the proper aim of the disclosure clause.

This is very relevant in this specific case, where the content of Seyedsalehi and Boffetta article should be read considering what IARC Working Group stated for the evaluation of the carcinogenicity of PFOA and PFOS in November 2023. The authoritative IARC evaluation recognizes that PFAS is carcinogenic to humans (Group 1), and PFOS is possibly carcinogenic to humans (Group 2B of the IARC classification).

Academic and scientific production, as a tool to improve knowledge and understanding, is extremely relevant, leading to win court cases or to influence public opinion. This is a great responsibility to fulfill.

Yours sincerely  
**Claudia Marcolungo**  
Professor of Environmental Law  
University of Padova

## AUTHOR'S REPLY

Sir,

The statement that I “acted as consultant in a litigation involving exposure to PFAS, unrelated to the present work” accurately and completely describes my involvement in the trial mentioned by Dr. Marcolungo. Furthermore, I attended a single hearing of the litigation before the submission of our manuscript [1]. This happened on June 26, 2023, 36 days (not “several months”, as mentioned by Dr. Marcolungo) before the submission of our manuscript [1].

Dr. Marcolungo mentions the IARC evaluation of carcinogenicity of PFAS, which took place after our manuscript was accepted for publication. In fact, IARC conclusions echoed ours. While keeping in mind that the details of the IARC evaluation will not be known for some time, it was stated in a short report that “for PFOA, there was “limited” evidence for renal cell carcinoma and testicular cancer in humans”, while the evidence for PFOA was inadequate for other cancers and for PFOS it was inadequate for all cancers [2]. “Limited” evidence in humans indicate that “a causal interpretation of the positive association observed in the body of evidence on exposure to the agent and cancer is credible, but chance, bias, or confounding could not be ruled out with reasonable confidence” [3]. Our conclusion was that “we identified an association between overall PFAS exposure and kidney cancer

and between high-dose exposure and kidney and testicular cancer. Residual confounding and other sources of bias prevent concluding the causal nature of these associations” [1]. I leave it to the unbiased reader to decide whether these two statements are consistent. In fact, I am rather satisfied that the IARC panel agreed with our interpretation of the evidence.

While respectful disagreement based on sound methodology and valid data is a quintessential aspect of the advancement of knowledge, groundless criticisms based on false premises and wrong data can only harm the reputation of their author.

**Paolo Boffetta, MD, MPH**

Stony Brook Cancer Center, Stony Brook University,  
Stony Brook, NY, USA  
Department of Medical and Surgical Sciences,  
University of Bologna, Bologna, Italy

## REFERENCES

1. Seyyedsalehi MS, Boffetta P. Per- and Poly-fluoroalkyl Substances (PFAS) Exposure and Risk of Kidney, Liver, and Testicular Cancers: A Systematic Review and Meta-Analysis. *Med Lav*. 2023;114:e2023040.
2. Zahm S, Bonde JP, Chiu WA, et al. Carcinogenicity of perfluorooctanoic acid and perfluorooctanesulfonic acid. *Lancet Oncol*. 2024;25:16-17.
3. <https://monographs.iarc.who.int/wp-content/uploads/2019/07/Preamble-2019.pdf> [Last Accessed January 13, 2023]