



# EMERGING SCIENCE FOR ENVIRONMENTAL HEALTH DECISIONS

## Recommended Reading

- Audebert et al. 2012 Comparative potency approach based on H2AX assay for estimating the genotoxicity of polycyclic aromatic hydrocarbons <https://www.sciencedirect.com/science/article/pii/S0041008X12000415>
- Bazarian J.J., P. Biberthaler, R. D. Welch, et al. Serum GFAP and UCH-L1 for prediction of absence of intracranial injuries on head CT (ALERT-TBI): a multicentre observational study. *Lancet Neurol.* 2018;17(9):782-789. doi:10.1016/S1474-4422(18)30231-X
- Bolognosi et al. 2017 - CBMN meta-analysis and dose response in vinyl-chloride exposed workers: <https://pubmed.ncbi.nlm.nih.gov/29173494/>
- Ethridge A., et al. (2011). "Extracellular microRNA: a new source of biomarkers". *Mutation Research* 717 (1-2): 85-90.
- Harrill A. H., S. D. McCullough, C. E. Wood, J. J. Kahle, and B. N. Chorley. MicroRNA Biomarkers of Toxicity in Biological Matrices. *Toxicol Sci.* 2016 Aug;152(2):264-72.
- Imam S. Z., Z. He, E. Cuevas, et al. Changes in the metabolome and microRNA levels in biological fluids might represent biomarkers of neurotoxicity: A trimethyltin study. *Exp Biol Med (Maywood)*. 2018;243(3):228-236. doi:10.1177/1535370217739859
- Kirsch-Volders et al. 2018 - CBMN systematic review across various carcinogens in humans: <https://pubmed.ncbi.nlm.nih.gov/30389162/>
- Kopp B., L. Khoury, and M. Audebert. 2019. Validation of the γH2AX biomarker for genotoxicity assessment: a review. *Archives of Toxicology* 93(8):2103-2114.
- Luster, M. I., V. J. Johnson, B. Yucsoy, and P. P. Simeonova. 2005. Biomarkers to assess potential developmental immunotoxicity in children. *Toxicology and Applied Pharmacology* 206(2):229-236.
- Rager, J. E., S. S. Auerbach, G. A. Chappell, E. Martin, C. M. Thompson, and R. C. Fry. 2017. Benchmark Dose Modeling Estimates of the Concentrations of Inorganic Arsenic That Induce Changes to the Neonatal Transcriptome, Proteome, and Epigenome in a Pregnancy Cohort. *Chemical Respiratory in Toxicology* 30: 1911-1920.
- Ray, P. D., A. Yosim, and R. C. Fry. 2014. Incorporating epigenetic data into the risk assessment process for the toxic metals arsenic, cadmium, chromium lead, and mercury: strategies and challenge. *Frontiers in Genetics* 5(201): 1-26.
- Roberts R. A., M. Aschner, D. Calligaro, et al. Translational Biomarkers of Neurotoxicity: A Health and Environmental Sciences Institute Perspective on the Way Forward. *Toxicol Sci.* 2015;148(2):332-340. doi:10.1093/toxsci/kfv188
- Sakane et al. 2020: H2AX correlates with chromosome aberrations in showing effects of chest x-rays in exposed humans: <https://pubmed.ncbi.nlm.nih.gov/32154776/>
- Serdar et al. 2016: H2AX biomarker of DNA damage in roofers: <https://ehjournal.biomedcentral.com/articles/10.1186/s12940-016-0182-4> ;
- Tomasetig et al. 2020: H2AX indicator of DNA damage potency of 27 PAHs across 3 human cell lines: <https://www.ncbi.nlm.nih.gov/pubmed/32184089> - (This one shows utility of the biomarker for predictive screening and for risk assessment in providing an in vitro way for cancer TEFs across PAHs) <https://pubmed.ncbi.nlm.nih.gov>

Vrijens K, Bollati V, Nawrot TS. (2015). "MicroRNAs as potential signatures of environmental exposure or effect: a systematic review". *Environ Health Perspect* 123:399–411.

Walker A. L., S. Z. Imam, and R. A. Roberts. Drug discovery and development: Biomarkers of neurotoxicity and neurodegeneration. *Exp Biol Med* (Maywood). 2018;243(13):1037-1045. doi:10.1177/1535370218801309

Yue J. K., E. L. Yuh, F. K. Korley, et al. Association between plasma GFAP concentrations and MRI abnormalities in patients with CT-negative traumatic brain injury in the TRACK-TBI cohort: a prospective multicentre study. *Lancet Neurol*. 2019;18(10):953-961. doi:10.1016/S1474-4422(19)30282-0

*Some of the competing thinking is outlined here:*

- <https://pubmed.ncbi.nlm.nih.gov/15979392/>
- <https://www.altex.org/index.php/altex/article/view/455/466>
- <https://www.frontiersin.org/articles/10.3389/fdata.2019.00036/full>
- <https://www.pnas.org/content/114/51/E10881.long>