

## **A New Dawn: Redefining the Scientific Perspective on Multiple Chemical Sensitivity (MCS)**

Resilience has been a defining strength of the MCS community. The community has overcome numerous challenges and barriers, pushing forward scientific inquiry and advocating for legal recognition. This spirit of determination was reflected in *Resilience: An International Conference on Multiple Chemical Sensitivity*, which showcased the community's role at the forefront of groundbreaking scientific and policy advancements.

A key challenge faced by the MCS community is the presence of bias and misinformation in some academic literature. A recent example is a publication in the journal *Brain Sciences*, which characterizes MCS as a psychogenic condition. The paper claims that MCS is caused by emotional trauma (from childhood or adulthood) rather than by chemicals. It therefore links stress-related symptoms to the person misidentifying these symptoms as being caused by chemical exposure. The paper fails to acknowledge the effect of direct chemical exposure, and its biological implications. Despite numerous studies indicating that exposure to pollutants and volatile organic compounds (VOCs, present in fragrances, scented products, and cleaning products) directly leads to inflammation. Additionally, research also indicates that repeated exposure can sensitize our sensory system to produce a reaction at lower than threshold levels. Furthermore, the article suggests that the best solution for MCS is trauma-focused psychotherapy, without acknowledging evidence that reducing or eliminating chemical exposure has led to significant symptom relief in affected individuals. Suggesting that MCS is predominantly psychogenic risks reinforcing stigma, increasing patient distress, and diverting attention from effective, evidence-based interventions. Such framing hinders meaningful progress in research, treatment, and support.

As an organization dedicated to protecting the rights of individuals with MCS, the Environmental Health Association of Quebec (ASEQ-EHAQ) considers it essential to respond to the inaccuracies that appear in scientific literature and public discourse. Elaine Psaradellis, a researcher from ASEQ-EHAQ, has published a formal commentary in the same journal (see reference below). Psaradellis' paper presents a plethora of research that clarifies the various environmental and physiological factors that lead to MCS. An extensive literature review conducted by Molot et al. (2023) presents 21 studies that implicate receptor sensitization, notably the TRPV1 and TRPA1 families of receptors, as a key factor in triggering MCS. After repeated chemical exposure, these receptors become activated by lower-than-threshold levels, which can lead to inflammation, and symptoms of MCS. Moreover, air quality research has shown that removal of chemicals (such as VOCs) can directly ameliorate the symptoms. Genetic research has demonstrated the possibility of metabolizing genes (i.e., CYP2D6 and NAT2, which affect the immune system) and transporter genes (i.e., the SLC family of genes, which affect the nervous system) as **a differentiating factor for people who are more likely to be susceptible to MCS**. These studies indicate that MCS is a condition resulting from a combination of genetic predisposition and environmental exposure. The commentary of Elaine Psaradellis highlights the importance of a science-based approach to MCS, recognizing it as a disability with identifiable physiological mechanisms.

In addition to the scientific literature, Elaine Psaradellis also reminds the audience that many countries, such as Japan, Spain, and Germany have recognized MCS by their usage of the ICD-10. These nations acknowledge MCS through their application of the ICD-10 (International Statistical Classification of Diseases and Related Health Problems, Tenth Revision), which classifies MCS as a biological condition, rather than psychogenic. Moreover, it is essential to note the concluding observations of the United Nations Committee on the Rights of Persons with

Disabilities (UNCRPD) in 2025, which explicitly acknowledge MCS as a disability. The Committee acknowledges the significant accessibility barriers faced by individuals with MCS and recognizes the need for inclusive policies that protect their rights and ensure their meaningful participation in society.

Overall, it is essential to recognize the significant progress made in advancing awareness and scientific understanding of MCS, despite ongoing challenges. While skepticism may persist in some circles, the existing body of research strongly supports the physiological and environmental underpinnings of MCS. Failing to address misinformation can have serious consequences, potentially undermining both public perception and appropriate medical care.

The commentary serves as a timely reminder to educate the public and the scientific community about the well-documented biological causes and effects of MCS. Continued research in this field is critical, not only for deepening our understanding of the condition, but also to develop more effective tools for the diagnosis and treatment of Multiple Chemical Sensitivity.

## References

- Alcorta, E., & Gomez-Diaz, C. (2025). Multiple Chemical Sensitivity and the SLC Gene Superfamily: A Case–Control Study. *International Journal of Molecular Sciences*, 26(13), 6484. <https://doi.org/10.3390/ijms26136484>
- Jacques, L. (2024). Multiple Chemical Sensitivity: A Clinical Perspective. *Brain Sciences*, 14(12), 1261. <https://doi.org/10.3390/brainsci14121261>
- Molot, J., Sears, M., & Anisman, H. (2023). Multiple chemical sensitivity: It's time to catch up to the science. *Neuroscience and biobehavioral reviews*, 151, 105227. <https://doi.org/10.1016/j.neubiorev.2023.105227>
- Psaradellis, E. (2025). Redefining Clinical Perspectives on MCS: Toward an Evidence-Based, Multisystem Model. Comment on Jacques, L. Multiple Chemical Sensitivity: A Clinical Perspective. *Brain Sci.* 2024, 14, 1261. *Brain Sciences*, 15(7), 747. <https://doi.org/10.3390/brainsci15070747>