



## **Summary**

The invisibility of MCS and the barriers and bias observed in society, health care, research, policy, and litigation

John Molot, MD,

Environmental Medicine. Adjunct Professor, Faculty of Medicine, University of Ottawa

Dr. John Molot's presentation was a deeply critical examination of how systemic bias, misinformation, and institutional failure have shaped the inadequate recognition and treatment of Multiple Chemical Sensitivity (MCS). He opened with a personal anecdote and compared it to the challenges faced by people living with invisible disabilities like MCS, who are often disbelieved, misunderstood, and stigmatized. Dr. Molot emphasized that people with invisible conditions endure more skepticism and social exclusion than their visible counterparts—an experience that reigns true for those with MCS.

He defined MCS as a biological condition triggered by everyday chemical exposures, such as volatile organic compounds (VOCs), which are generally considered safe for the general population. People with MCS, he explained, often cannot access basic services—such as transportation, healthcare, or places of worship—due to the widespread use of chemicals in indoor environments. These individuals frequently encounter barriers in housing, employment, and legal proceedings, and are subjected to institutional and societal bias, including from medical professionals, lawyers, and judges.

Dr. Molot introduced several types of bias that distort public and scientific understanding of MCS. He discussed implicit bias, confirmation bias, and spin, explaining how these mechanisms allow individuals and institutions to dismiss legitimate scientific evidence. Confirmation bias, he noted, leads people to interpret new data in ways that align with their existing beliefs while ignoring conflicting information. Spin, misinformation, and disinformation—deliberate distortions of facts—further contribute to the marginalization of people with MCS. This bias even infiltrates scientific





literature and governmental reviews, often misrepresenting the evidence base and diminishing the lived experiences of those affected.

A central focus of the presentation was a critique of past and present governmental inaction. Dr. Molot recounted his involvement in the 2012 business case for a Centre of Excellence for Environmental Health, which included surveys showing that the majority of primary care providers felt ill-equipped to diagnose or treat MCS. Despite formal recommendations from the Ontario Task Force on Environmental Health, the government failed to act on the proposed strategies, including establishing scent-free policies in hospitals and implementing awareness campaigns. He highlighted the lack of transparency from the Ontario Ministry of Health, particularly in the suppression of an implementation report entitled *Laying the Groundwork*, which remains unreleased despite its completion in 2021.

Dr. Molot criticized the 2013 review of MCS by Quebec's National Institute of Public Health (INSPQ), noting that it failed to consult key experts, ignored major scientific findings, and misrepresented the state of research. The review dismissed MCS as an anxiety disorder without properly considering a biological explanation, such as the modern evidence on TRP (transient receptor potential) receptor sensitization—a known physiological mechanism triggered by VOCs. He explained that recent research confirms these receptors, especially TRPV1 and TRPA1, play a key role in how people with MCS react to chemical exposures. Furthermore, the INSPQ failed to acknowledge gender differences in chemical sensitivity, despite evidence that women, who are disproportionately affected by MCS, have lower thresholds for TRP receptor activation and higher rates of chemical exposure due to societal roles and product use.

Dr. Molot also addressed the legal implications of medical bias. He noted that MCS-related disability and insurance claims often require expert witnesses, but because MCS is not formally recognized by any medical specialty, those testifying in court may lack genuine expertise. This has led to life-altering legal injustices. However, there has been a recent legal breakthrough. In 2024, Ontario's Workers' Safety and Insurance Appeals Tribunal successfully ruled in favour of three MCS cases, validating the role of TRP sensitization and setting an important legal precedent.

In terms of treatment and management, Dr. Molot acknowledged the lack of formal, evidence-based guidelines but emphasized that there is strong clinical and qualitative support for management strategies focused on chemical avoidance and the creation of safe living spaces. He referenced a 2022 pilot study in which individuals with MCS experienced significant symptom reduction after removing high-VOC products from their homes and replacing them with safer alternatives. These practical interventions have shown promise where psychotherapy and pharmaceutical treatments have consistently failed to demonstrate meaningful efficacy.

In conclusion, Dr. Molot. Shared a few words from Dr. Martin Luther King Jr., as he asserted that "injustice in health is the most shocking and inhumane," underscoring his call for evidence-based recognition, equitable accommodation, and a dismantling of the stigma surrounding MCS.





## **Citations**

- Alexander, R. G., Olson, J. A., & Raz, A. (2022). What the neuroscience and psychology of magic reveal about misinformation. *Publications (Basel)*, *10*(4), 33. https://doi.org/10.3390/publications10040033
- Bay, O. R. (2015). Malingerer or maligned: A comparative study of multiple chemical sensitivity case law. Osgoode Legal Studies Research Paper Series. https://digitalcommons.osgoode.yorku.ca/olsrps/103
- Care Now. (2018). Final report of the Task Force on Environmental Health. Ontario Ministry of Health and Long-Term Care.
- Chin, J. M., Lutsky, M., & Dror, I. E. (2021). The biases of experts: An empirical analysis of expert witness challenges. *Manitoba Law Journal*, *42*(4), 22–47. <a href="https://themanitobalawjournal.com/wp-content/uploads/articles/MLJ\_42.4/42.4\_Chin.pdf">https://themanitobalawjournal.com/wp-content/uploads/articles/MLJ\_42.4/42.4\_Chin.pdf</a>
- Cronin, M. A., & George, E. (2023). The why and how of the integrative review. *Organizational Research Methods*, *26*(1), 168–192. https://doi.org/10.1177/1094428120935507
- De Cesarei, A. (2015). Psychological factors that foster or deter the disclosure of disability by university students. *Psychological Reports*, *116*(3), 665–673. https://doi.org/10.2466/15.PR0.116k22w6
- Driesen, L., van Dongen, D., Smolders, R., & de Boer, A. (2020). The impact of multiple chemical sensitivity on people's social and occupational functioning: A systematic review of qualitative research studies. *Journal of Psychosomatic Research*, *132*, 109964. https://doi.org/10.1016/j.jpsychores.2020.109964
- Elliott, K. C., Lee, N. M., & Suryanarayanan, S. (2024). Words matter: Reflective science communication and tradeoffs in environmental health research. *Environmental Health Perspectives*, *132*(10), 105001. https://doi.org/10.1289/EHP13153
- Engle, M. (2023). *Misinformation, disinformation, and propaganda: Personal bias*. Cornell University. https://guides.library.cornell.edu/evaluate\_news/bias
- Foy, A. J., & Filippone, E. J. (2013). The case for intervention bias in the practice of medicine. *Yale Journal of Biology and Medicine*, *86*(2), 271–280.
- Gibson, P. R., Elms, A. N., & Ruding, L. A. (2003). Perceived treatment efficacy for conventional and alternative therapies reported by persons with multiple chemical sensitivity. *Environmental Health Perspectives*, *111*(12), 1498–1504. https://doi.org/10.1289/ehp.6063
- Gopal, D. P., et al. (2021). Implicit bias in healthcare: Clinical practice, research and decision making. Future Healthcare Journal, 8(1), 40–48. https://doi.org/10.7861/fhj.2020-0233
- Harter, K., Dittmar, H. C., & Schäfer, T. (2020). Multiple chemical sensitivity (MCS) A guide for dermatologists on how to manage affected individuals. *Journal der Deutschen Dermatologischen Gesellschaft*, 18(2), 119–130. https://doi.org/10.1111/ddg.14037





- Levinson, J. D. (2017). Judging implicit bias: A national empirical study of judicial stereotypes. *Florida Law Review*, *69*(1), 63–115.
- Mellor, L., et al. (2017). Invisible disabilities: Mine and theirs. American Family Physician, 95(7), 451.
- Molot, J. (2013). Academic and clinical perspectives. Compendium 3/4 of the business case for an OCEEH.
- Molot, J., Miller, C. S., Genuis, S. J., & Ziem, G. (2023). Multiple chemical sensitivity: It's time to catch up to the science. *Neuroscience & Biobehavioral Reviews*, *151*, 105227. https://doi.org/10.1016/j.neubiorev.2023.105227
- Molot, J. (2021). Neurological susceptibility to environmental exposures: Pathophysiological mechanisms in neurodegeneration and multiple chemical sensitivity. *Reviews on Environmental Health*, 37(4), 509–530. https://doi.org/10.1515/reveh-2021-0035
- Perales, R. B., Polito, A. J., & Ashford, N. A. (2022). Does improving indoor air quality lessen symptoms associated with chemical intolerance? *Primary Health Care Research & Development*, 23, e3. https://doi.org/10.1017/S1463423622000013
- Pollock, A., et al. (2018). Stakeholder involvement in systematic reviews: A scoping review. *Systematic Reviews*, 7, 208. https://doi.org/10.1186/s13643-018-0852-0
- Wardle, C., & Derakhshan, H. (2017). *Information disorder: Toward an interdisciplinary framework for research and policymaking*. Council of Europe. <a href="https://rm.coe.int/information-disorder-report/1680764666">https://rm.coe.int/information-disorder-report/1680764666</a>
- Whittemore, R., & Knafl, K. (2005). The integrative review: Updated methodology. *Journal of Advanced Nursing*, *52*(5), 546–553. https://doi.org/10.1111/j.1365-2648.2005.03621.x
  - Wilson, M. C., & Scior, K. (2014). Attitudes towards individuals with disabilities as measured by the implicit association test: A literature review. *Research in Developmental Disabilities*, 35(2), 294–321. https://doi.org/10.1016/j.ridd.2013.11.003