

*Scientific Study****Chemical Related Disability***

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Often misunderstood as a mere allergy, the nature of Multiple Chemical Sensitivity (MCS) is far from a simple allergy. An allergy occurs when a person's immune system overreacts to otherwise benign substances such as pollen, dust and dander. Symptoms are usually only annoyances, such as sniffing, sneezing, and coughing.

MCS, on the other hand, is a devastating affliction in which low levels of toxic chemicals impact neurological function and may trigger cardiac and pulmonary symptoms. This may occur when hepatic detoxification is impaired as a result of injury or toxic exposure.

MCS differs from allergy in that it is not an overreaction of the immune system to something benign, but rather a toxicological state induced by a low level of known toxicant contained in everyday chemicals after the detoxification pathways have been damaged.

Detoxification pathways may be damaged by a large chemical exposure or chronic low-level chemical exposure. Some people may be more susceptible to this damage than others or may become susceptible after a chemical injury.

The glutathione S-transferases (GST) represent a major group of detoxification enzymes which may be permanently damaged by chemical injury and results in glutathione deficiency. Glutathione is required for normal detoxification processes and its deficiency is not easily remedied because oral glutathione is not readily absorbed. Thus, toxic buildup occurs to the point where even a slight chemical or fragrance exposure will trigger symptoms of toxicity.

Repeated exposure to carcinogens found in air fresheners, laundry products, and perfumes may lead to cancer when the liver is unable to break down this foreign matter effectively.

MCS was defined in a 1989 multidisciplinary survey of 89 clinicians and researchers, and modified in 1999. The top consensus criteria (Multiple chemical sensitivity: a 1999 consensus, 1999) are:

1. The symptoms are reproducible with repeated chemical exposure.
2. The condition is chronic.
3. Low levels of exposure result in symptoms of the syndrome.
4. The symptoms improve or resolve when the incitants are removed.
5. Responses occur to multiple chemically unrelated substances.
6. Symptoms involve multiple organ systems.

“Understanding the impact of the health condition is crucial to communicate with and treat persons who experience the sensitivities,” says Pamela Reed Gibson, a researcher at James Madison University. “Informed providers can both avoid iatrogenic (illness caused by physicians, hospitals, drugs, and medical procedures) harm due to medical exposures and provide any possible treatment for the chemical sensitivities.”

Few providers specialize in the treatment of MCS, which is poorly understood in the medical field. Gibson says, “This lack of treatment and the ubiquity of chemicals engender severe life impacts such as job loss, financial loss, social isolation and even homelessness for persons who experience these sensitivities.”

The chemicals rated as causing the most symptoms in Gibson’s study are pesticide, formaldehyde, fresh paint, new carpet, diesel exhaust, perfume, and air freshener. Because these chemicals are so pervasive in our indoor and outdoor living environment, they become “invisible” barriers for access to jobs, housing, and virtually all public places.

It is crucial for people with MCS to control chemicals in their environment to have any functional capacity at all. This is often negatively perceived by others as trying to control their life and choices too. This is further complicated by the outward symptoms of neurotoxicity, which may be misunderstood by others as behavioral or anxiety induced.

Unlike allergies, where an antihistamine can control annoying symptoms, MCS is a toxicity for which no drug can relieve symptoms. Avoidance of all chemicals and fragrances is crucial to managing the condition and living a normal life.

MCS symptoms go beyond mere annoyance

into major life-altering functional impairments. At its most severe, smelling another person’s perfume in a shared airspace may impact neurological function enough to result in a temporary loss of the ability to speak, seizure, stroke, respiratory difficulty, unconsciousness, a drunken appearance, and an inability to process information and think clearly.

The most crucial thing to remember is that when there is no exposure, there are no symptoms and functioning returns to normal with no noticeable alterations other than avoiding exposures.

The highest rated symptoms in a study by Gibson and colleagues were tiredness/lethargy, difficulty concentrating, muscle aches, memory difficulties, and long-term fatigue.

Gibson says, “Multiple chemical sensitivity is an important health care issue because it often includes serious dysfunction, is poorly understood by providers and poses extensive financial and treatment obstacles for those who experience it.”

Though appearance frequently remains normal, MCS may present a more severe functional limitation than other obvious and visible disabilities. Learning how to accommodate people with MCS is not only required by law, but is also protective for everyone as it limits exposure to toxic chemicals and fragrances which may cause MCS.

References

Gibson PR, Vogel VM. Sickness-related dysfunction in persons with self-reported multiple chemical sensitivity at four levels of severity. *J Clin Nurs*. 2009 Jan;18(1):72-81.

Multiple chemical sensitivity: a 1999 consensus. *Arch Environ Health*. 1999 May-Jun;54(3):147-9.