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Unraveling the mystery of Multiple Chemical Sensitivity (MCS)

Air Quality News from IQAir, the world leader in air purifiers.

Multiple chemical sensitivity (MCS) is a chronic medical condition characterized by strong physical reactions to low-level chemical exposure. Symptoms of MCS typically include:

- Eye irritation
- Wheezing
- Fatigue
- Rhinitis
- Sore throat or cough
- Skin rashes



The term “multiple chemical sensitivity” first came into use in the 1980s. Since then, there has been a debate over the scientific basis for MCS. The American Medical Association (AMA) does not recognize MCS as an official medical disorder. However, many individual doctors do.

One recent Australian survey estimated that 2.9% of adults suffer from MCS. The study also found that 24.6% report sensitivity to chemical odors.

New research on MCS

The Karolinska Institutet in Stockholm, Sweden, used nuclear-imaging technology and other advanced techniques to identify the link between odors and MCS. Their research has defined at least two specific processes that cause those with MCS to react differently to odors.

- 1. Brain activity.** MCS patients process odors differently than the control group. Researchers used nuclear-imaging to observe that MCS patients activate the odor-processing areas of their brains less frequently than the non-MCS individuals. Those with MCS also show an increase in activity in two other regions of the brain in response to odors.
- 2. Harm avoidance and serotonin.** MCS patients exhibit higher levels of harm avoidance, a measurable personality trait, than non-MCS patients. MCS patients also have reduced levels of 5-HT1A, a receptor in the nervous system that is activated by serotonin. Serotonin contributes to feelings of well-being and

happiness. The researchers believe these deviations in the MCS sufferers' physiology could make them intolerant to environmental odors.

What chemicals trigger MCS?

A wide variety of chemicals and odors trigger MCS symptoms. Some of the most common include:

- Nail polish and remover
- Fragrances and hair-care products
- Tobacco smoke
- Insecticides
- Dry-cleaned clothing
- Alcohol
- Off-gassing of paint
- Some cleaning agents
- Gasoline

Steps to control odors

Health experts say maintaining optimal indoor air quality is essential for managing MCS symptoms, because chemicals and odors are concentrated indoors. Here are a few tips for controlling indoor chemical exposure:

1. **Control the source.** Identify the source of an odor and remove it. For example, gasoline and kerosene fuel and equipment should be stored in an outside shed or garage.
2. **Increase ventilation.** Opening a window to provide ventilation will help. Schedule interior painting for warm months when windows can be left open.
3. **Avoid air fresheners.** Do not cover-up odors with scented candles or air fresheners. Many of these contain chemicals that are toxic to everyone in the home, not just MCS sufferers.
4. **Use an effective air purifier.** Air purifiers that effectively filter chemicals from the air can help MCS patients. Air cleaners must be able to control a wide range of chemicals and must not themselves be a source of chemical contamination. Reviewers rate IQAir air purifiers as the best systems available for MCS sufferers.

This online publication is brought to you by The IQAir Group, which develops innovative air quality solutions for indoor environments around the globe. IQAir is the exclusive educational partner of the American Lung Association for the air purifier industry.