

# MCS Information

## Common Toxins



Everything we eat, drink, breathe or absorb through our skin has to be processed and eliminated by our bodies. In cases of multiple chemical sensitivity (MCS) the mechanisms our bodies use for processing toxins stop working efficiently. The body either stores the chemicals in body tissues to deal with later (when you're healthier), or tries to process them using an alternative pathway that might not be so efficient.

In terms of specific toxins, some of the most hazardous yet commonly encountered ones include:

**Bisphenol-A (BPA) and Bisphenol-S (BPS)** – Used in the manufacture of polycarbonate plastics eg drink bottles, and toys. Bisphenols are oestrogen-mimicking chemicals that can leach into food or drinks from the plastic containers holding them. Look for BPA-free plastic bottles or choose glass instead. Canned goods are also a source of BPA as they are often lined with plastic, so choose jars over tins.

**Chlorine** - The most common disinfection techniques used at water treatment facilities today involve the use of chlorine, chloramines, and chlorine dioxide to kill harmful, microorganisms in the water, making it safe to drink. Unfortunately toxic chemical by-products can be formed when these disinfectants react with natural organic matter like decaying vegetation in the source water. Studies show that chlorine can be absorbed through the skin and via inhalation (eg when showering) and can enter straight into the bloodstream.

**Fluoride** – found in toothpaste, fluoridated water, and non-organic food (due to the widespread use of fluoride-based pesticides. For example, conventionally-grown iceberg lettuce can contain as much as 180 ppm of fluoride – 180 times higher than what's recommended in drinking water).

**EMFs** - Electromagnetic field (EMF) exposures are becoming increasingly pervasive and affect your body's cells.

**Mercury** – found in dental amalgams and some fish. You can have mercury fillings removed and replaced with plastic or porcelain ones but if you have MCS, you should take great care. Regarding fish, the Food Standards Agency advises “*Pregnant women and women intending to become pregnant should avoid shark, marlin and swordfish. They may also need to limit the amount of tuna they eat.*”

**Phthalates** – found in soft plastics such as polyvinyl chloride (PVC), as well as many toiletries, including shampoo, toothpaste, and cosmetics. Phthalates are one of the most pervasive type of endocrine disrupting chemicals discovered so far, and have been linked to a wide range of developmental and reproductive “gender-bending” effects.

**Pesticides** - Not just sprayed on farmland, these include weedkiller and pet flea products as well as insecticides and garden pesticides. Have you noticed the weed-free kerbs and pavements? Local authorities regularly spray weedkiller in all public places including schools. Reduce your cumulative exposure by using organic methods of pest reduction at home. The US environmental Working Group has produced a handy 'Shopper's Guide to Pesticides in Produce™' which can help you determine which fruits and vegetables have the most pesticide residues and are therefore the most important to buy organic. You can lower your pesticide intake by avoiding the most contaminated fruits and

vegetables and choosing the least contaminated produce.

*Article reproduced from the MCS Aware website.*

***MCS-Aware is a registered charity providing information and support to those suffering from chemical, food and electro-sensitivities. Benefits of membership include a quarterly magazine, regular online newsletters, forum and support group.***

We are delighted to report that MCS Aware are offering a free sample magazine to 25% ME Group members by email or by post. For an e-copy go to: <http://www.mcs-aware.org/images/resources/Sample%20Magazine%20ONLINE%202013.pdf>

For a paper copy write to: **MCS-Aware, 56 Gaping Lane,**

**Hitchin, Herts. SG5 2JE**

Email: [mcsaware@gmail.com](mailto:mcsaware@gmail.com)

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MCS-Aware have produced a useful leaflet - '**How to be Fragrance Free**' - listing recommended cleaning products and toiletries that are likely to be suitable for people with chemical sensitivity. The leaflet can be downloaded from the resources section of the MCS Aware website: [www.mcsaware.org/articles/resources](http://www.mcsaware.org/articles/resources). Paper copy can be posted out on request to MCS Aware.

For more detailed information, MCS Aware recommend '*What's Really in Your Basket?*' by Bill Statham. Published by Summersdale RRP £5.99

## **MCS & Environmental Illness Websites**

[www.multiplechemicalsensitivity.org](http://www.multiplechemicalsensitivity.org)

[www.webmd.com/allergies/multiple-chemical-sensitivity](http://www.webmd.com/allergies/multiple-chemical-sensitivity)

[www.mcs-aware.org](http://www.mcs-aware.org)

[www.ei-resource.org](http://www.ei-resource.org)

## **MCS Research**

***Xenobiotic Sensor- and Metabolism-Related Gene Variants in Environmental Sensitivity-Related Illnesses: A Survey on the Italian Population*** Daniela Caccamo *et al.* Oxidative Medicine and Cellular Longevity vol 2013 (article ID 831969)

The research team found significantly higher frequency of five polymorphisms of cytochrome metabolizing enzymes in patients compared with controls. They conclude *Results allowed us to propose the genotyping for these specific variants, as reliable, cost-effective genetic parameters to be included in the still undefined biomarkers' panel for laboratory diagnosis of the main types of environmental-borne sensitivity related illness.*

For the background to this finding, and what it means for people who have these polymorphisms, see:

***The Effect of Cytochrome P450 Metabolism on Drug Response, Interactions, and Adverse Effects*** Lynch & Price *American Family Physician*. 2007 Aug 1; 76(3): 391-396.

## **Allergies & MCS in ME/CFS**

An impressive piece of work documenting publications on Allergies & Multiple Chemical sensitivities in ME/strictly defined CFS was published on line in November 2011. Written by Margaret Williams, it includes a list of UK reports on allergies, sensitivities, and the effect of chemicals, as well as more M.E. specific research.

### **Points of note include:**

Throughout the ME/CFS literature from at least the 1970s there is increasing reference to the existence of allergies and hypersensitivities to foods, normal household chemicals, gas, petrol, perfumes, prescription drugs, agricultural chemicals and even to seminal fluid. There is also reference to adverse reactions to tap water, an early such reference being in 1982

REF: *Hypersensitivity to Mains Tap Water in Adults: its Clinical Features and Treatment.* CWM Wilson. *Nutrition and Health* 1982;1:85-91.

Multiple Chemical Sensitivity is a well-documented component of ME/CFS due to the significant immune system disruption and dysregulation that since the 1980s has been documented in the disorder in peer-reviewed international journals.

In 1983 it was recognized that such patients fare badly, not least because of the obstacles allergy sufferers have to overcome in coping with their allergies on a day-to-day basis. The instability of the condition and its liability to deteriorate is a source of much additional distress to sufferers and the attitudes they encounter add insult to injury

REF: *The Allergy Problem: Why People Suffer and What Should Be Done*. Vicky Rippere MA; PhD; BSc; M Phil. Thorsons, 1983.

Given the evidence of a disrupted immune system, it was known in 1989 that raised interleukin levels could ultimately lead to raised IgE by stimulating the B cells: in other words, if not dealt with by the immune system, an on-going virus may result in allergies

REF: *Int Arch Allergy Appl Immunol* 1989;89:90-97

Normal body cells cannot be attacked by the immune system unless they have been persuaded to display on their surfaces complex glycoprotein molecules known as class II MHC antigens. They can be induced to do this by gamma interferon, an anti-viral chemical produced by the immune system when under virus attack, which make cells susceptible to this on-going attack by the immune system, thus doing further damage to the very system upon which the body depends for its defence.

There have been many published papers demonstrating the association of numerous viruses in ME/CFS patients, most notably the enterovirus Coxsackie B (CBV).

In relation to MCS, attention must be drawn to the seminal work of expert Martin Pall, Professor Emeritus of Biochemistry and Basic Medical Sciences, Washington State University and his work on NO/ONOO - the nitric oxide (NO) and peroxynitrite (ONOO) cycle - in the mechanism of MCS. This biochemical cycle being elevated in patients with ME/CFS and related diseases.

**This article can be read in full at:** [www.meactionuk.org.uk/Allergies-and-MCS-in-ME-CFS.pdf](http://www.meactionuk.org.uk/Allergies-and-MCS-in-ME-CFS.pdf)

Mohamed Abou-Donia, Professor of Pharmacology, Cancer Biology & Neurobiology, Duke University Medical Centre, North Carolina and his work on chemical disruption of the blood brain barrier.

It is essential to recognise that MCS involves multi-system and multi-organ damage brought about by a wide variety of chemicals and that a key aspect of MCS is the development of cross-sensitivity which results in sensitivity to compounds to which there has been no previous exposure.

This makes the life of an MCS patient very uncertain. Patients with MCS must live in a protected environment with scrupulous attention to every detail of their life in order to avoid becoming severely ill at any time. The systems most involved are the neurological, immunological, endocrinological, musculo-skeletal, gastrointestinal, cardiovascular and respiratory systems. People who have MCS as an additional component of ME/CFS are internationally recognised as being amongst the most severely affected.