

*Scientific Studies*

# Diagnostic Markers for MCS

**“Lower mineral levels do appear to be a part of the MCS puzzle.”**

Researchers at the Department of Public Health Sciences at the University of Toronto set out to find diagnostic markers, also known as biomarkers, for multiple chemical sensitivity (MCS). MCS has an estimated American prevalence of 15%. In the past, diagnostic makers have been elusive with no consistently abnormal tests that are shared by all subjects.

Physicians treating MCS often observe low mineral levels or changes in intra-erythrocytic minerals (IEMs) that may affect proper detoxification of xenobiotics (foreign chemical substances found in the body).

The participants tested were validated by current criteria for MCS diagnosis and compared to a control group that did not meet the current criteria. All participants diagnosed with MCS had lower levels of copper, chromium, magnesium, molybdenum, sulphur and zinc, than those without MCS.

do not seem to be useful diagnostic markers for MCS.

Many questions still remain. Could a slight reduction of these minerals affect detoxification of xenobiotics? Or, could improper detoxification of xenobiotics reduce these mineral levels?

In either case, would supplementation with these minerals aid in symptoms reduction or correction of the condition? Indeed both Martin Pall and Grace Ziem recommend similar supplement protocols to reduce the symptoms of MCS. While both protocols have been said to assist with symptom reduction and increased quality of life, neither has been proven effective enough to cure MCS.

Lower mineral levels do appear to be a piece of the MCS puzzle. Researchers are still searching for the remaining pieces that will serve as confirmed biomarkers for the diagnosis of MCS. In the meantime, intra-erythrocytic mineral testing and supplementation may be in order.

**Reference**

Baines CJ, McKeown-Eyssen GE, Riley N, Marshall L, Jazmaji V. University of Toronto case-control study of multiple chemical sensitivity-3: intra-erythrocytic mineral levels. *Occup Med (Lond)*. 2007 Mar;57(2):137-40. Epub 2006 Oct 17.

Past studies have also found reduced mineral levels in MCS subjects. However, because the difference is not statistically significant and no dose-response relationships have been found, intra-erythrocytic minerals

