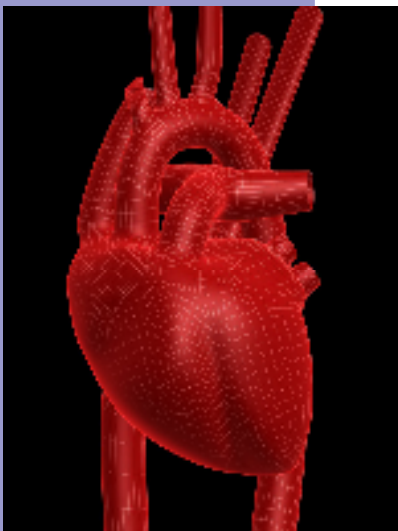


Scientific Study

Cardiovascular Evidence of MCS

“Scientists have found evidence of a varied hemodynamic response in women diagnosed with multiple chemical sensitivity.”



According to the International Hemodynamic Society, hemodynamics is an important part of cardiovascular physiology dealing with the forces that the heart has to develop to circulate blood through the cardiovascular system. It is the study of the physical aspects of blood circulation, including cardiac function and peripheral vascular physiology. Hemodynamic forces include both blood pressure and blood flow.

Proper circulation of blood is necessary for tissues in the body to receive an adequate oxygen supply. Without sufficient oxygen supply, longevity, quality of life, and cardiovascular health may suffer. Hypertension and congestive heart failure are two best known systemic hemodynamic disorders.

Scientists have found evidence of a varied hemodynamic response in women diagnosed with multiple chemical sensitivity (MCS). MCS is a chronic and disabling condition with reproducible symptoms triggered by low-level chemical exposures, such as that encountered from second-hand perfume and cleaning products used by others.

The researchers tested the hemodynamic response of 17 women with MCS by taking hemodynamic measures while sitting and immediately upon standing. McFetridge-Durdle and colleagues say, “Evidence gathered through clinical observations suggests that women with MCS may be at risk for autonomic nervous system dysfunction

as evidenced by abnormal heart rate and pulse pressure responses to exercise.

Though the pattern of hemodynamic response they found was within the normal range, the level of changes was significantly less than change observed in healthy people without MCS.

Similarly, a patient may experience symptoms of hypothyroidism and still be within the normal range, though on the borderline of “normal”. These “normal” ranges are frequently updated. As science advances, they may be found to be inadequate and/or block proper diagnosis.

MCS is often referred to as a subclinical disease. WebMD defines a subclinical disease as an “illness that stays below the surface of clinical detection. Many diseases, including diabetes, hypothyroidism, and rheumatoid arthritis, can be subclinical before surfacing as clinical diseases.” Patients may best understand subclinical disease as an “early stage” of a disease. Though clinical findings may be evasive, the symptoms are still very real and should be addressed as soon as possible to prevent a worsening of the condition.

Many people have experienced going to the doctor with a symptom that could not be diagnosed. Doctors are trained to look for specific clinical findings, rather than base diagnoses on the symptoms reported. This usually means patients are sick for lengthy periods of time before they are properly diagnosed, or experience spontaneous remission if a disease process was not present.

The patient may be told nothing is wrong. Usually the doctor prescribes something to help manage the symptom or suggests that the patient “relax”. This practice allows diseases processes to fester and grow into something larger and more expensive and time consuming to treat since something is wrong and putting a Band-Aide on the symptoms and relaxing won't cure it.

People with MCS have faced similar challenges to patients with early stages of cancer, diabetes, thyroid, and other diseases. They know something is wrong, but it evades a diagnosis until it turns into something larger and more expensive to treat.

Previous research has also shown reduced blood flow to the brain of patients with MCS. Nuclear medicine utilizes SPECT (Single Photon Emission Computerized Tomography) technology to perform brain scans which records brain functioning by measuring perfusion (blood flow). MCS patients commonly have a lower baseline flow of blood to the brain, and develop further decreases in brain perfusion upon exposure to perfumes and petrochemicals.

Individuals with chronic MCS symptoms show long-term reduced blood flow to the brain and reduced ability of the brain to take up the tracer substance in the early phase of injection, indicating a pattern of neurotoxic metabolic abnormality. Over 90% of MCS patients exhibit this pattern in the brain that is consistent with toxic encephalopathy.

Toxic encephalopathy indicates that the chemicals that people with MCS react to actually do have a toxic effect on them that limits oxygen supply to the brain and tissues and, thus, explains the symptoms. SPECT brain scans on MCS patients with chronic symptoms following toxic exposure to various petrochemical, perfume, and related compounds have thus provided evidence to support an organic, biological basis to MCS when compared with healthy control subjects.

Patients can help determine if they are getting the run-around by asking for copies of their tests and studying the “normal” values. If the normal value is .5 to 4.0 and your results are 2.7, chances are you

are okay for that test. But if you test at .5 or 3.8, you may be experiencing early signs of a sub-clinical disease. Since test values are routinely changed and updated as science advances, a result on the borderline deserves further investigation and consultation.

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