# Objective Evidence: The Peg upon which all other Issues Hang

**by Don Richard Paladin**

Without validating and corroborating objective evidence the opponents of Multiple Chemical Sensitivity (MCS) as a disorder can persist in denying any relationship between low level toxic chemical exposure and the symptoms they trigger. We must set the burden of disproof of the existence of MCS at an even higher level If evidence of reactions at a physiological level to low level toxins can be consistently demonstrated, then the use of argument that MCS is a purely psychological condition cannot be used to neutralize those with and those who support the existence of MCS. Because at this point there is no "universally accepted" diagnostic marker for MCS that demonstrates a relationship between low level exposure and symptoms, we must use all available tests that indicate a possible biochemical imbalance. We must use a number of objective assays to challenge the notion that there is no evidence of a physiological disorder. If we can find objective evidence that is universally accepted then all other related issues will be resolved.. A cause for the mechanism must be found through active research in order to prevent further injury and to remediate and treat those who presently are impaired. In order to find solutions of problems faced by the chemically injured, let us all resolve to advocate for the research to find these biomarkers

## The Challenge of Validation

The simple truth is that without validating and corroborating objective evidence the opponents of Multiple Chemical Sensitivity (MCS) as a disorder can persist in denying any relationship between low level toxic chemical exposure and the symptoms they trigger. They can continue to distract attention from chemical induced disorders by neutralizing the testimonials of those who report symptoms from low-level chemical exposure. They can prevent recognition of and awareness of the problem of environmentally induced disorders by making those who report their symptoms appear to have psychological problems. They understand the importance of denying or delaying the validation of MCS. The prevention of validation is as important to them as is the recognition of MCS as a Toxic Induced Disorder (1) is to all those who have been chemically injured.

We must set the burden of disproof of the existence of MCS at an even higher level. Although there is no doubt that for many with MCS there may be a psychological overlay, like with many chronic illnesses, the symptoms are not the cause of the illness. We must create research that looks at variability of tolerance (of the subpopulation of those with MCS compared to a control), variability of response (different level of response at different times of the year), reaction to synergistic levels of environmental triggers that may be unique to the responder as opposed to single variable stimulus, and cross documentation with a variety of objective assays to look at abnormal physiological patterns. Any research from opponents of MCS must also consider and control for these variables to be considered objective science on the research of issues of MCS. Because there is a relationship between the manifestation of psychological disturbances and many illnesses, removing those population subjects from consideration is not recommended. Other ways to control for this variable need

to be considered. In fact, removing those with the greatest psychological symptoms may actually skew the research so that a true picture of the disorder may not be represented.

If someone were to ask what is the most important factor in advocacy for MCS, one would have to assume that it is definitive objective evidence that demonstrates a relationship between low level multiple chemical exposure and reports of symptoms. The opponents of MCS on the face of it would appear to have logic and the experience of those not afflicted with symptoms from low level exposure on their side. The common experience of the majority indicates that it is not possible to become ill from low levels of "odors." Demonstration of a relationship of exposure to low level toxic chemicals and symptoms of chemical injury is the peg upon which validation of MCS hangs. If evidence of reactions at a physiological level of those with MCS to low level toxins can be consistently demonstrated, then the use of argument that MCS is a purely psychological condition cannot be used to neutralize those with and those who support the existence of MCS. Such objective evidence helps demonstrate something to others whose personal experience would suggest that there is not a relationship.

**Why don't they Understand?**

Just as we believe from our own experience that low level chemical exposure does in fact make us feel ill would want others to empathize with us and understand our experience, we must empathize with those for whom this may not be a personal experience. This is easier for us because most of us used to tolerate many of the low level exposures. I suggest that we remember the days when new clothing with sizing smelled good, or perfume was pleasant, or a room freshly sprayed with Black Flag fly spray did not bother us. If someone told us that they were being made sick from these exposures, what would be our first response based upon the logic of our own experience? I know what I have heard from those who were exposed to the same toxic chemicals that I was but did not have any noticeable reaction. Their direct and minimizing response was, "It does NOT bother me." That is a difficult level of awareness to challenge.

If someone can tolerate perfumes, pesticides, and the thousands of assorted synthetic chemicals without any noticeable and immediate response, how are we to expect them to understand our personal experience? Those of us with MCS do not appear any less bizarre to those without the intolerance than might someone who reports hearing sounds and voices we cannot hear. Because we cannot hear the voices as part of our experience, our logic dictates that there must be something wrong with the person reporting the voices.

This simple lack of shared experience with low level exposure triggering symptoms for the majority of the population has made it very easy for opponents of MCS to discount, neutralize, and minimize our illness. One might become impatient with those who don't understand MCS because we know that someone with cancer is not discounted, minimized, and neutralized. Those who have not had cancer have not experienced it. There is a difference because cancer as an illness has a large body of research and documented objective evidence. Also it is not necessary to directly link

its development to synthetic chemical exposures that might cause the illness. The "objective evidence" for cancer is overwhelming. Can we say that about MCS?

Because there are those with a vested interest lobbying to prevent recognition of MCS, getting funding for research for MCS has been very difficult. (3) (4)(5) Still, if we are to have a body of knowledge that demonstrates a relationship between environmental exposures and reported symptoms, we must have research. If we are to find solutions to the problem, we must have research that helps shed light on the causative factors. There can be no solutions without recognition and understanding of the problem.

In the case of those with a vested short-term interest in preventing recognition of MCS, our inability to explain what the causes of the symptoms of MCS are, is in their best interest. If the opponents of MCS can demonstrate a relationship between the psychological symptoms of MCS and reports of the symptoms of MCS, they can maintain that it is a purely a psychological condition. It appears that those who report the symptoms of MCS to products that are accepted as safe have a problem not the product. If the majority do not experience reactions at a conscious level to these chemicals, the opponents can use the logic of this common understanding to justify denial of a contradicting experience.

As it stands now, much of the peer reviewed literature on MCS does not shed light upon what particularly is causing the reported symptoms of those with the disorder. Those of us who would benefit from greater understanding of the causes and the relationship to low level exposures must use our limited energy to raise the standards of proof on existence of MCS higher. When epidemiology research on chemical sensitivity indicates that about 15% of the population may have some level of chemical sensitivity, it is time to help our opponents give up the old "psychogenic" canard and find the true cause. (6)

## Cross Documentation of Abnormal Chemistry - In search of a Biomarker

Because at this point there is no "universally accepted" diagnostic marker for MCS that demonstrates a relationship between low level exposure and symptoms, we must use all available tests that indicate a possible biochemical imbalance. We must advocate that research be created in which immune profiles, porphyrin levels, adrenal steroid levels, fat biopsies, enzyme levels, liver function, glucose levels, and other tests that suggest a physiological imbalance be used. It is imperative to show multiple cross documentation of possible markers of a physiological imbalance in order to prevent the use of the distraction of psychological tests to discount this illness. (2) We must challenge the researchers on the other side of the issue to first demonstrate that none of their subjects with MCS have abnormal objective tests with the results of their psychological testing. Although there may be a psychological overlay for many people with this chronic illness, symptoms are not a cause. We must challenge all researchers to find a specific cause of the reported symptoms of MCS. Treating MCS with drugs that treat psychological symptoms will not help shed light on and bring a solution to the causes of MCS.

My inspiration for suggesting a wide range of potential objective measures comes from hearing Dr. Gunnar Heuser speak on the issue. I also have read his article,

"Diagnostic Markers of Multiple Chemical Sensitivity."(7) We must start with his basic recommendations. I have included some testing that I believe might be promising below. We must start with a premise that we don't know what specifically is causing the abnormal responses. Then we look for a pattern of response in a class of subjects. I would like to recommend the following objective assays be used in all preliminary research of subjects with MCS:

1. Porphyrin enzyme tests to look for abnormal* porphyrin levels (8) (9 )
2. Liver function tests looking for any abnormal enzyme levels
3. A serum paraoxonase test to look for low level of this enzyme involved in detoxification (10)
4. Glucose tolerance tests looking for any abnormal glucose functioning
5. Pancreatic function tests looking for any abnormal enzyme levels
6. Total immunological profile looking for both overactive and underactive immune responses
7. TABM (T-cell antibody binding molecules) tests (11)
8. 2, 3-DPG (2, 3-diphosphoglycerate) blood tests (12)
9. A lipid panel to check for cholesterol and triglyceride levels
10. Basal metabolism temperature tests to measure body temperature
11. 37 kDa 2-5A binding protein test for abnormal level (13)
12. Fat biopsies to look for undetoxified synthetics stored in fat tissue
13. An Adrenal steroid panel to look at all hormone levels
14. Thyroid and TRH level tests (14)
15. Blood pressure tests to look for high or low blood pressure
16 ~Others . . .
    A. Serum Uric Acid levels (15)
    B. Zonulin levels (which regulates the permeability of the intestine) (16)
    C. Magnetic Resonance (MR) Spectropscopy (17)

**Throwing down the Gauntlet**

When looking at corporate sponsored anti-MCS science, we must challenge the motives and validity of their science. It is often science with a single premise: MCS is psychogenic. The corporate-sponsored science will be easier to debunk if we point out that there is indeed a psychological overlay to this illness but that it is not the cause but a symptom of the environmentally triggered responses. We must continue to assert and find ways to demonstrate that the environmental factors are responsible for triggering the responses . . . not the mind of the sick person. The psychological disorder is an effect not a cause of chemical hypersensitivity. We must continually point out that there is a variability of tolerance for chemicals within the human (probably all animals) population. If research does not control for or acknowledge this fact, then it is much less valid than that research which does. We must challenge the authority of those who create and publish science that supports a belief system that protects the products of industry. If an expert witness for corporations publishes research to challenge the validity of MCS, his or her associations and motivations must be challenged. We must challenge the belief that all the present diagnostic information and knowledge can be used to explain that which is not yet understood. We must point out that objective measures assess what they were designed to measure. One cannot explain new information with information from an old level of understanding. We must demand that the search for truth be an open system in which

the motivation is to discover the truth not to protect a belief system or a system with its own limited self interests.

## What can advocates for the chemically injured do?

Those of us who are advocates for the chemically injured need our own major premise and our own persistent message. We need to say over and over that MCS is an environmentally induced disorder caused by acute and low level exposures to toxic chemicals. We must say that although there is a psychological response to the triggering by these toxic chemicals we believe we need to discover the mechanism that is responsible for the reactions in order to remediate the problems associated with an inability to detoxify and metabolize chemicals in the same manner that the majority of the population does. We need to build bridges with our natural allies in government, industry, and the environmental movement to seek their assistance to create research that sheds light on the issues. We need to consistently focus on this very essential and critical need for research to obtain a Biomarker for the disorder. Once we recognize why we cannot detoxify these chemicals as easily as the majority of the population, we can create treatments that help with the process. Of course, it may be likely that these toxic synthetic chemicals, many of which are hormone mimickers and endocrine disrupters, were never intended to be tolerated. Those of us with MCS may demonstrate an intolerance for these synthetics in our own unique way while others will go on to develop cancer or asthma. Synthetic toxics are not a creation of evolution but a creation by humans with a limited understanding of the biochemical interrelationship of all living systems. We must encourage open exploration and search for the truth. In the long term, we will all benefit from it.

Specifically, all advocates for the chemically injured need to write, call, or tell anyone who will listen and can help obtain the needed research funds. We must tell them we want greater understanding of the mechanisms and to stop the denial of the problem so that it can be resolved and remediated. We must stay focused upon our major premise. We cannot allow the opposition to side track the issues and set their agenda so that we become embroiled in energy draining and meaningless little battles. We must use our limited energy to advocate for solutions and understanding. Let us never forget that if we can find objective evidence that is universally accepted then all other issues will be resolved. For example, if we tell the world that the spraying of the supposedly "safe pesticides" makes us ill and we want them out of our personal air, water, and soil, then we can no longer be denied. If we tell others that the synthetics in perfume make us feel ill, who can challenge solid objective evidence? If someone is injured by chemicals in their workplace, the Workmen's Compensation system can no longer deny the claim because it benefits (short term financially) from the belief that those who report they cannot tolerate toxic chemicals have a psychological condition. Objective evidence that cannot be refuted is very important to us. Objective evidence that helps explain and enlighten others about the mechanism for the illness is very important to us.

## The MCS Advocacy Major Premise

If you agree with me, then let this be your major premise through which you evaluate how you proceed in advocacy for MCS: MCS is an Environmentally Induced Disorder as a result of chronic, low level or acute exposures. A cause for the

mechanism must be found through active research in order to prevent further injury and to remediate and treat those who presently are impaired. Our mantra, my friends, is: RESEARCH, RESEARCH, RESEARCH! It is only by acknowledging a problem, looking for answers, and finding a solution that we can ever resolve any problem. Let us all resolve to support the research to find these biomarkers!

*Abnormal: The concept of abnormal is important because there may be some researchers who are only interested in finding objective evidence that indicates abnormal acute responses. MCS is a chronic illness in which individuals respond to low levels of environmental stimuli. One would expect that this would be reflected in objective evidence in which the abnormalities are not extreme. Science that does not recognize and acknowledge a continuum of response is not going to be able to understand the biochemical individuality among individuals. One may be able to manipulate the reporting of statistical information so that results below the low normal (or marginal) deviations are reported as within "normal range," but statistically abnormal remains abnormal.

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~Note: 5-13-00, As promising assays become available, I will add links to them on this page.

About the author: Don Richard Paladin became sensitive to formaldehyde in 1981 after living in a mobile home six years. His level of environmental tolerance changed dramatically when in 1989, the classroom in which he was a special education resource room teacher was sprayed to kill wasps. After six years of struggling with partial teaching assignments or leaves of absences, he was forced by extreme ill health to take a disability retirement from teaching. He has committed the rest of his life to help increase the understanding on the issues of chemical intolerance. He is the moderator and webmaster of the Washington State MCS Network. Permission has been granted to copy, link, and forward this article to others.

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Thank you to Irene Wilkenfeld, Betty Bridges, Bonnie Matthews, Mark Bowron & Ellie Bowron for their input

Susan Vaughan in North Carolina shared the following information with me related to variability of tolerance. Thank you, Susan,

I wanted to share one more quote with you (below) from a paper by Alfred Zamm, M.D. --- I'm wondering if anyone supporting the validity of MCS has the sources of the info he refers to in the following excerpt, and if these sources are checked out, and found to be reliable, again, is any more proof needed? If this is ignored, won't EVERYTHING else be ignored, objective or subjective, until the few of us who are aware of

these facts cite them as we insist on accommodation based on the facts -- Or until the number of chemically injured/sensitive is so large, that politics will have to succumb to the pressure?

Excerpt from "Dental Mercury: A Factor That Aggravates and Induces Xenobiotic Intolerance"

"There is a spectrum of xenobiotic intolerance in the general population that is a function of, among other things, the spectrum of efficiency of the cytochrome P-450 system that exists in the population due to a spectrum of genetic ploymorphism."

And

"The ability of a subset of the population to resist toxicity from exposure to xenobiotic chemicals is, among other things, proportional to the quantity and quality of cytochrome P450 present. There are individual differences in these two factors, and the effective protection in a population varies with the frequency distribution curve. The intensity of clinical symptoms of xenobiotic intolerance similarly varies with this curve and is a function of genetic polymorphism, (46, 47, 48, 49, 50, 51) making for a wide variety of confusing symptoms.

Work at the Department of Molecular Carcinogenesis at the National Institutes of Health demonstrated that these extremes in xenobiotic intolerance in individuals exist, and that these extremes are a function of the effectiveness of cytochrome P450, which is a result of genetic differences. 52"

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Re Zamm and mercury:

It comes from the Journal of Orthomolecular Medicine: Vol.6, No. 2, 1991. 254-262 And the first reference cited with Alfred Zamm's name is:

Zamm A: Removal of dental mercury: Often an effective treatment for the very sensitive patient. J. of Orthomolecular Medicine 5: 138-142, 1990

Zamm's Article:
In the abstract, it says: "On March 15, 1991, the Food and Drug Administration convened a hearing on the "Potential Toxicity of Dental Amalgam". I was one of the invited speakers. The following is based on the speech I delivered at that meeting.

My purpose in this presentation is to make three points:

1. Mercury from dental amalgam induces symptoms in a sensitive group of the population that thas also been abserved to be sensitive to xenobiotic substances. "Xenobiotic substances are substances which are foreign to the natural state of an organism. Examples of such foreighn substances are petrochemical vapors, chlorinated hydrocarbons, sulfites, and metals which are not metabolically useful.)
2. This sensitive group serves as a marker that warns of the potential danger of dental mercury to the rest of the population who are also at risk but may not yet exhibit symptoms.
3. Dental mercury should be banned."

And his first paragraph is:
"1. Symptomatology

The following is a small sample of common symptoms that I have observed to improve when mercury fillings are removed: fatigue, headache, central nervous system dysfunction, inappropriate coldness, sugar intolerance, sugar cravings, gastrointestinal disturbances, myalgia, arthralgia, rhinitis, dermatitis, asthma, and genitourinary dysfunction. These symptoms are so varied and seemingly disconnected that misdiagnosis or no diagnosis is more often the rule. These and many other symptoms can also be produced at will in these sensitive patients by exposure to xenobiotic substances."

**Source: http://wsmcsn.s5.com/hubpage.htm**