The MCS Controversy: Admissibility of Expert Testimony regarding Multiple Chemical Sensitivity Syndrome under the Daubert Regime

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THE MCS CONTROVERSY: ADMISSIBILITY OF EXPERT TESTIMONY REGARDING MULTIPLE CHEMICAL SENSITIVITY SYNDROME UNDER THE DAUBERT REGIME

I. INTRODUCTION

The environmental illness known as multiple chemical sensitivity syndrome ("MCS") is becoming an increasingly popular issue within the legal community through a new breed of toxic tort litigation. In attempting to secure a judgment for such an illness, plaintiffs face the problem of proving a causal link between alleged negligence and MCS. The refusal of judges to admit expert testimony regarding this illness is the main obstacle in MCS litigation. Federal district court judges in several jurisdictions refuse to allow expert testimony for MCS, stating that the theory on which MCS is based is too unreliable. The First Circuit has yet to consider the admissibility of expert testimony regarding MCS.¹

MCS syndrome as discussed in this article is distinct from the accepted medical diagnosis, chemical sensitivity.² The chemical sensitivity diagnosis, as recognized by mainstream medicine, involves a substantiated reaction after a patient has been exposed to a single chemical, or small group of similar chemicals.³ This type of chemical sensitivity is testable as well as diagnosable.⁴ As of yet, MCS has

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¹ Massachusetts state courts, which arguably follow the federal Daubert standard, have also not been faced with this issue.
³ Id. at 540.
⁴ Id. "[T]o objectively make such a diagnosis [for the recognized form of chemical sensitivity] a doctor, [sic] would need to administer either a scratch test, patch test, or a RAST test for Ig antibodies." Id.
neither sustained testing under the scientific method nor been accepted by mainstream medicine. 5

This article will explore the elusive illness known as MCS by defining and explaining the illness as well as problems an attorney may face in assessing MCS as an injury. Additionally, a discussion of the current state of MCS and the outlook for acceptance of the illness in the medical, legal and political fields is included. Finally, this article will consider whether the First Circuit and state courts that employ the federal standard are likely to follow federal jurisdictions who have rendered an opinion on this issue.

II. THE HISTORICAL PERSPECTIVE OF MCS

In 1962, allergist Theron Randolph became the pioneer of what is known today as MCS. 6 Randolph described patients’ symptoms, which were caused by urban chemical exposures, as a general allergic syndrome. 7 Randolph advised his patients to avoid the irritating chemicals, and prescribed sauna therapy as well as vitamin and mineral supplements for treatment. 8 This syndrome, Randolph believed, was similar to an illness first diagnosed by Selye, the originator of

5 See infra notes 45, 57-60, 85-113 and accompanying text (discussing lack of standard test to detect MCS and skepticism of MCS as a bona fide illness by mainstream medicine).


7 Id.

8 Kelly Corbett, Comment, Multiple Chemical Sensitivity Syndrome: Occupational Disease or Work-Related Accident? 24 B.C. ENVTL. AFF. L. REV. 395, 398 (1997). “The theory behind Randolph’s practices was ‘that ecologic[al] illness is manifested as a reaction to environmental insults associated with air, water, food, drugs, and our habitat as modified by individual susceptibility in terms of specific adaptation of the patients reacting as a biologic unit.’” Id.
stress-related physiologic studies, called stress orientated general ad-
aptation syndrome.  

At the turn of the century, a syndrome similar to MCS called neurasthenia was a popular diagnosis. Exemplifying this syndrome were individuals who were so intolerant of perfumes and other odors they were unable to function in society. In the mid-1970s, thoracic surgeon William Rea, who was convinced of Randolph's theories, established the Environmental Health Center, in Dallas, Texas, which specializes in diagnosing and treating patients with MCS and other environmental illnesses. Throughout the 1960s, 1970s and most of the 1980s proponents of Randolph's theories called themselves "clinical ecologists." This title evolved in the mid-1980s to "environmental medical specialists." Environmental medical specialists are the group of practitioners who diagnose and treat MCS. The American Board of Environmental Medicine, a proponent of MCS, boasts of having the support of thirty-one board-certified physicians in 1989. Additionally, it claimed several thousand physician sympathizers based upon attendance at their conferences.

In 1991, Dr. Nicholas A. Ashford and Claudia S. Miller took the MCS debate to a higher level. This team chose to bring the issue of MCS into the political regulatory arena, which determines the standards for public buildings, the workplace and occupational disability. Based on this effort, many established medical and research or-

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9 Kurt, supra note 6, at 101.
10 Id.
11 Id.
12 Id.
13 Id.
14 Kurt, supra note 6, at 101.
16 Kurt, supra note 6, at 101.
17 Id.
18 Id.
19 Id.
ganizations have joined forces to study MCS. Proponents of MCS believe that these large research initiatives are a step toward universal recognition of MCS as a viable illness. Notwithstanding these research efforts, MCS remains a topic of great debate in the medical, political, and legal arenas.

A. Definition of MCS

MCS is defined as "illness reactions associated with exposure to more than one chemical, at significantly lower exposure levels than would cause noticeable illness in the general population...." The theory is that exposures to different types of environmental factors may depress a person's immune system to such a point that the exposed person develops multiple chemical sensitivities. Specifically, the exposure results in a hypersensitivity to most chemicals and organic substances. Although no clinical definition of MCS has gained acceptance in the medical community, the most widely employed definition in the United States is set forth by Dr. Mark R. Cullen, a professor of medicine and epidemiology at Yale University. Incidentally, Cullen is credited with coining the title Multiple

20 Corbett, supra note 8, at 400. The National Research Counsel, the EPA, the National Institute of Mental Health Sciences, the Agency for Toxic Substance and Disease Registry, the Association of Occupational and Environmental Clinics, and the Department of Veteran's Affairs all have contributed to the study of MCS. Id.

21 Id. "These large research initiatives indicate that the government and the medical community are beginning to recognize MCS as a clinical illness." Id.

22 Grace E. Ziem, Multiple Chemical Sensitivity: Treatment and Follow-Up With Avoidance and Control of Chemical Exposures, 8 TOXICOLOGY AND INDUS. HEALTH 73, 73 (1992).

23 Summers, 897 F. Supp. at 535 (citing MANUAL ON SCIENTIFIC EVIDENCE, at 73-74 (Fed. Judicial Center, 1994)).


25 Ann L. Davidoff & Penelope M. Keyl, Symptoms And Health Status In Individuals With Multiple Chemical Sensitivities Syndrome From Four Reported Sensitizing Exposures And A General Population Comparison Group, 51
Chemical Sensitivity. Cullen postulates that MCS is the designation for those who meet the following criteria:

(1) the patient acquires the syndrome usually after the occurrence of a clearly evident --although not necessarily serious-- health event caused by environmental exposure, such as solvent intoxication, respiratory track irritation, pesticide poisoning, or sick building syndrome; (2) the patient experiences multiple symptoms referable to several organ systems, almost always including the central nervous system; (3) although there may be persistent complaints between exposures, the patient’s symptoms are characteristically and predictably precipitated by a perceived environmental exposure; (4) the agents that may precipitate the patients symptoms are multiple and chemically diverse; (5) the dose of these agents that precipitate symptoms are at least two orders of magnitude lower than the established thresholds for acute health effects; (6) no test of physiologic function can explain the symptoms and although there may be clinical abnormalities, such as mild bronchospasm or neuropsychologic dysfunction, these are insufficient to explain the illness pattern; (7) no other organic disorder is present that can explain the pattern of symptoms.

Although Cullen offers a detailed definition, it has not been widely accepted. Another frequently employed definition of MCS is one which has been accepted and endorsed by the American College of Occupational and Environmental Medicine. Among the variety

ARCHIVES ENVTL. HEALTH 201, 201 (1996); See also Patricia J. Sparks et al., Multiple Chemical Sensitivity Syndrome: A Clinical Perspective I: Case Definition, Theories of Pathogenesis, and Research Needs, 36 J. OCCUPATIONAL MED. 718, 719 (1994).

Ronald E. Gots, Multiple Chemical Sensitivities-Public Policy, 33 J. TOXICOLOGY 111, 111 (1995).


Davidoff & Keyl, supra note 25, at 201.

Frank v. State, 972 F. Supp. 130, 132 (N.D.N.Y. 1997). "That definition includes the following elements: (1) an initial, identifiable environmental
of proposed definitions of MCS, all share several commonalities: (1) the syndrome is a multisymptomatic disorder; (2) the syndrome affects various organ systems; and (3) the syndrome is the result of exposure to a level of various chemicals which is endurable by the majority of the population. Clinicians who actively research MCS have found practical limitations with the various definitions proposed by clinical ecologists. The lack of an accepted definition has grave consequences because it impedes research efforts; thus, MCS remains indistinguishable from other defined illnesses. Further, the absence of a well-accepted definition is one reason why trial judges have determined that expert testimony regarding MCS is unreliable thus refusing to admit this type of testimony.

B. What Causes MCS?

The cause of MCS remains as equally elusive as its definition. There are numerous theories to explain a pathophysiologic basis for MCS. Currently, there are two main schools of thought regarding the cause of MCS: the biologic view and the psychologic view. The biologic view assimilates MCS with other allergic disorders and sets forth the basis of MCS as a dysfunction of the immune, epithelial exposure resulting in the onset of symptoms; (2) symptoms ranging among multiple organ systems i.e. nervous and respiratory systems; (3) symptoms recurring and abating in response to exposures to very low levels of diverse chemicals; and (4) symptoms that cannot be accounted for by other medical conditions. Id. (citing E.E. Sikorski, et al., Roundtable Summary: The Question of Multiple Chemical Sensitivity, 24 FUNDAM. APP. TOXICOL. 22, 24 (1995)).

30 Frank, 972 F. Supp. at 132 n.2.
31 Sparks et al., supra note 25, at 719.
32 Id. at 727.
33 See Summers, 897 F. Supp. at 536-37 (agreeing with American College of Physicians about lack of MCS clinical definition).
35 Cullen, supra note 27, at 670.
or central nervous system.\textsuperscript{36} The psychologic view is based on the high rate of anxiety evident in patients with MCS in relation to the rest of the population.\textsuperscript{37} Although these two views dominate, others involved in MCS research have proposed additional causes for the illness.\textsuperscript{38} Unfortunately, to date, no single theory has gained a majority of acceptance and so the cause of MCS remains in dispute.\textsuperscript{39}

\textbf{C. The Innumerable Symptoms of MCS}

MCS is characterized by a constellation of nonspecific symptoms unique to each patient.\textsuperscript{40} MCS sufferers report many common symptoms including, but not limited to, unusual fatigue, difficulty in thinking, impaired concentration, and short-term memory loss.\textsuperscript{41} Other frequently-occurring symptoms are headaches, upper or lower respiratory irritation, and aching of the muscles and joints.\textsuperscript{42} Symptoms can also involve internal organs, including gastrointestinal and cardiac symptoms (e.g., palpitations or an irregular heart beat).\textsuperscript{43} Unusual thirst is another common symptom.\textsuperscript{44} The vast array of

\begin{quote}
\textsuperscript{36} \textit{Id.; See also} Sparks et al., \textit{Multiple Chemical Sensitivity Syndrome: A Clinical Perspective II: Evaluation, Diagnostic Testing, Treatment, and Social Considerations}, 36 J. OCCUPATIONAL MED. 731, 732 (1994). \textit{[N]one of \{}[the\] current views of \{}[the\] etiology of MCS is universally accepted on the basis of substantial scientific evidence.\textit{ Id.}

\textsuperscript{37} Cullen, \textit{supra} note 27, at 671.

\textsuperscript{38} Sparks, \textit{supra} note 25, at 719. In addition to the biologic and psychologic views two additional views of the etiology of MCS are: (1) MCS is a misdiagnosis of another illness; and (2) MCS is a manifestation of culturally shaped illness behavior. \textit{Id.}

\textsuperscript{39} Cullen, \textit{supra} note 27, at 670-71.

\textsuperscript{40} Ziem, \textit{supra} note 22, at 74.

\textsuperscript{41} \textit{Id.}

\textsuperscript{42} \textit{Id.}

\textsuperscript{43} \textit{Id.}

\textsuperscript{44} \textit{Id.}
\end{quote}
symptoms MCS sufferers report contribute to the theory that it is not possible to adequately test for MCS.  

**D. Treatments for MCS**

Proponents of MCS have set forth several possible treatments for the illness. Despite the fact that the cause of MCS is unknown, patients can still seek relief from their symptoms. Although advocates of MCS agree that this illness is incurable, a belief consistent with the basic principals of toxicology, they also agree that certain treatments can lessen the symptoms of the illness.

Dr. Mark Cullen proposes the following treatment for every MCS patient: (1) Education- it is critical for patients and their families to understand the illness and know that it is neither lethal nor curable; (2) Support- including self-help groups and aiding sufferers in returning to their daily activities; (3) Environmental modifications- important changes includes removal or reduction of the heaviest exposures that are associated with the onset of the illness, and (4) Economic support- if the illness impairs a person to the extent that they cannot work, then they should apply for available benefits. The most frequently proscribed treatment suggests eliminating all unnecessary exposures to chemical and environmental agents that may aggravate the condition. Additionally, there are several highly criti-

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45 Berkowitz, *supra* note 15, at 488. Due to the subjectivity of symptoms, those who diagnose MCS cannot rule out other possible variables that may have caused the patients' alleged symptoms. *Id.*

46 Sparks, *supra* note 36, at 734.


48 Cullen, *supra* note 27, at 671.

49 *Id.*

50 *Id.*

51 *Id.*

52 Ziem, *supra* note 22, at 76. "Patients with MCS typically improve, albeit gradually over months or years, with adequate control of their chemical
cized and unconventional treatments for MCS such as, diet drugs, a macrobiotic diet and saunas.\textsuperscript{53} Although many MCS sufferers put faith in these treatments, there is no scientific evidence to back them up.\textsuperscript{54}

E. Alternative Names for MCS

The plethora of titles used to describe MCS are consistent with the elusive nature of MCS. Some examples of these titles include: Chemical Hypersensitivity Syndrome; Environmental Illness (EI); Environmentally Induced Illness; Environmental Hypersensitivity Disorder; Multiple Chemical Hypersensitivity Syndrome; Toxic Response Syndrome; and 20\textsuperscript{th} Century Disease.\textsuperscript{55} It is important to be aware of the different titles for MCS because they are used interchangeably throughout the literature regarding MCS. Moreover, awareness of the different titles used to describe MCS is especially important in the legal community because MCS claims may be filed under any one of these alternative names.\textsuperscript{56}

exposures. The focus should be on eliminating all unnecessary exposures to pesticides, petroleum and coal-derived chemicals, and combustion products." \textit{Id.}

\textsuperscript{53} Michael Fumento, \textit{Sick of it All}, REASON, 20, 24 (1996). Some criticized treatments include, a combination of phentermine and fenfluramine [Phen-Fen], a macrobiotic diet based on grains and vegetables free of wheat and dairy products, sauna therapy to “sweat out” toxins, coffee-enemas, salt-neutralization therapy, gamma globulin, interferon, vitamins, ginseng, and the patient’s urine (as a beverage or injection). \textit{Id.}

\textsuperscript{54} \textit{Id.}

\textsuperscript{55} Albert Donnay, \textit{Recognition of Multiple Chemical Sensitivity}, MCS REFERRAL \& RESOURCES, 179,179 (1997). Some of the additional titles for MCS include: Acquired Intolerance to Solvents, Allergic Toxemia, Cerebral Allergy, Chemical-Induced Immune Dysfunction, Ecological Illness, Environmental Irritant Syndrome, Idiopathic Environmental Intolerance or (IEI), Immune System Dysregulation, Multiple Chemical Reactivity, Total Allergy Syndrome, Toxin Induced Loss of Tolerance or (TILT). \textit{Id.}

\textsuperscript{56} Gots, \textit{supra} note 26, at 112. Other problems which arise when researching MCS claims are that many claims for MCS type injuries have been filed before the name MCS was coined, a state may catalogue claims according to alleged
F. Mixed Acceptance of MCS in the Medical Field

MCS remains extremely controversial and has not been readily accepted by mainstream medicine. The American Medical Association, (AMA) in a position paper regarding MCS, refused to accept MCS as a disease. The American College of Physicians is also skeptical of clinical ecology and MCS. Likewise, the American Academy of Allergy and Immunology believes that the practice of cause rather than diagnosis, and many MCS claims are at the trial court or administrative level which tend to be not well catalogued. Id.

Sanderson v. International Flavors and Fragrances, Inc., 950 F. Supp. 981, 1000 (C.D. Cal. 1996). The American College of Occupational and Environmental Medicine, the American Medical Association, the American College of Physicians, the American Academy of Allergy and Immunology, and the California Medical Association have studied this alleged condition and have concluded that MCS is not a physiological, as opposed to a psychological, illness. Id.

Summers, 897 F. Supp. at 536.

No scientific evidence supports the contention that MCS is a significant cause of disease or that diagnostic tests or treatments used have any therapeutic value. Until such accurate, reproducible, and well-controlled studies are available, the American Medical Association Council on Scientific Affairs believes that multiple chemical sensitivity should not be considered a recognized clinical syndrome.

Id. (citing 1992 American Medical Association Council Report on Clinical Ecology issued by the Council on Scientific Affairs (1992)).

Summers, 897 F. Supp. at 536. The American College of Physicians' (ACP) 1989 position paper on MCS states that "the literature [on clinical ecology] provides inadequate support for the beliefs and practices of clinical ecology." Id. Moreover, this position paper proposes that the clinical ecology theory be questioned because of the lack of a clinical definition. Id. Finally, the ACP feels that there is no proven diagnosis of nor effective treatment for MCS. Id. (citing the 1989 position paper of the ACP).
clinical ecology and current treatments for MCS are too experimental and that MCS sufferers should be informed of this.\footnote{Summers, 897 F. Supp. at 537. This position was stated in a position paper issued by the American Academy of Allergy and Immunology (AAAI) in August of 1986. \textit{Id}. Specifically, this organization criticizes the fact that clinical ecology is time-consuming and places severe restrictions on the patient's lifestyle. \textit{Id}.}

There is no clear consensus on MCS in the medical community and so the debate rages on. Concurrently, the validity of this disease is being put to the test on the legal front. As in the medical community, the growing awareness about and reception of MCS in the legal community has been mixed. Thus, the future of MCS as a recognized illness is uncertain in many arenas.

II. THE EVIDENTIARY STANDARD APPLIED FOR ADMITTING EXPERT TESTIMONY REGARDING MCS

Litigation asserting that a claimant suffers from MCS requires her to establish a causal link between the defendant's alleged conduct and MCS.\footnote{Bradley v. Brown, 852 F. Supp. 690, 696 (N.D. Ind. 1994). "As used in negligence law, causation 'is the requirement for a reasonable connection between a defendant's conduct and the damage which [ ] plaintiff[s] have suffered.'" \textit{Id.} (citing Cowe v. Forum Group, Inc., 575 N.E.2d 630, 635 (Ind. 1991)). "The plaintiffs must draw this connection by showing that their injuries were the 'natural and probable consequence' of [the defendant's] negligence 'which should have been foreseen.'" \textit{Brown}, 852 F. Supp. at 696 (citing Watson v. Medical Emergency Services, Corp., 532 N.E.2d 1191, 1194 (Ind. Ct. App. 1989)).} Establishing this connection is particularly difficult in litigation asserting injuries caused by hazardous substance exposure.\footnote{Bradley, 852 F. Supp. at 696. The Bradley court stresses that drawing a causal connection in the growing field of hazardous substance litigation is particularly difficult. \textit{Id.} Illustrating this connection is especially difficult in cases where the causal relationship between exposure to a hazardous substance and subsequent symptoms has only been hypothesized but not yet tested and proven to a legal certainty. \textit{Id}.}
Expert testimony is required to prove this causation.\textsuperscript{63}

The common law rule regarding expert testimony of scientific evidence proposed to be entered in court requires a showing that the testimony has reached the level of “general acceptance” in its relevant scientific community.\textsuperscript{64} This rule was articulated in the case of \textit{Frye v. United States}\textsuperscript{65} and was employed by federal courts throughout this country.\textsuperscript{66} In 1993, however, the seminal case of \textit{Daubert v. Merrill Dow Pharmaceuticals, Inc.}\textsuperscript{67} modified \textit{Frye}’s strict standard.\textsuperscript{68} In the years following \textit{Daubert}, many state courts, including Massachusetts, lent credence to this decision and adopted \textit{Daubert}’s reasoning.\textsuperscript{69}

In \textit{Daubert}, the United States Supreme Court held that the adoption of Federal Rule of Evidence 702 supercedes the \textit{Frye} test and the

\textsuperscript{63} \textit{Id.} The testimony of an expert witness is necessary when the issue of proximate cause is not one a lay person would understand. \textit{Id.} “The etiology of MCS, to the extent [that] it is understood at all, must turn upon complex medical interactions beyond the ken of a lay person, or for that matter the court.” \textit{Bradley}, 852 F. Supp. at 697. “[P]laintiffs may not make out causation vis-à-vis MCS merely by reliance upon the temporal congruity of the [alleged negligent events] and the onset of their symptoms.” \textit{Id.}

\textsuperscript{64} \textit{See} \textit{Frye v. United States}, 293 F. 1013 (D.C. Cir. 1923).

\textsuperscript{65} \textit{Frye}, 293 F. at 1013.

\textsuperscript{66} \textit{See} \textit{O’Conner v. Commonwealth Edison Co.}, 13 F.3d 1090, 1106 (7th Cir. 1994) (stating a majority of federal courts apply \textit{Frye} to determine admissibility of scientific evidence).

\textsuperscript{67} \textit{Daubert v. Merrill Dow Pharmaceuticals, Inc.}, 509 U.S. 579 (1993).

\textsuperscript{68} \textit{Id.} at 593-94.

\textsuperscript{69} \textit{See} \textit{Commonwealth v. Lanigan}, 641 N.E.2d 1342, 1349 (Mass. 1994) (adopting \textit{Daubert} framework in Massachusetts by stating reliability is the ultimate test of admissibility for expert testimony); \textit{Rotman v. National R.R. Passenger Corp.}, 669 N.E.2d 1090, 1091 (Mass. 1996) (excluding testimony of neurologist on exacerbation of pre-existing condition will be excluded under \textit{Daubert} analysis absent required validating data).
common law rule for federal courts. The Court concluded that scientific evidence, which was not yet generally accepted in the scientific community, may be admitted if the trial judge determines, before trial, that the testimony satisfies a two-prong test. Daubert established the principle that the district court judge acts as a "gatekeeper" in allowing expert opinion testimony to be presented. Thus, the trial judge is vested with discretion to admit or exclude an expert's testimony. The Court's interpretation of Rule 702 established a broad, flexible test to help the trial judge determine whether scientific evidence should be admitted.

The first prong of the Daubert test requires a district court judge

70 Daubert, 509 U.S. at 590.

71 Id. at 588-89; See also FED. R. EVID. 702 which provides: "if scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise." Id.

72 See, e.g., O'Conner, 13 F.3d at 1106 (stating a trial judge must regulate theories about which expert may testify); Wilson v. Merrell Dow Pharmaceuticals, Inc., 6 F.3d 1233, 1239 (N.D. Okla. 1996) (elimination of formal barriers to expert testimony merely shifts to the trial judge responsibility for keeping 'junk-sciences' out of court); Frymire-Brinati v. KPMG Peat Marwick, 2 F.3d 183, 186-187 (7th Cir. 1993) (finding reversible error when trial judge fails to conduct adequate preliminary assessment of expert's methodology).

73 Daubert, 509 U.S. at 592; See also FED. R. EVID. 104 which provides: "Preliminary questions concerning the qualification of a person to be a witness . . . or the admissibility of evidence shall be determined by the court . . . . In making this determination it is not bound by the rules of evidence except those with respect to privileges." Summers, 897 F. Supp. at 541. "Daubert entrusted the courts to make a 'preliminary assessment of whether the reasoning or methodology underlying the testimony is scientifically valid and of whether that reasoning or methodology properly can be applied to the facts in issue.'" Id. at 541-42.

to ensure that the proffered testimony pertains to scientific knowledge, thus determining if the testimony is reliable and relevant enough to be admitted for the jury's consideration. Daubert explained that "scientific knowledge" requires "a grounding in the methods and procedures of science," as well as a basis for the expert opinion to be more convincing than a mere "subjective belief or unsupported speculation." To aid the court in making the admissibility determination, Daubert established a framework to ensure the reliability of the methodology utilized by the particular field of science. The Daubert court noted several factors that the trial judge may take into consideration when evaluating whether or not the proposed testimony is based on scientific knowledge:

(1) whether the theory or opinion in question can be (and has been) tested; (2) whether the theory or opinion has been the subject of peer review and publication; (3) whether the known or potential error rate associated with the principal is excessive; and (4) whether the theory or technique has achieved widespread acceptance within the scientific community.

The Court's characterization of the Rule 702 inquiry as a "flexible one" was clearly defined in the United States Supreme Court case of Kumho Tire Co. v. Carmichael. The Kumho court held that the factors set forth in Daubert, to assess the reliability of proffered expert testimony, are meant to be helpful and do not constitute a defini-

75 Daubert, 509 U.S. at 589. "[U]nder the rules the trial judge must ensure that any and all scientific testimony or evidence admitted is not only relevant, but reliable." Id.
76 Berkowitz, supra note 15, at 485.
77 See O'Conner, 13 F.3d at 1106 (discussing application of Daubert factors).
78 Daubert, 509 U.S. at 593-94.
The Daubert factors are to be applied in accordance with the facts of the case and do not all necessarily apply in every situation. Therefore, the Daubert factors which a trial judge is likely to apply will depend upon the facts of a particular case and how helpful the factors will be in assessing the reliability of the proffered expert testimony.

The second prong of Daubert requires the trial judge to inquire into whether the proffered testimony will assist the trier of fact in determining causation. Specifically, the court "must ensure that the proposed expert testimony is 'relevant to the task at hand,' i.e. that it logically advances a material aspect of the proposing party's case." The first prong may be referred to as the "reliability requirement," and the second prong is sometimes known as the "fit requirement." The general rule is that the plaintiff has the burden to establish admissibility of expert testimony by a preponderance of proof.

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80 See id. at *10 (holding Daubert factors not definitive and a court is not required to apply all factors in every case).
81 See id. at *9 (stating Daubert factors must be tied to the facts of a particular case).
82 See id. at *10 (holding court should apply Daubert factors which are helpful to determine reliability of proffered expert testimony).
83 Daubert, 509 U.S. at 595.
84 Sanderson, 950 F. Supp. at 992; see also Wilson, 6 F.3d at 1239. "[t]he trial judge must determine at the outset, pursuant to rule 104(a), whether the expert is proposing to testify to (1) scientific knowledge that (2) will assist the trier of fact to understand or determine a fact in issue." (emphasis added) Id. (citing Daubert, 509 U.S. at 594-95).
85 See id. (citing Daubert, 509 U.S. at 592).
86 Id.
87 See, e.g., Bradley, 852 F. Supp. at 697 (stating Plaintiffs must establish by a preponderance of proof the admissibility of testimony); Murphy v. E.R. Squibb and Sons, Inc., 710 P.2d 247, 253 (Cal. 1985) (general rule states burden of proof...
III. APPLYING THE DAUBERT STANDARD TO MCS

In applying the Daubert standard to MCS litigation, every federal court, which has ruled on the issue of admissibility of expert testimony regarding MCS, has found the proffered testimony inadmissible. Additionally, other courts that have failed to reach this issue have indicated skepticism as to whether MCS is a valid medical condition. Many decisions reason that MCS' etiology is still hypothetical and thus unable to assist the fact-finder. Further, the District

rests on plaintiff to establish injuries were caused by defendant's conduct); Sindell v. Abbott Lab., 607 P.2d 924, 928 (Cal. 1980) (defendant's liability rests on showing by plaintiff that her injuries were caused by defendant).

See Bradley, 852 F. Supp. at 700 (holding expert testimony regarding MCS inadmissible); Carlin v. RFE Indus., Inc., No. 88-CV-842, 1995 U.S. Dist. LEXIS 19035, at *22 (N.D. N.Y. Nov. 20, 1995) (precluding MCS testimony by expert witnesses); Summers, 897 F. Supp. at 534 (excluding testimony of two clinical ecologists); Hundley v. Norfolk & Western Ry Co., No. 91-C-6127, 1996 U.S. Dist. LEXIS 1041, at *2 (N.D. Ill. Jan. 31, 1996) (noting testimony of proposed experts did not reach a reasonable level of certainty); Wilson, 6 F.3d at 1233 (holding expert testimony concerning MCS inadmissible under Daubert test); Sanderson, 950 F. Supp. at 986 (holding plaintiff failed to demonstrate MCS is a "good science"); Treadwell, 970 F. Supp. at 980 (excluding part of expert testimony regarding MCS); Frank, 972 F. Supp. at 130 (holding MCS testimony inadmissible under Federal Rules of Evidence).


Bradley, 852 F. Supp. at 700. "[T]he 'science' of MCS's [sic] etiology has not progressed from the plausible, that is, the hypothetical, to knowledge capable of assisting a fact-finder, jury or judge." See Carlin, 1995 U.S. Dist. LEXIS 19035, at *14 (citing Bradley agreeing that testimony regarding MCS is unreliable); Summers, 897 F. Supp. at 537 (adopting the reasoning of Bradley); United States v. Starzecpyzel, 880 F. Supp. 1027, 1029 (S.D.N.Y. 1995) (dismissing clinical ecology as one of four discredited ventures in the area of scientific expertise).
Court for the Northern District of Indiana urges that "scientific controversies must be settled by the methods of science rather than by the methods of litigation." 91 Notwithstanding adverse decisions regarding the admissibility of expert testimony regarding MCS, the door is not yet closed entirely on this issue. At least one district court has recognized that although MCS is not yet an established syndrome or disease, materials presented by the parties illustrate continuing experimentation involving MCS. 92 This observation illustrates that that further experimentation and research may lead to the recognition of MCS as an established illness. 93 Despite this observation, the contested issue regarding MCS in this type of litigation remains whether the proposed expert testimony is based upon scientific knowledge that is both reliable and will assist the fact-finder in reaching a conclusion. 94

A. MCS and the Scientific Method

When applying the first prong of Daubert to assess the question of admissibility of expert testimony regarding MCS, a court must first look at whether the theory or methodology offered by the testimony has been subjected to the scientific method. 95 This prong of the Daubert analysis encompasses two factors: (1) whether the opinion in question can be (and has been) tested; and (2) whether the known or potential error rate associated with the principal is excessive. 96 Determining whether the proposed theory has been subjected to the scientific method is the most important and significant inquiry. 97 The importance of requiring an expert's theory to have been subject to the

91 See Bradley, 852 F. Supp. at 700.
94 Bradley, 852 F. Supp. at 697.
95 Id. at 698.
96 Id.
97 Id.
scientific method is to ensure that the theory is reliable and not mere conjecture. 98

1. Is MCS Capable of Being Tested?

The most common test employed by clinical ecologists to diagnosis and treat MCS is provocation-neutralization. 99 This test requires patients who suffer from MCS symptoms to go to a special isolation unit, one of which exists at Rea’s Environmental Health Center. 100 There the patient is cleared of all toxins by fasting. 101 Once the patient is free of all “toxins,” they are injected with a small amount of test substance until they exhibit a reaction. 102 The patient is then cleared of the test substance and tested again by being injected with a lessening dosages of the test substance until they no longer exhibit a reaction. 103 From this procedure, clinical ecologists claim to be able to diagnose and treat a patient with MCS. 104

The provocation-neutralization method has been put to the test and the results are not promising for proponents of MCS. 105 In a study which was financed by the Academy of Otolaryngic Allergy and the American Academy of Environmental Medicine, test subjects

98 Daubert, 509 U.S. at 598; Bradley, 852 F. Supp. at 698.

Specifically, scientific expert opinion testimony is allowed on the rationale that the expert can tie the facts of a particular case to tested scientific theory. ... This allows the fact-finder to infer that the case before it comports with that theory. ... ‘If the experts cannot tie their assessment of data to known scientific conclusions, based on research or studies, then there is no comparison for the [fact-finder] to evaluate.’

Bradley, 852 F. Supp. at 698.

99 Berkowitz, supra note 15, at 485; See also Fumento, supra note 53, at 25.

100 Berkowitz, supra note 15, at 485.

101 Id.

102 Id.

103 Id.

104 Id.

105 Fumento, supra note 53, at 20.
were injected with either a placebo or a test substance. The chief researcher conducting this project was surprised when the experiment subjects reported exactly the same symptoms, whether exposed to the test substance or the placebo. The results of this test converted some believers in MCS into skeptics.

The adverse results of this experiment lead some in the medical field to focus on the theory that MCS is a psychological rather than a physiological condition. A study based on this theory, reported in the Journal of the American Medical Association in 1990, suggests that patients diagnosed with MCS suffer from psychological problems. Some may query that MCS is psychologically based, that is that MCS causes the psychological problems; this position is highly refuted.

106 Id.
107 Id. 'Neutralizing' doses of the test substance and the placebo were equally likely to provide the subjects of the study with relief. Id.
108 Fumento, supra note 53, at 26. Don L. Jewett, orthopedic surgeon and chief researcher on this project at the University of California at San Francisco stated: “[w]e designed [this study] carefully to convince any skeptics. So when it didn’t work out it clearly showed the methods they [sic] clinical ecologists were using at that time did not work as claimed.” Id. Jewett went on to state that the clinical ecologists’ “basis was the doctor’s impressions and I believe that’s all they still use. It’s not science.” Id.
109 Id.
110 Fumento, supra note 53, at 26. A study reported in the Journal of American Medical Association conducted by Donald Black, a University of Iowa psychiatrist, concluded that individuals diagnosed with MCS were substantially more likely to have physiological problems than the rest of the population. Black has found that those diagnosed with MCS may also suffer from depression, anxiety disorders, and panic attacks. Id. Moreover, Stephen Barrett, a retired psychiatrist and author, believes that most MCS symptoms are related to the patient’s reaction to stress. Id.
111 Id. Donald Black refutes the theory that the psychological disorder many MCS sufferers face is the result of years of their MCS going untreated by arguing that MCS patients’ psychiatric history usually predates any chemical exposure which may be causing their condition. Id.
According to mainstream medicine, MCS is not capable of being tested for several reasons: "(1) it lacks any established, agreed-upon definition; (2) it lacks a dose-responsive relationship; and (3) it is based entirely on subjective data." These factors are illustrated by the lack of a single definition for MCS and the innumerable symptoms sufferers seem to experience. Although clinical ecologists have no doubt that the provocation-neutralization method is the correct test to diagnose MCS, this claim is unfounded. The lack of agreement on what causes MCS and the want of a test to diagnose MCS has lead courts to rule that expert testimony on MCS offered to prove causation is unreliable.

In the line of cases excluding expert testimony regarding MCS, the explanation that the presiding trial judge most frequently gave was that there was no evidence of an accepted etiology of the illness. Even proponents of MCS, including well known clinical ecologists, acknowledge that there is presently no test to determine the cause of MCS. The absence of a known etiology of MCS further contrib-

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112 Berkowitz, supra note 15, at 487.
113 See supra notes 22-33 and accompanying text (illustrating the lack of consensus on a definition, name and etiology of MCS).
114 Fumento, supra note 53, at 20; see also Berkowitz, supra note 15, at 485.
116 See, e.g., Summers, 897 F. Supp. at 541 (recognizing plaintiff's failure to show MCS etiology theories have been adequately tested); Carlin, 1995 U.S. Dist. LEXIS 19035, at *16 (holding plaintiff failed to establish knowledge and testability of MCS etiology); Treadwell, 970 F. Supp. at 982 (expressing its inability to conclude reliability of MCS etiology).
117 Bradley, 852 F. Supp. at 699. William J. Rea, a clinical ecologists and proponent of MCS, states in his own book that the catalyst which triggers MCS cannot be ascertained. Id. Miller and Ashford postulate that the mechanism for MCS may not be able to be identified; that is that even after exhausting all avenues of inquiry there is still no distinct explanation for MCS. Id.; Carlin, 1995 U.S. Dist. LEXIS 19035 at *11. Dr. Michael B. Lax an occupational medicine physician, acknowledges the absence of a single test that can identify
utes to the conclusion that MCS is not testable, and thus fails to satisfy the testability prong of the *Daubert* standard.

2. Unknown Error Rate for MCS Tests

Assuming, arguendo, MCS is sufficiently testable, attorneys litigating this matter face another problem under the *Daubert* standard. *Daubert* dictates that one factor a trial judge should consider in deciding whether scientific testimony is reliable is the potential for error.¹¹⁸ In discussing the test frequently employed to diagnose MCS, the District Court for the Northern District of Illinois held that "the testimony of the witnesses [who were clinical ecologists] affords no possible basis upon which any such determination [of error rates] could be made."¹¹⁹ This court excluded expert testimony based on the belief that the potential error rate of the provocation-neutralization test employed by clinical ecologists is unknown.¹²⁰

The trial judge in *Bradley*, denouncing MCS as an accepted illness, stated that the theory of MCS "is a far cry from the tested hypotheses foreseen as the basis of 'scientific knowledge' testified to under Rule 702."¹²¹ The unknown etiology and the absence of a reliable test to diagnose MCS prevents expert testimony regarding this illness from surviving the testability and potential rate of error factors set forth in *Daubert* for testing the scientific reliability of expert testimony.

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¹¹⁸ *Daubert*, 509 U.S. at 594.
¹²⁰ *Id*.
B. Peer Review and Acceptance of the MCS Theory

Peer review is another factor that Daubert urges trial judges to inquire into when determining whether expert testimony is based on scientific knowledge.\textsuperscript{122} The theory behind peer review is that if a hypothesis is reviewed by others in the field, problems, if any, will be discovered and remedied.\textsuperscript{123} The results of peer review of MCS have not been favorable.\textsuperscript{124} Peer review of the theories surrounding MCS exposed a multitude of flaws in the theory and thus has perpetuated suspicions regarding the validity of MCS.\textsuperscript{125}

The most significant evidence of adverse peer review of MCS is the numerous mainstream medical associations who have taken a negative position on the question of whether MCS is an illness.\textsuperscript{126} Various medical association’s views on MCS have been articulated in numerous position papers offered by the organizations after reviewing MCS literature.\textsuperscript{127} The result of peer review of MCS illustrates

\textsuperscript{122} Id.; see also Carlin, 1995 U.S. Dist. LEXIS 19035, at *12. "Thorny problems of admissibility arise when an expert seeks to base his opinion on novel or unorthodox techniques that have yet to stand the test of time to prove their validity." \textit{Id.} (citing McCullock v. H.B. Fuller Co., 61 F.3d 1038, 1042 (2d Cir. 1995)).

\textsuperscript{123} Bradley, 852 F. Supp. at 699. "Peer review is significant under Daubert because ‘scrutiny of the scientific community is a component of “good science,” in part because it increases the likelihood that substantive flaws in methodology will be detected.’” \textit{Id.}

\textsuperscript{124} See infra notes 123-124 and accompanying text (illustrating the many organized medical associations refusing to accept MCS as an illness).

\textsuperscript{125} \textit{Frank}, 972 F. Supp. at 135.

\textsuperscript{126} See supra notes 57-60 and accompanying text (discussing medical organizations denouncing MCS as a bona fide illness).

\textsuperscript{127} \textit{Frank}, 972 F. Supp. at 135. Several established medical organizations such as the American College of Physicians (1989), The American Academy of Allergy and Immunology (1986), the California Medical Association (1986), and the American Medical Association, through a review of MCS literature, have not
minimal scientific evidence -- certainly not the widespread acceptance as required under Daubert.\textsuperscript{128} Additionally, the field of toxicology, a resource many claimants rely upon in asserting the cause of MCS, has failed to recognize MCS as a definable disease.\textsuperscript{129} Thus, the failure of established medical institutions to recognize MCS is a factor weighing heavily against admitting expert testimony regarding MCS to prove causation.

\textit{C. Fatal Results}

Exclusion of expert testimony to prove the cause of MCS prevents a plaintiff from establishing the essential causal connection between the alleged negligence had the injury.\textsuperscript{130} Thus, the exclusion of this type of expert testimony is fatal to a plaintiff's claim for MCS injury.\textsuperscript{131}

\textsuperscript{128} \textit{See id.} (stating that MCS's status with mainstream medicine does not reach the level of widespread acceptance).

\textsuperscript{129} \textit{Frank}, 972 F. Supp. at 136.

The International Society of Regulatory Toxicology and Pharmacology has concluded that 'current scientific information reports no clinical, laboratory, or other objective support for the proposition that MCS represents a clinical definable disease entity. The theories claiming to unify this condition as a toxicologically mediated disorder transgress basic principles of toxicology and clinical sciences and moreover the scientific evidence is lacking.' \textit{Frank}, 972 F. Supp. at 136.

\textsuperscript{130} \textit{See Wilson}, 6 F.3d at 1233 (stating inability of Plaintiffs to show causation because inadmissibility of expert testimony on MCS); \textit{Sanderson}, 950 F. Supp. at 1005 (holding inadmissible testimony regarding MCS prevents plaintiff from stopping summary judgement on issue of causation); \textit{but see Bradley}, 852 F. Supp. at 700 (holding although plaintiffs proved connection between injury and negligence they failed to show existence of MCS);

\textsuperscript{131} \textit{Bradley}, 852 F. Supp. at 700.
III. OUTLOOK

A. Limitation of Scientific Evidence By The United States Supreme Court: General Electric Co. v. Joiner

The United States Supreme Court, in its decision in *General Electric Co. v. Joiner*, has made it more difficult for scientific evidence to be admitted in various types of cases, including toxic tort litigation. Specifically, the *Joiner* court held that there is no precedent in *Daubert* or the Federal Rules of Evidence that requires a district court judge to admit expert testimony which is linked to previously recorded data solely by the experts' bare assertion. Many commentators have interpreted the Court's decision to mean that it will be more difficult for attorneys to have their experts pass the rigors of the *Daubert* standard and have experts testimony admitted. Moreover, this decision will apply in a wide variety of cases. Experts pontificate that this decision reflects the Justices' concern with removing 'junk science' from the courtroom and the growing problem

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133 Susan A. Bocamazo, 'Scientific Evidence' is Sharply Limited by U.S. Supreme Court, LAW. WKLY USA, Jan. 12, 1998, at 1.
134 118 S. Ct. at 512. "A court may conclude that there is simply too great an analytical gap between the data and the opinion proffered." *Id.* Justice Steven disagrees with this requirement "it is not intrinsically 'unscientific' for experienced professionals to arrive at a conclusion by weighing all available scientific evidence – this is not the sort of 'junk science' with which *Daubert* was concerned." *Id.* (Stevens, J., dissenting).
135 Bocamazo, supra note 129 at 15. "The ruling 'gives a green light to lower courts to be very demanding of evidence.'" *Id.* (quoting law professor David Kaye, of Arizona State University, co-author of treatise on scientific evidence).
136 *Id.* "[This decision] applies in every single case where there's any kind of scientific, technical or specialized testimony." *Id.* (quoting attorney Marc Kline, member of the ABA's Counsel on Science and Technology).
EXPERT TESTIMONY

of experts relying on accepted tests to have questionable conclusions admitted as scientific evidence. Experts believe that this decision will no longer afford an expert the opportunity to cite a valid study then give his opinion regarding the results if there is no link between the valid data and the expert’s opinion.

The most evident effect of this decision will be on plaintiffs, especially in the realm of toxic tort cases. This particular area of law will be affected because it is plaintiffs embroiled in this type of litigation who are mostly required to rely on novel scientific theories such as the MCS diagnosis. The new requirement of proving a definitive link between the proffered expert testimony and the study from which

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137 Bocamazo, supra note 129 at 15. “[I]t now appears that the Justices are more concerned about removing ‘junk science’ from the courtroom.” Id. “Some experts believe the Court [in this decision] was responding to a growing problem – the use of legitimate methodologies to get questionable conclusions admitted.” Id.

138 Joiner, 118 S. Ct. at 520. “This requirement will sometimes ask judges to make subtle and sophisticated determinations about scientific methodology and its relation to the conclusions an expert witness seeks to offer – particularly when a case arises in an area where the science itself is tentative or uncertain, or where testimony about general risk levels in human beings or animals is offered to prove causation.” Id. (Breyer, J., concurring). Bocamazo, supra note 129 at 15. “A number of people argue that as long as the technique is valid, any conclusions are for the jury.” Id. (quoting David Faigman, law professor and co-author of treatise on scientific evidence). “You can’t simply cite a study and say, [that] ‘[s]ince the study was valid, my opinion is valid.’ There has to be a link between the data and the opinion.” Id. (quoting John Kester, the winning attorney in the Joiner case).

139 Bocamazo, supra note 129 at 15.

140 “The science of whether a particular substance causes injury usually is not very well developed at the time people begin to get hurt. Consequently, plaintiffs are forced to turn to ‘not very well developed science.’” Id. (quoting Paul Rothstien, law professor and author of several books on evidence).
the opinion was taken will be costly and time consuming. Additionally, this added requirement may increase the amount of recovery expected for a case to be a viable option for a plaintiffs attorney.

With regard to MCS, this decision may have serious implications in the future for admission of expert testimony on MCS. As for other scientific testimony the decision sets forth one more hurdle for plaintiffs attorneys in toxic tort cases to have to cross before expert testimony can be admitted to show causation between the alleged injury and the chemical exposure.

B. Recognition of MCS

While MCS has yet to be recognized as an illness by the standards of conventional medicine, MCS has been recognized in a number of contexts. Several federal courts have affirmed MCS (by this or another name) as a handicap or disability under the Fair Housing Act, Rehabilitation Act, and the Social Security Disability Act. To date,

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141 According to New Hampshire plaintiff's attorney Anthony Roisman, "[t]he problem is that [proving the connection between the evidence and conclusion is] an 'expensive proposition.'" Bocamazo, supra note 129 at 15.

142 "[A] lot of smaller cases may no longer be economically viable." Id. "If you have a $750,000 injury, the cost of proving it is $250,000 and the chance of success can't be measured beyond "some lose and some win" there won't be a lot of people who will take that case." Id.

sixteen state court decisions have affirmed MCS as a handicap or injury in cases regarding housing discrimination, employment discrimination, health service discrimination, negligence/toxic torts, the tort of outrage and deliberate intention exception to worker's compensation and worker's compensation. Additionally, several worker's compensation boards have recognized MCS as a work-related illness.

recognizing MCS, awarding disability benefits to plaintiff who suffers from chemical hypersensitivity).


Although these cases seem persuasive for MCS proponents, none reach the issue of accepting expert testimony regarding MCS under the *Daubert* regime.\(^{146}\) The trial judge in *Frank v. New York*\(^{147}\) urged that the admissibility of expert testimony regarding MCS under *Daubert* is a separate issue from determining whether MCS is a disability under the American with Disabilities Act.\(^{148}\) While the recognition by these courts is a step toward universal recognition of MCS as an illness, MCS sufferers still have a long way to go before expert testimony regarding MCS will be admissible to prove causation. Thus, the recognition of MCS as an illness or handicap by courts interpreting federal statutes will probably do little to persuade trial judges to accept expert testimony regarding MCS as reliable under *Daubert*.

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\(^{146}\) See *supra* note 112 and accompanying text (discussing the failure of trial judges to accept expert testimony regarding MCS).

\(^{147}\) *Frank*, 972 F. Supp. at 130.

\(^{148}\) *Id.* at 133 n.3.
C. MCS Acceptance in the Political Regulatory Arena

MCS has been widely recognized in policy arenas. Although several governmental agencies recognize MCS as an illness, they do so because claimants are unable to function effectively. The major federal agencies which recognize MCS as an illness or injury include the United State Equal Employment Opportunity Commission (EEOC), the Department of Justice and United States Department of Housing and Urban Development (HUD).

The 1991 ADA handbook, jointly published by the EEOC and the Department of Justice, recognized MCS as a disability under the Americans with Disabilities Act (Act) and called for workplace accommodations for an MCS sufferer. The Act defines a person’s disability as a “physical or mental impairment that substantially limits one or more of the major life activities of such individual.” Notwithstanding this recognition, MCS is not specifically noted as a disability within the Act. Thus, claims of MCS as a disability under this Act are determined on a case-by-case basis using the typical analysis done for any disability. Since MCS has in some cases been

149 Gots, supra note 26, at 111.
150 Id. "While some of the regulations implemented and policy statements issued provide criteria and terms to define MCS, other regulatory and policy actions place the affected individuals under their purview, not by the singular diagnosis of MCS, but rather by virtue of the fact that their ability to function has been adversely affected." Id.
151 Id. at *3; see also Patricia E. Dougherty, Regulatory Action: Understanding Multiple Chemical Sensitivity, APPA, February, 1996.
152 Donnay, supra note 55, at 183.
153 Americans With Disabilities Act (ADA) of 1990, 42 U.S.C. § 12102 (1990). The full definition as provided in the Act is as follows: “The term ‘disability’ means, with respect to an individual- (A) a physical or mental impairment that substantially limits one or more of the major life activities of such individual; (B) a record of such impairment; or (C) being regarded as having such an impairment.” Id.
154 Gots, supra note 26, at 111.
155 Id.
recognized a disability under the ADA, employers may be faced with ADA-inspired cases when MCS suffering employees demand accommodations for their illness.\(^\text{156}\)

Also in 1991, HUD took the position that MCS sufferers are entitled to protection under federal housing discrimination laws.\(^\text{157}\) On April 14, 1992, the Office of General Counsel for HUD released a memorandum regarding MCS and its recognition as a handicap under the Federal Fair Housing Act.\(^\text{158}\) To come under the protection of the Federal Fair Housing Act, claimants must show that their impairment is based upon an actual physical or mental impairment.\(^\text{159}\) Additionally, claimants must prove that this impairment has the effect of substantially limiting one or more life activities.\(^\text{160}\) MCS complainants

\(^{156}\) Dougherty, supra note 147, at *2.

\(^{157}\) Gots, supra note 26, at 111; see also Donnay, supra note 55. HUD recognizes "'MCS as a disability entitling those with chemical sensitivities to reasonable accommodation under Section 504 of the Rehabilitation Act of 1973' and also 'under Title VIII of the Fair Housing Amendments Act of 1988.'" Id. at 182. "MCS and environmental illness 'can be handicaps' within the meaning of section 802(h) of the Fair Housing Act and its implementing regulations." Id. "Section 804 (f)(2) of the Act provides that it shall be unlawful to discriminate against any person in the terms, conditions or privileges of sale or rental of a dwelling, or in the provision of services or facilities in connection with such dwelling because of a handicap." Marilyn Brown, Establishing a Prima Facie Case Involving Multiple Chemical Sensitivity: "A Threshold Approach," J. MARSHALL L. REV. 441, 444 (1996).

\(^{158}\) Memorandum from George L. Weidenfeller, Deputy General Counsel for Operations U.S. Department of Housing and Urban Development, to All Regional Counsel (April 14, 1992) (on file with HUD). "MCS and [Environmental Illness] EI can be associated with physical impairments which substantially impair one or more of a person's major life activities. Thus, individuals disabled by MCS and EI can be handicapped within the meaning of the Act." Id.

\(^{159}\) Id. "MCS complainants must show that their impairment is based upon an actual physical or mental condition." Id. "The Act does not define the terms physical or mental impairment." Id.

\(^{160}\) Id.
may prove that they are handicapped under the Act if they denote their condition as being physiological or psychological.\textsuperscript{161} MCS claimants must also show impairments that are drastic before they will qualify as a substantial limitation under the Act.\textsuperscript{162} Therefore, to say that MCS sufferers can claim handicap under the Federal Fair Housing Act is not without difficulty.

\textbf{D. Social, Political and Legal Implications of the Recognition of MCS}

Recognition by governmental agencies of MCS as an illness which has the potential to cause permanent disability has strong implications in the political regulatory arena.\textsuperscript{163} This recognition is likely to necessitate alterations in policies regarding health care coverage, worker’s compensation benefit awards, and the regulation of chemicals in the workplace and the environment.\textsuperscript{164}

Whether this recognition of MCS by several governmental agencies will inspire trial judges to find expert testimony on this illness admissible remains to be seen. Since the judge is vested with discretion and has wide latitude as to what is permissible expert testimony, a persuasive argument that this recognition illustrates the reasonableness and reliability of the MCS diagnosis required under \textit{Daubert} may

\textsuperscript{161} \textit{Id.}

\textsuperscript{162} See Prindemore v. Legal Aid Society of Dayton, 625 F. Supp. 1171 (S.D. Ohio 1985) (holding no substantial limitation on a major life activity when claimants condition did not impair his ability walk and talk); Gomez v. Department of the Air Force, 869 F.2d 852 (5th Cir. 1989) (refusing to find claimants hypersensitive to paint fumes substantially limiting because claimant was not disqualified from other jobs); Wright v. Tisch, 45 F.E.P. 151 (E.D. Va. 1987) (stating that a postal employee who was hypersensitive to dust was not handicapped because his condition only prevented him from working in unusually dusty environments). \textit{But see} Joyner v. Department of the Navy, 47 M.S.P.B. 596, 599-600 (1991) (ruling a Navy employee was limited in his ability to lift, carry, climb, work on ladders or scaffolding, stoop, twist, bend, push and pull, thus substantially limited in his ability to work).

\textsuperscript{163} Sparks, \textit{supra} note 36, at 735.

\textsuperscript{164} \textit{Id.}
sway a judge to admit the testimony. Without clear word on the acceptance by the medical community through the scientific method, it is unlikely that the recognition of MCS by these agencies will dictate a result different from the current line of cases.

E. Research Recommendations

"MCS is rapidly becoming a politically defined illness in the vacuum created by lack of data."165 To avoid this result, scientists urge that further research on MCS is needed to clarify the etiologic mechanisms of MCS so the existence of a link between chemical exposure and the illness may be credited or discredited.166 Legislators and members of the legal profession are mainly concerned that the lack of evidence on MCS is similar to the asbestos-lung disease controversy which existed several decades ago.167 Thus, the medical field feels it is critical to obtain the medical data necessary to define MCS and decipher its relation to chemical exposure.168 Further, obtaining this data must be done quickly before "medical science becomes irrelevant to the diagnosis, treatment and social policy decisions relating to MCS."169

V. CONCLUSION

What lies ahead for MCS sufferers depends upon research and tests performed by the medical community. The position the legal community takes on emerging sciences mirrors the position of the medical community. Unless clinical ecologists can lessen the skepticism trial judges have as to the testability, definition and cause of MCS, the Daubert test is likely to continue to preclude proffered expert testimony regarding this illness. Considering that Daubert is the least stringent standard for the admissibility of expert testimony, state courts that employ the Frye test are more than likely to exclude this

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165 Sparks, supra note 25 at 728.
166 Id.
167 Id.
168 Id.
169 Id. at 728-29.
type of testimony, at least in the near future. The courts' recognition of the continuation of experimentation on MCS illustrates that if proponents are able to show promising evidence, judges may be willing to exercise their discretion and admit expert testimony on MCS.

A First Circuit court, if faced with a claim for MCS, may be inclined to follow the existing line of cases regarding this issue. The First Circuit is likely to be persuaded by the strong language used by the federal courts regarding the unreliability of MCS testimony. Likewise, state courts who have adopted the reasoning of Daubert are also likely to follow the federal line of cases and refuse to admit expert testimony on MCS to prove causation.

In conclusion, the future of MCS in the courtroom lies in the hands of the researchers of the medical profession. Future research must decipher the inconsistencies surrounding MCS and derive a singular test, definition and etiology for MCS before it will be accepted by mainstream medicine and the legal community.

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