

Medical Expert Witness Review of newer case rulings

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Goals: After completing the reading of this article, the reader should be able to understand the history of key toxic tort rulings in the United States, the current rulings that influence today's decisions, causation theory and what is expected of a medical expert as a result of these decisions.

Introduction

In recent years, increasing concern has been placed upon the credibility of medical expert witness testimony.¹ This review addresses the reasons for this concern and the newer methods being utilized to ensure that a improved quality of medical expert testimony is being provided. This is largely possible due to recent case rulings that resulted in improved judicial guidance as to of what constitutes acceptable expert testimony.

Traditionally the judge makes a decision as to what evidence is admissible and inadmissible to a jury. Beginning with the Frye Decision in 1923², the standards of admissibility dictated that the person suing (Plaintiff) must demonstrate that the scientific tests, methods and techniques on which he/she intends to rely at trial are "sufficiently established to have gained general acceptance in the particular field to which it belongs." The test emphasizes a comparison of members of the relevant scientific community who do or do not consider the proposed scientific test, method, or technique as valid and reliable. Often repeated epidemiologic trails supporting the plaintiff's claim were considered necessary to determine the validity of the plaintiff claim in cases where there was not a clear consensus of opinion or little knowledge of an outcome from a toxic substances. It was difficult for the plaintiff to receive a favorable verdict under these circumstances. Critics emerged through the years that stated that the standards of admissibility under the Frye Decision were too restrictive. In New Jersey, *Rubanick v. Witco Corp.*,³ 593 A. 2nd 733, 739 (N.J. 1991) } stated the "we recognize too that because of the extremely high level of proof required before scientists will accept a new theory...plaintiffs in toxic-tort litigation, despite strong and compelling indicators that they have been tortuously harmed by toxic exposure, may never recover if required to await general acceptance by the scientific community of a reasonable, but as yet not certain, theory of causation." In 1974 Congress enacted a more comprehensive and exacting standard for admissibility of scientific evidence. These were known as the Federal Rules of Evidence (FRE). All federal and many state courts have adopted the FRE, which proved to be more liberal than the Frye. Continued confusion occurred within the courts due to some

vague terminology in the FRE and it was uncertain whether the FRE superceded the Frye or whether both guidelines had to be simultaneously utilized.

In 1993 , an important Supreme Court decision in 1993 significantly influenced the rules of admissibility. In *Daubert v. Merrill Dow Pharmaceuticals Inc.*⁴, the Supreme Court set forth a new test for the admissibility of expert scientific evidence, replacing and rejecting the theretofore-dominant test delivered from the Frye rule on the ground that the test was at odds with the “liberal thrust of the Federal Rules of Evidence and their general approach of relaxing traditional barriers to opinion testimony.”

The test laid down in *Daubert* has two components. First, a court must determine “whether the expert’s testimony reflects ‘scientific knowledge,’ i.e. whether their findings are derived from ‘a scientific method,’ and whether their products amounts to ‘good science.’” Second the court “must ensure that the proposed expert witness 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 of the test is referred to as the “reliability” requirement. the second prong as the “fit” requirement. The Plaintiff, as the proponent of the expert testimony, bears the burden of showing that both prongs are satisfied.⁵

An exception to the *Daubert* can be found on the basis of earlier case rulings In *Summers v.. Ticethe.*⁶ In 1948, in this case, the Supreme Court held that burden-shifting (making the defendant bear the burden of proof) is appropriate under the theory of alternative liability when the plaintiff has sued all of the persons who may have caused her injury, they all acted tortuously and it is certain that one of the defendants actually caused the plaintiff’s damages. This is joint and several not proportionate. The fact that all potential tortfeasors (wrongdoers or defendants) have been joined (sued) is vital to the alternate liability ruling. If not then the *Summers* does not apply.⁷

Reliability

This is the first prong of the *Daubert*. To demonstrate the reliability of proffered scientific evidence, an expert’s “bald assurance of validity is not enough.” Rather, the party presenting the expert must show that the expert’s findings are based on sound science, and this will require some objective, independent validation of the expert’s methodology. The best way for an expert witness to provide independent objective validation is to show that his conclusions are based on his own research and that his research is legitimately scientific. “whether its been subjected to peer review and publication; whether it can be and has been tested; and whether the known or potential rate of error is acceptable.⁸ The next way a proponent of expert testimony can demonstrate its reliability is by showing that, in forming his opinion, the expert relied on research and analysis that have been subjected to normal scientific scrutiny through peer review and publication.”.. The Ninth Circuit Court concludes that “the testimony proffered by an expert when it is based on legitimate, preexisting research unrelated to the litigation, provides the most persuasive basis for concluding that the opinions that he expresses were derived by the scientific method.” Even if the expert did not rely on published, peer-reviewed research in

coming to his conclusions, his testimony is not necessarily unreliable.¹⁰ In this case, the experts must explain precisely how they went about reaching their conclusions and point some objective source-- a learned treatise, a policy statement of a professional association, a published article from a reputable scientific journal or the like--- to show that they have followed the scientific method, as it is practiced by a recognized minority of scientists in their field.”¹¹

FIT

The second prong of the Daubert requires that “the proponent of expert testimony demonstrate that it logically advances a material aspect of the case”. Here to prove causation, a plaintiff must that his/her injuries were caused or exacerbated by the defendant’s products. Under Daubert it must be demonstrated that exposure to the product “actually caused the plaintiff’s injuries or at least more than doubled the plaintiff’s risk of suffering those injuries”¹²

Causation

Under California law ,as in most states, causation is an essential element of strict liability and negligence. “The burden of proof is on the plaintiff to establish that the injuries that they suffered were caused by the conduct of the defendant.”¹³

“The law is well settled that in a personal injury case causation must be proven within a reasonable medical probability based upon competent medical testimony. Mere possibility alone is insufficient to establish a *prima facie* case . . . A possible cause only becomes probable when, in the absence of other reasonable medical reasonable causal explanations, it becomes more likely than not that the injury is a result of the action. This is the outer limit of inference upon which an issue may be submitted to a jury”^{14,15}

Expert testimony is required to establish causation, since this case involves scientific issues that are beyond the experience of the laymen.

“In the absence of factual circumstances of probability understandable by a jury there must be scientific testimony that can be interpreted as an inference of hypothetical probability before we can allow a jury to speculate upon the rights of citizens”¹⁶

A Plaintiff’s own testimony about her exposures to substances or products by arguing for an inference of causation from “the totality of the circumstances” is not acceptable.¹⁷

In order to prove that a defendant’s conduct was the cause, in fact, of her injuries, a plaintiff must establish that such a conduct was “a substantial factor in bringing about her injury. “¹⁸ To withstand summary judgment the plaintiff must present evidence form, which a rational jury could find such a reasonable medical probability as to that defendant’s conduct.

The necessary foundations for the Court in hearing toxicology cases are that a summary of the scientific literature is presented discussing evidence that the particular chemicals can cause particular injuries. Plausibility does not equal reliability; only ‘objective independent validation’ equals reliability.

Relying on scientific literature involving individuals with similar health problems who were injured not with the toxic substance in the particular case but other chemicals or the development of other medical problems then specified for the said toxic substance would invalidate the plaintiff's claim.

In order for animal studies utilized to prove causation in humans, there must be good grounds to extrapolate from animals to humans, just as the methodology of the studies must constitute good grounds to reach conclusions about the animals themselves. The requirement of reliability or 'good grounds' extends to each step in an expert's analysis all the way through to the step that connects the work of the expert to the particular case.¹⁹

Reliance on chemicals other than those which plaintiff alleges injured her and on the ability of her alleged toxic chemical to produced damage or injuries other than documented in scientific documentation has been addressed in *Valentine v. Pioneer Chlor Alkali Co.*²⁰ In that case central nervous injuries were attributed to chlorine gas exposure. The Court concluded that while the disastrous effects of chlorine gas on the pulmonary system are "not reasonably capable of question" the "expert's claim regarding the effects of chlorine on the nervous system are novel and unsupported by scientific literature extraneous to this litigation." Also see *Grimes v. Hoffman-La Roche, Inc*²¹ or *Casey v. Ohio Medical Prods.*²² (study showing link between halothane and cirrhosis is not reliable scientific evidence of causal link between halothane and chronic active hepatitis.)

Causation methodology

When a medical scientist wants to solve a problem of causation he would utilize a hypothesis-deductive reasoning method. He would follow certain steps to logically obtain the answer including defining an outcome or end point, establishing an experimental model to prove his hypothesis, determining proper strength to the model and identify confounders, biases and establish that his findings are statistically validated. In legal matters, as is so within one's everyday medical practice, it is more common to use inferential logic and inductive reason. This is done not by direct testing of the hypothesis, but by evaluating the literature to review the animal and human studies pertinent to a particular injurious agent in a toxic tort to determine probabilistically (beyond reasonable medical probability or more likely than not) whether the toxic agent was the cause for the plaintiff injury.

Toxicology is the science of the study of adverse effects of chemical or physical agents on living organisms. Not all chemical agents have been though ugly studied in regard to their health effects. This is especially true for long-term human studies and for mixtures of chemical compounds. This leaves room for reasonable doubt in certain circumstances. Direct evidence may at times be lacking for a toxic relationship to the plaintiff's specific alleged injuries. in the peer reviewed literature. If the animal studies, in addition to the human data regarding the specific toxic substance permits one to draw the conclusion that the cumulative totality of medical evidence beyond reasonable medical probability is the cause of the plaintiff injuries and the scientific method was utilized in drawing the expert's conclusion.

The medical expert should ask three questions about toxic tort causation:

- **Can it?**
- **Will it?**
- **Did it?**

It should be emphasized that If the chemical can and will, it does not automatically mean that it did.

From a toxicologists' point of view one must not fall in the trap that because a series of events follows a specific exposure or incident, the first incident (or exposure) is the cause of the subsequent events. This is known as post ergo propter hoc. Rather it is better to use Sackett's Rules of Causation. In decreasing order of importance, these are:

- 1. Is there evidence from true experiments in humans showing causation?**
- 2. Is the association strong?**
- 3. Is the Association consistent from study to study?**
- 4. Is the temporal relationship correct?**
- 5. Is there a dose-response relationship?**
- 6. Does the association make epidemiological sense?**
- 7. Does the association make biological sense?**
- 8. Is the association specific?**
- 9. Is the association analogous to a previously proven causal association?**

Multiple Chemical Sensitivity Issues

In Sanderson v. International Flavors and Fragrances Inc., the plaintiff alleged that her physical damage resulted for repeated exposure to perfumes in part related to specific types produced by the defendant. A result of this plaintiff's injury was the development of multiple chemical sensitive (see table 1) The court ruled in favor of summary judgment citing a number of factors. "While a jury could probably find that the defendant's products were a substantial factor in causing her illness, plaintiff has no evidence whatever from which a jury could find any particular defendant's products were. The pleadings in this case were important enough to permit a more detailed review.

(a) The Plaintiff argued that the Court should adopt a "common sense" lay interpretation of causation. This fails under California law as an expert witness on causation is required. This argument equates symptoms with injury but her experts testify that they cannot say that she was injured each time she experienced a symptom.

(b) The Plaintiff requested on fairness that the shift of burden of causation should be placed upon the defendant. She asked the court to apply some type of market share theory of liability. The Court concludes that such burden shifting is limited to

cases meeting the criteria of either Sindell or Summers.^{24 25} These were not met in this case.

In Sanderson, the principal expert for the plaintiff was Dr. Thrasher. Dr. Thrasher used the following criteria to draw his conclusion regarding causation.

(1) was the patient exposed to the toxic substance? (2) was the person exposed to enough of the substance to make an injury? (3) is there a temporal or other relationship between the exposure to the toxic chemical and the development of the physical symptoms? (4) have other possible causes for the physical symptoms been ruled out? (5) have the physical symptoms been tied to objective medical evidence of abnormality? (6) are all the patient's symptoms and lifestyle changes taken as a whole consistent with other cases of known chemical injury? The court ruled that such thinking is not valid. The plaintiff bears the burden of showing that Thrasher's rules are being practiced by a recognized minority of scientists in their field. Daubert on remand 43 F. 3rd at 1319. There is no reliable evidence that aldehydes in fragrance causes MCS or other injuries alleged by the plaintiff. There must be scientific evidence for a causal connection.

In Sanderson v. International Flavors and Fragrances, Inc., etc. LEXIS 15942 1996 U.S. Dist. CV-95-3387 SW, the summary judgment ruled that apart from the Daubert problems afflicting the plaintiff's experts testimony more broadly, "no testimony regarding multiple chemical sensitivity (MCS) should be admitted because there is no reliable evidence that MCS exists as a physiological illness." The Court agreed that the plaintiff's expert's testimony regarding MCS must be excluded under the Daubert. This is important because this case represents, to the best of my knowledge, the first time that multiple chemical sensitivity was specifically addressed in a Daubert proceeding.

Other issues that may apply not just to MCS cases but other types medical expert testimony include the following statements from Sanderson: Since many of the symptoms of MCS are subjective, the expert is prone to repeat the plaintiff's opinion. If the Court interprets the expert's answer as an attempt to adopt the plaintiff's opinion, it's not admissible expert opinion testimony. ("an expert testimony that merely repeats a layperson's oral history is no more than {lay} testimony dressed up and sanctified as the opinion of an expert.")²⁶

In regards to the defendant providing a substantial factor in causing the plaintiff's injuries, a 'mere possibility' is not enough.^{27 28} Unless plaintiff is somehow relieved by expert testimony that each defendant caused her to suffer injury, she cannot recover against any of them.

In the case of a suit against a number of companies due to different fragrance exposures the Court stated that unless the case meets the criteria for market-share liability, "exposure to fragrance products" does not "necessarily include defendants' fragrance products."

Even if the temporal connection could suffice to prove that defendants' products caused her to experience certain symptoms, it does not suffice to prove that defendant's products caused her MCS, toxic encephalopathy, reactive airways disease or other symptoms.

Plaintiff states that "How many thousand times does plaintiff need to develop symptoms immediately following exposure to fragrance products for an expert or a

layman with the assistance of expert testimony to find that the relationship is more than one of possible coincidence?" Court replies that that is the wrong question: even if plaintiff symptoms upon exposure to products an infinite number of times, that wouldn't get her anywhere. To hold the defendant liable, a plaintiff has to prove that the defendant's conduct was a substantial factor in causing her injuries. This case did not meet the Sindell criteria for market share liability or the Summers criteria for alternate liability.

Multiple chemical sensitivity is a catch 22. In the Worker's Compensation arena claims have been won at the adjudicative level. Such a system varies from one state to another and requires upon its own body of law using civil decisions as a general guideline but not relying on the Daubert. Since some of these claims then proceed to civil trial, the medical expert or designated doctor is obligated to follow the basic tenants of the Daubert. The medical expert may personally acknowledge that Multiple Chemical Sensitivity cases exist and that not all cases are psychologic, but since no reproducible widely accepted objective test is available to measure the disorder if it does not meet the prongs of Daubert. The only possible defense that may be if value is as follows: (a) A majority of learned treatises from recognized scientists in the field are opposed to clinical ecology methodology and such treatments and philosophy should be separated from the phenomenon of Multiple Chemical Sensitivity. (b) Articles in the peer reviewed medical literature vary from denying the existence of this disorder entirely to acknowledging that the entity is present though poorly understood and most likely having psychological roots. Thus there is no precise agreement amount all experts about whether we have an entity or not. (c) Some entities are predominately subjective in medicine. Would the physician dismiss every migraine patient as a non-entity simply because their symptoms were subjective. Thus the literature acknowledges that MCS are suffering just as a migraine patient would suffer. (d) Even if the patient developed an acquired toxic agoraphobia as Kurt proposes that is still a serious and potentially incapacitating psychiatric entity. Are subjective psychiatric syndromes any less harmful or medically incapacitating than more easily demonstrable medical illness? MCS thus could be equated with an acquired conditioning response resulting in a phobia. A psychiatrist would be required to discuss the nature of learned helplessness but the kindling response, conditioning and the pathophysiology of stress, fear, phobias and panic disorders.

(e) The learned treatises and expert panels and opinion of professional organizations in regard to MCS are flawed according to statisticians at John Hopkins University. All significant studies dealing with this entity that the medical experts rely upon are statistically flawed many times seriously. All showed prejudice to begin with. A statistician would be the best expert to examine this data and confirm or communicate with the team at John Hopkins.

A toxicologist will usually not be reliable in these cases as his literature universally denies the entity. Occupational physicians vary, as does their formal literature. Their position statement (ACOEM) basically states that if this entity is present it will be up to its proponents to prove it. Some newer Occ med literature acknowledges that the entity is encountered in Occ med clinics with increasing

frequency and supportive care nonjudgementally is required to assist these patients with avoidance from the offending substances.

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