

High court changes evidence rules

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The outcome of your next personal injury case may be decided by what kind of scientific evidence the judge allows in the courtroom. As of June 1993, the U.S. Supreme court changed the rules about such evidence, in a decision that has paradoxically been called both a victory for what critics call junk science and a gate to keep such non-mainstream opinions out of the courts.

For example, consider a plaintiff who dies from a rare form of small-cell colon cancer allegedly caused by exposure to nickel and cadmium fumes while working at a battery manufacturing facility.

One of the major questions to be answered is "What caused the cancer?" As with many types of cancers and suspect substances, mainstream medical literature and textbooks will say that no scientific link has been demonstrated. In your case, the plaintiff has located an expert willing to testify that the cancer was more probably than not caused by exposure to cadmium and nickel. The stage has just been set for a classic scientific confrontation in the legal system.

Will testimony that falls outside the general scientific consensus be allowed to buttress the plaintiff's case? It may depend on whether a judge would ever let a jury hear that expert. Besides the recent Supreme Court case, which influences the future of such decisions, there are also evidence rules in all 50 states and the federal court system that govern the admissibility of expert witness testimony. Through use of this colon cancer example, this article will give you a practical overview of how the latest court battle over junk science might affect your day-to-day work.

The Daubert ruling:

There have been thousands of claims filed on behalf of children with birth defects allegedly caused by their mothers' use of a morning sickness drug called Bendectin. The suits were filed even though no epidemiological study has ever shown a statistically significant link between Bendectin and birth defects. In spite of the negative studies, Jason Daubert recently sued Merrell Dow Pharmaceuticals in California claiming Bendectin caused his birth defects. Eight experts with substantial credentials testified "more probably than not" that Bendectin caused Jason's birth defects.

But a federal court in California and the Ninth Circuit Court of Appeals refused to let Jason's experts tell their causation theories to a jury.

The primary reason was that Jason's experts were not espousing

theories that were generally accepted by the scientific community. The theories had not even been turned into studies published in scientific peer-reviewed journals.

But in June, the U.S. Supreme Court ruled in favor of Jason and overruled a 70-year-old case (*Frye v. United States*)² that required all testimony to be based on scientific principles that are "sufficiently established to have gained general acceptance" in the scientific community. A plaintiff doesn't have to show that his scientific evidence would be generally accepted in the relevant scientific community. The Supreme Court has now ordered federal court judges to screen expert testimony so they make sure it is at least supported by "scientific knowledge" and that there are "good grounds" for the expert's opinions based on what is known about that area of science.

The new law of the land is *Daubert*³, which states that the "more liberal" Federal Rules of Evidence provide the only standards for scientific testimony in a federal trial. (Because many states have adopted the Federal Rules of Evidence, the effect of *Daubert* will definitely extend beyond the federal court arena.)

If a scientific theory or process doesn't have to attain general acceptance before someone can testify about it, are you facing a future where "junk science" and "scientists-for-hire" will run rampant in the courtrooms? Let's look at our example.

Colon cancer and the new evidence rule

In our example, the plaintiff's expert intends to string together a series of inferences to reach his opinion that the cancer was caused by cadmium and nickel on a more probable than not basis. Specifically, the expert will argue that:

- * Nickel and cadmium are definitely known to cause cancer of the lung, prostate, and renal system; and
- * Research suggests there is an association between nickel, cadmium, and small-cell lung cancer; and
- * Plaintiff's colon cancer is a small-cell type; and
- * Small-cell carcinomas look the same whether they are in the lung or elsewhere; and
- * Small-cell cancers are linked to abnormal alterations of genetic materials; and
- * One mechanism of nickel and cadmium carcinogenicity is alteration in DNA synthesis; and
- * Nickel and cadmium can cause small-cell colon cancer; and
- * Plaintiff had a twenty-year history of extensive exposure to nickel and cadmium; thus
- * Plaintiff's cancer was probably caused by nickel and cadmium exposure.

When plaintiff couples that chain of reasoning with the jurors' inclination to believe that all chemicals harm people in some way, the ground is laid for a generous financial recovery. Will a court

allow that testimony to be heard by a jury?

A common way for questions about the merits of expert testimony to come before a judge for resolution is through a motion called summary judgment.

No jury is present. The lawyers simply present excerpts from transcripts, copies of medical articles, information about plaintiff's exposure and medical conditions, affidavits from experts, and the like. The defense lawyers who file the motion try to explain to the judge why plaintiff's expert's testimony doesn't meet the proper legal standards.

To allow the testimony in, the trial court must find that the expert is testifying based on "scientific knowledge" and that there are "good grounds" for the opinions. The Supreme Court explained that the word "scientific" means "a grounding in the methods and procedures of science." In addition, the word "knowledge" means "more than subjective belief or unsupported speculation." It is very important to understand that, as long as the expert has good grounds for his scientific opinions, a court is not permitted to throw out the testimony just because the ultimate opinion might not make sense. The entire focus of the court is on the underlying data and the methodology by which the data are analyzed.

Underlying data

In the colon cancer case, the defense attorneys might be able to show the judge that the expert was basing his opinions on factual data that were simply wrong. Thus, exposure issues must be explored in detail during the case work-up. Most experts will agree during depositions that the level and duration of exposure are important in evaluating the effects of toxic exposures. Nevertheless, an expert may have relied on erroneous information that vastly overstated the level, duration, and even nature of the plaintiff's exposure.

In the actual colon cancer case, instead of twenty years of "extensive exposure", the defense attorneys showed fewer years of exposure, fewer times per week plaintiff was in a nickel/cadmium area, and brief exposures in that area where there was good ventilation. The correct data dramatically decreased the presumed amount of exposure, proving that the expert had overestimated by at least 50%.

Simply attacking basic facts is one of the easiest and most persuasive ways of convincing a court to throw out the expert testimony.

Methodology

Assuming that the expert is relying on reasonably accurate facts, it is important to make sure the expert uses those facts properly. The colon cancer expert was asked about and had agreed in his deposition that the results of human epidemiological studies, live animal

testing, and in vitro testing yield the types of information most often used to establish causation. Nevertheless, he didn't actually rely on any of them for his opinions. As a result, the method by which he reached his opinion wasn't scientifically or legally valid. The expert's assumption that, since nickel and cadmium had been associated with cancer in the lung it was therefore associated with cancer of the colon, constituted nothing more than a hunch.

In certain types of cases, it would be important to determine whether an expert's theory or technique had ever been tested. The colon cancer expert had never performed his own study proving the relationship, nor did he even have his theories published in any scientific journals.

In other instances, the nature of the expert testimony might call into question any known or potential error rates in the method relied on. Say the colon cancer expert had attempted to quantify the tissue burden of cadmium and nickel at the time of plaintiff's death. There may be a serious error rate in extrapolating a particular result from 5 grams of tissue to a total body burden that may render the results unreliable.

A court might also consider under some circumstances whether there are any standards that govern the expert's technique or theory. To diverge from the colon cancer example briefly, there are counting methods specified by NIOSH for asbestos-containing air samples but not for counting particles collected on the sticky part of a Post-it[®]; note. The lack of a standard may undercut the "good grounds" for the expert's testimony.

Daubert actually still allows for consideration of "general acceptance." As the Supreme Court explained, a known technique or theory that has been able to attract only a minimal support within the relevant scientific community can be viewed with skepticism by the trial judge.

Under the information as presented above, a court probably should throw out the colon cancer expert's testimony. (In the real case, the testimony was excluded and defendant's summary judgment motion granted. However, the decision to exclude the testimony was far from unanimous.)

The future

Predictions about the future of litigation under Daubert are wide-ranging.

For example, the June 29, 1993, Wall Street Journal stated,

The Supreme Court rejected a fixed standard that has been widely used by federal judges to keep scientific evidence out of personal injury lawsuits and other trials. The unanimous decision was a defeat for business and the medical professions, which have argued for years that they are subjected to countless consumer lawsuits based on dubious scientific evidence.

Just two weeks later, that same newspaper trumpeted,

The Supreme Court just dealt a potentially lethal blow to junk science evidence in the courtroom. In Daubert..., the court rejected the "let-it-all-in" philosophy advocated by the plaintiff's attorney. The court instead emphasized that the Federal District Court must act as "gatekeepers" and exclude evidence that is not scientifically reliable.

P. Arley Harrel, Co-Chair of the Product Liability Committee of the American Bar Association Section of Litigation, suggests that Daubert not have much impact, particularly in states such as Washington, which have already blended Frye with rules similar to the Federal Rules of Evidence. Harrel also points out how many courts already felt they had authority to act as gatekeepers and will continue to do so. Still, Daubert may be more helpful to defendants ultimately because of the set of guidelines given by the Supreme Court for evaluating scientific testimony.

There is no question but that plaintiffs will actively shop for judges and jurisdictions that have proven tendencies to be liberal when admitting scientific evidence. For example, the Third Circuit (which encompasses such states as Pennsylvania), has long been at the forefront of laxity in allowing junk science. Defendants are especially likely to face important test cases in such jurisdictions.

The next few years will be unsettled ones in the medical-legal arena. The Supreme Court acknowledged there are important differences between the quest for truth in the courtroom as opposed to the quest for truth in a laboratory. If judges take the activist role in controlling non-mainstream science encouraged in Daubert, courtrooms themselves could turn into laboratories of a sort. How the experiment will turn out is anyone's guess.

ISSUES OF INJURY

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