UNITED STATES DISTRICT COURT

DISTRICT OF MAINE

CYNTHIA KROPP, *et al., as next friend and on behalf of S. Kropp,*	)	
Plaintiffs,	)	
v.	)	Civil No. 06-81-P-S
MAINE SCHOOL ADMINISTRATIVE UNION # 44, et al.,	)	
Defendants.	)	

MEMORANDUM OF DECISION

S.K. is a sixth grade student at Wales Central School in Wales, Maine. Her parents brought this lawsuit on her behalf against School Union # 44, its superintendent, and the principal of the Wales Central School. In a fourteen-count complaint S.K. and her parents claim various violations of the Americans with Disabilities Act, the Rehabilitation Act, and the Maine Human Rights Act, as well as a tort claim for intentional infliction of emotional distress, all arising from the defendants' alleged failure to reasonably accommodate S.K., who suffers from allergic reactions and asthma allegedly aggravated by environmental factors at the Wales Central School.

Currently before the court are two related motions: (1) defendants' motion to exclude expert testimony from Dr. Glass, S.K.'s primary treating physician, relating to multiple chemical sensitivities and (2) a responsive motion by the plaintiffs for a more definite statement regarding the motion to exclude, brought pursuant to Rule 12(e) of the Federal Rules of Civil Procedure. (Docket Nos. 30 & 39.) Oral argument held before me in Portland, Maine, on December 15,

2006, clarified the scope of the dispute between the parties as to the nature of the expert testimony defendants seek to exclude. Therefore, without discussing the merits of defendants' procedural arguments concerning the use of Rule 12(e) in this situation, I am dismissing Docket No. 32 as moot because the plaintiffs are now fully apprised of what evidence the defendants seek to exclude.[1] In particular, defendants' counsel indicated at oral argument that she is *not* arguing that expert testimony regarding S.K.'s allergies to mold, pollens, pet dander or other scientifically-recognized environmental allergens should be excluded. Rather, the defendants are asking the court to exclude evidence of the aborted methacholine challenge test[2] and the resulting "phenol sensitivity" opinion put forth by Dr. Glass, which is based upon the aborted test, the "clinical" follow up undertaken when phenol was deleted as an ingredient in S.K.'s allergy shots, and Dr. Glass's observations of S.K.'s progress following the removal of "phenol related" products from the parents' home.

The Applicable Legal Standard

In Daubert v. Merrell Dow Pharmaceuticals, Inc., 509 U.S. 579 (1993), the Supreme Court discussed the gate-keeping role federal judges play under Rule 702 in screening from

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[1] Also under advisement is the defendants' motion for summary judgment. (Docket No. 32.) I have concluded that the motion for summary judgment, while containing record evidence helpful to an understanding of these two related motions, does not depend upon the outcome of an order on the motion to exclude.

[2] A methacholine challenge test calls for a controlled introduction of methacholine, a known agonist,(a molecule that binds to a receptor in the lungs and triggers a response) to the patient's lungs through inhalation of an aerosol (or "nebulized solution") containing progressively larger doses of methacholine. The first round of the challenge calls for the patient to inhale a nebulized saline solution that does not contain methacholine, in order to determine the patient's FEV_1 baseline ("forced expiratory volume in one second," the volume in liters that the patient can forcefully exhale in one second). Subsequently, methacholine is introduced in gradually larger doses to measure the degree of asthmatic reaction based on the drop in the patient's FEV_1 measures. A 20% drop is significant. In this case, S.K. did not make it to the methacholine stage of the challenge. She demonstrated a marked response to just the saline solution. The nebulized saline solution (or diluent) in this case consisted of a saline solution containing some phenol or phenol compound (described as phynol). Successful pulmonory function testing depends on patient cooperation and, therefore, the FEV_1 test is normally repeated three times to ensure reproducibility and an accurate baseline measure.

introduction in evidence expert testimony that, although relevant, is nevertheless based on unreliable scientific methodologies. Id. at 597. That role is "to ensure that an expert's testimony 'both rests on a reliable foundation and is relevant to the task at hand.'" United States v. Mooney, 315 F.3d 54, 62 (1st Cir. 2002). In General Electric Co. v. Joiner, 522 U.S. 136 (1997), the Supreme Court explained that a judge exercising this duty must evaluate whether the challenged expert testimony is based on reliable scientific principles and methodologies in order to ensure that expert opinions are not "connected to existing data only by the *ipse dixit* of the expert." Id. at 146. To aid in this task, the Court assigned the following non-exclusive, four-factor standard:

> (1) whether the theory or technique can be and has been tested; (2) whether the technique has been subject to peer review and publication; (3) the technique's known or potential rate of error; and (4) the level of the theory or technique's acceptance within the relevant discipline.

Mooney, 315 F.3d at 62 (citing Daubert, 509 U.S. at 593-94). In addition to these factors, the trial court may consider other factors that are probative of reliability in light of the particular facts and circumstances of the case at hand. Id. Ultimately, the proponent of the expert testimony must simply establish that it is reliable. The proponent is not required to prove that the expert's opinion is correct. Id. at 63. "Once a trial judge determines the reliability of the expert's methodology and the validity of his reasoning, the expert should be permitted to testify as to inferences and conclusions he draws from it and any flaws in his opinion may be exposed through cross-examination or competing expert testimony." Brown v. Wal-Mart Stores, Inc., 402 F. Supp. 2d 303, 308 (D. Me. 2005). "Vigorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof are the traditional and appropriate means of attacking shaky but admissible evidence." Daubert, 509 U.S. at 596.

If the claimed "phenol sensitivity" opinion offered by Dr. Glass is but a sub species of a multiple chemical sensitivity ("MCS") diagnosis, it is helpful in framing the legal standard to look at how other courts have dealt with similar expert opinions. In Coffin v. Orkin Exterminating Co., Inc., 20 F. Supp. 2d 107 (D. Me. 1998), the court noted that: "Every federal court that has addressed the issue of admissibility of expert testimony on MCS under Daubert has found such testimony too speculative to meet the requirement of 'scientific knowledge.'" Id. at 110 (quoting Frank v. State of New York, 972 F. Supp. 130, 136-37 (N.D.N.Y. 1997)). The Coffin court granted the defendant's motion in limine to exclude testimony concerning the plaintiff's alleged MCS diagnosis, and as a result granted summary judgment to the defense. Other federal courts that have considered the issue have also ruled that evidence of MCS is inadmissible because it does not meet the Daubert standard. See, e.g., Gabbard v. Linn-Benton Hous. Auth. , 219 F. Supp. 2d 1130, 1134 (D. Or. 2002) (collecting cases).

Discussion

In Dr. Glass's expert opinion, S.K.'s inability to complete the methacholine challenge test and S.K.'s subjective report that she felt less tired when she was given allergy shots that did not contain phenol are sufficient when taken together with the adjustments made to S.K.'s home and S.K.'s reported improvement thereafter, to support the conclusion that S.K. has a hypersensitivity to environmental phenol, such as the vapors that might be found at a school following the use of cleaning agents or paints that contain any amount of phenol. According to Dr. Glass, S.K.'s

allergies are aggravated by the presence of phenol in the air she breathes.[3] This claimed phenol sensitivity relates to the facts of this case because, among other accommodations sought by S.K.'s parents, they requested that the school use only "green" phenol-free cleaning agents throughout the school and perform certain tests to determine if the new paint used at the school contains phenol. The school failed to completely provide these accommodations, although the defendants maintain that S.K.'s classroom is now cleaned with phenol-free cleaning agents.

Dr. Jonathan Musmand, M.D., defendants' medical expert, expresses the opinion that the methacholine challenge test does not establish phenol sensitivity on the part of S.K. He is also of the opinion that phenol-induced asthma is not supported by the medical literature. (See Musmand Aff., Docket No. 51). Neither Dr. Glass nor any of S.K.'s other treating physicians has produced any medical literature supporting the concept of phenol-induced asthma.[4] No one seriously contends that the methacholine challenge test is designed to test for a phenol allergy. Nor does it appear that Dr. Glass takes issues with Dr. Musmand's opinion regarding the incomplete nature of the methacholine challenge test and, by extension, its unreliability as a diagnostic tool for S.K.'s asthma. Nor does Dr. Glass claim to be a qualified pulmonologist able to read the methacholine challenge test results. The dispute is whether Dr. Glass should be

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[3] Dr. Glass also opines that S.K. has a longstanding hypersensitivity to fluorocarbons and hydrocarbons in the atmosphere, (Defs.' Statement of Material Facts ¶ 62) as well as "multiple chemical sensitivities" (Glass Dep. at 114-15). Although defendants' motion originally targeted this "diagnosis," plaintiffs' counsel clarified in his response (Docket No. 38) and at oral argument that he does not intend to offer Dr. Glass's diagnosis of multiple chemical sensitivities. The crux of this dispute is that defendants' counsel says that opining about a hypersensitivity to phenol is the same thing as offering a diagnosis of "multiple chemical sensitivities." Plaintiffs' counsel maintains that the phenol sensitivity diagnosis has a trustworthy scientific etiology, just as does the opinion testimony concerning asthma and allergies to other environmental allergens that the defendants have conceded Dr. Glass is qualified to offer.

[4] This point may be a bit of a red herring. It is not clear to me that Dr. Glass claims the phenol sensitivity aggravates S.K.'s breathing related asthma problems. It appears that S.K.'s reaction to "chemical allergens manifested itself as confusion, sleeping more, and difficulty processing." (Malinski Dep., Ex. 12). On the other hand, in the summary judgment record, Dr. Glass opines that chemical allergens such as phenols and hydrocarbons are known to bind to the smooth muscle in the respiratory tract and damage them by depleting their chemicals, a reaction improved by the use of asthma medications. (Bourgoin Dep. Ex. # 6). The scientific basis for this opinion is never explicated in either record, to the best of my knowledge.

allowed to opine that the methacholine challenge test, as buttressed by the "double blind" study involving removal of the phenol solution from S.K.'s allergy shots and circumstantial home improvement evidence, demonstrates that S.K. has a hypersensitivity to environmental phenol such that exposure to any amount of environmental phenol in the school setting will aggravate her allergies.

According to the Agency for Toxic Substances & Disease Registry ("ATSDR") of the United States Department of Health and Human Services, phenol is both a manufactured chemical and a natural substance used in a number of consumer products. Internal or external tissue exposure to concentrated phenol is likely to result in burns. The commercial product is in a liquid form and has a distinct odor that is sickeningly sweet and tarry. A person can taste and smell phenol at levels lower than those that are associated with harmful effects. Phenol is used commercially as a disinfectant and antiseptic, and in medicinal preparations such as mouthwash and sore throat lozenges. Phenol can have beneficial effects when used medically as an antiseptic or anesthetic. People are routinely exposed to low levels of phenol in the home in a number of consumer products, including some foods such as summer sausage, fried chicken and mountain cheese, and phenol can be present in low levels in air and drinking water. Smoking or inhaling second hand smoke will also expose one to phenol. Short-term exposure to phenol in the air can cause respiratory irritation, headaches and burning eyes, but the effects of prolonged exposure to low levels of phenol are uncertain because almost always there has been simultaneous exposure to other chemicals. Phenol is not classifiable as to its carcinogenicity to humans. Governmental agencies such as the Environmental Protection Agency, the Occupational Safety and Health Administration, and the National Institute for Occupational

Safety and Health have recommendations regarding the concentration of phenol in water and air.[5]

In the present case neither side offers any scientific evidence about the concentration of phenol in school air or water. Thus, there is no way to compare the phenol concentration to the recommended levels developed by the agencies. The two instances of alleged "phenol induced" reactions on S.K.'s part involve two dissimilar exposures. The allergy shots, which were routinely suspended in a phenol solution and injected directly into S.K.'s body, produced lethargy, according to S.K. When, unbeknownst to her, the phenol was removed from the injection by her allergist, those symptoms were reduced and she felt better after her shot. The preliminary stage of the methacholine challenge test, which involved inhalation of a mist of phenol-containing saline solution, produced an irritation to the airways and a breathing problem. Dr. Glass draws the conclusion that these two discrete events "prove" that S.K. is hypersensitive to phenol and she deduces that any level of phenol in the school environment would likewise produce a negative reaction in S.K. Dr. Glass also notes that S.K.'s parents built a new, allergy free home with specially treated furniture and wood, presumably removing phenol products, and S.K. responded favorably to the new environment. Of course, a variety of other chemicals and environmental allergens, including pets, were removed from the home as well.

S.K., her parents, and Dr. Glass have all drawn the inference that S.K. must be hypersensitive to phenol based upon the circumstantial evidence outlined above. However, it is not an inference based upon adequate scientific data, testing, or methodology and therefore it is

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[5] The background information concerning phenol comes from a website containing fact sheets or summaries about hazardous substances authored by the Department of Human Services Agency for Toxic Substances & Disease Registry. See ToxFAQs™ for Phenol (Sept. 2006, updated Dec. 13, 2006), http://www.atsdr.cdc.gov/tfacts115.html#bookmark02. The record developed by the parties surrounding these motions does not contain much detail about phenol itself, although it contains scientific information about the methacholine challenge test and the diagnosis of multiple chemical sensitivities. The summary judgment record, specifically the Lajoie-Cameron Deposition Ex. 27 (filed under seal), includes helpful information concerning the ubiquitous nature of the phenols or phenol containing compounds.

not a proper subject for expert testimony. Assuming the "double blind" test involving the injections has some scientific validity, there is no scientific correlation between that event and the claim that exposure to low levels of phenol in school air aggravates S.K.'s allergies. Likewise, the evidence from the methacholine challenge test, "suggestive of a very severe nonspecific airways hyperreactivity" (Ramser Report, Feb. 11, 2005), does not scientifically prove a hypersensitivity to phenol. The reason for the hyperreactivity remains a scientific unknown based upon this record. There is no scientific measurement of the phenol reduction in the new home and no evidence of what other chemicals might also have been eliminated from the environment.

Ultimately, I agree with the defendants that Dr. Glass's opinion regarding phenol sensitivity is simply a diagnosis of "multiple chemical sensitivities" repackaged as a hypersensitivity to a single, ubiquitous chemical. According to the defendants' own submissions, "the view that some patients are allergic to or intolerant of environmental substances is not in itself controversial." The problem, according to the defendants' submission, is "[n]o evidence based on well-controlled clinical trials is available that supports a cause-and-effect relationship between exposure to very low levels of substances and the myriad symptoms purported by clinical ecologists to result from such exposure." (Council on Sci. Affairs, Clinical Ecology, JAMA, Vol. 268, No. 24, Dec. 23/30, 1992, Docket No. 31, Ex. 4.) The plaintiffs do not dispute the defendants' submissions with their own scientific journals or evidence of well-controlled clinical trials or tests regarding phenol sensitivity, but rather rely upon the *ipse dixit* of Dr. Glass.

In Treadwell v. Dow-United Technologies, 970 F. Supp. 974, 980-984 (M.D. Ala. 1997), the court encountered a similar, but distinguishable, line of testimony from Dr. Brown, the plaintiff's treating physician. Dr. Brown, like plaintiffs' counsel in this case, attempted to

distance himself from the MCS diagnosis, qualifying it by saying, "I wouldn't go so far as to say that it was just 'multiple' but she's allergic to many compounds that contain phenol and formaldehyde." Id. at 982. The court ultimately ruled inadmissible "any evidence offered by Dr. Brown propounding a diagnosis of multiple chemical sensitivity, as well as causes and treatments grounded in the etiology of MCS and clinical ecology." Id. However, the court admitted Dr. Brown's opinion that Treadwell was hyperreactive when exposed to formaldehyde based upon the result of an intracutaneous provocation test, physical examination of the patient, the positive results of patch tests administered by a different physician, patient history, and the results of a skin irritation test. The court further noted in a footnote that Dr. Brown's findings regarding phenol would be subject to the same analysis as his findings concerning formaldehyde, but unfortunately the opinion does not discuss any such technical findings regarding phenol. Id. at 983, n. 11. What tipped the balance in favor of allowing Dr. Brown's testimony regarding the formaldehyde allergy was that his diagnosis was based upon "scientifically valid [methodologies], having been subjected to positive peer review and publication, and are considered reliable by medical specialists in the area of otolaryngic allergy." Id. at 982. The court specifically rejected the defendants' reliance upon the fact that Dr. Brown could not produce any published work that suggested the substance in question had ever caused or was even capable of causing the alleged injuries. Id. at 983.

I apply the same analysis to Dr. Glass's testimony in this case. The fact that the plaintiffs can produce no studies showing that phenol has ever caused an allergic reaction does not, in and of itself, render the opinion inadmissible. Nor does the mere fact that other courts have found the MCS diagnosis, a close cousin to Dr. Glass's phenol sensitivity diagnosis, to lack scientific reliability, mean that Dr. Glass should necessarily be barred from offering this opinion.

Scientific knowledge evolves over time, and if scientific methodologies are applied in new ways, different tests are employed, and new conclusions reached, testimony concerning such methodologies and the findings they produce may well be admissible even if the broader scientific community has not yet reviewed or accepted them. This record does not contain any such breakthrough relating to phenol sensitivity. We are left with one physician's inferential conclusions formed all but entirely on the basis of her patient's report of subjective symptoms under uncontrolled conditions, without the aid of any reliable scientific methodology or data, such as clinical studies, objective allergy tests, or medical literature.

Accordingly, what renders this opinion inadmissible is that Dr. Glass, unlike the doctor in Treadwell, does not rely upon scientifically valid methodologies or data in reaching her conclusion that S.K. is hypersensitive to phenol vapors in the school air. There are no patch tests, intracutaneous provocation tests, or skin irritation test results for phenol in this record. Plaintiffs' counsel argues that the "blind test" involving the phenol injections somehow transforms Dr. Glass's opinion from being identical to the suspect MCS diagnosis into a diagnosis based upon scientific methodology akin to the opinion testimony allowed in Treadwell. I will accept S.K.'s argument that a patient's history of subjective complaints is a valid diagnostic tool and that its importance goes to weight rather than admissibility. However, even if I assume that some scientific validity attaches to the "blind test" involving the phenol-based injection, there is no scientific evidence to provide any correlation between that event and allergies or asthma triggered by unknown levels of phenol present in the air at the school. Dr. Glass makes that leap based on the same sort of inferential reasoning that any lay person might employ in reaching the same conclusion. "Global warming" has not become an accepted scientific theory because someone observed that more carbon dioxide had been released into the atmosphere and

the winters were getting warmer, voila, cause and effect are established. Dr. Glass's diagnosis of phenol hypersensitivity is nothing more than a restatement of a multiple chemical sensitivity diagnosis, narrowed to one particular chemical that has multiple environmental and medical uses. The essence of her opinion is that any exposure to phenol in any form is likely to produce a multitude of symptoms in S.K., ranging from lethargy to an acute attack of asthma. For all the reasons given by other courts about the unreliability of a multiple chemical sensitivity diagnosis, especially the lack of scientific correlation between exposures and symptoms, I find Dr. Glass's opinion regarding phenol hypersensitivity is unreliable and, therefore, subject to exclusion under the Daubert standard.

Conclusion

For the reasons stated above, the motion for a more definite statement is dismissed as moot and the motion to exclude testimony is granted to the extent set forth in this memorandum of decision.

So Ordered.

CERTIFICATE

Any appeal of this Order may be filed in accordance with Fed.R.Civ.P. 72.

/s/ Margaret J. Kravchuk
U.S. Magistrate Judge

Dated: January 10, 2007

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