

**IN THE UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF OHIO
EASTERN DIVISION**

**BRUCE KERNER, et al.,
Plaintiffs,**

v.

**Case No. 2:04-CV-735
JUDGE EDMUND A. SARGUS, JR.
Magistrate Judge Terence P. Kemp**

**TERMINIX INTERNATIONAL, CO.,
Defendant.**

OPINION AND ORDER

This matter is before the Court on the parties' motions to exclude certain expert witness testimony in this case. The Court held an Evidentiary Hearing on January 28, 2008. The Court now considers the merits of the parties' motions.

I.

Fed. R. Evid. 702 requires the trial judge to perform a "gatekeeping role" when considering the admissibility of expert testimony. *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579, 597 (1993). The rule 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.

Fed. R. Evid. 702.

This Court's gatekeeping role is two-fold. The Court must determine whether the proffered testimony is reliable and whether it is relevant to the task at hand. *See Daubert*, 509

U.S. at 590. The reliability assessment focuses on whether the reasoning or methodology underlying the testimony is scientifically valid. *Id.* The expert's testimony must be grounded in the methods and procedures of science and must be more than unsupported speculation or subjective belief. *Id.* Thus, the proponent of the testimony does not have the burden of proving that it is scientifically correct, but that by a preponderance of the evidence, it is reliable.

Wellman v. Norfolk & Western Railway Co., 98 F.Supp.2d at 923, citing *In re Paoli R.R. Yard PCB Litig.*, 35 F.3d 717, 744 (3rd Cir. 1994).

In *Daubert*, the Supreme Court set out four non-exclusive factors to aid in the determination of whether an expert's methodology is reliable:

- (1) whether the theory or technique has been tested;
- (2) whether the theory or technique has been subjected to peer review and publication;
- (3) the known or potential rate of error of the method used and the existence and maintenance of standards controlling the technique's operation; and
- (4) whether the theory or method has been generally accepted by the scientific community.

Daubert, 509 U.S. at 593-94.

In *Kuhmo Tire Co., Ltd. v. Carmichael*, 526 U.S. 137 (1999), the Supreme Court stressed that, in assessing the reliability of expert testimony, whether scientific or otherwise, the trial judge may consider one or more of the *Daubert* factors when doing so will help determine that expert's reliability. *Id.* at 150. The test of reliability, however, is a "flexible" one and the four *Daubert* factors do not constitute a "definitive checklist or test" but must be tailored to the facts of the particular case. *Id.*, quoting *Daubert*, 509 U.S. at 593.

Thus, the Court has "considerable leeway in deciding in a particular case how to go about determining whether particular expert testimony is reliable." *Id.* at 152. Furthermore, "mere

‘weakness in the factual basis of an expert witness’ opinion . . . bears on the weight of the evidence rather than on its admissibility.’” *McLean v. 988011 Ontario, Ltd.*, 224 F.3d 797, 801 (6th Cir. 2000), quoting *United States v. L.E. Cooke Co.*, 991 F.2d 336, 342 (6th Cir. 1993).

II.

A. Doc. #110 - Defendant’s Motion to Exclude Opinion Testimony of Drs. Bernad, Simon, Smalldon & Smothers

Defendant contends that the opinions of Plaintiffs’ experts, who will testify as to the causal connection between the claimed injuries of Dr. Kerner and the pesticide application, fail to satisfy the requirements of *Daubert* and Rule 702. First, Defendant claims that the required showings of general and specific causation for toxic tort cases is not established through the experts’ opinions because the opinions are based on unreliable methodologies. Second, Defendant argues that, even if the methodologies are reliable, the opinions are based on incorrect information or assumptions about the Plaintiffs’ actual medical conditions¹.

1. Dr. Simon

Plaintiffs offer the testimony of Dr. Robert K. Simon, a toxicologist and Ph. D., to show general causation. In his report, Dr. Simon explains that the pesticides used in the Plaintiffs’ home are part of the family of pesticides called pyrethroids: “The active ingredient in Tempo SC Ultra, the particular pesticide used by Terminix, is cyfluthrin, a synthetic pyrethroid. (*Pl. Exhibit*

¹The latter argument depends on the fact that Dr. Kerner has represented to various hospitals and licensing agencies that he is in “good health.”

3 at 9). Piperonyl butoxide, or PBO, is a specific synergist that increases the toxicity of pyrethroid ingredients. (*Id.*). According to Dr. Simon, when products are stabilized with PBO, pyrethrin residuals last for weeks to months. (*Id.* at 10).

In his report, Dr. Simon reviews various studies regarding the toxicity of pyrethrins and pyrethroids. An epidemiological study conducted on cotton farmers by Chen et al.², found that persons with acute exposure to pyrethroids used for crops experienced abnormalities of the skin, mucous membranes, gastrointestinal tract, respiratory tract, heart and circulatory system, weight loss, fatigue and swollen lymph nodes. (*Id.* at 13). Berger Preiss et al.³, conducted a study of pyrethroids in a model home in Germany. The authors reported that 33.4% of persons in the home reported central and peripheral nervous system complaints including headaches, dizziness, tiredness, lack of concentration, uneasiness, paraesthesia, muscle fasciculation, impaired vision, and impairment of the sense of taste. The authors also found that it was difficult to reduce levels of pyrethrins and PBO attached to suspended airborne particles even when decontamination measures were taken. (*Id.* at 15). In his report, Dr. Simon refers to several additional studies, including three by Mueller-Mohnssen⁴, which showed residual effects of two or more years after exposure, including reduced intellectual performance, lowered work endurance, reduction of

²Chen, S., *et al.*, "An epidemiological study on occupational acute pyrethroid poisoning in cotton farmers", *Brit. J. of Indust. Med.*, 48: 77-81, (1991).

³Berger-Preiss, E., *et al.*, The Behavior of Pyrethroids Indoors: A Model Study. *Indoor Air*, 7: 248-261 (1997).

⁴Mueller-Mohnssen, H., "Pyrethroid Intoxication Showing Three Types of Clinical Expression," American Conference on Technology, 06/08; "About a Method for Early Recognition of Neurotoxic Diseases (Exemplified by Pyrethroid Intoxication)", *GEDUNDH-WES*, 57, 214-222 (1995); "Chronic Sequelae and Irreversible Injuries Following Pyrethroid Intoxication", *Toxicology Letters*, 107, 161-175 (1999).

mental work endurance and personality disorder, visual disturbances, tinnitus, sensomotor-polyneuropathy, particularly in the lower legs, nervous disorders and decreased humoral and cellular immune disorders. (*Id.* at 17).

Further, the hazardous nature of pyrethrins and pyrethroids is confirmed by the labeling required by federal law of Tempo SC, the pyrethroid at issue in this case. The label itself warns of danger if the product is ingested, touched or inhaled.

According to Dr. Simon, the known, published adverse toxicological reactions to cyfluthrin and PBO are directly applicable to the Plaintiffs in this case. Dr. Simon notes the testing performed at the Plaintiffs' home by the Ohio Department of Agriculture in January 2004; by SEA consultants in January 2004; by FTI/SEA in April 2004 and by ETI in September 2004. Dr. Simon opines that the Plaintiffs were breathing contaminated air in December 2003 as shown by the contamination of their HVAC system. Plaintiffs' clothing and other items showed contamination upon testing. According to Dr. Simon, since oil soluble, water-insoluble pyrethrins and PBO would have attached to clothes or other porous possessions of Plaintiffs, they "would have received excessive doses of . . . chemicals during the time they remained in the house during and after the Terminix applications." (*Id.* at 19). Dr. Simon opines that Plaintiffs' symptoms are "consistent with the known, published adverse toxicological effects of cyfluthrin and PBO." (*Id.* at 20). Dr. Simon further opines:

The adverse health symptoms that have been reported to me for the Kerners, the temporal association of these adverse health symptoms following the misapplications, and the consistency of these reported symptoms to the known, published toxicology of type II pyrethroids and PBO lead me to conclude that the scientific hypothesis of general causation toxicity has been met in this case.

(*Id.* at 21).

Defendant takes issue with Dr. Simon's failure to quantify the degree of exposure to pesticides as well as his failure to specify the basis for finding the exposure "excessive."

Defendant cites *Conde v. Velsicol Chemical Corp.*, 804 F.Supp. 972 (S.D. Ohio 1992) (Smith, J.) in support of its challenge. In that case, Plaintiffs alleged adverse health effects as a result of termite treatment to their home. The Plaintiff in that case, a licensed D.O., offered the only expert testimony on medical causation. In considering a *Daubert* challenge to Plaintiff's testimony, the court held:

The toxicity of a substance is dose specific. It is not a medical or scientific methodology to lump together without explanation of acute exposure case studies, worker exposure studies, animal studies, excerpts from standard medical references, and regulatory agency pamphlets, and then to assert without further analysis that these studies and other information about the toxicity of chlordane "caused" the Condes' symptoms and diseases. Moreover, when an expert expresses an opinion which is not generally accepted within the medical and scientific communities, he has an obligation to provide a reasoned explanation of why his methodology and opinions differ from those representing the collective view of the relevant medical or scientific disciplines. *Turpin*, 959 F.2d at 1360. Dr. Conde has failed to give such an explanation. Dr. Conde also refers to literature about persons exposed to large doses of chlordane who suffer acute central nervous system symptoms. Plaintiffs also have suffered CNS symptoms. However, there are no studies of long-term, low dose exposure which indicate a correlation between that exposure and CNS symptoms. It is not a generally accepted medical or scientific methodology for Dr. Conde to rely on that literature to establish that his and his family's exposure to chlordane caused their CNS symptoms.

Consequently, for the reasons set out above, the Court concludes that Dr. Conde's reliance on the literature about chlordane does not raise his testimony above the level of an expression of opinion insufficient to avoid summary judgment.

804 F.Supp. at 1023-24.

Dr. Simon also offered medical causation testimony in the *Conde* case. The court found Dr. Simon's testimony unreliable because he is not a medical doctor and, therefore, could not render a differential diagnosis. This Court finds the *Conde* case distinguishable, since Dr. Simon

does not purport to render a specific causation opinion in this action; rather, in this case, his opinion is offered for purposes of general causation.

Defendant argues that Dr. Simon's opinion is unreliable because it lacks a scientific explanation. As the Sixth Circuit has observed, "[a] district court is not required to admit expert testimony 'that is connected to existing data only by the *ipse dixit* of the expert. A court may conclude that there is simply too great an analytical gap between the data and the opinion proffered.'" *Nelson v. Tennessee Gas Pipeline Co.*, 243 F.3d 244, 254 (6th Cir. 2001), quoting *General Electric Co. v. Joiner*, 522 U.S. 136, 146 (1997). In *Nelson*, there was no scientific literature to support the expert's conclusion that PCBs could cause the kind of symptoms plaintiffs allegedly suffered by exposure thereto⁵. By contrast, in this case, Dr. Simon refers to nine studies reviewing the toxicity of pyrethrins and pyrethroids. (*Pl. Exhibit 3* at 13-18). Each of the studies identifies symptoms of the sort allegedly experienced by Plaintiffs in this case. Notably, the Berger Preiss study was conducted in a model home in Germany and revealed that the more the home area was overdosed with the pesticides, the higher the airborne levels were. The study also found that pyrethrins and PBO were persistent when used indoors, with up to 10% of the residues found two years after the application. (*Id.* at 15). Dr. Simon points out that Plaintiffs' symptoms are similar to those identified by Bayer for "Acute Effects of Exposure" to beta cyfluthrin. (*Pl. Exhibit 22*, Updated Report of Dr. Simon, at 12).

Defendant also takes issue with Dr. Simon's methodology because no reference is made to the specific dose to which Plaintiffs were exposed. Plaintiffs cite the Sixth Circuit's decision

⁵Plaintiffs were comprised of persons who lived, worked or spent time near a natural gas pipeline compressor station. Plaintiffs claimed that they suffered injuries from exposure to polychlorinated biphenyls (PCBs) contained in a lubricant used at the compressor.

in *Hardyman v. Norfolk & Western Railway Co.*, 243 F.3d 255 (6th Cir. 2001), in support of this position. In *Hardyman*, the Plaintiff, a railroad brakeman, suffered from carpal tunnel syndrome. The district court held that unless Plaintiff's expert could offer a scientific or epidemiological study concerning carpal tunnel syndrome and railroad brakemen, the only way to establish causation would be to proffer a "known dose / response relationship" or "threshold phenomenon⁶." The Sixth Circuit held this conclusion erroneous. The court relied on the Fourth Circuit's decision in *Westberry*, 178 F.3d at 266, in which the court stated:

[W]hile precise information concerning the exposure necessary to cause specific harm to humans and exact details pertaining to the plaintiff's exposure are beneficial, such evidence is not always available, or necessary, to demonstrate that a substance is toxic to humans given substantial exposure and need not invariably provide the basis for an expert's opinion on causation. *Id.* at 264 (citing *Heller v. Shaw Indus., Inc.*, 167 F.3d 146, 157 (3rd Cir. 1999) (noting that "even absent hard evidence of the level of exposure to the chemical in question, a medical expert could offer an opinion that the chemical caused plaintiff's illness.")).

Plaintiffs point out Dr. Simon's opinion that the ability to calculate environmental dose exposure was impeded by Terminix's failure to test Plaintiffs' home after the misapplication of pesticides. Plaintiffs cite *Kannankeril v. Terminix Int'l, Inc.*, 128 F.3d 802 (3rd Cir. 1997). There, Plaintiffs (a physician, her husband and two children) sued Terminix seeking damages for injuries arising from alleged misapplication of pesticides to treat carpenter ants inside Plaintiffs' residence. The Defendant took issue with an expert's opinion which did not measure the level of toxicity at the time of Plaintiffs' exposure. The only evidence as to the actual level of pesticides

⁶"Dose/Response Relationship" is defined as "[a] relationship in which a change in amount, intensity or duration of exposure is associated with a change-either an increase or a decrease-in risk of disease." Federal Judicial Center, *Reference Manual on Scientific Evidence* 174 (1994). "Threshold Phenomenon" is "[a] certain level of exposure to an agent below which disease does not occur and above which disease does occur." *Id.* at 178. *Hardyman*, 243 F.3d at 262, n.3.

came from an ambient air quality test performed nine months after the last treatment; the results indicated nondetectable levels of pesticides. The Third Circuit held that it was for a jury to consider what weight to give such evidence. The court stated:

[T]he plaintiffs were prepared to offer into evidence the Dursban product label which contained warnings such as: "HARMFUL IF SWALLOWED. HARMFUL IF ABSORBED THROUGH SKIN. CAUSES EYE AND SKIN IRRITATION" and "Thoroughly wash dishes and food handling utensils with soap and water if they become contaminated by application of this product. Do not allow children or pets to contact treated surfaces until spray has dried." App. at 241-43. Under the facts as presented in this case, the district judge erred in ruling that an expert may rely only on the ambient air test to determine whether Dr. Kannankeril had been exposed to Dursban. Instead, all factual evidence of the presence of the chemicals in the residence should be relevant in forming an expert opinion of causation.

Id. at 808-09.

Similarly, in this case, the label for Tempo Ultra SC reads: "CAUTION: Harmful if swallowed, inhaled or absorbed through skin. Causes moderate eye irritation. Avoid contact with eyes, skin or clothing. Avoid breathing spray mist" (*Pl. Exhibit 12* at 1). This evidence, together with evidence of the tests performed at the Plaintiffs' residence, will be considered by the jury. The exact level of toxicity at the time of Plaintiffs' exposure in this case is unknown. Plaintiffs' experts rely on other evidence to support their opinions. The Court concludes that the lack of a precise toxicity level is not fatal to the opinion of Dr. Simon.

The Court concludes that Dr. Simon's opinion is sufficiently reliable to survive scrutiny under Rule 702 and the *Daubert* standard. Dr. Simon's opinion that Plaintiff's symptoms are consistent with toxic exposure to the pesticides used in this case is supported by scientific literature. In the Court's view, Defendant's attack on Dr. Simon's opinion goes to the weight, rather than the admissibility, of his testimony.

2. Dr. Bernad

Plaintiffs identify Dr. Peter Bernad, a practicing medical physician and neurotoxicologist, as an expert on the issue of specific causation in this case. In his report, Dr. Bernad states: “It is my opinion based on reasonable degree of medical certainty that Dr. Kerner has been sufficiently exposed to pyrethroids and other pesticides associated with the flea treatment of his house in December of 2003.” (Doc. #112, Exhibit 2 at 9). Dr. Bernad states that Plaintiff was exposed to pesticides because he “slept on the bed that was soaked with the neurotoxin; [h]e also breathed the pesticides in the air and was exposed by contacting items that were sprayed such as furniture and carpet. It is my conclusion that a threshold was reached and that the threshold was actually breached in terms of no observed effect level (NOEL).” (*Id.*).

With respect to specific causation, Defendant contends that Dr. Bernad’s differential diagnosis is unreliable. Defendant takes issue with the alleged failure to eliminate Plaintiff Dr. Kerner’s diabetes or alleged allergy to latex as the source of the claimed ailments. As with Dr. Simon, Defendant contends that Dr. Bernad’s failure to estimate a dose of exposure to the substances is fatal to establishing specific causation. Finally, Defendant contends that Dr. Bernad relied on incorrect information given by Plaintiff in forming his opinion, because Dr. Kerner has represented to various hospitals and licensing facilities that he is in overall good health.

Plaintiffs argue that the differential diagnosis used to show specific causation is reliable. Dr. Bernad reviewed the treatment records of Dr. Friedman, an allergist; Dr. Katz, an endocrinologist; Dr. Soldano, a family doctor; and Dr. Bechtel, a dermatologist. Dr. Bernad also

reviewed bloodwork studies, Plaintiff's EKG and stress echocardiogram, as well as the records of Dr. Katz regarding Plaintiff's diabetes. Further, Dr. Bernad performed his own physical examination and had Plaintiff undergo various neurological tests, a sleep study, and autonomic tests. Dr. Bernad concluded that Plaintiff's exposure to the pesticides was the cause of his acute and chronic symptoms. Plaintiffs note that Dr. Albers, Terminix's medical expert, attributes the symptoms to diabetes. According to Plaintiffs, this does not mean that Dr. Bernad's opinion is not reliable.

A differential diagnosis is "[o]ne appropriate method for making a determination of causation for an individual instance of disease." *Hardyman*, 243 F.3d at 260. In particular it is "[t]he method by which a physician determines what disease process caused a patient's symptoms. The physician considers all relevant potential causes of the symptoms and then eliminates alternative causes based on a physical examination, clinical tests, and a thorough case history." *Id.*

Dr. Bernad performed a physical and neurological examination on Plaintiff. He considered the results of Plaintiff's examinations and diagnostic studies; he also considered pertinent medical literature, personal experience with other patients exposed to pyrethroids, and communication with other individuals and experts involved in the research of pyrethroids. Dr. Bernad also considered the following nine factors: 1) strength of association; 2) consistency of association; 3) specificity of relationship; 4) temporality; 5) lack of time; 6) documentation of body burden or dose relationship; 7) biologic plausibility; 8) coherence of evidence; and 9) dose response relationship. (*Pl. Exhibit 21* at 9). It is Dr. Bernad's opinion that Plaintiff Dr. Kerner's exposure to pesticides in December 2003 "proximately caused a multitude of medical and

neurological problems.” (*Id.* at 10). In particular, Dr. Bernad states:

From a neurological point of view, these include numbness and tingling, paraesthesias, peripheral neuropathy, memory problems, difficulties with the use of his hands, rash, and symptoms associated with headaches and confusion, sleep disorder, as well as pain and burning sensation in his hands, feet and calves. He demonstrates similar symptoms to other individuals in the literature who had fallen ill after indoor pyrethroid exposure. Dr. Kerner’s overall condition may be characterized as involving the central nervous system, peripheral nervous system, and autonomic nervous system. These adverse health consequences have impaired his ability to carry out normal activities, as well as to carry out his functions as a surgeon.

(*Id.*).

As to Plaintiff’s diabetes, Dr. Bernad testified that he considered this history in his differential diagnosis. Dr. Albers, Defendant’s expert⁷, takes issue with the consideration given by Dr. Bernad. According to Dr. Albers, Dr. Bernad did not give sufficient consideration to Plaintiff’s diabetes in rendering his differential diagnosis. Dr. Albers testified that the most common cause of peripheral neuropathy and autonomic dysfunction is diabetes. Dr. Albers acknowledged, however, that prior to Plaintiff Dr. Kerner’s exposure to pesticides, he had no reported complications from his diabetes. As Plaintiffs observe, Dr. Albers did not perform a physical examination of Plaintiff or take a medical history. Further, Dr. Albers acknowledged during his testimony that there is scientific literature that shows exposure to pyrethrins and pyrethroids can cause numbness, tingling, burning sensations and paresthesia, which are all symptoms from which Plaintiff allegedly suffered.

In the Court’s view, Dr. Bernad’s differential diagnosis is sufficiently reliable to withstand *Daubert* scrutiny. Dr. Bernad examined Plaintiff and conducted a thorough review of

⁷Dr. Albers is an Assistant Dean at the University of Michigan Medical School, Department of Neurology.

his medical history in addition to performing various tests on Plaintiff. Dr. Bernad considered a number of factors in forming his opinion. To the extent Defendant takes issue with Dr. Bernad's failure identify a precise level of exposure to pesticides in this case, the Court concludes that this does not render Dr. Bernad's opinion unreliable. "Where direct evidence of the precise level of toxic exposure is limited, courts have looked favorably on causation testimony that is primarily based on differential diagnosis . . ." *Plourde v. Gladstone*, 190 F.Supp.2d 708, 722 (D. Vt. 2002). The Court concludes that Defendant's reliance on Dr. Albers' opinion to discredit Dr. Bernad, goes to the weight, rather than the admissibility, of Dr. Bernad's testimony.

3. Drs. Smalldon and Smothers

The Defendant moves to exclude the opinions of Drs. Smalldon and Smothers to the extent that their opinions rely on those of Drs. Bernad and Simon. Dr. Smothers, a neuropsychologist who initially offered an opinion on specific causation as to Dr. Kerner, is now deceased. To the extent Dr. Bernad relies on tests performed by Dr. Smothers in forming his opinion, the Court finds no issue with admissibility. Dr. Smothers' opinion itself, however, will be excluded.

Dr. Smalldon is a neuropsychologist who relies, in part, on the opinions of Drs. Bernad and Simon in forming his opinion. Defendant argues that Dr. Smalldon's opinion is cumulative of Plaintiff's other experts. Dr. Smalldon is the only neuropsychologist who will be called by the Plaintiffs. To the extent that is testimony is not duplicative of that given by other professionals in different specialties called by the Plaintiffs, the testimony is permissible.

B. Doc. #215 - Plaintiffs' Motion to Preclude Trial Testimony of Michael J. Wernke, R.Ph., Ph. D.


Plaintiffs move to exclude the testimony of Dr. Wernke, who is offered by Defendant to refute Plaintiffs' evidence of causation. Dr. Wernke is not a medical doctor. Plaintiffs contend that he is not qualified to render an opinion on Plaintiffs' chronic, long-term health effects. As clarified during the *Daubert* hearing in this case, Dr. Wernke will not testify as to specific causation of Plaintiffs' alleged injuries. Dr. Wernke may testify, however, as to a purported lack of general causation without reference specifically to Plaintiffs.

III.

The Defendant's Motion regarding exclusion of the opinions of Drs. Simon, Bernad, Smalldon and Smothers (**Doc. #110**) is **DENIED** as to the opinions of Dr. Simon, Dr. Bernad and Dr. Smalldon. The motion is **GRANTED in part and DENIED in part** as to Dr. Smothers. Plaintiffs' Motion as to Dr. Wernke (**Doc. #215**) is **GRANTED in part and DENIED in part**.

IT IS SO ORDERED.

2-5-2008
DATE



EDMUND A. SARGUS, JR.
UNITED STATES DISTRICT JUDGE