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607 N.W.2d 123 (Mich.App. 1999)

ALEXIS ANTON and ROBERT ANTON, Plaintiffs-Appellees,

v.

STATE FARM MUTUAL AUTOMOBILE INSURANCE COMPANY, Defendant-Appellant.

Docket No. 203260

STATE OF MICHIGAN, COURT OF APPEALS

Submitted March 4, 1999,

Decided Dec. 3, 1999.

Released for Publication March 7, 2000.

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Before: Gribbs, P.J., and Griffin and Wilder, JJ.

RICHARD ALLEN GRIFFIN, J.

In this first-party no-fault automobile insurance case, defendant State Farm Mutual Automobile Insurance Company appeals as of right a judgment entered in favor of plaintiffs following a jury trial. The jury awarded \$26,799 plus judgment interest in the amount of \$3,333.24 to plaintiff Robert Anton and awarded \$76,636 plus judgment interest in the amount of \$9,200.90 to plaintiff Alexis Anton. Defendant also appeals the trial court's order denying its motions for a directed verdict, judgment notwithstanding the verdict (JNOV), and remittitur. We affirm.

I

A major issue of fact tried to the jury was whether stress arising out of plaintiffs' automobile accident caused plaintiff Robert Anton to develop Graves' disease.¹ Before trial, defendant brought a motion in limine requesting that the proffered testimony of plaintiffs' expert witness attributing the onset of Mr. Anton's Graves' disease

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to the accident be excluded because, allegedly, such a theory of causation had not achieved general scientific acceptance or been independently validated as required by the Davis-Frye rule.²

The trial court conducted a Davis-Frye inquiry, reviewing the deposition testimony of Mr. Anton's treating physician, endocrinologist Dr. Charles Taylor, and defendant's expert, Dr. Solomon Rosenblatt. In concluding that the testimony of Dr. Taylor regarding the etiology of Graves' disease was admissible, the trial court ruled:

I am relying on the testimony of both experts. The experts pretty well agree on many concepts basically that it's generally accepted that there is a causal [sic] and affect [sic] relationship. . . . I'm speaking of the relationship between stress and Graves' disease. . . .

I note in the deposition exhibit of Doctor Solomon Rosenblatt that there is a discussion in the article The Role of Stress in the Introduction of Graves' Disease this is from Autoimmune Diseases of the Endocrine System by Doctor Volpe. Both experts agree that he's the foremost expert in the area.

The article states on page 186 it is difficult to escape the conclusion that in some patients there is a cause and affect [sic] relationship between such stresses and the subsequent development of hyperthyroidism which is Graves' disease that we're talking about here. But only in already predisposed persons such event is recent bereavements, marital discord or recent upper respiratory infection or other infections, gastrointestinal disorders, motor vehicle accidents or even dieting have been cited.

It's further attached as a deposition exhibit a pamphlet that's referenced during Doctor Rosenblatt's deposition. The pamphlet is entitled The Thyroid Gland and discusses Graves' disease. Under one of the paragraphs there is a discussion of causes of Graves' disease. "It is believed that Graves' disease which is named for the doctor [who] first described it is caused by a combination of different factors including your family heredity, immune system, gender, age and stress.["]

This court's opinion that there is sufficient evidence on this record so as to warrant the admission of the testimony. It is a matter of weight for the jury to decide whether the plaintiff has sustained [his] burden and showing that the stress as resulting from the car accident was a cause of the onset of Graves' disease in plaintiff. But, there certainly is enough on this record for the court to make a preliminary ruling that it is a generally accepted scientific opinion that there is some type of relationship between stress and Graves' disease.

Following the close of plaintiffs' proofs, defendant brought a motion for a directed verdict and later JNOV, arguing that there was insufficient evidence linking Mr. Anton's Graves' disease to the automobile accident. The trial court denied defendant's motions.

On appeal, defendant contends that the trial court erred in admitting Dr. Taylor's testimony regarding Graves' disease and in denying its motions for a directed verdict and JNOV in this regard. Defendant argues that the testimony adduced at the Davis-Frye hearing established that the correlation between stress and Graves' disease is only a hypothesis, not yet recognized in the scientific community as proven theory, and, thus, that plaintiffs failed to demonstrate by a preponderance of the evidence that Mr. Anton's Graves' disease arose out of the ownership, operation, use, or maintenance of a motor vehicle. MCL 500.3105(1); MSA 24.13105(1). We disagree.

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Absent an abuse of discretion, the qualification of a witness as an expert and the admissibility of his testimony will not be reversed on appeal. *Phillips v. Deihm*, 213 Mich.App. 389, 401; 541 N.W.2d. 566 (1995). The trial court may qualify a witness as an expert if it determines that recognized scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue. *People v. Peterson*, 450 Mich. 349, 362; 537 N.W.2d. 857 (1995), amended 450 Mich. 1212 (1995). The facts and data on which an expert relies in formulating an opinion must be reliable. *Amorello v. Monsanto Corp*, 186 Mich.App. 324, 332; 463 N.W.2d. 487 (1990). MRE 702 restricts the subject of an expert's testimony to "recognized scientific . . . knowledge." As explained by this Court in *Nelson v. American Sterilizer Co (On Remand)*, 223 Mich.App. 485, 491-492; 566 N.W.2d. 671 (1997):

MRE 702 requires a trial court to determine the evidentiary reliability or trustworthiness of the facts and data underlying an expert's testimony before that testimony may be admitted. To determine whether the requisite standard of reliability has been met, the court must determine whether the proposed testimony is derived from "recognized scientific knowledge." To be derived from recognized scientific knowledge, the proposed testimony must contain inferences or assertions, the source of which rests in an application of scientific methods. Additionally, the inferences or assertions must be supported by appropriate objective and independent validation based on what is known, e.g., scientific and medical literature. This is not to say, however, that the subject of the scientific testimony must be known to a certainty, *Daubert [v Merrell Dow Pharmaceuticals, Inc]*, 509 US 579, 590; 113 S Ct 2786; 125 L Ed 2d 469 (1993)]. As long as the basic methodology and principles employed by an expert to reach a conclusion are sound and create a trustworthy foundation for the conclusion reached, the expert testimony is admissible no matter how novel. [Emphasis added.]

Pursuant to MRE 702, the Davis-Frye rule limits the admissibility of novel scientific evidence by requiring the party offering such evidence to demonstrate that it has gained general acceptance in the scientific community. *People v. McMillan*, 213 Mich.App. 134, 136; 539 N.W.2d. 553 (1995); *People v. Haywood*, 209 Mich.App. 217, 221; 530 N.W.2d. 497 (1995).³ In conducting a Davis-Frye inquiry, a trial court is not concerned with the ultimate conclusion of an expert, but rather with the method, process, or basis for the expert's conclusion and whether it is generally accepted or recognized. General scientific recognition may not be established without the testimony of impartial experts whose livelihoods are not intimately connected with the evidence at issue.⁴ *Id.* at 221, 530 N.W.2d 497. See

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also *People v. Tobey*, 401 Mich. 141, 145; 257 N.W.2d. 537 (1977). The party offering the evidence has the burden of demonstrating its acceptance in the scientific community. *People v. Davis*, 199 Mich.App. 502, 512; 503 N.W.2d. 457 (1993); *Kluck v. Borland*, 162 Mich.App. 695, 697; 413 N.W.2d. 90 (1987).

In the present case, plaintiffs' expert, Dr. Taylor, a board-certified endocrinologist, testified that a genetic predisposition is an essential prerequisite for the onset of Graves' disease. Further, Dr. Taylor stated that "most thyroid specialists agree that . . . the most likely explanation why someone who is genetically predisposed to developing Graves' disease, develops Graves' disease is a stressful event." Dr. Taylor testified that in his opinion Mr. Anton was genetically predisposed and that the stress of the automobile accident was the triggering mechanism for his Graves' disease.

Defendant's expert, Dr. Rosenblatt, also a board-certified endocrinologist, agreed with Dr. Taylor that two elements are required for an individual to develop Graves' disease: a genetic predisposition toward Graves' disease and a precipitating event. Dr. Rosenblatt cited examples of several precipitating factors, such as infectious agents, viruses, and emotional stress. He felt comfortable, as a board-certified endocrinologist, making the statement that stress is a potential precipitating factor, the reason being "that there are many examples of individuals in whom prior to the diagnosis of Graves' disease, there was some type of stress." In Dr. Rosenblatt's opinion, it was possible that

Mr. Anton's Graves' disease was caused by the stress from the automobile accident, although there were no studies confirming such a cause and effect relationship.

Each expert agreed that recognized medical opinion acknowledges a causal relationship between stress and the onset of Graves' disease; both Dr. Taylor and Dr. Rosenblatt relied in their testimony on the textbook *Autoimmune Diseases of the Endocrine System*, written by Dr. Robert Volpe, a world expert on thyroid immunology.⁵ Dr. Volpe theorized therein that although the mechanism by which stress may precipitate hyperthyroidism in Graves' disease is not completely understood, it is difficult to escape the conclusion that in some predisposed patients there is a cause and effect relationship between stress and the subsequent development of Graves' disease.

Also relevant to the Davis-Frye inquiry was Dr. Taylor's testimony concerning his treatment of Mr. Anton in May 1995. Dr. Taylor testified that in the fourteen months following the accident, Mr. Anton lost forty-five pounds, accompanied by increasing fatigue and eye inflammation, excessive perspiration, rapid pulse, tremor, brisk reflexes, and elevated thyroid levels—all symptomatic of Graves' disease. Mr. Anton complained to Dr. Taylor that these symptoms started shortly after the automobile accident.

On the basis of this evidence, we hold that the trial court did not abuse its discretion in allowing plaintiffs' expert to testify regarding the etiology of Graves' disease. Phillips, *supra*. Experts for both plaintiffs and defendant testified in a consistent manner that the medical community recognizes a causal link between stress and Graves' disease. Although Dr. Rosenblatt expressed his frustration that scientific studies have not confirmed Dr. Volpe's

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expert opinion that stress is a triggering factor of Graves' disease, the Davis-Frye evidence established the requisite foundation of "recognized scientific . . . knowledge" from independent sources mandated by MRE 702. Reflecting Dr. Taylor's observation in this case that "almost all medicine is hypotheses and not proven fact," the Nelson Court, *supra* at 492, held that the subject of the scientific testimony need not be known to a 100 percent certainty, "[a]s long as the basic methodology and principles employed by an expert to reach a conclusion are sound and create a trustworthy foundation for the conclusion reached" In this instance, both testifying experts and the foremost expert, Dr. Volpe, concurred that there is a causal relationship between stress and Graves' disease. The onset of Mr. Anton's symptoms following the accident certainly provides objective manifestation of this relationship.

We therefore conclude that the trial court neither abused its discretion in admitting Dr. Taylor's testimony nor erred in denying defendant's motions for a directed verdict or JNOV in this regard. *Allen v. Owens-Corning Fiberglas Corp*, 225 Mich.App. 397, 406; 571 N.W.2d. 530 (1997); In light of Dr. Taylor's testimony, essentially supported by the testimony of Dr. Rosenblatt, proving the element of causation, plaintiffs established a triable issue of fact whether Mr. Anton's Graves' disease arose out of the ownership, operation, use, or maintenance of a motor vehicle. MCL 500.3105(1); MSA 24.13105(1).

II

Next, defendant argues that the trial court erred in allowing Mrs. Anton's wage-loss claim to be submitted to the jury and in denying its motions for a directed verdict, JNOV, a new trial, and remittitur in light of the allegedly insufficient evidence in support of the claim. Specifically, defendant challenges the jury's finding that Mrs. Anton was entitled to recover wage-loss benefits in the amount of \$61,009 through April 1996, the date on which she voluntarily returned to work, despite the fact that she was last treated for her injuries on October 13, 1995, and defendant suspended benefits on April 3, 1995. Defendant contends that she failed to prove through expert testimony that a disability existed beyond October 1995. In addition, defendant objects to the amount awarded to her for wage loss, arguing in particular that the jury used the wrong figure for calculating the benefits.

In reviewing a trial court's decision regarding a motion for a directed verdict or JNOV, this Court views the evidence presented up to the time the motion was made in the light most favorable to the nonmoving party to determine whether a factual question exists with regard to which reasonable minds could differ. *Allen, supra* at 406; *Terzano v. Wayne Co*, 216 Mich.App.522, 525-526; 549 N.W.2606 (1996). Without a clear abuse of discretion, the trial court's decision to deny JNOV or a motion for a new trial or remittitur will not be disturbed on appeal. *Bordeaux v. Celotex Corp*, 203 Mich.App.158, 170; 511 N.W.2899 (1993); *Byrne v. Schneider's Iron & Metal, Inc*, 190 Mich.App.176, 183; 475 N.W.2854 (1991). When deciding a motion for remittitur, the trial court must determine whether the jury verdict was for an amount greater than the evidence supports. MCR 2.611(E); *McLemore v. Detroit Receiving Hosp & Univ Medical Center*, 196 Mich.App.391, 401; 493 N.W.2441 (1992). This Court must afford due deference to the trial court's unique ability to evaluate the jury's reaction to the evidence. *Id.*

Under the no-fault act, personal protection insurance benefits are payable for lost income from work an injured person would have performed during the first three years after the date of the accident if the person had not been injured. MCL 500.3107(1)(b); MSA 24.13107(1)(b). Work-loss benefits are based on earned

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income for the last month the injured person was employed full time preceding the accident. MCL 500.3107a; MSA 24.13107(1). See *Frazier v. Allstate Ins Co*, 231 Mich.App. 172, 175-176; 585 N.W.2d. 365 (1998). In all cases, claimants bear the burden of proving the amount they would have earned had they not been injured in the automobile accident. *Popma v. Auto Club Ins Ass'n*, 446 Mich. 460, 472-473; 521 N.W.2d. 831 (1994).

After our thorough review of the record, we conclude that there was sufficient evidence for a jury to reasonably conclude that Mrs. Anton suffered from debilitating injuries preventing her from returning to work through April 1996. The record indicates that Mrs. Anton's treating physician, Dr. Sherry Viola, discharged her in November 1994 because her remaining injuries were emotional in nature and she did not have any physical impairment necessitating treatment. Mrs. Anton was thus referred to a psychiatrist, Dr. Alvin Michaels, as part of her rehabilitation program. Dr. Michaels testified during the trial regarding the nature and extent of Mrs. Anton's disability from work from a psychiatric viewpoint. He opined that during her period of treatment from January 1995 through October 1995, Mrs. Anton did not have "the energy to manage gainful employment or the cognitive ability to work." Dr. Michaels testified that the psychiatric bases of her disability were depression and the effects of a closed-head injury. When he last treated her on October 13, 1995, Dr. Michaels' assessment of her psychiatric condition had not changed and he recommended that Mrs. Anton continue with the Beaumont Hospital program of rehabilitation. However, Mrs. Anton discontinued psychiatric and rehabilitative treatment because of embarrassment over her financial inability to pay for the treatment. Mrs. Anton testified that she continued to suffer from depression and memory loss in the interim period and was unable to function outside her house until she returned to work in April 1996. Viewing the evidence in the light most favorable to plaintiffs, a jury reasonably could have found that Mrs. Anton's disability continued well after the last day of her treatment until she returned to work in April 1996. Accordingly, the trial court properly denied defendant's motions for a directed verdict, a new trial, and JNOV in this regard.

Defendant further alleges that the trial court erred in denying its motion for remittitur that alleged that the jury's award of wage-loss benefits in the amount of \$61,009 to Mrs. Anton was excessive and unsupported by the evidence. We disagree.

MCL 500.3107a; MSA 24.13107(1) requires that wage-loss benefits be based on earned income for the last month employed full time before the accident. The evidence below established that while working for Hallmark Windows, Mrs. Anton's last full-time position before she was in the accident, she consistently received \$1,000 a week as a draw against commissions, even though her earnings statement introduced at trial showed that during her three-month employment she only averaged \$500 a week in actual commissions.

Defendant argues that most companies paying solely on commission would deduct the difference between the draw and the actual commission from subsequent earnings in future commission checks; therefore, Mrs. Anton was purportedly overcompensated for her wage loss. However, no evidence was introduced to show that the payment arrangement between Mrs. Anton and her employer required her to return any amounts she did not actually earn from the draw. Thus, Mrs. Anton's testimony that she received \$1,000 every week irrespective of her actual commissions, in part because her employer was generous and because she performed other functions beyond the scope of her normal duties, was unrefuted. The jury therefore had ample evidence, when viewed in the light most favorable to plaintiffs, to award wage-loss benefits based on the weekly

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wage of \$1,000. Under these circumstances, we conclude that the trial court did not err in denying defendant's motion for remittitur.

III

Defendant further maintains that the trial court erred in denying its motions for a directed verdict and JNOV because plaintiffs failed to prove the reasonableness and necessity of their allowable expenses as required by MCL 500.3107(1)(a); MSA 24.13107(1)(a)6. See also *Nasser v. Auto Club Ins Ass'n*, 435 Mich. 33, 49-50; 457 N.W.2d. 637 (1990); *Manley v. DAIIE*, 425 Mich. 140, 169; 388 N.W.2d. 216 (1986); *McGill v. Automobile Ass'n of Michigan*, 207 Mich.App. 402, 405; 526 N.W.2d. 12 (1994). We disagree.

At trial, Mr. Anton provided a lengthy itemization of the bills and expenses allegedly incurred as a result of the automobile accident, which totaled \$65,982.86. He testified with regard to the reasonableness and necessity of the majority of these bills without objection. The State Farm claims file that contained additional bills was also admitted at trial without objection. Moreover, Mrs. Anton's treating physician, Dr. Viola, testified that she ordered physical, recreational, and occupational therapy, speech pathology, and social work. She also ordered various diagnostic tests for Mrs. Anton and testified that these tests and therapies were reasonably and medically necessary as a result of the automobile accident. Similarly, Dr. Michaels testified that his psychiatric services were reasonably and medically necessary and that plaintiffs relied on his recommendations when they submitted to treatment.

When viewing the testimony and all legitimate inferences in a light most favorable to plaintiffs, we conclude that there was sufficient evidence presented at trial to create an issue for the jury and competent evidence to support the jury's verdict for allowable expenses under MCL 500.3107(1)(a); MSA 24.13107(1)(a). Accordingly, the trial court did not err in denying defendant's motions for a directed verdict and JNOV regarding this facet of plaintiffs' claim.

IV

Defendant next argues that the trial court abused its discretion in admitting evidence regarding defendant's handling of plaintiffs' claim when the evidence was not relevant or material to the issues before the jury. We disagree.

To oppose on appeal the admission of evidence at trial, a party must timely object at trial and specify the same ground for objection that it asserts on appeal. MRE 103(a)(1); *In re Weiss*, 224 Mich.App. 37, 39; 568 N.W.2d 336 (1997). Here, defense counsel failed to timely object to this testimony on relevancy grounds. Therefore, because the substantial rights of defendant were not affected, this issue was not preserved for appeal, and we decline to address it. MRE 103; *Wischmeyer v. Schanz*, 449 Mich. 469, 483; 536 N.W.2d 760 (1995).

V

Finally, defendant contends that this Court should reverse the judgment because the jury verdict was against the great weight of the evidence and was based on passion or prejudice. Defendant supports its position by reference to two notes submitted by the jury to the trial court with its verdict. One note indicated that the jury believed Mrs. Anton should resume treatment and that her driver's license should be revoked. The other note

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indicated that the jury believed two of defendant's experts committed perjury with their testimony and suggested that the prosecutor's office review the testimony.

A trial court may consider whether a verdict was induced by bias or prejudice; however, its inquiry must be limited to objective considerations relating to the actual conduct at trial or the evidence adduced. *Phinney v. Perlmutter*, 222 Mich.App. 513, 538; 564 N.W.2d 532 (1997). The trial judge, who experienced the trial, is generally in the best position to determine whether the jury's verdict was motivated by such impermissible considerations as passion, bias, or anger. *Id.*

We are not persuaded that either of these two notes show that the jury's verdict was influenced by passion or prejudice or that the jury decided issues not before it. Rather, the notes reflect the jury's perception of the credibility of the witnesses, an issue properly left to the factfinder when conflicting evidence is presented. The record indicates that the jury properly considered only the issues with which it was confronted and did not base its verdict on passion or prejudice. Defendant's argument in this regard is therefore without merit.

Affirmed.

Gribbs, P.J., concurred.

Notes:

1. Graves' disease is an autoimmune disease that causes overstimulation of the thyroid gland.
2. *People v. Davis*, 343 Mich. 348; 72 N.W.2d 269 (1955); *Frye v. United States*, 54 US App DC 46, 47; 293 F 1013 (1923).
3. In *Haywood*, supra at 221, n 1, this Court recognized that in *Daubert v. Merrell Dow Pharmaceuticals, Inc*, 509 US [579]; 113 S Ct 2786; 125 L Ed 2d 469 (1993), the United States Supreme Court held the Frye test was superseded by the adoption of FRE 702. In light of our narrow resolution of this issue, we need not address the continued applicability of the Davis-Frye test under Michigan jurisprudence. Nevertheless, we note that MRE 702, unlike its federal counterpart, incorporates a "recognized" standard for the admissibility of scientific evidence. See *People v. Hubbard*, 209 Mich.App. 234; [530] N.W.2d. [130] (1995). Recently, in *Kumho Tire Co, Ltd v. Carmichael*, 526 US 137; 119 S Ct 1167; 143 L Ed 2d 238 (1999), the United States Supreme Court expanded the scope of Daubert, holding that Daubert's gatekeeping obligation applies not only to "scientific" testimony, but to all expert testimony.
4. We reject defendant's contention that the trial court improperly conducted the Davis-Frye hearing because it did not base its evidentiary ruling on the testimony of an independent expert. As the trial court noted, the manner in which the Davis-Frye hearing was conducted, through deposition transcripts of both parties' experts, was brought about by the parties themselves and not by the trial court's suggestion or decision. Neither party requested that live testimony or testimony from another expert be presented. A party cannot base an objection or seek reversal on the basis of an error that the party caused by either plan or negligence. *Detroit v. Larned Associates*, 199 Mich.App. 36, 38; 501 N.W.2d 189 (1993).

5. This textbook was introduced as an exhibit to be considered as part of the Davis-Frye inquiry.

6. MCL 500.3107(1)(a); MSA 24.13107(1)(a) provides:

(1) Except as provided in subsection (2), personal protection insurance benefits are payable for the following:

(a) Allowable expenses consisting of all reasonable charges incurred for reasonably necessary products, services and accommodations for an injured person's care, recovery, or rehabilitation

WILDER, J. (concurring).

I join in the majority's opinion in parts II, III, IV and V, but write separately with regard to part I because, while I agree with the result reached by the majority, I respectfully disagree with the analysis. Specifically, I disagree with the majority's finding that the evidence established that plaintiffs' and defendant's experts,¹ and Dr. Robert Volpe,² each had concluded that there is a causal relationship between stress and Graves' disease, and that this opined causal relationship is "recognized scientific . . . knowledge" under a Davis-Frye³ analysis.

The pertinent part of Dr. Volpe's article on the relationship between stress and Graves' disease reads as follows:

In the author's experience, there have been so many patients with Graves' disease who have had their disorder precipitated by specific acute stresses that it is difficult to escape the conclusion that in some patients there is a cause and effect relationship between such stresses and the subsequent development of hyperthyroidism, but only in already predisposed persons. Such events as bereavements, marital discord, a recent upper respiratory infection, or other infections, gastrointestinal disorders, motor vehicle accidents, or even dieting have been cited.

Nevertheless, the evidence for such a cause and effect relationship between stress and hyperthyroidism remains largely anecdotal and it has not yet been possible to design an impeccable study to prove this association. [Volpe, *The Role of Stress in the Induction of Graves' Disease*, found in *Autoimmune Diseases of the Endocrine System* (1990), p 186 (emphasis added).]

Dr. Volpe's article establishes quite clearly that his opinion that stress causes Graves' disease in persons predisposed to the disease is based on anecdotal evidence and personal experience, but that his opinion is not objectively and independently validated by scientific or medical literature. Accordingly, I cannot join in the majority's conclusion that Dr. Volpe's text

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provides sufficient evidence of a causal relationship between stress and Graves' disease to meet the requirements of Davis-Frye.

Similarly, I disagree with the majority's finding that Dr. Rosenblatt concluded there was a causal relationship between stress and Graves' disease. Dr. Rosenblatt testified during the trial⁴ that stress is a potential precipitating factor in the development of Graves' disease because "there are many examples of individuals in whom prior to the diagnosis of Graves' disease, there was some type of a stress." Dr. Rosenblatt further testified "that Dr. Taylor is certainly correct if he limits his statement to say that there can be a relationship between stress and the development of Graves'. It would be unproven if he were to say that there is a factual relationship between the two." (Emphasis added).

That there is no scientific proof of a cause and effect relationship between stress and Graves' disease is clear by the manner in which causation is defined by scientists. The glossary of terms in the Reference Guide on Epidemiology, found in the Federal Judicial Center's Reference Manual on Scientific Evidence (1994), p 172, defines causation as used in the field of epidemiology as denoting "an event, condition, characteristic, or agent that is a necessary element of a set of other events that produce an outcome, such as a disease. Thus, a cause may be thought of as a necessary link in some causal chain that results in an outcome of interest." There is no testimony in this case that establishes stress as a necessary element in the occurrence of Graves' disease. To the contrary, it appears from the evidence that having a genetic predisposition to Graves' disease is a necessary element to the development of the disease in combination with stress, since stress without predisposition does not necessarily lead to Graves' disease.⁵

For all these reasons, I cannot agree with the majority that plaintiffs presented evidence of a causal link between stress and Graves' disease.

On the other hand, there seems to be no question and no dispute that the evidence in this case establishes an association between stress and Graves' disease. According to the glossary of terms in the epidemiology chapter in Faigman, et al, eds, *2 Modern Scientific Evidence: The Law and Science of Expert Testimony* (1997), p 345, an association is a

[s]tatistical dependence between two or more events, characteristics, or other variables. An association is present if the probability of occurrence of an event or characteristic, or the quantity of a variable, depends upon the occurrence of one or more events, the presence of one or more characteristics, or the quantity of one or more

variables. . . . An association may be fortuitous or may be produced by various other circumstances; the presence of an association does not necessarily imply a causal relationship.

As pointed out by Dr. Volpe, many clinicians hold the "impression" that emotional or physical stress can precipitate Graves' disease and, according to Dr. Volpe, this assumption receives comment in every textbook of endocrinology. Dr. Taylor testified that aside from stress, he could determine no other likely precipitant to the disease from the history provided by Mr. Anton. Therefore, while the scientific evidence does not establish a causal link between Graves' disease and stress, I would nevertheless find Dr. Taylor's testimony admissible as a permissible inference under MRE 702 that, given the undisputed association between stress and Graves' disease,⁶ the facts in this case supported the

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conclusion that Mr. Anton's Graves' disease was proximately caused by stress from the accident. The trial court properly permitted the jury to be aware of the underlying facts and data supporting the inference reached by Dr. Taylor, i.e., Dr. Volpe's text and Dr. Taylor's clinical experience, and the jury was free to give the views of Dr. Volpe and Dr. Taylor whatever weight the jury felt it deserved in light of all the evidence. MRE 703.

Notes:

1. Dr. Charles Taylor and Dr. Solomon Rosenblatt, respectively.
 2. Dr. Volpe, described by Dr. Taylor as "one of the world's experts on thyroid immunology," is editor of the compiled text *Autoimmune Diseases of the Endocrine System* and author of Chapter 4 of this text, *Immunology of Human Thyroid Disease*.
 3. *People v. Davis*, 343 Mich. 348; 72 N.W.2d 269 (1955); *Frye v. United States*, 54 US App DC 46, 47; 293 F 1013 (1923).
 4. Dr. Rosenblatt's de bene esse deposition was read to the jury
 5. Interestingly, there was no testimony in the record establishing whether plaintiff was genetically predisposed to Graves' disease.
 6. It is significant that while no causal link is established, an association between stress and Graves' disease is undisputed. Where an association between occurrences is disputed, and where scientific studies are unable to validate the hypothesized linkage, inference testimony may be more prejudicial than probative, and therefore, inadmissible. MRE 403; MRE 702. See, e.g., *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 US 579, 595; 113 S Ct 2786; 125 L Ed 2d 469 (1993).
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