

IN THE CIRCUIT COURT OF MILLER COUNTY, ARKANSAS
CIVIL DIVISION

FRANCINE BENTON and
CANDACE BENTON

PLAINTIFFS

V.

06-70-1
NO. CV ~~03-158~~

STEVEN R. MURRAH

DEFENDANT

ORDER DENYING DEFENSE MOTION TO EXCLUDE
DIGITIZED X-RAY EVIDENCE

Now on this 21st day of DECEMBER 2010, there came on for consideration the Defendant's Motion in Limine to Exclude computerized radiographic mensuration analysis ("CRMA" also known as "digitized x-ray reports") from being introduced as evidence in the trial of this action. The Court, having considered the Defendant's Motion in Limine and the Plaintiffs' Response, the legal briefs submitted by the parties, the supporting documentation submitted by the parties, and after considering arguments of counsel made during a hearing before the Court on July 30, 2009, does find that such Motion in Limine should be **DENIED** for the following reasons:

CRMA is not Subject to a Daubert Challenge

1. The Defendant's *Daubert* challenge focuses on the use of digitized x-rays, more accurately known as computerized radiographic mensuration analysis (CRMA), to objectively measure the amounts of translation and slippage between the vertebrae in the spine. Mensuration has been used for many years by medical professionals to diagnose spinal instability and to formulate treatment plans.

2. The American Medical Association's *Guides to the Evaluation of Permanent Impairment (AMA Guides)*, which are the guidelines mandated for use by the Arkansas

Workmens' Compensation Commission (*see* Ark. Workers' Comp. Comm'n Rule 099.34) and which are often used by medical professionals in Arkansas courts, utilize mensuration analysis to assign a permanent impairment rating for spinal injury.

3. According to the medical literature submitted by the Plaintiffs in support of such technology, there are numerous peer-reviewed articles in which CRMA is shown to be more reliable, repeatable, and objective than hand-performed mensuration.

4. According to the precedent of *Graftenreed v. Seabaugh*, 100 Ark. App. 364, 268 S.W.3d 905 (2007) (*Graftenreed*), mere technological advancement of established, reliable procedures is not "novel" scientific evidence for which a *Daubert* challenge is appropriate. *Graftenreed, supra*, 100 Ark. App. at 373-74. The Court finds that CRMA is a mere technological advancement of established, reliable mensuration procedures such as the one utilized by the *AMA Guides*. Accordingly, the Defendant's *Daubert* challenge to CRMA is not appropriate in this case.

CRMA Meets the *Daubert* Criteria for Reliability

5. Even if CRMA is subject to a *Daubert* challenge as a novel scientific theory, the Court's conclusion would be the same. The Arkansas Supreme Court adopted the *Daubert* test in the case styled *Farm Bureau Mut. Ins. Co. v. Foote*, 341 Ark. 105, 14 S.W.3d 512 (2000), as follows:

The [U.S. Supreme] Court ... established the following inquiry to be conducted by the trial court:

Faced with a proffer of expert scientific testimony, then, the trial judge must determine at the outset, pursuant to Rule 104(a), whether the expert is proposing to testify to (1) scientific knowledge that (2) will assist the trier of fact to understand or determine a fact in issue. This entails a preliminary assessment of whether the reasoning or methodology underlying the testimony is scientifically valid and of whether that reasoning or methodology properly can be applied to the facts in issue.

The Court concluded that a key consideration is whether the scientific theory or technique can be or has been tested. Other considerations include whether the theory or technique has been subjected to peer review and publication, the potential rate of error, and the existence and maintenance of standards controlling the technique's operation. Additionally, the Court recognized that general acceptance in the scientific community can have a bearing on the inquiry. The Court emphasized that the inquiry envisioned by Federal Rule of Evidence 702, which is identical to our Rule 702, is a flexible one: □ □

Its overarching subject is the scientific validity -- and thus the evidentiary relevance and reliability -- of the principles that underlie a proposed submission. The focus, of course, must be solely on principles and methodology, not on the conclusions that they generate. □

Foote, 341 Ark. at 115–16, 14 S.W.3d at 519 (quoting *Daubert v. Merrell-Dow Pharm., Inc.*, 509 U.S. 579, 592–95, 125 L. Ed. 2d 469, 113 S. Ct. 2786 (1993)) (citations omitted).

6. In this matter, the Plaintiffs intend to rely upon CRMA to objectively identify and quantify the injuries to Plaintiffs' spines alleged to be the fault of the Defendant as a result of a motor vehicle collision. Such information is certainly probative of the facts at issue in this case insofar as AMI Civil 2202 (2010) will ask the jury to determine “[t]he nature, extent, and duration of any injury and whether it is temporary or permanent.”

7. Because CRMA evidence is relevant scientific evidence, the Court must next determine whether CRMA evidence is scientifically valid under the various *Daubert* factors. To demonstrate that CRMA is scientifically valid, the Plaintiffs submitted the *Affidavit of Dr. James D. Raker*, which was accompanied by twenty-seven (27) medical articles and guidelines, and citations to an additional thirteen (13) medical articles and guidelines. Highlights from these documents include the following:

- a. The American College of Radiology's clinical practice guidelines accept the use of CRMA because computerized processing is easier and more reliable.

- b. The International Chiropractic Association's guidelines permit chiropractors to use CRMA to determine lines of mensuration.
- c. The Council on Chiropractic Practice adopted a guideline, which has been accepted by the National Guideline Clearinghouse, states: "Computer aided digitizing mensuration analysis software has demonstrated accuracy to 0.0023 mm. While hand mensuration should not be overlooked, it cannot approach the accuracy attainable with advanced computer technology. Computer aided digitizing mensuration analysis provides biomechanical analyses with a high degree of accuracy in order to make a chiropractic differential diagnosis and/or to determine care protocols. Mensuration also provides a definitive baseline for follow-up radiological examinations as an assessment of outcome."
- d. The American Chiropractic College of Radiology has embraced CRMA in its clinical practice guidelines because it is faster, more portable and accessible, and equally or more accurate than hand-derived measurements.
- e. A peer-reviewed study published in 1999 concluded that "[r]adiographic mensuration methods, both manual and computerized, are among the most investigated and reliable analytical methods available to the chiropractic clinician and researcher." Troyanovich SJ, Harrison SO, Harrison DD, Harrison DE, Payne M, Janik TJ, et al. Chiropractic biophysics digitized radiographic mensuration analysis of the anteroposterior lumbopelvic view: a reliability study. *J Manipulative Physiol Ther* 1999; 22:309–15.

8. The information before this Court demonstrates that CRMA has been thoroughly tested and has been the subject of a number of peer-reviewed publications. The potential rate of error of CRMA is lower than the error rate of manual mensuration techniques, which have been used in Arkansas courts since 1995 after the Arkansas Workers' Compensation Commission adopted the *AMA Guides* as the definitive guide for making anatomical impairment ratings. *See Ark. Workers' Comp. Comm'n Rule 099.34*. Several national practitioner organizations have adopted and currently maintain standards controlling the operation of CRMA. The express conclusion of many of the articles and guidelines before the Court recognize that CRMA has received general acceptance in the scientific community. For these reasons, this Court concludes that CRMA meets the scientific validity requirements found in *Daubert*.

9. In opposing the admissibility of CRMA, the Defendant provided a single *Affidavit of Dr. Steven A. Dunnagan, M.D.* Notably, this affidavit fails to address any of the factors relevant to the *Daubert* inquiry required of this Court. That is, Dr. Dunnagan's affidavit does not provide any meaningful dialog on the results of CRMA testing; whether CRMA has been subjected to peer review and publication; the potential rate of error of CRMA; the existence and maintenance of standards controlling CRMA's operation; or whether CRMA has general acceptance in the scientific community. In essence, Dr. Dunnagan's affidavit questions the conclusions reached by Plaintiff Francine Benton's treating physicians after utilizing CRMA. However, to reiterate, this Court's analysis "must be solely on principles and methodology, not on the conclusions that they generate." *Foote*, 341 Ark. at 115–16, 14 S.W.3d at 519 (quoting *Daubert*, 509 U.S. 579, 592–95).

10. At the July 30, 2009 hearing, the Defendant requested and was granted a 60 day extension of time in which to research and reply to the Plaintiffs' evidence and argument regarding the scientific validity of CRMA. No such reply has been filed. Accordingly, the Defendant has produced no competent evidence demonstrating that CRMA fails to meet the scientific validity standards required by *Daubert*. To the extent the burden rests on the Plaintiffs, they have met their burden of demonstrating that CRMA meets each of the scientific validity factors set forth in *Daubert*.

The Residual Exclusionary Rule is not Applicable

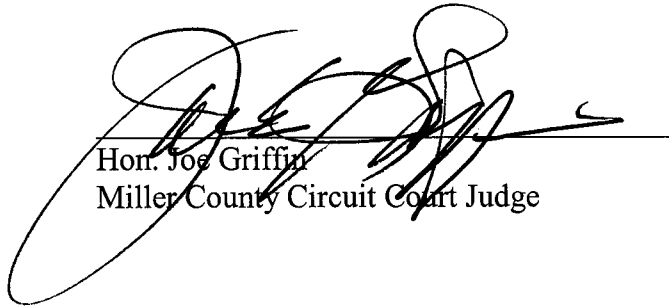
11. Give the above indicators of the objective, repeatable, and reliable nature of CRMA, the Court is convinced that the probative value of the CRMA evidence is not outweighed by the danger of unfair prejudice, confusion of the issues, or tendency to mislead the jury; or by considerations of undue delay, waste of time, or needless presentation of cumulative

evidence. For these reasons the Defendant's Rule 403 objections to DMX and CRMA evidence is denied.

Conclusion

12. The CRMA evidence in this case may be relied upon by the Plaintiffs' expert witnesses in this case, provided an appropriate foundation is laid for testimony by each such expert.

IT IS THEREFORE ORDERED AND ADJUDGED that the Defendant's Motion in Limine to exclude CRMA (digitized x-ray) evidence should be and is hereby **DENIED**.



Hon. Joe Griffin
Miller County Circuit Court Judge

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