

<p>Combined Court, Chaffee County, Colorado <input type="checkbox"/> County Ct. <input checked="" type="checkbox"/> District Ct. Court Address: 142 Crestone Ave. Salida, CO 81201 Telephone Number: (719) 539-6031</p> <hr/> <p>VITTORIA ERNST, Plaintiff,</p> <p>v.</p> <p>KAYLEEN FRALEY, Defendant.</p> <hr/> <p>Attorney for Plaintiffs: Pete Cordova, Esq. Law Office of Pete Cordova, P.C. 1604 H Street Salida, CO 81201 Phone Number: (719) 539-6679 FAX Number: (719) 539-3020 Atty. Reg.: 11881</p>	<p>FILED Document CO Chaffee County District Court 11th JD Filing Date: Apr 27 2007 2:53PM MDT Filing ID: 14650234 Review Clerk: Karen Prosser</p> <hr/> <p>COURT USE ONLY</p> <hr/> <p>Case Number: 05CV207 Division: Courtroom:</p>
<p align="center">PLAINTIFF'S RESPONSE IN OPPOSITION TO DEFENDANT KAYLEEN FRALEY'S MOTION TO EXCLUDE TESTIMONY OF THEODORE HENDERSON, M.D., REGARDING SPECT SCANS</p>	

COMES NOW the above named Plaintiff, VITTORIA ERNST, by and through her attorney, Pete Cordova, Esq., of The Law Office of Pete Cordova, P.C., and for her Response in Opposition to Defendant's Motion to Exclude Testimony of Theodore Henderson, M.D., Regarding Spect Scans and states to the Court as follows:

BACKGROUND

Plaintiff was severely injured in the automobile crash of March 12, 2005. So much so, that she had to undergo emergency surgery because of the risk that she would die or be paralyzed from the blow she received as the result of being in the back seat of a small car which was plowed into by an almost three-ton SUV. After Plaintiff had sufficiently recovered from her spinal surgery, she and her family began to notice there were serious problems with her thinking and vision.

Plaintiff underwent neuropsychological testing of her brain functioning. That testing, as well as other clinical data, revealed that she did not have normal function in several areas of her brain (Exhibit No. 3). Plaintiff was diagnosed with a Traumatic Brain Injury (TBI). As part of an accepted and

recognized practice of medical doctors (Affidavit of Dr. Henderson, Exhibit No. 1, p.3 para. d), psychologists and neuropsychologists (Affidavit of Dr. Helffenstein, Exhibit No. 2, p. 1, para. 3), and other treatment providers, SPECT scan technology was utilized as a tool in the treatment of the Plaintiff who had or was suspected of having suffered a TBI. There is nothing controversial about SPECT scan technology. It has been around for almost thirty years, and it is generally accepted in relevant professional communities as a tool for the treatment of TBI patients.

Plaintiff was referred for a diagnostic scan of her brain using a Single Photon Emission Computed Tomography (SPECT) machine. A SPECT scan is a radiographic imaging technique that produces a three dimensional radiographic image of blood flow throughout the brain. The patient ingests a radioactive tracer that allows the SPECT scan machine to image perfusion (blood flow) throughout the brain. The resulting images can reveal areas of brain abnormalities. The images are captured, compared against a normative database, and then colorized in a statistical way to differentiate the areas of the brain where blood flow (perfusion) differs from objective parameters.

Plaintiff underwent a SPECT scan on August 14, 2006, at Brain Matters in Denver, Colorado, (Exhibit No. 4). The radiographic images and the report of Dr. Henderson have been endorsed for trial as well as the expert testimony of Dr. Henderson. Dr. Henderson is a licensed medical doctor, a psychiatrist, and he is licensed in nuclear medicine (Exhibit No. 1).

The use of SPECT scans as a treatment tool for the patients with Traumatic Brain Injuries (TBI) is accepted by American College of Radiology (Exhibit No. 9), the Society of Nuclear Medicine, the European Association of Nuclear Medicine (Exhibit No. 10), the Society of Nuclear Medicine Brain Injury Council, and other professional organizations (Exhibit No. 1, p.3, Para. d).

Plaintiff's medical providers have opined that the SPECT scan of her brain is reliable and is accepted in their respective fields (Affidavit of Dr. Henderson, Exhibit No. 1, Para. d and Affidavit of Dr. Helffenstein, Exhibit No. 2, para. 3).

Despite the length of Defendant's pertinent Shreck brief, the arguments by the defense can be summarized as follows: (1) because the SPECT scan, standing alone, cannot reliably prove what caused Plaintiff's brain damage, then it cannot be entered into evidence at trial under C.R.E. 702. This is a false argument. Plaintiff's SPECT scan expert has not been endorsed to offer any opinion on causation. Rather, the SPECT scan expert has been endorsed to testify to the jury about the results of the SPECT scan of Plaintiff's brain. (2) The specific imaging technique employed in Plaintiff's SPECT scan was incorrect or inferior to other techniques.

The easiest way to conceptualize a SPECT scan, in a very general way, is to compare it to an x-ray. An x-ray of a broken arm does not identify what caused the broken arm. What it does confirm is that the arm is broken. An x-ray would not be excluded from a trial just because it did not prove, in and of itself, what caused the broken arm. The x-ray evidence would be added to other evidence to establish causation, such as when the arm began hurting in relation to a known trauma. In any event, the x-ray would be evidence for the injury, even if it did not prove what caused the injury.

Just as with an x-ray, the SPECT scan, in and of itself, would not necessarily indicate what caused any brain abnormalities imaged by the SPECT scan. What it does indicate is if there are brain abnormalities and, just as importantly for Plaintiff's case, where those brain abnormalities are located. Dr. Helffenstein has compared the areas of brain abnormalities in Plaintiff's SPECT scan imaging to the results of his neuropsychological testing and has found that the two corroborate each other to a high degree (Affidavit of Dr. Helffenstein, Exhibit No. 2, para. 4). Further, the areas of abnormalities in Plaintiff's brain imaged by the SPECT scan correspond to the areas of the brain that would have been expected to have been damaged in a rear-end collision.

Plaintiff's neuropsychological testing revealed uneven performance on various tasks. On some brain functioning tasks, Plaintiff performed normally; on others she performed outside of the norm. Because different parts of the brain control different kinds of intellectual tasks, it is possible to use the uneven results of Plaintiff's neuropsychological testing to predict which areas of her brain would be expected to be normal and which areas should show abnormalities. This is where the SPECT scan comes in as a way to confirm the neuropsychological testing. When the areas of Plaintiff's brain that were imaged as abnormal in the SPECT scan were compared to the areas of Plaintiff's brain that would have been predicted to be abnormal from the neuropsychological testing, the two matched. The brain abnormalities on the SPECT scan were located where the psychological testing said they should be. When the evidence as to when Plaintiff began to exhibit the symptoms of a brain injury is added to the SPECT scan evidence and the neuropsychological testing, then a scientific and legal argument can be made for causation (Affidavit of Dr. Helffenstein, Exhibit No. 2, para. 5) (Affidavit of Dr. Henderson, Exhibit No. 1). Plaintiff is only required to prove that it is more likely than not that she suffered a brain injury from the pertinent automobile crash. Her SPECT scan is simply one piece of relevant and reasonably reliable scientific evidence that would assist the jury in its determination.

Under any circumstances, the SPECT scan would be admissible to prove that the Plaintiff has brain abnormalities. Before evidence of what caused brain damage is introduced, evidence must be introduced that there is brain damage in the first instance. The SPECT scan is such evidence.

Counsel for both parties agreed that the Court need not conduct a hearing on either of Defendant's Shreck motions and that the Court could decide the Shreck motions on the argument and evidence submitted with the motions and responses. Defense counsel indicated during the telephone status conference on April 16, 2007, that the weaker of his two Shreck motions was the SPECT scan motion; and, that if the Court felt that it needed a hearing to clarify any of the evidence, then May 11, 2007, would be reserved for that hearing. Plaintiff would submit that there is more than enough evidence submitted with this motion to meet the liberal standard for the admission of expert evidence under Shreck.

STANDARD OF REVIEW

In 2001, the Supreme Court of Colorado had before it two general approaches for the admissibility of expert evidence. One approach, the Frye approach, was more rigid and required that the proffered evidence be generally accepted in the scientific community as a prerequisite to admission. Frye v. U.S., 54, App.D.C. 46, 293 F. 1013 (C.A.D.C. 1923)(general acceptance prerequisite to admission of expert testimony) superseded by statute and rule as recognized in Daubert v. Merrell Dow Pharmaceuticals, Inc., 509 U.S. 579, 113 S.Ct. 2786 (U.S.Cal., 1993).

The other approach, the Daubert approach, was less stringent and involved balancing a number of non-exhaustive factors under a totality of circumstances test. **"The drafting history makes no mention of Frye, and a rigid "general acceptance" requirement would be at odds with the "liberal thrust" of the Federal Rules and their "general approach of relaxing the traditional barriers to 'opinion' testimony."** Daubert v. Merrell Dow Pharmaceuticals, Inc., 509 U.S. 579, 588 (U.S.Cal., 1993).

The Colorado Supreme Court, in the Shreck case, went the direction of the liberal approach to the admission of expert testimony recognized under the Daubert case.

"We therefore hold that the rules of evidence, particularly CRE 702 and CRE 403, represent a better standard, because their flexibility is consistent with a liberal approach that considers a wide range of issues. See Downing, 753 F.2d at 1237 (noting that the language of Rule 702, the spirit of the rules of evidence, and the problems with applying Frye "suggest the appropriateness of a more flexible approach to the admissibility of ... scientific evidence")." People v. Shreck, 22 P.3d 68, 77 (Colo., 2001).

The admission of expert testimony and evidence is a matter within the sound discretion of the trial court. Broadly speaking, the admission of scientific

evidence requires that it (1) be reasonably reliable and (2) that the witness be qualified to opine to such matters. Id. The court should consider a number of factors when weighing the admission of expert evidence. The Shreck case delineated the factors as follows:

“(1) whether the technique can and has been tested; (2) whether the theory or technique has been subjected to peer review and publication; (3) the scientific technique's known or potential rate of error, and the existence and maintenance of standards controlling the technique's operation; and (4) whether the technique has been generally accepted. 509 U.S. at 593-94, 113 S.Ct. 2786. The Third Circuit has articulated yet other considerations: (1) the relationship of the proffered technique to more established modes of scientific analysis; (2) the existence of specialized literature dealing with the technique; (3) the non-judicial uses to which the technique are put; (4) the frequency and type of error generated by the technique; and (5) whether such evidence has been offered in previous cases to support or dispute the merits of a particular scientific procedure. Downing, 753 F.2d at 1238-39.

We hold that a trial court making a CRE 702 reliability determination may, but need not consider any or all of these factors, depending on the totality of the circumstances of a given case. A trial court may also consider other factors not listed here, to the extent that it finds them helpful in determining the reliability of the proffered evidence.” Id. at 77-8.

In adopting a liberal standard for the admission of scientific evidence, the Colorado Supreme Court addressed the concern that the standard was too liberal by saying the following:

“Any concerns that invalid scientific assertions will be admitted under this liberal standard are assuaged by Rule 702's overarching mandate of reliability and relevance. See Daubert, 509 U.S. at 595, 113 S.Ct. 2786. Such concerns are also mitigated by “[v]igorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof.” Id. at 596, 113 S.Ct. 2786.” Id. at 78.

Recently, the Colorado Supreme Court has further lowered the bar for the admission of expert testimony in the Ramirez case. In that case, the Colorado Supreme Court ruled expert opinion need not be expressed in terms of certainty or even probability; rather, possibility was a sufficient basis on which to render an opinion. Further, a nurse was permitted to testify as an expert based on a finding

only amounting to "suspicion" of sexual abuse and that the nurse's determination was sufficiently reliable as a scientific principle to be admitted under Shreck. People v. Ramirez, --- P.3d ----, 2007 WL 881171 (Colo., 2007).

SUMMARY OF DEFENDANT'S ARGUMENTS AND RESPONSES

A. SPECT scan evidence is not sufficiently reliable for admission in brain trauma cases in Colorado.

Response: SPECT scan testimony and evidence has already been found sufficiently reliable to meet the Shreck and Daubert standards for admission in both state and federal courts in Colorado. Judge Melonakis, in a pre-Shreck decision in Adams County District Court, found that SPECT scan technology passed even the stringent Frye for admissibility in a brain trauma case and admitted SPECT scan evidence despite C.R.E. 702 and 403 attacks (Exhibit No. 5). Judge Weinshienk, in a Colorado Federal District Court case, denied a Daubert challenge to SPECT evidence and admitted the SPECT scan into evidence in another brain trauma case (Exhibit No. 6). SPECT scan technology is such a thoroughly researched and reliable diagnostic tool in the evaluation of brain trauma cases, that it has been admitted in at least thirty known cases in Colorado where it was offered without challenge (Exhibit No. 1, p. 1, para. 4 and Exhibit No. 2, p. 2, para. 7). The overwhelming majority of cases referencing SPECT scans do so in a way that is supportive of their admissibility as evidence (Exhibit No. 7).

B. SPECT scans, standing alone, cannot establish a cause and effect relationship between trauma and brain injury; SPECT scans cannot date injuries; and psychological conditions can confound causation (Defendant's Shreck Motion, p. 2, paragraphs b, c, d, and e). In other words, Defendant's position is that the SPECT scan must, in and of itself, make the whole case for causation before it is admissible.

Response: There is no requirement that any particular piece of evidence carry the whole weight of causation on its shoulders as a prerequisite to admissibility. Plaintiff's SPECT scan expert has not been endorsed to testify as to causation. He has been endorsed to explain to the jury what a SPECT scan is and what brain abnormalities were imaged by the SPECT scan and where they are located. Plaintiff's SPECT scan evidence is not intended, in and of itself, to prove what caused Plaintiff's brain injury, when the injury occurred, or whether the injury is attributable to multiple causes. It is a diagnostic test utilized by Plaintiff's treatment providers to provide evidence that she actually has organic (objective and physical) brain abnormalities. It is a tool used to correlate her

injuries to certain impairments of her brain functioning and to corroborate other diagnostic tests like neuropsychological testing.

For the same reason that an x-ray would not be excluded simply because it did not establish causation, similarly, a SPECT scan should not be excluded. Further, Defendant is not conceding Plaintiff even has brain damage. If nothing else, the SPECT is evidence of brain damage because of the abnormal brain perfusions imaged on Plaintiff's brain. The SPECT scan counters Defendant's contention that her brain injuries are subjective or fake. One of Defendant's experts has opined that her personality testing has raised issues of faking due to the litigation (Exhibit No. 8, P.8 "Fake bad scale").

C. Plaintiff's SPECT scan was not conducted in a reliable manner because the results are subjective; there are no patterns, SPECT scans are investigational; sensitivity levels are uncertain, etc. (Defendant's Shreck Motion, p. 2-3, f-n.).

Response: Dr. Henderson, in his affidavit addresses each and every criticism of Defense as to the reliability of SPECT scans in general and the one performed on Plaintiff in particular (Exhibit No. 1). Dr. Henderson is a licensed psychiatrist and is licensed in nuclear medicine procedures. The test standards utilized in the scan of Plaintiff's brain are objective and along parameters that have been established by volumes of statistical studies of brain abnormalities (Exhibit No. 1, p. 5, para i). The American College of Radiology has established practice guidelines for SPECT imaging (Exhibit No. 9). The European Association of Nuclear Medicine has established guidelines (Exhibit No. 10). The Society of Nuclear medicine has established procedure guidelines (Exhibit No. 11). Studies have established that SPECT scans are superior to both MRIs and CT scans (Exhibit Nos. 12, 13, 14, and 15). MRIs image "structure" while SPECT scans image "functioning". Plaintiff's SPECT scan is merely a specialized picture of her brain designed to identify areas of abnormalities. Plaintiff's SPECT scan was conducted under accepted guidelines.

The matrix imaging utilized in Plaintiff's SPECT scan (64x64 vs. 128x128) provides better imaging than that suggested by the defendant because of the use of multiple detector gamma cameras with high resolution (Exhibit 1, p. 7-8, ¶7). As for subjectivity in the imaging process, the SPECT scan of Plaintiff's brain was conducted according to accepted guidelines. Plaintiff's SPECT was imaged using an objective statistical parametric analysis. A standard mean is utilized to differentiate (color) between any departures from normal blood flow (perfusion) in the brain (Exhibit 1, pp. 1-2, ¶5).

ARGUMENT

I. **SPECT scan evidence is reliable because (A) it is based on sound scientific evidence and methodology; (B) it is not novel because it**

has been in use for about thirty years; (C) it is not untested because it has been reviewed extensively in peer reviewed professional periodicals; (D) it is not controversial as to its legal admissibility at trial because it has been admitted into evidence in scores of trials; and (E) the use of SPECT scans for the evaluation of brain trauma is endorsed by professional organizations, doctors, and other health care practitioners. Plaintiff's endorsed SPECT scan evidence easily exceeds the liberal standard under Shreck for the admission of scientific or technical testimony.

A. SPECT scan evidence is based on sound scientific evidence and methodology.

SPECT scan technology is listed as an indicated diagnostic tool for the evaluation of traumatic brain injury by the American College of Radiology (Exhibit No. 9, p. p.2, III(7)), the European Association of Nuclear Medicine (Exhibit No. 10, p.2, III(D)), and the Society of Nuclear Medicine (Exhibit No. 11, p.1, III(D)). There are literally thousands of SPECT scan studies using control groups. SPECT scans are the go-to diagnostic tool where MRIs or CT are normal yet the patient exhibits signs of a brain injury (Exhibit No. 12, p.1). "SPECT brain perfusion imaging has been found to be **"highly sensitive"** for detecting blood flow disturbances in patients with traumatic brain injury" (Exhibit No. 12).

- (1) There is no requirement under Rule 702 that the SPECT scan must, by itself, be able to differentiate brain damage from a horse fall, depression, or any number of causes as a prerequisite for admission.

The defense's criticism that most SPECT scan studies exclude people with multiple traumas is not probative of the issue of admissibility. As Dr. Henderson pointed out, most studies will try to limit the variables to isolate particular injuries for study (Exhibit No. 1, p.2, 6(a)). Again, the SPECT scan is evidence of brain damage, not what caused it. The SPECT scan is added to other evidence, such as when the symptoms began, to make an argument for causation. SPECT scan evidence can corroborate neuropsychological testing. The criticism that studies tend to leave out subjects with multiple confounding causes could be said of all diagnostic tools like MRIs and CT scans. However, SPECT scans have been found to be superior to MRI and to PET scans in some kinds of head trauma. **"These findings have been corroborated by other studies which have shown that SPECT scans more closely correlate with long term outcome in head trauma patients compared to either MRI or CT."** (NEUROIMAGING IN PATIENTS WITH HEAD INJURY, p. 142).

The fact that multiple causes for Plaintiff's brain injuries may be present is not grounds to keep out a well established diagnostic tool like SPECT scans. Rather, the defense's objections go to the weight of the evidence. Any concern that the defense has about the SPECT scan evidence can be addressed in cross examination. **"Such concerns are**

also mitigated by “[v]igorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof.” Shreck, at 78. SPECT scans are routinely used and relied upon by medical doctors for the treatment and evaluation of traumatic brain injuries. Insurance companies routinely pay for SPECT scans. The science behind the SPECT scan technology is sound.

B. SPECT scan technology has been subjected to peer review, and it has been the subject of thousands of articles in peer reviewed publications.

Attached to this response are a number of peer reviewed articles concerning SPECT scans. Hundreds or thousands could have been attached; however, Plaintiff wanted to demonstrate just some of the scientific literature available. Dozens of other studies were referenced in Dr. Henderson’s Affidavit (Exhibit No. 1). The use of SPECT scans in the evaluation and treatment of brain injury patients is well accepted and recognized in various fields of medicine. For the defense to say otherwise is to have their proverbial head buried in the sand.

In this case, SPECT scan technology was used to correlate and corroborate the neuropsychological testing of Dr. Helffenstein. The use of SPECT scans hand-in-hand with clinical observations and testing is well established. (Exhibit No. 12, p.1-2). There are studies demonstrating the use of SPECT scans in patients with mild traumatic brain injury (Exhibit No. 13). Many studies have shown the superiority of SPECT scan to MRIs and other radiographic technologies (Exhibit No. 14, p. 198 and Figure 7.2). SPECT scans have been found to be effective and practical for the routine evaluation of brain injury as compared to other diagnostic tools (Exhibit 15, pp. 141, 142, 143, 144, and 145).

When the defense argues for four or five pages that SPECT scans pick up brain abnormalities in people with depression or other psychiatric illnesses, aren’t they really making the case that SPECT scans are reliable in imaging brain damage. What they are saying is that the SPECT scans are so good at what they do, imaging brain abnormalities, and that the scans are useful in the treatment of all sorts of brain injuries and illnesses. The defense is not, and cannot, argue that SPECT scans do not reveal brain injury. Quite clearly what they are arguing is that SPECT scans are so good that the scans can image too many types of brain injuries. There is no debate that SPECT scans can reliably image brain abnormalities caused by traumatic injuries to the brain. Again, it does not matter what caused the brain abnormalities for the purposes legal admissibility under C.R.E. 702. If the SPECT scan can demonstrate brain abnormalities, and traumatic brain injury is a possible cause of brain abnormalities, then SPECT scans are unquestionably admissible. People v. Ramirez, --- P.3d ----, 2007 WL 881171 (Colo., 2007)(Expert can testify to possibilities and not just probabilities).

Plaintiff's SPECT scan is merely a specialized picture of her brain. The picture of a broken window in a criminal mischief case would not be kept out because the picture could not identify who broke the window. The picture of the broken window would not be kept out because the picture, in and of itself, could not establish whether the window was broken by a hammer, a rock, or a boot. The picture of the broken window would come in as relevant evidence that the window was broken. So, to, must the Plaintiff's picture of her "broken" brain come in as a relevant evidence of her brain injury. The SPECT scan refutes the implication that she is making up her injury or that it is only non-organic (solely psychological based). Defendant's arguments that the picture of Plaintiff's brain from the SPECT scan is subjective because of manipulation of the image goes to its weight and not to its admissibility. The SPECT scan of Plaintiff's brain was obtained using objective criteria. Each standard deviation from the mean gets a different color. There is no manipulation of the process to obtain a desired result. The criteria and guidelines for Plaintiff's scan were in place before her scan took place. Her scan results can be repeated and statistically verified against other diagnostic criteria which is one of the elements to be considered under Shreck as favoring inclusion of evidence.

C. SPECT scans are not controversial as to their legal admissibility. SPECT scans have been admitted after being scrutinized under Shreck and Daubert in at least one state district court case and one federal district court case; and the scans have been admitted in at least thirty cases in Colorado alone without challenge.

There are two (2) known orders from Colorado that have disposed of the very same arguments the defense is raising in this case regarding SPECT scans (Exhibit Nos. 5 and 6). SPECT scans have been around for decades now. They are used by hospitals, laboratories, and diagnostic centers. They are often covered by insurance. Attached hereto is a summary of various state and federal cases supporting the admission of SPECT scans (Exhibit No. 7). The fact that SPECT scans are overwhelmingly admitted into evidence without challenge is indicative of just how reliable they are. The Court should note that, unlike in the defense motion to exclude Visual Midline Shift Syndrome evidence, Defendant does not even attempt to paint SPECT scans as junk science.

All that it required under the liberal standard for admissibility under Shreck and C.R.E. 702 is that the evidence be reasonably reliable. The evidence does not have to be conclusive for any issue in controversy. The evidence does not have to exclude all other causes as a prerequisite for admission.

The defense quotes a selected portion of Division of Worker's Compensation, TRAUMATIC BRAIN INJURY GUIDELINES. Defendant's counsel states" ... **the Colorado Division of Worker's Compensation has determined that SPECT scan is not generally accepted as a diagnostic tool for traumatic brain injury of any severity and is considered investigational for**

diagnostic purposes." (Defendant's pertinent Shreck Motion, p. 24, ¶K) The defense left out the following from that same section:

"SPECT may identify areas of decreased perfusion and provide a qualitative estimate of regional cerebral blood flow (CBF), which correlates with metabolism in many neurologic disorders. There is a variable correlation of SPECT with other measures such as neuropsychological test findings.

Although it should not be used to diagnose MTBI, there is some evidence that SPECT may provide useful information in some cases in which the prognosis is in question. SPECT may be useful when expected recovery from MTBI is not occurring within several months from the time of injury. A normal SPECT scan in this setting indicates a likelihood of resolution of symptoms within twelve months. However, due to its lack of specificity, an abnormal SPECT scan does not mean that symptoms will persist. Symptoms may resolve even when areas of abnormal perfusion continue to be seen on the SPECT scan.

For severe brain injury, SPECT may be useful for individuals with prolonged low levels of responsiveness (i.e. persistent vegetative state) in cases of anoxia, or when additional data is needed.

In all severities of TBI, it is recommended that medical necessity and clinical usefulness for this study be justified." (Exhibit No. 16)

When the section not quoted by Defendant is revealed, it is clear that the Division's position runs entirely contrary to the defense's request to exclude the SPECT scan in this case. SPECT scan studies are authorized by the Division, when "**justified**" by the physician, which means they must be paid for by insurers when called for by physicians. The Division has found that SPECT scans are useful for "**correlation**" with "**neuropsychological test findings.**" This is precisely what was done with Plaintiff's SPECT scans by the providers in this case. The Division does not allow a SPECT scan to be the sole basis for the diagnosis of a traumatic brain injury. This is exactly the same position taken by Plaintiff's SPECT scan expert. He has not been endorsed to say that the SPECT scan can, in and of itself, diagnose a traumatic brain injury.

Hereto, the defense argument boils down to the proposition, not supported by any case, that unless a piece of scientific evidence can, standing alone, establish causation, then it must be excluded under C.R.E. 702. There is no such requirement as a prerequisite admission. To summarize, the Colorado Division

of Labor recognizes the usefulness of SPECT scans; it recognizes the use of SPECT scans in conjunction with neuropsychological testing; and the use of SPECT is mandatory when reasonably required by a physician for the treatment of a worker with a traumatic brain injury of any severity.

D. SPECT scans are reasonably reliable for admission because they are used in the treatment of patients with mild traumatic brain injuries.

SPECT scans are routinely used in cases of mild traumatic brain injury by any number of medical doctors and other health care providers. SPECT scans make objective what would otherwise be subjective complaints from a person with a mild traumatic brain injury. The conclusion of one study said:

Our results demonstrate that repeat SPECT shows perfusion deficits in 95% of patients with persistent post-concussive symptoms and/or clinical signs. This high Spect sensitivity represents an important instrument in the objectivation of otherwise undetectable sequaelae. Indeed, many patients keep presenting clear post-concussive symptoms, but an objective proof confirming the presence of an organic dysfunction is often lacking because classical techniques, such as CT and EEG, are frequently normal in these subjects.

Our results suggest that cerebral perfusion SPECT offers the clinician a useful tool in the evaluation and follow-up of patients after acute, mild, or moderate traumatic brain injury. SPECT alterations correlate well with the severity of the trauma. A normal SPECT is a reliable predictor of favorable clinical outcome. On the other hand, an abnormal SPECT is not sufficient as prognosticator of the outcome. In the follow-up, the combination of SPECT and clinical data should be considered. SPECT offers an objectivation of sequaelae in patients suffering postconcussive symptoms.”
(Exhibit 17, p. 946).

Again, Plaintiff's SPECT scan was a part of her medical treatment. It was used by her neuropsychologist to confirm and correlate his clinical findings. The SPECT scan confirmed that Plaintiff had organic (real and physical) brain perfusion abnormalities in her brain. Regardless of their cause, the SPECT radiograph of Plaintiff's brain is relevant evidence that Plaintiff's brain abnormalities are real and not faked for the purposes of litigation. Regardless of their cause, the SPECT radiograph of Plaintiff's brain is relevant evidence that Plaintiff's brain abnormalities are real and not imagined.

II. The SPECT evidence is not unfairly prejudicial; it will not confuse the jury; and the danger of any prejudice or confusion is not outweighed by its probative value.

As cited earlier, there have been at least two reported cases denying C.R.E. 403 and F.R.E 403 attacks on SPECT scans (Exhibit Nos. 5 and 6). Defendant asserts that SPECT scan will prejudice the Defendant. There is no doubt that the SPECT scan evidence could damage the Defendant's case. However, that is of no consequence under C.R.E. 403. **"Evidence is not 'unfairly prejudicial' simply because it damages the defendant's case. 'All effective evidence is prejudicial in the sense of being damaging or detrimental to the party against whom it is offered.'" Masters v. People, 58 P.3d 979, 1001 (Colo.2002) (quoting People v. Dist. Court, 785 P.2d 141, 147 (Colo.1990). People v. Hall, 107 P.3d 1073, 1079 (Colo.App., 2004).** The real question is whether the SPECT scan is unfairly prejudicial. The benefits and limitations of SPECT scans are well researched. The defense is free and, no doubt, will raise at trial the limitations of SPECT scan technology, but that is no argument to exclude Plaintiff's SPECT scan. The liberal standard for admission under Shreck is intended to be **"mitigated by '[v]igorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof.'" Shreck at 78.** The Defense has hired experts to counter any perceived misuse of SPECT technology in general and to voice their criticisms of Plaintiff's SPECT scan in particular.

Plaintiff's scan is probative of whether she has an organic brain injury. It is probative of the strength of the results of her neuropsychological testing because the SPECT scan abnormalities were located where the neuropsychological testing said they would be. The scientific acceptance of the use of SPECT the way it has been used in this case is not in question. It has not been used, as Defendant would suggest, to diagnose the cause of a brain injury in the presence of multiple possible causes.

CONCLUSION

Plaintiff's SPECT scan is a specialized picture of her brain which was obtained from scanning her brain after she ingested a radioactive isotope. The scan was then compared to a normative database and colorized to reflect deviations. Her scan was conducted on accepted guidelines for the use of SPECT technology.

The defense has set up a straw man argument which is that SPECT scans cannot differentiate the cause between multiple possible sources for a brain injury. This may or may not be true; however, it does not matter because the SPECT scan in this case is not being offered, in and of itself, to differentiate between multiple possible causes of Plaintiff's brain abnormalities. It is being offered as relevant to proving that she has objective brain abnormalities. It is being offered to corroborate and correlate her SPECT imaged brain abnormalities to her neuropsychological testing. It is being offered to rebut the

suggestion that her brain injuries are imagined or faked. For those uses, there is more than enough evidence for the reasonable reliability of SPECT scans.

Plaintiff's SPECT scan is just like that picture of a broken window. It might be argued that a different lens could have been used or that the color process used in the developing of the picture was inferior to another process. This is the stuff of cross-examination not evidence exclusion. Defense counsel indicated that in his view, his motion to exclude the SPECT scan was the closer call of the two Shreck motions he filed. Considering the widespread use of SPECT scans, the research available, the fact that SPECT has weathered 702 and 403 attacks even under the stricter Frye standard, and the liberal standard for admission under Shreck, no hearing is needed on defense counsel's motion to exclude Plaintiff's scan. That motion should be denied.

WHEREFORE Plaintiff prays that this Honorable Court deny Defendant's Motion to Exclude Testimony of Theodore Henderson, M.D., Regarding Spect Scans and admit Plaintiff's SPECT scan evidence.

Respectfully submitted this 27th day of April, 2007.

THE LAW OFFICE OF PETE CORDOVA, P.C.

*Signature on File
At Law Office of Pete Cordova, P.C.*

Pete Cordova, Esq.
Attorney for Plaintiff

CERTIFICATE OF MAILING

The undersigned hereby certifies that on April 27, 2007, a true and correct copy of the foregoing Plaintiff's Response in Opposition to Defendant Kayleen Fraley's Motion to Testimony of Theodore Henderson, M.D., Regarding Spect Scans was served on each of the following at the indicated address by:

- Via Overnight Delivery
- First Class U.S. Mail, postage prepaid
- Certified U.S. Mail, postage prepaid
- Facsimile transmittal

E-file via Lexis Nexis

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Signature on File
At Law Office of Pete Cordova, P.C.

Judy Bullen