FIBROMYALGIA DUE TO PHYSICAL TRAUMA: FACT OR FICTION?

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“The controversy about traumatic causation of fibromyalgia is deeply entwined with the controversy about the nature and legitimacy of fibromyalgia—about whether [fibromyalgia] is primarily a neurophysiological or psychosocial illness.”
—Frederick Wolfe

Fibromyalgia, also termed fibromyalgia syndrome, is a painful condition characterized by chronic widespread musculoskeletal discomfort throughout multiple locations in upper and lower body regions. Other concomitant symptoms include sleep disturbance, memory loss, fatigue, migraine headaches, irritable bowel, and morning stiffness. The idea that fibromyalgia may develop as the result of physical trauma is subject to intense debate and is driven by social and legal issues. It is, therefore, easy to understand why the relationship between the two is controversial in medical/legal circles. One merely has to look at the literature to appreciate that fibromyalgia is a contested disorder which has been called one of the “most prevalent chronic pain syndrome

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1 Frederick Wolfe et al., Fibromyalgia and Physical Trauma: The Concepts We Invent, 41(9) J. OF RHEUMATOLOGY 1737-745 (Sept. 1, 2014).
4 See Gregory Gardner, Fibromyalgia Following Trauma: Psychological or Biological, 4(4) CURRENT REVIEW OF PAIN 295, 295-300 (2000).
presented in contemporary litigation.” Another publication names it the “most controversial condition in the history of medicine.” An obvious problem is that unlike a broken bone or heart attack, fibromyalgia has no objective criteria for the diagnosis. Several Consensus Reports exist on the diagnostic requirements, but these papers are merely the opinions of a select group of physicians.

This article will provide a comprehensive analysis of the problems associated with trauma-induced fibromyalgia. The first section will examine the medical evidence with regard to the disorder including its origin, diagnostic criteria and the recent research as to its cause. The article will then provide a review of the legal issues including the court cases in various context and it will end by offering practical tips to those advancing or defending a fibromyalgia claim.

I. A MEDICAL ANALYSIS

Fibromyalgia typically occurs in those between 20 and 60 years of age, although it has been observed in children. It has an overall prevalence of 2.0% in the general

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6 Monique Leahy, Proof of Chronic Fatigue Syndrome and Fibromyalgia, 99 AM. JUR. PROOF OF FACTS 1, 6 (3rd ed. 2008).
7 See Frederick Wolfe et al., The American College of Rheumatology Preliminary Diagnostic Criteria for Fibromyalgia and Measurement of Symptom Severity, 62 ARTHRITIS CARE & RESEARCH 600, 600-610 (2010); Frederick Wolfe et. al., 2016 Revisions to the 2010/2011 Fibromyalgia Diagnostic Criteria, 46 SEMIN. ARTHRITIS RHEUM. 319, 321 (2016).
8 See John Quintner et al., Signification & Pain: A Semiotic Reading of Fibromyalgia, 24 THEORETICAL MED. 345, 347 (2003). A diagnostic requirement is defined as a requirement that is necessary to maintain a diagnosis. See KEANE MILLER ENCYCLOPEDIA & DICTIONARY OF MEDICINE, NURSING, & ALLIED HEALTH (7th ed. 2003), uhhttp://medical-dictionary.thefreedictionary.com/Diagnostic+criteria. A medical diagnosis is defined as “diagnosis based on information from sources such as findings from a physical examination, interview with the patient or family or both, medical history of the patient and family, and clinical findings as reported by laboratory tests and radiologic studies.” Id.
population occurring more often in women (3.4%) than men (0.5%)\(^{10}\) and the symptoms can be worsened with stress.\(^{11}\) The syndrome is diagnosed on subjective criteria alone, without available supporting objective findings from physical examination, laboratory results, or imaging studies.\(^{12}\)

**A. Historical Perspective**

One only needs to look at the historical development of this condition to appreciate the struggles that the medical profession has had with fibromyalgia. The disorder has been around since the antiquities, but was first identified as a condition in 1900 when termed “fibrositis.”\(^{13}\) In the early years, fibrositis was thought to be a psychological condition without any medical or organic basis.\(^{14}\) In 1989, a researcher identified eighteen soft tissue sites tender to palpation in many of those patients diagnosed with fibrositis.\(^{15}\) These tender points were defined as specific places on the body, which experienced pain with the application of a standard amount of non-painful pressure (4

Because of a presumed rheumatologic basis for this condition, the American College of Rheumatology (ACR) accepted fibrositis as a rheumatologic problem, which was then termed fibromyalgia. In 1990, the ACR published its initial diagnostic criteria, which includes a history of chronic widespread pain for at least three months duration and having more than eleven of eighteen possible tender points identified on physical examination. In 2010, the ACR modified its criteria by removing the tender point examination and simply requiring the patient to identify those regions of the body that are painful. One critic of this change noted that without the requirement of the tender point examination, “it seems that just about every patient with generalized pain, insomnia, and depression is now given the diagnosis of ‘fibromyalgia.’”

To provide more specificity to the diagnosis, the 2010 ACR criteria included a widespread pain index (WPI), a count of the number of painful body regions, and a symptom severity (SS) scale that measured cognitive symptoms, sleep, fatigue, and other somatic issues. These criteria were modified further in 2011 by retaining the WPI but eliminating the SS score, replacing it with yes/no answers to questions on the presence of abdominal pain, depression, and headaches over the prior six months. However, all

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19 See Wolfe et al., *supra* note 7, at 600 (describing a change from tender point examination to patient’s self identification of points and pain).


21 See Wolfe et al., *supra* note 7, at 600.

criteria remain subjective; that is, they are simply based upon what the patient reports experiencing.\textsuperscript{23}

The concept of fibromyalgia being a rheumatologic problem, however, has been questioned in recent years since physical examination fails to reveal any joint or bone findings, and the usual laboratory studies for inflammatory disease, such as sedimentation rate, rheumatoid factor, and c-reactive protein are typically normal.\textsuperscript{24} Researchers have turned to other explanations that may cause fibromyalgia, including neurological dysfunction.\textsuperscript{25} Pain specialist, Miroslav Backonja, M.D., a Professor of Neurology at the University of Wisconsin School of Medicine and Public Health has stated that “[t]here’s a growing body of information clearly pointing to this as a neurological disorder, and while we can’t cure it, there is a pretty reasonable way to apply treatment strategies.”\textsuperscript{26}

\textsuperscript{23} See id. “This signifies that the criteria set has been quantitatively validated using patient data, but has not undergone validation based on an external data set. All ACR-approved criteria sets are expected to undergo intermitted updates.” Id.

\textsuperscript{24} See Russell, supra note 2.

\textsuperscript{25} See Robert Hawkins, \textit{Fibromyalgia: A Clinical Update}, 113 J. OF AM. OSTEOPATHIC ASS’N. 680, 682 (2013). More recently, it has been appreciated that fibromyalgia shares similar abnormalities of causation with, and clinical features of, several other disorders. Id. The new understanding led to the concept of a group of conditions that make up central sensitivity syndrome. Id. The underlying cause of CSS disorders is still being explored, but unifying theories have been proposed. Id. Genetic, sleep, nervous system, infection, and psychological factors are all potential contributors to the presence of fibromyalgia. Id. Rather than being a discrete illness, fibromyalgia is now considered 1 phenotype of a much larger spectrum of disorders that overlap substantially in individual patients. Id. See also G. Shaw, \textit{Is Fibromyalgia Real?}, 5 NEUROLOGY Now 29, 29-32 (2009).

New and better research pointing to possible underlying causes of fibromyalgia seems to be winning over at least some of the skeptics. Using tools like functional MRI, which show the brain’s responses to pressure and heat stimuli, researchers have been able to measure how people with fibromyalgia process stimuli like pain and pressure. Patients with fibromyalgia have what’s called a “hyperexcitable” nervous system. Pain networks in their brains are more easily activated that people who don’t have fibromyalgia. Other researchers have also found impairments in a specific brain region that helps to inhibit the body’s response to pain among people with fibromyalgia.

\textit{Id.}

\textsuperscript{26} See Shaw, supra note 25, at 29-32.
The neurology community, however, has been slow to embrace fibromyalgia as its own. In a scathing editorial in *Neurology*, the journal of the American Academy of Neurology, a physician blasted the concept of fibromyalgia, stating “presently, neurologists are only viewing from a distance the milking of this ‘cash cow’ by certain rheumatologists and attorneys.” Even as late as 2015, a case study in *Neurology* likened the fibromyalgia tender points to hysterical findings. Despite the continued controversy swirling around fibromyalgia, the Federal Drug Administration (FDA) has approved three medications for the treatment of this ephemeral disorder – pregabalin (Lyrica), duloxetine (Cymbalta), and milnacipran (Savella).

B. Current Concepts

Fibromyalgia in terms of both cause and mechanism remains poorly understood, but research is being directed along several pathways. A recent concept is that...
fibromyalgia is due to central sensitization, whereby the central nervous system—the brain and spinal cord—are at a heightened degree of excitability, making normal sensory stimulation extremely painful. Such aberrant pain processing leads to the chronic pain of fibromyalgia. This theory is supported by one study of the tender points in fibromyalgia patients, where researchers concluded that fibromyalgia “is a syndrome of disordered central processing of pain (sensitization)” and the tender points are simply a reflection of this sensitivity and have no other significance. This type of conclusion has led the ACR to abolish the 11/18 tender point requirement in their original fibromyalgia diagnostic criteria. In a different study of fibromyalgia, a leading rheumatologist in fibromyalgia research concluded that the disorder is due to central sensitivity of the nervous system. In addition to the central nervous system, work has shown that the sympathetic nervous system is persistently hyperactive.

32 See Bellato et al., supra note 16 (explaining the symptoms of fibromyalgia primarily linked to nerve sensitivity and pain).
33 See R.N. Harden et al., A Critical Analysis of the Tender Points of Fibromyalgia, 8 PAIN MEDICINE 147, 152-53 (2007) (discussing the connection between chronic pain and the diagnosis of fibromyalgia).
34 See id. at 153. Pain threshold was tested among 31 healthy controls and 25 fibromyalgia patients. Id. at 148. The threshold was measured by “algometric total scores” and had an accuracy of [eighty-five point seven percent] in comparing fibromyalgia patient thresholds to those of the healthy controls, which allowed for increased accuracy in diagnosis.” Id. at 150.
35 See id. at 153. The conclusion of the test suggests “single points, smaller groups of points, or sham points may be as effective in diagnosing fibromyalgia as the use of all [eighteen] points.” Id. However, using the eighteen ACR points showed significant differences in threshold pains of fibromyalgia patients to the controls. See Harden et al., supra note 33.
37 See Henry Gray, Anatomy of the Human Body: The Sympathetic Nerves, BARTLEBY, http://www.bartleby.com/107/214.html (last visited Apr. 7, 2018). “The sympathetic nervous system includes those portions of the nervous mechanism in which a medullated nerve fiber from the central system passes to a ganglion, sympathetic or peripheral, from which fibers, usually non-medullated, are distributed to such structures, e.g., blood vessels, as are not under voluntary control.” Id. This system is involved in the fight or flight response by conducting impulses to different organs. Id. See also Bellato et al., supra note 16 (explaining the hyperactivity of nerves as increased sensitization and widespread pain at tender points).
Another path of research is examining the role of the neuroendocrine system involving the hypothalamus of the brain along with the pituitary and adrenal glands. Since this hypothalamic-pituitary-adrenal axis is critical for stress-adaptation, the stress-induced component of fibromyalgia may be explained by dysfunction at this level. Genetic factors may also be at play since several familial studies have demonstrated a genetic predisposition to fibromyalgia.

Immune dysfunction may play a role since fibromyalgia has been reported to commonly occur in patients with autoimmune disorders. Psychiatric problems are also associated with fibromyalgia, particularly anxiety, somatization, dysthymia, panic disorders, post-traumatic stress, and depression. The question then becomes which is the cause and which is the effect. Neurotransmitter alterations, especially serotonin, may

38 See Henry Gray, Anatomy of the Human Body: IX Neurology, BARTLEBY, http://www.bartleby.com/107/183.html (last visited Apr. 7, 2018). The hypothalamus helps hormone production and “includes the subthalamic tegmental region and the structures forming the greater part of the floor of the third ventricle, viz., the corpora mammillaria, tuber cinereum, infundibulum, hypophysis, and optic chiasma.” Id. The pituitary gland is referred to as the master gland that controls the release of hormones. See Bellato, supra note 16, at 67. The adrenal gland is located just above the kidneys and produces the hormone adrenaline. Id. See SUSAN STANDRING, GRAY'S ANATOMY 32-34 (Neel Anand et al. eds., 41st ed. 2016) (explaining how the adrenal gland functions through the hormone adrenaline). Additionally, the pituitary gland is referred to as the master gland that controls the release of hormones. Id. at 360.

39 See Bellato, supra note 16, at 67 (describing the function of the axis as associated with a disrupted circadian rhythm); STANDRING, supra note 38, at 360 (describing the relationship the hypothalamic-pituitary-adrenal axis and its effects on stress-adaptation).

40 See Bellato, supra note 16, at 86 (explaining how transmission is thought to be polygenic and linked to neurotransmitters).

41 See id. (describing the relationship between immune system dysfunction and the controversal study on antipolymer antibodies).

contribute to the impaired sleep patterns and depression seen in fibromyalgia as well as the sensitivity to stress-induced exacerbation of fibromyalgia symptoms.\(^{43}\)

### C. Diagnostic Criteria

Even though there is little evidence to conclude that fibromyalgia is a rheumatologic disorder, medical organizations have deferred to the American Academy of Rheumatology (ACR) for their diagnostic criteria of fibromyalgia.\(^{44}\) As previously noted, the first criteria were published by the ACR in 1990, which were then modified in 2010 and 2011.\(^{45}\) The latest modifications were presented in 2016 and include the following:

1. Widespread pain index (WPI) equal to or greater than 7 and symptom severity score (SSS) equal to or greater than 5; or a WPI of 4-6 and an SSS score equal to or greater than 9.

2. Generalized pain, defined as pain in at least four of five regions, is present.

3. Symptoms have been present at a similar level for at least three months.

4. A diagnosis of fibromyalgia is valid irrespective of other diagnoses. A diagnosis of fibromyalgia does not exclude the presence of other clinically important illnesses.\(^{46}\)

Missing from these criteria are any objective measures, either found on physical examination, imaging, or laboratory studies.\(^{47}\) That is, the ACR diagnostic criteria rely solely upon subjective reporting by the patient of either pain or associated symptoms such

\(^{43}\) See Bellato, supra note 16, at 26 (describing the role Serotonin has on dealing with pain). See Desvenlafaxine (Oral Route), MAYOCLINIC, http://www.mayoclinic.org/drugs-supplements/desvenlafaxine-oral-route/description/drg-20071583 (last updated Mar. 1, 2017) (noting that desvenlafaxine belongs to a group of medicines known as serotonin and norepinephrine). Serotonin is a chemical that helps treat depression. Id.

\(^{44}\) See Wolfe, supra note 7, at 319-29.

\(^{45}\) See id. at 319-29 (describing revisions to the 2016 criteria).

\(^{46}\) See id. at 319-29 (listing the modifications to the 2010/2011 criteria).

\(^{47}\) See id. at 319-29.
as insomnia and depression. As one writer cynically stated, “[i]t seems clear that if one palpates too heavily then any patient examined can be made to have fibromyalgia.”

A skeptic would suggest that any person wishing to assume a diagnosis of fibromyalgia could simply research it on the internet, visit their doctor reporting the symptoms that they have learned about, and be rewarded with the fibromyalgia diagnosis for whatever reason they wish. As stated by one critic, “perhaps the epitome of this is ‘Internet iatrogenesis,’ a self-inflicted condition enjoyed by increasing numbers of techno-patients.” It is no wonder that this disorder with its subjective symptoms has caused confusion and contradiction within the medical-legal community.

Recent research has identified specific abnormalities that may provide objective measures of fibromyalgia. Two areas of promise are that of functional neuro-imaging and biomarkers. Functional neuro-imaging, which seeks to identify what parts of the brain are working combining anatomy and physiology, support the likelihood that fibromyalgia is a neurological dysfunction of the central nervous system. One of the

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48 See id.
49 See Harden, supra note 33, at 147-156 (describing limitations to the ACR criteria due to subjective and qualitative nature that can improve).
50 See Bohr, supra note 28, at 593-597 (describing the simplicity of being diagnosed with fibromyalgia).
51 See Tennant, supra note 14.
52 See id. (defining iatrogenesis where patients look for diagnostic label that fits and does not stigmatize them).
53 See Jacob N. Ablin et al., Biomarkers in Fibromyalgia, 13 CURRENT PAIN & HEADACHE REP. 343 (2009) (finding objective markers to diagnose an ailment that is currently detected by subjective reporting).
54 See id. (finding objective ways to measure fibromyalgia through functional neuro-imaging and biomarkers).
56 Abnormal responses to pain in fibromyalgia have been documented with [functional]
first types of imaging studies used in fibromyalgia is that of single photon emission computed tomography (SPECT). With the SPECT procedure, a radioactive tracer is infused into a vein allowing for the measurement of the regional blood flow (rCBF) through the brain. Various SPECT studies of fibromyalgia patients have demonstrated reduced blood flow through the thalamus, a structure in the center of the brain important for sensory processing, such as painful information. One study even showed decreased blood flow in areas of the sensory cerebral cortex, which matched the degree of fibromyalgia severity as reported by the patients.

Another imaging technique, positron emission tomography (PET), also uses injected radioactive tracers but provides better image resolution. These studies in fibromyalgia patients demonstrate abnormal blood flow patterns in certain parts of the cerebral cortex suggesting abnormal signaling of pain and the cognitive processing of pain. Studies using functional magnetic resonance imaging (fMRI), which display those active parts of the brain based upon the metabolic activity of the brain structures, also...
demonstrate abnormalities in fibromyalgia patients. One study, for example, evaluated with fMRI, showed the responses of two groups of women, both with fibromyalgia and non-symptomatic controls, to be both painful and non-painful to stimulation. Both types of stimulation produced differences in activity in certain parts of the brain when comparing the subjects with fibromyalgia to the control group.

Other advanced neuro-imaging procedures, including voxel-based morphometry, diffusion tensor imaging, magnetic resonance spectroscopy, and arterial spin labeling, have revealed differences in brain function activity when comparing patients with fibromyalgia with normal controls. While these neuro-imaging studies are helpful in understanding the basic mechanism of fibromyalgia, they are not diagnostic for the disorder. However, such positive imaging findings in a person suspected of having fibromyalgia can be supportive for that diagnosis.

62 See Bellato, supra note 16, at 2 (finding that “(fMRI) has greater temporal and spatial resolution than either SPECT or PET”)


64 See id.

65 See J. Ashburner & K. Frishton, Voxel-Based Morphometry–The Methods, 11 NEUROIMAGE 805, 807 (2000). Simply put, voxel-based morphometry evaluates the intensity of gray matter between two sets of subjects. Id. See Dr. Laurent Hermoye, Diffusion Tensor Imaging (DTI) – Fiber Tracking, IMAGYLS, http://www.imagilys.com/diffusion-tensor-imaging-dti/ (last visited Apr. 8, 2018). This technique is based on MRI neuroimaging technique allowing for one to “estimate the location, orientation, and anisotropy of the brain’s white matter tracts.” Id. See Sasitorn Petcharunpaisan et al., Arterial Spin Labeling in Neuroimaging, 2 WORLD J. RADIOLOGY 384, 384-85 (2010). This MRI technique measures tissue perfusion. Id. See Bellato, supra note 16 (explaining the various neuro-imaging procedures, their results, and how the results differ in brain function activity of fibromyalgia patients).

66 See id. (explaining that diagnosis is often an inference found through meeting several requirements and then eliminating other possible causes).

67 See id. (explaining difficulties in diagnosis but emphasizing that there are several factors that can help infer the existence of the condition).
Biomarkers are laboratory findings that indicate the presence of a disease. However, all standard laboratory tests are normal in cases of fibromyalgia and such testing is performed to rule out other possible disorders. A more recent study has led to the development of the FM/a test that is suggested to be sensitive and specific for fibromyalgia. This immunological test is based upon abnormally low cytokine levels in fibromyalgia patients in response to stimulation of certain white blood cells in the blood, indicating a depressed immune system.

D. Fibromyalgia Pain vs. Myofascial Pain

A point of confusion is the difference between fibromyalgia and myofascial pain, a critical distinction since these two conditions are quite different. While both disorders result in a chronic musculoskeletal pain problem, the discomfort from fibromyalgia is widespread, while myofascial pain is regionally localized such as to the neck or back. Myofascial pain is traditionally characterized by the objective finding of trigger points in the painful region, recognized as palpable muscle knots, whereas the tender points of fibromyalgia are identifiable only by the subjective response of pain with palpation. The pain from myofascial trigger points responds to appropriate physical therapy and

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69 See Bellato, supra note 16 (emphasizing that with no definitive diagnostic criteria for Fibromyalgia, diagnosis may occur through the elimination of other possible causes).
70 See Behm et al., Unique Immunologic Patterns in Fibromyalgia, 12 BMC CLINICAL PATHOLOGY 1 (2012).
71 See id. The low or lack of increase of cytokine levels from patients with FM were significantly lower 1.4 to 8 times fold lower than those of healthy control group individuals. Id. This implies that cell-mediated immunity is impaired in FM patients, and is distinctive enough to act as a confirmation of clinical diagnosis for FM. Id.
72 See Mense, Do We Know Enough To Put Forward A Unifying Hypothesis?, 3 J. PAIN 264 (2002).
73 See id.
74 See Hodge et al., Small Circles of Pain Cause Big Headaches In Court — A Primer on Myofascial Pain and Trigger Points, 15 MSU J. MED. LAW 71, 71-110 (2010) (defining palpable muscle knots as “a small patch of a tightly contracted muscle”).
injections whereas the discomfort from fibromyalgia tender points do not react to these measures.\textsuperscript{75} Fibromyalgia patients also have associated generalized symptoms such as insomnia, fatigue, depression, joint stiffness, sleep disturbance, and irritable bowel, while myofascial patients have relatively few similar systemic complaints.\textsuperscript{76}

E. The Link Between Trauma and Fibromyalgia

The role of trauma as a cause for fibromyalgia has been just as, if not more, controversial as the disorder itself. There are a variety of reasons for the lack of respect afforded this diagnosis. Fibromyalgia remains a disputed affliction that is made by the process of elimination because there is no definitive laboratory or diagnostic test that will confirm the impression.\textsuperscript{77} As noted in \textit{Marsh v. Valyou},\textsuperscript{78} fibromyalgia is “a chronic painful muscular disorder of unknown cause.”\textsuperscript{79} Despite extensive research, the etiology and pathophysiology of FM are still unclear.\textsuperscript{80}

Adding any condition to a compensation setting that cannot be objectively documented is like adding fuel to a fire and FM falls within this category. This controversy, however, is not unique. One merely has to look at the history of other subjective painful conditions, such as whiplash, complex regional pain syndrome and minor traumatic brain injury, to appreciate the problem.\textsuperscript{81}

\textsuperscript{75} See Mense, supra note 72, at 265.
\textsuperscript{76} See Lehmann et al., supra note 3; Yang TY et al., \textit{Risk for Irritable Bowel Syndrome in Fibromyalgia Patients: A National Database Study}, 96 MEDICINE (BALTIMORE) 1, 5 (2017) (finding FM associated with 1.54-fold increased risk for functional disorder IBS in Taiwan).
\textsuperscript{77} See Leahy, supra note 6, at 6.
\textsuperscript{78} See Marsh v. Valyou, 977 So. 2d 543 (Fla. 2007).
\textsuperscript{79} See id. at 571 (explaining lack of clarity and understanding as to origin of fibromyalgia).
In any event, it is helpful to differentiate primary from secondary fibromyalgia. Primary fibromyalgia arises on its own without an apparent precipitating cause, occurring in up to 72% of patients as reported in one study. Secondary fibromyalgia results from some type of triggering factor including infections, vaccinations, chemical substances, and perhaps physical trauma resulting in fibromyalgia. In his editorial, Dr. Tennant takes this point further and states that fibromyalgia “. . . is not a primary disease at all, but a secondary or symptomatic manifestation of an underlying, causative disorder,” particularly infections and neck trauma.

To consider the relationship of trauma to fibromyalgia, termed post-traumatic fibromyalgia, the following discussion will present arguments supporting and those opposing this possibility.

1. Post-Traumatic Fibromyalgia: Supporting Views

The medical literature reveals that between 25-50% of patients with fibromyalgia report an episode of physical trauma that preceded the onset of symptoms by several weeks to months. In one study of 136 patients with fibromyalgia, 39% reported significant trauma within six months of symptom onset. The location of the trauma also
appears important in the development of fibromyalgia.\textsuperscript{87} For example, one paper found that 21.6\% of 102 adults with neck injury developed fibromyalgia within one year, while less than 2\% (1/59) of patients with a leg fracture developed FM.\textsuperscript{88} A similar correlation of neck injury and fibromyalgia was reported in an analysis of 130 women with fibromyalgia.\textsuperscript{89}

In a study of inflammatory cytokines in fibromyalgia patients with a history of cervical spine trauma, the authors suggest that the “causal link between FMS (fibromyalgia syndrome) and cervical spine trauma may be attributable to commonly occurring posterolateral or central annular tears, and tears between the disc and endplate in these injuries, exposing the cord to the nucleus pulposus.”\textsuperscript{90} Along the same lines, an MRI analysis of whiplash-type injuries examining the vertebral canal, which houses the spinal cord, determined that the diameter of the canal is an important risk factor for the development of chronic pain following an injury.\textsuperscript{91} In his chapter on fibromyalgia syndrome, Dr. Russell concluded that, “... there is reason to believe that monitoring

\textsuperscript{87} See infra notes 102-3 (illustrating examples of strong correlation between trauma location and FM development).
\textsuperscript{88} See D. Buskila et al., *Increased Rates of Fibromyalgia Following Cervical Spine Injury*, 40 J. ARTHRITIS & RHEUMATISM 446, 447-50 (1997) (showing increased prevalence of FM in those that suffered neck injuries than other injuries).
\textsuperscript{91} See Kurt Petterson et al., *Decreased Width of The Spinal Canal In Patients With Chronic Symptoms After Whiplash Injury*, 20 SPINE 1664, 1665 (1995) (finding patients with persistent symptoms had significantly narrower spinal canals compared to control group). The researchers hypothesized that the combination of nerve root compression in whiplash and a narrow spinal canal places an excessive strain on the nerve roots of the spine. \textit{Id.} at 1666.
whiplash injury subjects, especially those with narrow cervical canals, will prospectively allow the development of fibromyalgia syndrome to be observed and characterized."

In a discussion of a Consensus Report evaluating the relationship of fibromyalgia to trauma, one author noted that “[t]his latest report concludes that, based on existing epidemiological, clinical, and biological evidence, there is a compelling argument that trauma does, in fact, play an etiological role in the development of fibromyalgia in some, but not all patients.”

A number of organizations recognize the link between fibromyalgia and trauma. The American College of Rheumatology notes that an injury or other type of physical stress may trigger fibromyalgia. The Mayo Clinic reports that fibromyalgia may occur as the result of physical trauma and the National Institute of Arthritis, Musculoskeletal, and Skin Diseases agrees that fibromyalgia may be associated with a traumatic event or repetitive injury. The Office of Woman’s Health indicates that while the causes of fibromyalgia are unknown, researchers believe the disorder may be

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92 See Russell, supra note 2, at 307. The unique nature of whiplash injuries is that they specifically impact neck tissue. Id. at 306.


95 See AM. COLL. RHEUMATOLOGY, supra note 107 (explaining that levels of brain chemicals change in response to physical injury).

96 See MAYO CLINIC, supra note 94 (providing car accident as example of physical trauma that may trigger fibromyalgia); Nat’l Inst. Arthritis & Musculoskeletal & Skin Diseases, Questions and Answers About Fibromyalgia, 16 J. PAIN & PALLIATIVE CARE PHARMACOTHERAPY 91, 92 (2002) (describing definition, causes, diagnosis, treatment, and research of fibromyalgia).
caused by a traumatic event such as a motor vehicle accident or a repetitive injury. Even the Merck Manual states that fibromyalgia can be exacerbated by trauma.

2. Post-Traumatic Fibromyalgia: Opposing Views

Critics maintain that trauma-induced fibromyalgia is merely part of a constellation of somatic conditions caused by media publicity, self-interests, and the ability to collect compensation. As reported, these pain syndromes “reside in the minds of the sufferers” and are influenced by litigation. Some physicians even assert that fibromyalgia is “junk science” which should not be given a diagnostic label.

Those opposing the concept of trauma-induced fibromyalgia point to a study of 153 whiplash injured patients, which concluded that their injuries were not associated with an increased risk for the development of fibromyalgia. In a discussion of fibromyalgia following motor vehicle accidents, other researchers noted that “fibromyalgia has never been found in the four decades of simulated whiplash collisions with thousands of volunteers, even though the collisions at times rendered acute symptoms.” They further noted that fibromyalgia following a whiplash injury is rare in other countries such

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99 See Finch, supra note 5, at 291.
100 See id. See also A. Barsky, Functional Somatic Syndromes, 130 ANNALS INTERNAL MED. 910, 911, 916 (1999) (attributing fibromyalgia with sociocultural and psychological origins rather than pathological).
101 See Finch, supra note 5, at 297.
as Lithuania, Germany, and Greece, reasoning that there should be no difference between motor vehicle accidents in those jurisdictions as compared to the United States.\textsuperscript{104}

The incidence of fibromyalgia after a cervical neck injury has been shown in a different study to be very low, and the conclusion that the disorder may occur after whiplash may be caused by the failure to exclude pre-accident fibromyalgia.\textsuperscript{105} Other researchers opine that there is some supporting documentation to connect trauma and fibromyalgia but that “evidence is not definitive.”\textsuperscript{106} Additional prospective studies must be done to confirm the casual connection.\textsuperscript{107}

Dr. Frederick Wolfe and cohorts have written a compelling article on the topic.\textsuperscript{108} This physician is the lead author of the 1990 and 2010 Consensus Reports on Fibromyalgia.\textsuperscript{109} Their paper pointed out that the evidence attempting to establish a link between fibromyalgia and trauma is weak to nonexistent. More specifically, “there is no scientific support for the idea that trauma overall causes [fibromyalgia] and evidence in regard to an effect of motor vehicle accidents on [fibromyalgia] is weak or nil.”\textsuperscript{110}

A major criticism of the post-traumatic fibromyalgia literature is the quality of the studies. Dr. Bohr set the tone when he wrote: “[b]y ‘heedless wordsmithing’ the entity of ‘traumatic fibromyositis’ gets renamed by the noncritical and rises again. Sometimes a

\textsuperscript{104} See id.


\textsuperscript{106} See Kevin White et al., \textit{Trauma and Fibromyalgia: Is There An Association and What Does it Mean?}, 29 \textsc{Seminars in Arthritis & Rheumatism} 200, 200-216 (2000).

\textsuperscript{107} See id.

\textsuperscript{108} See Frederick Wolfe et al., \textit{Fibromyalgia and Physical Trauma: The Concepts We Invent}, 41 \textsc{J. of Rheumatology} 1737-1745 (2014) (explaining the small amount of evidence declaring this causal connection).

\textsuperscript{109} See id.

\textsuperscript{110} Id. at 1737 (describing the lack of substantial evidence supporting claims that car accident trauma causes fibromyalgia).
phoenix should stay dead, despite resuscitation efforts by editors of second-rate journals.”

In their review of the matter, White and associates concluded that “[a]lthough there is some evidence supporting an association between trauma and fibromyalgia, the evidence is not definitive. Further prospective studies are needed to confirm this association and to identify whether trauma has a causal role.”

It has even been suggested that rather than a physical injury causing fibromyalgia, the possibility of the emotional stress from the trauma is the cause for the symptoms. For instance, Dr. Bohr points to the high incidence of the “burden of psychiatric disease” in fibromyalgia patients. The most common psychiatric disorders among patients with FM include depression, anxiety, somatization, dysthymia, panic disorder, and post-traumatic stress. This correlation is demonstrated in another study of individuals with a lifetime history of abuse and emotional distress where 56% of these patients met the criteria for fibromyalgia. The researchers suggested that their findings point to a “novel biopsychosocial paradigm” such that emotional stress and fibromyalgia symptoms interact in an association between abuse and pain. A different analysis of traumatized patients revealed a significantly higher incidence of emotional neglect, emotional abuse, and sexual

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111 See Bohr, supra note 28.
112 K. White et al., Trauma and Fibromyalgia: Is There An Association And What Does It Mean?, 29 SEMINARS IN ARTHRITIS & RHEUMATISM 200-16 (2000) (attempting to identify if there is an association between trauma and fibromyalgia).
113 See Bohr, supra note 28.
114 See id.
115 See Bellato, supra note 16, at 1.
117 See id. (examining history of abuse through a patient’s life and the crossover diagnosis of fibromyalgia).
harassment in fibromyalgia patients as compared to a control group with rheumatoid arthritis.\textsuperscript{118}

An examination of over 10,000 individuals was the subject of a paper that found a close association between fibromyalgia and sexual as well as physical assault/abuse.\textsuperscript{119} This finding was supported by researchers who discovered that the development of chronic widespread body pain (CWP), synonymous with fibromyalgia, was found in a population of 627 college women.\textsuperscript{120} The paper revealed an increased incidence of childhood physical and sexual abuse.\textsuperscript{121}

II. LEGAL DISCUSSION

A. The Problem of Over Diagnosing Fibromyalgia

There is a valuable criticism that must be kept in mind when looking at fibromyalgia in a compensation context. Fibromyalgia is over diagnosed and not every trauma patient who is said to have the disorder satisfies the appropriate ACR criteria.\textsuperscript{122} This point is demonstrated in studies conducted in 2015 and 2016 in which researchers discovered that 75\% of those who reported they were diagnosed with fibromyalgia did not fulfill the diagnostic criteria.\textsuperscript{123} The authors determined that about three million

\textsuperscript{118} See G. Naring et al., Somatoform Dissociation And Traumatic Experiences In Patients With Rheumatoid Arthritis And Fibromyalgia, 25 CLINICAL AND EXPERIMENTAL RHEUMATOLOGY 872-877 (2007).
\textsuperscript{119} See Mark G. Haviland, Kelly R. Morton, Keiji Oda, & Gary E. Fraser, Traumatic Experiences, Major Life Stressors, and Self-Reporting a Physician-Given Fibromyalgia Diagnosis, 177 PSYCHIATRY RES. 335, 335 (2010).
\textsuperscript{120} See D. Nelson & A. Miller, Trauma and Pain in Young Adults at Risk for Chronic Widespread Pain, 12 J. PAIN P21, P21 (2011) (defining chronic widespread body pain and describing investigation reports on the condition).
\textsuperscript{121} See id.
\textsuperscript{122} See Frederick Wolfe & Brian Walitt, 75\% of Persons in the General Population Diagnosed with Fibromyalgia Don’t Have It, But It is Worse Than That…., THE FIBROMYALGIA PERPLEX (Dec. 7, 2016), http://www.fmperplex.com/2016/12/07/75-of-persons-in-the-general-population-diagnosed-with-fibromyalgia-dont-have-it-but-it-is-worse-than-that (describing statistics of false diagnoses of fibromyalgia).
\textsuperscript{123} See id.
individuals who did not satisfy the fibromyalgia criteria were provided with the incorrect diagnosis. In other words, the diagnosis can improperly legitimize “vague and difficult or distressing symptoms” opening the door to government approved treatments, or leading to a disability determination. This means that individuals may gain monetary benefits based upon self-reported symptoms when the disorder may not be present.

People have always complained of pain, fatigue, and anxiety so what is behind the over diagnosis of fibromyalgia? There are at least three possible causes: the pharmaceutical industry; physicians with conflicts of interests; and patient support groups. For example, Pfizer offered $4 million in grant money to educate healthcare professionals about fibromyalgia, and the drug manufacturer began direct consumer marketing and sponsored articles that talked about the dangers of a delayed diagnosis of the condition. After all, support of fibromyalgia by doctors is important in the world of acceptance because it leads to the recognition of the premise of centralized pain and a neurobiological basis for the disorder. One cannot overlook the efforts of patient support groups and their backing of doctors who believe in fibromyalgia. For sufferers and their advocates, fibromyalgia is a “self-evident demonstration of legitimacy, even if the scientific reasons used to establish its legitimacy may not be.”

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124 See id.
127 See id.
128 See id.
129 See id.
130 Id.
B. Comments by the Medical/Legal Community

Comments by doctors and lawyers surveyed for this article are instructive because they reinforce the continued divide between believers and skeptics. Several physicians noted that they do not believe in or rely upon fibromyalgia in their practices. For example, Alex Vaccaro, M.D., Ph.D., MBA commented, “[a]s an orthopedic surgeon, fibromyalgia is a diagnosis of exclusion that we rarely use in a clinical setting.” Dr. Noubar Didizian, another orthopedic surgeon, commented that:

[F]ibromyalgia involves skeletal muscles throughout the body and it is not localized to one anatomical area. Trauma, on the other hand, normally involves a specific anatomical region, but not all of the skeletal musculature. With fibromyalgia the involved muscles change anatomically from one area to another and there is no scientific pattern to document.

This physician went on to comment that he “is unaware of any scientific work discussing large series of patients with long term follow up.”

Nathan Schwartz, M.D.,

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131 Interview with Dr. Alexander R. Vaccaro, President, Rothman Institute in Philadelphia, Pa. (Aug. 8, 2017). Dr. Vaccaro is a professor and Chair of the Department of Orthopedic Surgery at Thomas Jefferson University Hospital and the President of the Rothman Institute, the largest orthopedic practice in the Philadelphia area. A rheumatologist who was told of this comment noted that he was not surprised since orthopedic surgeons do not treat people with long-term chronic pain. See also Alexander R. Vaccaro, M.D., Ph.D., ROTHMAN INSTITUTE, https://www.rothmaninstitute.com/physicians/alexander-r-vaccaro-md-phd (providing biography of Dr. Alexander R. Vaccaro).

132 Interview with Dr. Noubar Didizian, Orthopedic Surgeon, Holy Redeemer Hospital in Bala Cynwyd, Pa. (Aug. 8, 2017). Dr. Didizian is an orthopedic surgeon and hand specialist in the Philadelphia area. See also Dr. Noubar Didizian, U.S. NEWS & WORLD REPORT, https://health.usnews.com/doctors/noubar-didizian-507327 (last visited Apr. 8, 2018) (providing biography of Dr. Noubar Didizian). See also Daniel J. Clauw, Fibromyalgia: An Overview, 122 AM. J. OF MEDICINE, S3 (2009) (defining fibromyalgia as a diagnosis of chronic widespread musculoskeletal pain). See also D.S. Goodin, G.C. Ebers, K.P. Johnson, M. Ridriguez, W.A. Sibley, and J.S. Wolinsky, The Relationship of MS to Physical Trauma and Psychological Stress: Report of the Therapeutics and Technology Assessment Subcommittee of the American Academy of Neurology, 52 NEUROLOGY 1737, 1737-45 (1999). This article discusses the relationship of physical trauma to MS and how it is uncertain what kinds of trauma should be included in an analysis. Id. Some authors have included minor traumas such as abrasions and bruises, while others have restricted the definition to injuries to the head, neck, or back. Id. Under any circumstance, the trauma referred to is an occurrence of an injury to a specific anatomical region, rather than throughout the skeletal musculature. Id.

133 See Goodin et al., supra note 132.
an anesthesiologist and pain specialist, indicated that “fibromyalgia is like religion. You either believe in it or you don’t. Most supporters can quote studies showing changes in neurotransmitters or some objective medical data.”

In his opinion he stated:

[T]he disorder is a bag of symptoms which are unscientifically conglomerated and then given a name. A name has the magical power of legitimizing the illness for many sufferers. Frankly, most physicians except rheumatologists consider fibromyalgia a proxy for PTSD, or my favorite diagnostic term, Limbic Augmented Pain Syndrome, meaning a highly emotional affective and sensory disorder.

J. B. Dilsheimer, a plaintiff’s attorney, indicates:

[F]ibromyalgia can’t be seen, is difficult to detect and the diagnosis can be critiqued as uncertain. Some rail that fibromyalgia isn’t real, but just emotional turmoil masquerading as pain. More than 5.8 million Americans suffer from fibromyalgia but the cynics can say it is a ‘fake disease,’ until one of them is crippled by its clutches. Chronic, often unexplained pain may be invisible, untraceable, and even undetectable. But it is real and life-altering.

Anthony J. Barratta, Esquire, another lawyer who represents injured parties, has a more philosophical approach, stating:

It is much more important to show how an injury affects a person’s life than the name attached to the injury. If you have a credible, life changing event due to the consequences of an injury, which can be properly supported with before and after witnesses, I don’t care what label the doctor gives it as long as the physician is also credible.

The Honorable A. Michael Snyder, a former workers compensation judge and current mediator commented: “fibromyalgia is a diagnosis that promotes much
controversy in trauma cases. Some doctors use the term almost as an extension of ‘strain and sprain’ while other physicians insist that it doesn’t exist, or if it does, it has no relation to trauma.” Judge Snyder then noted that he has “always struggled with making a determination about the causation of the fibromyalgia, assuming that it truly exists. For myself, I have probably minimized the importance of this diagnosis in cases of trauma, finding that it is so over-used as to be meaningless.”

C. Fibromyalgia as Novel Scientific Evidence

There are thousands of reported cases that mention fibromyalgia. However, a threshed inquiry is whether the disorder is novel scientific theory that can be excluded under the Frye and Daubert standards. Frye requires the scientific principle to be generally accepted in the scientific community. This doctrine was superseded by Daubert in 1993 in federal and some state courts. This new rule reviews a scientific principle with an eye towards “testing; peer review and publications; known or expected error rates; operational standards; and acceptance within a relevant scientific community.”

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139 Id.

140 See Frye v. United States, 293 F. 1013 (D.C. Cir. 1923).


142 See Frye, 293 F. at 1014.

143 See Daubert, 509 U.S. at 585-97 (stating that Frye does not create the standard for experts).
community.” Daubert is more liberal and transforms the rule of general acceptance to that of acceptance within the relevant community. A number of cases have arisen where the defense has challenged the introduction of evidence pertaining to fibromyalgia with mixed results.

1. Cases That Have Not Allowed the Evidence

Grant v. Boccia involves an allegation that a motor vehicle accident caused the plaintiff to develop fibromyalgia. The defense moved to exclude the evidence claiming that the relationship of trauma to fibromyalgia “is not generally accepted in the relevant scientific community.” The court agreed, noting that the plaintiff provided no evidence that trauma was sufficiently linked to fibromyalgia to have established general acceptance in the scientific community. The court pointed out that “medical science is still unclear as to the processes that trigger fibromyalgia.”

Gross v. King David Bistro, Inc. deals with a person who developed fibromyalgia after consuming tainted tuna fish. The plaintiff attempted to introduce expert

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144 See id. at 594. It is important for the trier of fact to look at whether the technique can be tested or has been tested. Id. at 593. The court should look at whether the technique has been subject to a peer reviewed publication. Id. When there is a particular scientific technique used, the court should consider both the known and the potential error rate. Id. at 594. It is more important that the technique is relevant in the scientific community and not just generally accepted. Id. See also Joseph Sanders, Scientifically Complex Cases, Trial by Jury, and the Erosion of Adversarial Processes, 48 DEPAUL L. REV. 355, 368 (1998) (discussing the factors set out in Daubert).
145 See Sanders, supra note 144, (discussing the change in factors between Frye and Daubert).
146 See infra Section 1 (discussing cases that have not allowed the evidence); see also infra Section 2 (discussing cases that have allowed the evidence).
148 See id. at 21 (discussing defendant’s argument that under Frye, the proposition that trauma causes fibromyalgia is not accepted).
149 See id. at 22 (discussing lack of evidence linking the trauma to fibromyalgia).
150 See id. (discussing medical science’s uncertainty as to triggers of fibromyalgia).
testimony that the shigella infection caused the disorder and the defense maintained that there are no scientific studies that support this conclusion.152 The court noted that judges are required to act as gatekeepers in determining whether expert testimony is reliable and relevant.153 In this regard, the plaintiff admitted that there are no published articles linking shigellosis to fibromyalgia but submitted three studies allegedly showing a link between food poisoning and fibromyalgia.154 These articles, however, confirmed that the pathogenesis of fibromyalgia remains in doubt.155 The court concluded that the empirical data is “too nascent and tepid to support [the plaintiff’s] conclusion.”156 The researchers acknowledge that the causes of the disorder remain unknown.157 At best, the studies suggest that there may be a link between infections and fibromyalgia.158 The defendant’s motion to exclude the evidence was therefore granted.159

The issue in Maras v. Avis Rent a Car Systems, Inc. was whether testimony linking a car accident to fibromyalgia is sufficient to overcome a Daubert challenge.160 The plaintiff’s expert had not conducted research or published any articles on the topic and

152 See id. at 598. Plaintiff seeks to introduce her doctor’s testimony that the shigella infection caused the fibromyalgia, but defendants object due to a lack of scientific studies or medical reports. Id.
153 See id. See also Daubert, 509 U.S. at 589 (discussing the factors for judges to consider in assessing expert testimony).
154 See Gross, 83 F. Supp. 2d at 600 (submitting studies stating a causal link between infectious diseases, such as Lyme disease and fibromyalgia).
155 See id. All three studies find the link inconclusive and that there could be many factors that cause fibromyalgia in patients that have infectious diseases. Id.
156 See id. (finding no evidence that shigella is similar to the diseases in the studies). See also General Electric Co. v. Joiner, 522 U.S. 136, 146 (1997) (discussing the relation of data in support of allowing expert testimony).
157 See Gross, 83 F. Supp. 2d at 600 (discussing the results of the three studies).
158 See id. (stating that the studies suggest a causal link between infectious diseases and fibromyalgia).
159 See id. at 597 (granting in limine motion prohibiting the testimony of plaintiff’s expert). The court finds that even if the studies did find a link between infectious diseases observed in the studies and fibromyalgia, there is not enough evidence to show that shigellosis might produce the same outcome. Id. at 600.
testified that “nobody knows actually what causes fibromyalgia.” In excluding the testimony, the court stated that neither the plaintiff’s expert nor medical science knows the exact process that causes the disorder or the factors that trigger it. The use of a general mythology to validate a conclusion for which there is no underlying medical support is inappropriate.

The testimony of an expert who wanted to link trauma and fibromyalgia was also excluded in McRevy v. Ryan. The plaintiff was diagnosed with fibromyalgia following a car accident. The plaintiff’s expert testified that there is no objective evidence that accidents cause the disorder and he was unaware of any scientific studies that link trauma to fibromyalgia. Nevertheless, he asserted that certain patients are susceptible to fibromyalgia, and if a person is so predisposed, the trauma will precipitate fibromyalgia. Counsel for the plaintiff cited to three studies in support of this expert’s opinion but the physician did not rely upon these articles and was unaware of them. The court precluded the testimony because the expert’s opinion would have been speculative.

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161 See id. at 805 (quoting deposition of Dr. Klymiuk, psychiatrist who specializes in pain management).
162 See id. at 805-6 (reinforcing the duty of the court to take a gatekeeping role). See also Danbert, 509 U.S. at 589. “[U]nder the Rules the trial judge must ensure that any and all scientific testimony or evidence admitted is not only relevant, but reliable.” Id.
163 See Maras, 393 F. Supp. 2d at 807-8 (explaining the exclusion of expert’s testimony).
164 See id. at 806 (describing the standard on which experts should base testimony).
166 See id. at *2 (describing circumstances surrounding Plaintiff’s fibromyalgia diagnosis).
167 See id. at *7 (quoting expert testimony regarding the uncertain nature of fibromyalgia causes).
168 See id. at *7 (describing expert testimony on possible link between traumatic injuries and development of fibromyalgia).
169 See id. at *10-11 (highlighting fact that expert was unaware of cases therefore testimony not based on cited cases).
170 See id. at *12 (stating speculation is insufficient to satisfy Danbert).
2. **Cases That Have Allowed the Evidence**

One of the more interesting opinions is *Marsh v. Valou*. This Florida case involves a *Frye* determination concerning the testimony of an expert who wanted to link fibromyalgia to trauma. The defendant moved to preclude the testimony because the predicate that trauma causes fibromyalgia is not generally accepted. In its opinion, the court noted that a disagreement among experts does not turn the dispute into a new or novel principle. In denying the motion for preclusion, the court stated that there are numerous scientific studies linking trauma and fibromyalgia. In fact, the expert for the defense admitted that there are cases where he thought that trauma may be indirectly linked to the disorder. Just because there is a lack of conclusive studies demonstrating a causal link does not preclude the testimony. *Frye* does not mandate unanimity. While the exact cause of fibromyalgia may not be understood, the plaintiff has sufficiently demonstrated the reliability of his expert’s testimony.

The dissenting judge noted that the plaintiff’s expert failed to demonstrate that the scientific community has accepted the principle that trauma can cause fibromyalgia. While an expert may express an opinion premised upon their experience and training, it

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171 See Marsh v. Valou, 997 So. 2d 543 (Fl. 2007).
172 See id. at 546 (limiting the issue to whether the *Frye* test applies to expert testimony linking trauma to fibromyalgia).
173 See id. at 545 (describing the procedural posture).
174 See id. at 548 (distinguishing between a disagreement and a novel or new principle under the *Frye* test).
176 See id. at 550 (noting that the respondent’s expert testified to trauma indirectly causing fibromyalgia in certain cases).
177 See Marsh, 997 So. 2d at 550 (noting that even if *Frye* did apply, the testimony would satisfy the *Frye* test).
178 See id.
179 See id at 550 (holding in favor of plaintiff’s expert testimony).
180 See id. at 560 (noting the testimony must pass *Frye* and petitioner failed to demonstrate general acceptance).
is necessary that the underlying scientific principle be proven, that is, trauma can cause fibromyalgia. Based upon a review of the materials submitted and the holdings from other jurisdictions, the dissent concluded that there remains an ongoing debate on whether there is a link between trauma and fibromyalgia. Furthermore, the Consensus Report notes that there is no known cause for fibromyalgia but it appears that trauma may play a role. More research must be done on genetic components and incidents such as physical trauma. The evidence in this case establishes that there is no consensus for the idea that trauma can trigger fibromyalgia. Most of the studies are anecdotal.

In Reichart v. Phillips, the court allowed the testimony linking trauma and fibromyalgia. The defense objected to the expert opinion of the plaintiff’s witness claiming that there is insufficient scientific knowledge to support such a conclusion. The court opined that peer review information establishes that there is a controversy concerning the connection between trauma and fibromyalgia and the disorder is not completely understood. However, there are countervailing principles that must be considered and some experts believe that there is a link. Therefore, the evidence is not

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181 See id. at 560 (arguing the testimony is subject to the Frye test).
182 See id. at 571 (arguing that a debate demonstrates the lack of acceptance and thus unreliability).
184 See Jain, supra note 183, at 61 (suggesting further research areas for causes of fibromyalgia).
185 See Marsh, 977 So. 2d at 567 (Cantero, J., dissenting) (noting limited empirical weight of case studies regarding causation between physical trauma and fibromyalgia).
187 See id. (granting motion in limine). The defense argued that the plaintiff’s expert opinions failed the Daubert test. Id. at 358. The Daubert test requires the trial court to evaluate whether the expert’s method is reliable and whether the expert’s testimony would fit the facts of the current case. Id. at 356 (citing Bunting v. Jamieson, 984 P. 2d 467, 471 (Wyo. 1999)).
188 See id. at 363 (holding expert testimonies lacked scientific reliability).
189 See id. at 363-64. While there are limited studies on fibromyalgia in support of the physical trauma connection, Judge Voigt reminds trial court judges to preserve the jury’s role in evaluating credibility and to prevent the case from becoming a mini-trial on scientific validity. See Marsh,
novel either in its approach or conclusion.190 The court concluded that the evidence should be submitted to the jury for them to consider the weight to be given to the testimony.191

D. Fibromyalgia and Social Security

The Social Security and Supplemental Security Income Disability Programs offer financial help to those individuals with disabilities who satisfy the medical criteria.192 A “disability” is premised upon the inability to work which occurs when the applicant cannot do the job he or she previously performed; the administrative agency concludes that the person is unable to adjust to alternative employment because of a medical condition(s); and the impairment has lasted or is expected to last for at least twelve months or is expected to result in death.193 Benefits are restricted to those employees with only the

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977 So. 2d at 357. When applying Danbert, “the test must remain flexible enough to give the trial court broad latitude in determining reliability.” Id. The trial court’s dismissal of the experts’ differential diagnosis methodology implied that the expert’s opinion could only be based on scientific research. Id. at 360. This rigid analysis runs contrary to the flexible application of the Danbert test in Bunting, which became the Wyoming standard for evaluating admissibility of expert testimony. Id. at 364 (Lehman, J., dissenting).

190 Id. at 364 (noting other experts believe physical trauma can cause fibromyalgia). Even if the experts’ opinions were novel, they would not be deemed automatically inadmissible. See Heller v. Shaw Indus., Inc. 167 F.3d 146, 156 (3rd Cir. 1999) (stating expert not required to rule out all alternative explanations).

191 See id. at 364 (reiterating expert needs “reliable grounds” regardless of court’s agreement with expert’s opinion). For other cases in which the evidence was allowed over the objection of the defense. See also Johnson v. Duffy, 855 F. Supp. 2d 311, 318-19 (M.D. Pa. 2012) (reasoning expert reviewing medical records and 25 years experience made testimony qualified); Epp v. Lauby, 715 N.W.2d 501, 511 (Neb. 2006) (holding trauma properly “ruled in” by experts’ reliance on scientifically sound methodology); Crossman v. Delisi, No. 07 CV 706, 2009 WL 221941, at *8 (Pa. Ct. C.P. Jan. 9, 2009) (expressing hesitancy that Frye even applied to expert’s testimony of fibromyalgia).


most severe conditions and both plans use the same strict criteria: the inability to engage in "substantial gainful activity," which is defined as being able to earn $1,040 a month.\textsuperscript{194}

Pain is the hallmark characteristic of fibromyalgia but the diagnosis alone is not sufficient for a person to be deemed disabled for Social Security purposes.\textsuperscript{195} The symptoms and limitations must be so severe as to prevent gainful employment.\textsuperscript{196} Historically, the Social Security Administration did look favorably upon fibromyalgia claims.\textsuperscript{197} The denial of benefits was partially based upon the agency’s failure to have a disability listing for the disorder.\textsuperscript{198} That changed on July 25, 2012, when Social Security issued a Policy Interpretation and Ruling on the Evaluation of Fibromyalgia to provide guidance on how to present evidence to establish that a person has a medically determinable impairment.\textsuperscript{199} In this regard, the agency must ensure that there is "sufficient objective evidence" to justify a finding that the person’s disability limits the functional abilities to perform substantial gainful employment.\textsuperscript{200} The Policy Interpretation then goes on to indicate that fibromyalgia "can be the basis for a finding

\textsuperscript{195} See Fibromyalgia, DISABILITY SPECIALISTS (Oct. 30, 2014), http://www.disabilitiespecialists.net/fibromyalgia (defining fibromyalgia and describing criteria used to evaluate it as a disability).
\textsuperscript{196} See RAYMOND C. TAIT & VIKRUM FIGOORA, FIBROMYALGIA: DISABILITY MANAGEMENT IN PATIENTS WITH FIBROMYALGIA SYNDROME 115 (Bill H. McCarberg & Daniel J. Clauw eds., 2009).
\textsuperscript{200} Id. at 43641.
However, Social Security cannot rely upon the doctor’s diagnosis alone. The evidence must show that the healthcare provider examined the claimant’s medical history and conducted a physical examination. The agency will then review the materials to ascertain if they are consistent with fibromyalgia, determine the person’s prognosis, and establish the doctor’s assessment over time of the claimant’s strength and functional abilities.

Social Security now recognizes two sets of distinct criteria: the 1990 American College of Rheumatology Criteria for Classification of Fibromyalgia or the 2010 American College of Rheumatology Preliminary Diagnostic Criteria. If the Social Security Administration is unable to determine that the individual has a medically determined impairment for fibromyalgia, but there is evidence of a different impairment, the agency will not look at the fibromyalgia impairment under this Ruling.

Social Security is a stickler in making sure that claimants adhere to the new Rules. For instance, *Truong v. Berryhill* involves the application of these new guidelines. The plaintiff applied for disability insurance partially as the result of fibromyalgia and the Administrative Law Judge denied the application on the basis that the claimant did not

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201 Id. (establishing that fibromyalgia is a medically determinable impairment when determined by appropriate medical evidence).
202 See id. (describing general criteria that may establish a medically determinable impairment of fibromyalgia).
203 See id.
204 See id. at 2.
meet the diagnostic requirements and pointed to the new Guidelines for its determination. The judge noted that these Rules require the applicant to have: “1) a history of widespread pain; 2) at least eleven positive trigger points on physical exam, or repeated magnifications of at least six fibromyalgia symptoms; and 3) evidence that other disorders that could cause the symptoms were excluded.” In this case, there was a lack of evidence to support the diagnosis. The trial judge noted that one of the plaintiff’s treating doctors failed to discuss the criteria, another identified trigger points but did not document the exact number, and a third physician did not support the diagnosis with a trigger point assessment. This denial of benefits was upheld on appeal. The appellate court ruled that the diagnosis of fibromyalgia was unsupported because “they did not satisfy the SSDI’s diagnostic criteria of eleven or more positive trigger point sites.”

A similar result was reached in Howell v. Berryhill. The plaintiff’s doctor stated that she had muscular pain, fatigue, joint pain and depression identified by the American College of Rheumatology as being consistent with fibromyalgia. Nevertheless, the records show that she had full range of motion, a normal gait and no motor deficits.

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208 See id. at *5-7 (explaining guidelines for determining disability for Social Security purposes).
209 See id. at *17 (summarizing the Social Security Administration’s policy interpretation supporting the prior determination of the claim).
210 See id. (analyzing why claimant’s presented evidence was insufficient to receive benefits).
211 See id. at *25-26 (supporting the original determination by providing reasoning for upholding the decision).
212 See Truong, U.S. Dist. LEXIS 117187 at 37* (deciding to uphold Administrative Law Judge’s determination).
215 See Howell, U.S. Dist. LEXIS 118388 at *3 (introducing claimant’s arguments as to why the determination was improper regarding her fibromyalgia).
216 See id. at *6, *7 (explaining assessments asserting that though claimant has diagnosis she could perform some tasks normally).
The doctor reported that “trigger points for fibromyalgia are positive” but he did not comment on what limitations she might experience as the result of the impairment. Her application was denied, and on appeal, the plaintiff asserted that the judge did not properly apply Social Security Ruling 12-2p. The court disagreed and stated that the ALJ considered a longitudinal view of her symptoms:

After careful consideration of the evidence, the undersigned finds that the claimant's medically determinable impairments could reasonably be expected to cause the alleged symptoms; however, the claimant's statements concerning the intensity, persistence and limiting effects of these symptoms are not entirely credible for the reasons explained in this decision. While it is reasonable that the claimant may experience some swelling and pain that would cause some exertional and non-exertional limitations, the objective medical evidence does not support a complete inability to work.

The court went on to say that the ALJ did not consider just a snapshot of the plaintiff’s symptoms but looked at the claimant’s functional abilities over the years.

A ruling in favor of the claimant was reached in Vanprooyen v. Berryhill. The facts show that the claimant fell in 2009 sustaining a traumatic brain injury. Several days after giving birth in 2011, the plaintiff went to the emergency room complaining of

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217 See id. at *7.
218 See id. at *3. Social Security Ruling 12-12p provides that, once fibromyalgia has been established as a medically determinable impairment, the intensity and persistence of the individual’s pain is evaluated in order to determine the extent to which the symptoms limit the individual’s work capacity. Id. The court considers objective medical evidence as well as all of the evidence in the case record. Id.
220 See id. The ALJ considered the claimant’s treatment history, the reports from treating and consultative physicians, the effect of the claimant’s obesity on her overall abilities, and the claimant’s reported daily activities. Id.
221 See Vanprooyen v. Berryhill, 864 F.3d 567, 573 (7th Cir. 2007). The Court of Appeals reversed the district court’s decision based on serious deficiencies in the administrative law judge’s analysis. Id. Notably, the ALJ did not mention that a state consultative examiner who had examined the plaintiff had concluded that the plaintiff had emotional adjustment and medical difficulties. Id. Instead, the ALJ considered the opinions of consulting physicians who had never examined the plaintiff. Id.
222 See id. at 568.
pain in the lower back and legs. The doctor found that this discomfort was caused by fibromyalgia. Subsequently, she developed difficulty sleeping, worsening generalized pain and headaches. The plaintiff visited two rheumatologists and was found to be diffusely tender at 18/18 trigger points. A state agency-appointed psychologist told the claimant to avoid ladders, ropes and scaffolding but she could sit, stand and walk for up to six hours. Another doctor indicated that she was moderately impaired for complex tasks but was able to perform routine, repetitive tasks. The ALJ found that she had severe impairments but they were not disabling. In reversing this determination, the appellate court noted that fibromyalgia cannot be objectively measured aside from a trigger-point assessment. That evaluation revealed that the claimant was “diffusely tender at 18/18 points.” A claimant’s testimony about her pain and limitations may not be dismissed solely because there is a lack of objective medical evidence favoring it. After all, pain is a subjective experience.
E. Fibromyalgia and Accidents

Fibromyalgia is not a magic bullet that will automatically result in a large monetary award.\textsuperscript{234} Like any subjective injury, million dollar verdicts have been rendered and there have been findings for the defense.\textsuperscript{235} The cases demonstrate that counsel must have the right plaintiff, a credible doctor knowledgeable in the nuances of fibromyalgia and satisfy the criteria set forth by the American College of Rheumatology.\textsuperscript{236}

1. Cases Where Fibromyalgia Did Not Make a Difference

The following cases are examples in which fibromyalgia was given little consideration. \textit{Smith v. Southwestern Bell Telephone Company} involves injuries suffered in a four-vehicle accident.\textsuperscript{237} The plaintiff’s car sustained minor damage and she did not appear to be hurt.\textsuperscript{238} A short time later, the plaintiff visited the emergency room and complained of pain “that went everywhere.”\textsuperscript{239} Her symptoms eventually developed into neck and back pain, numbness in the arms and legs, headaches, and trouble falling asleep.\textsuperscript{240} During the trial, the plaintiff attempted to show that her symptoms were caused

\textsuperscript{234} See Carradine, 360 F.3d at 770 (Coffey, J., dissenting). Establishing pain is not sufficient in itself to secure benefits or payments unless the pain definitively hinders a person’s ability to work. \textit{See id.}
\textsuperscript{235} See Allison v. McGhan Med. Corp., 184 F.3d 1300, 1300 (11th Cir. 1999) (showing where the plaintiff failed to prove causation between the accused tort and fibromyalgia, a decision was rendered in favor of the defendant.) \textit{See Case Results, Kraft Davies PLLC} (2017), https://www.admiralty.com/case-results.html (describing a court case involving a Washington Ferry Company, in which a plaintiff received over $2 million dollars for injuries causing fibromyalgia that were sustained on the job).
\textsuperscript{236} See Larson v. Astruc, 780 F. Supp. 2d 935, 943-95 (W.D. Mo. 2011) (explaining the criteria set forth by the American College of Rheumatology).
\textsuperscript{237} See Smith v. Southwestern Bell Telephone Company, 101 S.W. 3d 698, 700 (N.D. Tex. 2015). Plaintiff was driving a truck for the defendant during a four-vehicle car accident in which plaintiff sustained pain inducing injuries. \textit{Id.}
\textsuperscript{238} See \textit{id.} Plaintiff refused ambulatory care after the incident. \textit{See id.}
\textsuperscript{239} See \textit{id.}
\textsuperscript{240} See Southwestern Bell Telephone Company, 101 S.W. 3d at 700. The plaintiff developed pain in various areas causing her to feel “currently disabled”, leading to loss of working ability. \textit{See id.}
by fibromyalgia as the result of the accident.\textsuperscript{241} Her rheumatologist wanted to testify that when the doctor first saw the claimant, she was “hurting essentially from head to toe.”\textsuperscript{242} Following a review of the medical records, he attributed the pain to fibromyalgia.\textsuperscript{243} This testimony was challenged by the defense because of an improper foundation.\textsuperscript{244} The doctor admitted that the cause of fibromyalgia is unknown, and that there is no reported medical evidence or peer reviewed journal that establishes a link between trauma and the medical condition.\textsuperscript{245} The appellate court upheld the lower court’s ruling.\textsuperscript{246}

The issue of whether a diagnosis of fibromyalgia can overcome a verbal tort threshold was presented in \textit{Broderick v. Spaeth}.\textsuperscript{247} The plaintiff was injured in a car accident and her treating physician drafted an affidavit indicating that she suffered from fibromyalgia as the result of the accident and the diagnosis was based upon the mandates of the American College of Rheumatology.\textsuperscript{248} This condition significantly limited the use of her body thereby constituting a serious injury as that term is defined by statute.\textsuperscript{249} The court concluded that the averments were insufficient to raise a legitimate question of fact

\begin{itemize}
  \item \textsuperscript{241} See \textit{id.} at 701. The plaintiff had a rheumatologist testify that “most, if not all” of the plaintiff’s ailments are pain caused by fibromyalgia – directly resulting from the car accident. \textit{See id.}
  \item \textsuperscript{242} See \textit{id.} at 701 (describing the doctor’s recollection of the victim’s condition during the first examination).
  \item \textsuperscript{243} See \textit{id.} at 701 (explaining that fibromyalgia caused most of her ailments).
  \item \textsuperscript{244} \textit{See Southwestern Bell Telephone Company}, 101 S.W. 3d at 701 (explaining the doctor’s testimony is the only evidence the injuries were caused by the accident).
  \item \textsuperscript{245} See \textit{id.} at 702 (holding that if an expert cannot produce an accurate assumption, then a jury will not).
  \item \textsuperscript{246} See \textit{id.} at 703 (upholding the directed verdict because of no traceable connection between the accident and the injuries).
  \item \textsuperscript{248} See \textit{id.} at 890 (explaining “fibromyalgia tender points” in Harrison’s principles of internal medicine and American College of Rheumatology).
  \item \textsuperscript{249} See \textit{id.} at 890. (noting the affidavit argued the condition satisfied the “serious injury” requirement pursuant to the statute).
\end{itemize}
and dismissed the lawsuit.\textsuperscript{250} The record shows that it was not until 10 years after the accident that the doctor made the diagnosis and he failed to correlate the claimant’s restricted range of motion or objective findings of muscle spasm to fibromyalgia.\textsuperscript{251} Also, the plaintiff’s pain was confined to her neck and upper back, which is contrary to the pain pattern mandated by the disorder.\textsuperscript{252}

\textit{Grover v. Martin} dealt with the limited tort threshold.\textsuperscript{253} The plaintiff, a young woman, was initially diagnosed with an injury to her ankle and neck following a car accident.\textsuperscript{254} A rheumatologist noted that the neck problem turned into fibromyalgia and the claimant maintained that she could not return to her factory job.\textsuperscript{255} The doctor for the defense stated that there are no articles that relate trauma to fibromyalgia and he denied that her condition was related to the accident.\textsuperscript{256} Instead, the physician said that she merely sustained a soft tissue injury.\textsuperscript{257} The jury returned with a defense verdict determining that the plaintiff did not sustain a serious impairment of body function.\textsuperscript{258}

\textsuperscript{250} See id. at 890 (stating the court granted the defendant’s motion for summary judgment dismissing the complaint).
\textsuperscript{251} See id. at 890 (noting that the plaintiff was not hospitalized and returned to work as a school teacher).
\textsuperscript{252} See Spaeth, 241 A.D.2d at 890 (“patients must ache all over and have tenderness in at least 11 of 18 fibromyalgia tender points”).
\textsuperscript{254} See id. at 8 (detailing sprained and strained right ankle and neck from intersection collision where defendant ran stop sign).
\textsuperscript{255} See id. (explaining ankle injury resolved, but neck injury progressed to permanent myofascial pain syndrome and fibromyalgia).
\textsuperscript{256} See id. (detailing no known medical literature relating trauma as cause of fibromyalgia).
\textsuperscript{257} See id. (diagnosing that plaintiff only had soft tissues neck and ankle injuries that were resolved).
\textsuperscript{258} See id. See also Maulsby v. Mena, No. SUCV94-05330, 1996 Mass. Super. Ct., WL 34608831 (Mass. Dist. Ct. Jan. 22, 1996). In Maulsby, the plaintiff was involved in an accident and claimed that she developed fibromyalgia. The defendant denied that the medical condition was from the accident and argued that the fibromyalgia existed prior to the accident. \textit{Id.} During cross-examination, the plaintiff’s expert admitted that he was not aware of this history. The jury returned with a defense verdict and noted that the claimed injury was not caused by the accident. \textit{Id.}
Broussard v. Premiere, Inc. involves a 14-year-old passenger who was injured in a rear-end accident. Multiple doctors treated the patient, including one who specializes in fibromyalgia. The teenager was involved in a second more serious accident two years later at which time she sustained a broken nose. The issue in the first case was whether the plaintiff sustained damages in excess of $105,000 for purposes of underinsured motorist benefits. The trial judge ruled that the plaintiff did not prove that she suffered from fibromyalgia nor did the accident result in any type of disability. On appeal, the verdict was upheld.

The court looked at the testimony of the doctors. One said that her back pain was from being out of shape and another said that her headaches and neck pain were better. The medical testimony further showed that the plaintiff did not suffer from fatigue or insomnia, the doctor only found one trigger point and he did not find

259 See Broussard v. Premiere, Inc., 861 So. 2d 734,736 (La. Ct. App. 2003) (detailing injuries from sitting in the backseat and striking her face on the rear of the front seat). Injuries included a face contusion, and immediate pain in the jaw, neck and back after impact. Id.
260 See id. (explaining that plaintiff saw a specialist in psychiatry and neurology concentrating in fibromyalgia). Plaintiff also saw a doctor who treated her for temporomandibular (TMJ) disorder, multiple orthopaedic surgeons, a neurologist, a rheumatologist, a specialist in physical medicine and rehabilitation, multiple psychologists and a chiropractor with two courses of physical therapy. Id.
261 See id. at 735-36 (explaining that pick-up truck she was in flipped over requiring surgical repair of her nose).
262 See id. at 736 (explaining LIGA only liable for damages over $105,000). The driver of the car the plaintiff was in, in the first accident, had liability up to $105,000 worth of damages. See Broussard, 861 So. 2d at 736. After that, LIGA paid for excess of $105,000. Id. LIGA is a Louisiana state statute mechanism for payment of covered claims for insolvent insurers like Reliance, the insurance of the driver that hit the car to which the plaintiff was a passenger. Id.
263 See id. at 737 (finding failure to prove permanent disability, loss of earning capacity, and general or medical damages).
264 See id. at 740 (holding based on plaintiff’s doctor’s opinion she reached maximum medical improvement after first accident).
265 See Broussard, 861 So. 2d 734 at 738-40. The testimony of one of the two doctors claimed that Broussard did not meet the diagnosis of fibromyalgia based off of the 18-trigger point test. Id. According to the two physician opinions, Broussard had reached maximum recovery from the accident and no longer needed medical treatment. Id.
266 See id. at 738 (describing Broussard’s complaints of neck and back pain as treatable through muscle strengthening). During an exam, Broussard was considered “woefully out of shape,” but could resume regular activities once she became fit. Id. During the same exam, Broussard was not found to have any muscles spasms or joint issues. Id.
multiple trigger points until after the second collisions. The expert noted that the plaintiff had no trigger points on examination but he still diagnosed her with fibromyalgia based upon the medical records. Under the circumstances, the court noted that they could not state that the trial judge made a mistake.

2. Cases Where Fibromyalgia Made a Difference

The following are cases in which the fact-finder accepted the diagnosis. In *Dececco v. Harchelroad Trucking Company*, a $1,400,000 verdict was returned in a claim in which the plaintiff asserted that she sustained an aggravation of pre-existing fibromyalgia, which incapacitated her from employment. The plaintiff’s doctor defined this disorder as severe muscle pain, which involved her neck and right shoulder. It was estimated that this 48-year-old woman lost $1.2 million in wages. The medical expert for the defense stated that her symptoms were related to pre-existing issues and not casually related to the accident.

In *Ridenbaugh v. Chisholm*, the plaintiff was rear-ended causing extensive damage to her vehicle. She initially sustained a sprain and strain of her cervical and lumbar spine. Her symptoms did not abate and the plaintiff was referred to a rheumatologist.

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267 See Broussard, 861 So. 2d at 739 (discussing that fibromyalgia patients suffer from chronic fatigue and trigger points, but Broussard did not).
268 See id. (explaining although Broussard did not have trigger points, medical records indicated diagnosis).
269 See id. at 740 (concluding the trial court was correct by finding fibromyalgia was not a result of accident).
271 See id.
272 See id.
273 See id.
274 See Ridenbaugh v. Chisholm, C.P. Phila. No. 001075 (2015). Ridenbaugh was involved in an auto accident, which resulted in chronic cervical and lumbar pain and eventually led to the diagnosis of fibromyalgia. Id. The physician defined Ridenbaugh’s diagnosis as “poor” since fibromyalgia is a long-term, chronic pain syndrome. Id.
275 See id. Ridenbaugh was diagnosed with “chronic cervical and lumbar myofascial” pain which led to the diagnosis of fibromyalgia after two years of treatment. Id.
who found multiple trigger points that were symmetrical and bilateral. This lead to a diagnosis of post-traumatic fibromyalgia based upon the criteria of the American College of Rheumatology for the Diagnosis of the Fibromyalgia Syndrome. The doctor noted that:

A large subset of patients with Fibromyalgia Syndrome develops this condition as a direct result of a physically traumatic event. It is a generally accepted opinion as reported in the medical literature that a subset of patients with fibromyalgia have precipitation of their symptoms as a direct result of a traumatic event. . . . The theory on how trauma can initiate a generalized myofascial pain syndrome like fibromyalgia is then subsequent to trauma in which there are soft tissue injuries, the process known as central sensitization, takes place in which the pain centers continue to perceive ongoing pain impulses despite the fact that there should be normal resolution of these impulses with healing.

The case was settled for $315,000.

Bengruz v. SG Johnson Transportation Co. involves a nurse who was involved in an accident with a van. The plaintiff alleged an aggravation of her pre-existing fibromyalgia and claimed that she then experienced severe flare-ups that caused substantial pain. Her specialist noted that she could no longer do manual lifting which was a requirement of her nursing job. The defense demonstrated that the accident merely caused a small dent in the van’s bumper and an IME noted that her fibromyalgia had returned to its pre-

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276 See id. Dr. Lawrence Levanthal testified as Ridenbaugh’s rheumatology expert and diagnosed Ridenbaugh with onset fibromyalgia which evolved from the injuries of the auto accident. Ridenbaugh, C.P. Phila No. 001075 (2015). Ridenbaugh’s injuries and chronic pain included her neck, arms, shoulders, back, and legs. Id.
277 See id. at 8 (diagnosing her after 2 years of unsuccessful treatment for sprained cervical and lumbar spine).
278 Id. at 8.
280 See Bengruz et al. v. SG Johnson Transportation et al., 16 NEW ENG. JURY VERDICT REV. & ANALYSIS (describing the case and the settlement).
281 See id. (describing the plaintiff’s change in condition as a result of the accident).
282 See id. (explaining why the plaintiff had to change her job to be a school nurse).
accident level within nine months of the collision. The jury returned with an award of $125,000.

F. Fibromyalgia and Workers’ Compensation

Workers’ compensation benefits are designed to offer those hurt on the job with payment of their lost wages, medical care, and vocational rehabilitation. It is not necessary to demonstrate fault in order to recover these benefits. Nevertheless, the nuances of the worker’s compensation laws and the problems inherent with fibromyalgia present difficulties for those attempting to recover benefits. This is partially due to the inability to show that fibromyalgia was caused by an industrial accident or proving that the disorder is an occupation illness.

The relationship between a work-related injury and fibromyalgia is for the most part lacking. Causally connecting an occupational injury to fibromyalgia, “a retrodictive causal proposition can rarely be determined to be certainly true or certainly false.” Evidence of such a link is limited to a few studies or case reports, which are inadequate

283 See id. (describing the consequences of the automobile accident).
284 See id.
285 See Worker’s Compensation, UNITED STATES DEPARTMENT OF LABOR, https://www.dol.gov/general/topic/workcomp (last visited Apr. 8, 2018) (describing the different areas that worker’s compensation can cover).
286 See The Purpose and Effect of Workers Compensation, LEGAL INFO, http://www.legalinfo.com/content/workers-compensation/the-purpose-and-effect-of-workers-compensation.html (last visited Apr. 8, 2018). The program is intended to be one of strict liability, as to provide insurance coverage for injuries or death. Id. Previously, “an injured or sick employee had to hire an attorney and prove in court that the employer had in some way caused the accident or created the exposure.” Id. Now the employee agrees not to sue the employer in exchange for worker’s compensation, lessening the burden on the employee. Id.
287 See Joel Everst, Fibromyalgia and Workers’ Compensation: Controversy, Problems and Injustices, 60 ALA. L. REV. 1031, 1043 (2009) (explaining the difficulty workers have proving their fibromyalgia was a result of their work).
288 See id. (describing an issue regarding classifying fibromyalgia as an occupational disease or injury by accident).
to create a causal connection with the necessary scientific proof.\textsuperscript{290} It is, therefore, not surpassing that the majority of courts have found in favor of the employer.\textsuperscript{291}

In \textit{Walgreen Co. v. Carver}, an employee was granted total disability benefits as the result of trauma-induced fibromyalgia despite the opinion of an expert medical advisor to the contrary.\textsuperscript{292} This ruling was reversed on appeal.\textsuperscript{293} This 35-year-old employee twisted her back in a stockroom and claimed that she could no longer work.\textsuperscript{294} The only evidence that she was totally disabled came from a vocational expert who assumed that the diagnosis of fibromyalgia was accurate.\textsuperscript{295} There was medical evidence, however, that disputed this diagnosis.\textsuperscript{296} A court-appointed medical adviser concluded that the employee may have a non-physiological basis for her complaints and that she did not meet the fibromyalgia diagnostic criteria.\textsuperscript{297} On appeal, the court noted that only one out of the seven doctors, who examined the claimant, said she suffered from fibromyalgia.\textsuperscript{298} However, two of her treating doctors noted that they questioned the validity of the diagnosis and another ruled out fibromyalgia.\textsuperscript{299} A medical advisor noted that the employee's pain responses failed to meet the diagnostic criteria and she did not have a

\textsuperscript{290} See id. (explaining that there are not enough studies that exist to establish a causal relationship).
\textsuperscript{291} See Everst, supra note 287, at 7 (discussing the difficulty of overcoming common law duties of employers through workers compensation through statute).
\textsuperscript{292} See Walgreen Co. v. Carver, 770 So. 2d 172, 173 (Fla. Dist. Ct. App. 2000) (reversal by the court despite a rejection of trauma as a catalyst for fibromyalgia).
\textsuperscript{293} See id. at 173. (reversing the order under review because Dr. Imfeld’s opinion was not considered clear and convincing).
\textsuperscript{294} See id. (explaining the injury the plaintiff suffered while at work via a merchandise tote).
\textsuperscript{295} See id. (explaining William Hoeffner’s testimony that plaintiff was permanently disabled because of her diagnosis of fibromyalgia).
\textsuperscript{296} See id. (indicating the conflict between Hoeffner’s testimony and experts who concluded plaintiff did not have fibromyalgia).
\textsuperscript{297} See id. at 174 (detailing the fact that Ms. Carver’s pain was insufficient for a fibromyalgia diagnosis).
\textsuperscript{298} See Carver, 770 So. 2d at 175 (explaining that one out of seven physicians diagnosed Ms. Carver with fibromyalgia).
\textsuperscript{299} See id. at 175 (detailing Dr. Gosselin and Dr. Cooper’s rejection that Ms. Carver suffered from fibromyalgia).
reproducible pattern of tenderness in the trigger points.\textsuperscript{300} Under the circumstances, the judge of compensation should not have rejected the testimony of the medical advisor.\textsuperscript{301}

A claim for benefits was also denied in \textit{Hanks v. City of Casper}.\textsuperscript{302} The plaintiff, a community service officer, was injured when she walked into a street sign.\textsuperscript{303} She was treated by a chiropractor who made the diagnosis of fibromyalgia.\textsuperscript{304} The doctor testified:

So I can’t say that greater than 50\% of her symptoms are because of her work injury. I can say that she had a work injury that triggered this syndrome, and now she has some residual musculoskeletal complaints. It is always a difficult call, from my perspective, when these patients come up with fibromyalgia.\textsuperscript{305}

The court noted that this testimony raised enough questions for a reasonable person to conclude that the plaintiff did not satisfy her burden of showing that the injury was connected to her condition.\textsuperscript{306} The doctor did not testify that the incident caused the disorder and noted that he was cautious about making that link. He also admitted that the incident is not an event that causes fibromyalgia.\textsuperscript{307}

Another example of the court failing to find a causal link is \textit{Ex Parte Kmart Corp}.\textsuperscript{308} The worker was the manager of the electronics department of a store and was injured when a shelf fell on her.\textsuperscript{309} Seven months later, she went to the doctor for discomfort in

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\textsuperscript{300} See id. (applying ten pounds of pressure to the trigger points failed to confirm fibromyalgia).\\
\textsuperscript{301} See id. at 5 (highlighting the standards brought forth in Carver and author’s disagreements with the judge’s decision).\\
\textsuperscript{302} See Hanks v. City of Casper, 16 P. 3d 710, 710 (Wy. 2001) (dealing with whether claims of compensation can be denied under cases involving fibromyalgia).\\
\textsuperscript{303} See id. (highlighting the standard as used by the Supreme Court of Wyoming for compensation claims cases).\\
\textsuperscript{304} See id.\\
\textsuperscript{305} Id.\\
\textsuperscript{306} See id. at 711 (detailing that after a certain level of questioning/review the information is insufficient for the standards required).\\
\textsuperscript{307} See id. at 710 (proving that the causal link was not enough to connect it to fibromyalgia).\\
\textsuperscript{308} See Ex Parte Kmart Corp, 812 So.2d 1205, 1208 (Ala. 2001) (reviewing workers compensation connections in Alabama).\\
\textsuperscript{309} See id. at 1206 (describing the facts of the Kmart incident that led to the case).\
\end{flushright}
The claimant was eventually diagnosed with fibromyalgia, a condition that “causes inflammation of the muscles and fibrous covering of the muscles from chronic pain.” The judge ruled that the plaintiff's disorder was not related to her injury but caused by the stress of criminal charges filed against the claimant and her husband. This denial of benefits was upheld on appeal. While the treating physician stated that fibromyalgia was the result of the shelf falling on her, he also testified that stress can cause fibromyalgia. The doctor who performed the IME replied that the symptoms of the disorder are vague and not recognized by all physicians. Even the vocational expert conceded that fibromyalgia is a disputed diagnosis and stress can contribute its development. Because of the conflicting evidence, the ruling of the trial court was upheld.

Richardson v. Coffee County Board of Education offers an example of a case in which a worker was successful in obtaining benefits. The claimant slipped and fell at work hitting her hip and shoulder. While she continued to have pain in various parts of her body, her treating doctor could find no objective reason for the plaintiff's continued complaints. The worker was referred to a rheumatologist who made the fibromyalgia diagnosis and said the condition is: “a term used to denote soft tissue pain that seems to

310 See id. (specifying the facts of the pain the employee felt due to the Fibromyalgia).
311 See id. at 1208 n.3 (detailing the testimonial definition of fibromyalgia).
312 See id. at 1207.
313 See id. at 1207.
314 See Ex Parte Kmart Corp, 812 So.2d at 1207.
315 See id.
316 See id.
319 See id. at *3.
320 See id.
be present out of proportion to any tissue abnormality that cannot be detected by examination, imaging studies, or even biochemical and electrical studies.\textsuperscript{321}

The doctor admitted that the definition, causes and existence of the disorder are contentious subjects among doctors.\textsuperscript{322} He further noted that among physicians who believe in fibromyalgia there is a dispute over whether trauma can trigger the condition, and he could not state with a reasonable degree of medical certainty that the trauma caused her problems.\textsuperscript{323}

In upholding the award of permanent total disability, the court acknowledged that an examination of cases looking at the relationship between trauma and fibromyalgia has reached different results and that it remains a determination that must be made on a case-by-case basis.\textsuperscript{324} Absolute certainty is not needed to support an award and an expert’s opinion may be more or less uncertain and speculative.\textsuperscript{325} An award can be made if when combined with the other evidence, a finding of causation can be made.\textsuperscript{326} There is no dispute that the employee’s symptoms are real and they started soon after her fall. When the court’s examines the entire record, the award is justified.\textsuperscript{327}

\textsuperscript{321} Id.
\textsuperscript{322} See id.
\textsuperscript{323} See id. at *3-*4.
\textsuperscript{324} See Richardson, 2008 WL 918531 at *5.
\textsuperscript{325} See id. at *10 (discussing proof required for a causal connection between employment and the injury).
\textsuperscript{326} Id. at *11 (discussing how doctor testimony along with medical evidence and other evidence, causation can be found).
\textsuperscript{327} See id. at *6. See also Thetford v. American Mfrs. Mut. Ins. Co., 2005 WL 1026577 (Tenn. 2005) (holding that the award was not excessive for fibromyalgia); V.L. Prewett & Son, Inc. v. Brown, 896 So. 2d 564 ( Ala. Civ. App., 2004) (affirming that the worker’s compensation was properly credited for fibromyalgia); Safeway, Inc. v. Mackey, 965 P.2d 22 (Alaska 1998) (holding that the employer sufficiently proved her fibromyalgia was not work-related).
G. An Attorney’s Guide

Several valuable lessons can be learned by reviewing the medical literature and court cases involving fibromyalgia and physical trauma.

1. Tips for Counsel for the Plaintiffs

Trying to link trauma and fibromyalgia is a difficult process because it is not a widely accepted opinion within the medical community. Counsel must use an expert that is knowledgeable in the nuances of fibromyalgia and knows the literature. Make sure that the physician references the appropriate Consensus Report in making the diagnosis and comports to the specific requirements for the fibromyalgia diagnosis.

The case must also not rest solely on the testimony of the plaintiff. Be prepared to call family members, friends, and co-workers who can testify about the claimant’s level of function before and after the accident. Suggest that the claimant maintain a diary detailing how the pain has impacted the person’s activities of daily living.

The diagnostic criteria for fibromyalgia have changed over the years so counsel must ascertain which criteria were used in making the diagnosis. There are different

330 See Quintner et al., supra note 8.
331 See Vanprooyen v. Berryhill, 864 F.3d 567, 572 (7th Cir. 2007) (discussing plaintiff’s testimony).
333 See Wolfe, supra note 1 (discussing the original diagnostic criteria); Wolfe, supra note 7 (discussing the most recent criteria for fibromyalgia diagnosis).
Consensus Reports and the physician should be able to explain the varying criteria. For example, did the physician use the 1990 Consensus Report that focused on trigger point assessment and required 11 out of 18 tender points, the 2010 Report that mandated high levels of fibromyalgia symptoms or some other criteria? This issue should provide counsel with a starting point for direct examination.

Counsel should always make sure that the expert has reviewed all of the plaintiff’s records medical records. Fibromyalgia remains a diagnosis of exclusion and there are a number of other conditions that mimic the disorder. For example, certain autoimmune and inflammatory disorders, hypothyroidism, lupus, rheumatoid arthritis and polymyalgia rheumatica can imitate fibromyalgia. Other conditions include Chronic Fatigue Syndrome, arthritis, multiple sclerosis, and depression. Counsel must check to make sure the treating physician or expert conducted a proper medical workup to exclude these other conditions including ordering the appropriate blood tests and diagnostic studies.

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334 See Quintner, supra note 8 (noting the existence of several Consensus Reports); Wolfe, supra note 7. Wolfe stresses the importance of physicians using an appropriate Consensus Report when making a diagnosis. Id.
335 See Wolfe et al., supra note 1. Trigger point assessment is a subjective finding and anyone can replicate a positive finding by the amount of pressure exerted. See supra note 74 and accompanying text.
336 See Wolfe et al., supra note 1 (discussing the different fibromyalgia criteria).
337 See DON L. GOLDENBERG, FIBROMYALGIA: A LEADING EXPERT’S GUIDE TO UNDERSTANDING AND GETTING RELIEF FROM THE PAIN THAT WON’T GO AWAY 168 (1st ed. 2002); Wolfe et al., supra note 1 (discussing possibility that medical records will show fibromyalgia symptoms pre-accident).
338 See Fibromyalgia, AMERICAN COLLEGE OF RHEUMATOLOGY, https://www.rheumatology.org/I-Am-A/Patient-Caregiver/Diseases-Conditions/Fibromyalgia (last updated Mar. 2017) (stating that fibromyalgia is sometimes confused with other illnesses such as rheumatoid arthritis or lupus).
339 See id. (describing fibromyalgia and symptoms related to it).
340 See Karen Lee Richards, Seven Conditions Often Mistaken for Fibromyalgia, HEALTHCENTRAL (May 8, 2013), http://www.healthcentral.com/slideshow/7-conditions-often-mistaken-for-fibromyalgia#slide=8 (discussing other diseases that cause similar symptoms to fibromyalgia).
341 See AMERICAN COLLEGE OF RHEUMATOLOGY, supra note 359 (discussing how fibromyalgia is diagnosed).
2. **Tips for Counsel for the Defendants**

It is equally important for the defense to investigate the claimant’s pre-accident history by obtaining the individual’s full medical, employment and military records. Did the person previously exhibit symptoms consistent with fibromyalgia, such as sleeping difficulties, generalized pain and weakness, fatigue, headaches or irritable bowel syndrome? It is possible that the person had these symptoms before the accident and no one made the connection with fibromyalgia.

Medical records that should be obtained at a minimum include the records of the family doctor, pharmacy records (since they will contain a listing of medication), the records of all treating physicians, a health insurance printout of medical expenses paid with diagnostic codes, and with women, their gynecological records. These records should be reviewed for per-accident symptoms that may be consistent with fibromyalgia and to make sure that the clinician ruled out other causes for the symptoms of widespread pain.

The criteria of the American College of Rheumatology requires the patient to experience the fibromyalgia symptoms for at least three months before the diagnosis can be made. If the diagnosis was made within a three month window, the fibromyalgia

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342 See Wolfe et al., supra note 1 (discussing the possibility of a pre-accident showing of fibromyalgia symptoms).
343 See id. (identifying possible symptoms that might have been exhibited pre-accident).
344 See Wolfe et al., supra note 1 (finding medical records show pre-accident myofascial or FM-associated symptoms 90% of the time). The conclusion of the authors is that trauma cannot cause FM if the disorder existed before the incident. Id. See also Gregory Gardner supra note 4.
346 See Wolfe et al., 2016 Revisions to the 2010/2011 Fibromyalgia Diagnostic Criteria, supra note 8 (discussing the Wide Spread Pain Index and symptom severity and criteria used to diagnose fibromyalgia).
347 See id. at 320. The 1990 criteria require at least 11 tender points and CWP; the 2010 criteria require certain (high) levels of fibromyalgia symptoms and pain. Id. Some authors provide exceptions to the tender point criteria. Id.
diagnose must be questioned.\textsuperscript{348} Examine the records to see how long following the trauma the physician make the diagnosis.

The American College of Rheumatology has created a form for completion by healthcare providers to assist in making the fibromyalgia diagnosis.\textsuperscript{349} This form provides a score that correlates to the relevant diagnostic criteria.\textsuperscript{350} Has the physician completed this three-page form that assesses the location of the pain, severity of symptoms and other somatic issues? Is the form in the patient’s file and does the witness even know about the form?

A sophisticated claimant can research the symptoms and methods for diagnosing fibromyalgia and present a classic case on examination when the symptoms are not really present. The claimant should be asked whether he or she read about the disorder before seeing the physician. This is also a fruitful area of cross-examination of the medical expert since the doctor should concede that a claimant that has learned the diagnostic criteria before an examination could mislead the physician. Remember, the symptoms are subjective so they can be faked.

The lack of rigorous scientific papers dealing with fibromyalgia and trauma is a fruitful area for cross-examination. Never rely on a blanket statement from the expert such as “the relationship has been clearly established” or “many studies show the connection between trauma and fibromyalgia.” Ask the physician to be more specific by citing to the journals and studies relied upon to support that conclusion. Counsel should

\textsuperscript{348} See Wolfe et al., \textit{supra} note 18. For classification purposes, patients will be said to have fibromyalgia if both criteria of history or widespread pain and pain in eleven of eighteen tender points sites on digital palpation are satisfied for at least three months. The presence of second clinical disorder does not exclude the diagnosis of fibromyalgia. \textit{Id.}

\textsuperscript{349} See generally Wolfe et al., \textit{The American College of Rheumatology Preliminary Diagnostic Criteria for Fibromyalgia and Measurement of Symptom Severity, supra} note 7.

\textsuperscript{350} See \textit{id.} at 608 (discussing how scores correlate to diagnostic criteria).
also examine the quality of the journals being referenced, look to see if the author of the study has received payment from a drug company or support group for writing the article, ascertain the size of the study’s population and determine whether the research paper is prospective or the less favored retrospective analysis that tends to have a higher degree of bias. 51 Remember that this article provides a listing of papers that have failed to find a connection between fibromyalgia and trauma. Counsel should have them available and use the studies on cross-examination.

Don’t forget to ask the expert if the medical community has fully embraced fibromyalgia, whether the exact cause of fibromyalgia remains unknown, and if there is any way to objectively make the diagnosis. Inquire whether fibromyalgia was taught in medical school as part of the curriculum and learn in what percentage of the time the doctor has made the diagnosis. This percentage should be rather low among most physicians other than rheumatologists.

351 See Prospective vs. Retrospective Studies, STATS DIRECT LIMITED, http://www.statsdirect.com/help/basics/prospective.htm (last visited Apr. 8, 2018). A prospective study looks for outcomes, such as the occurrence of a disease throughout the review period and correlates this to other issues including suspected risks or protection factors. Id. These studies tend to have less bias than retrospective studies. On the other hand, a retrospective study examines the information backwards and looks at exposure to assumed risks or protection factors with respect to a result that is created at the beginning of the analysis. Id. The vast majority of errors as the result of bias are found in retrospective studies. Id. Lawrence J. Leventhal, M.D., a rheumatologist who believes that there is an association between trauma and fibromyalgia on a case-by-case basis, commented that it is not possible to conduct a prospective study on the issue. Telephone interview with Lawrence J. Leventhal, M.D. (Aug. 15, 2017). “You would have to place the study population in an accident and see who gets pain.” Id. The doctor continued “fibromyalgia is not an objective test like a broken bone. Id. ‘The pain is generalized’” Dr. Leventhal referenced the work of Daniel Clauw, M.D. from the University of Michigan who has studied the relationship of FM and trauma in support of the connection. Id.
Because there remains a dispute as to whether fibromyalgia and trauma has gained general acceptance, counsel should be prepared to present a Frye or Daubert challenge. Motions for preclusion have occasionally been successful.\footnote{See generally Daubert v. Merrell Dow Pharm., Inc., 509 U.S. 579 (1993). In federal court, an expert may be precluded from offering opinions that are not founded on a reliable methodology based on the principles set forth in Daubert v. Merrell Dow Pharmaceuticals, Inc.}

III. CONCLUSIONS

Throughout the years, the medical community has had difficulty in understanding fibromyalgia, leading to significant controversy and confusion. Since it was first identified, most aspects of the disorder have been hotly debated. Whether the condition even exists as an organic disease, as opposed to a strictly functional, psychiatric disorder, or psychosocial and cultural construct, remains unclear.

Those supporting a relationship between trauma and fibromyalgia point to a number of studies identifying the risk of developing fibromyalgia within months of the trauma. Those opposed criticize the academic rigor of this literature. Opinions persist that fibromyalgia is not a separate clinical entity, that it is a psychological condition, or that other factors such as personality, attitudes, psychological health, and litigation determine the development of chronic pain following an acute injury.\footnote{A. W. Al-Allaf, A Case-Control Study Examining The Role of Physical Trauma In The Onset of Fibromyalgia Syndrome, 41 RHEUMATOLOGY, 450, 450–453 (2002). Fibromyalgia syndrome seems to result in significant suffering and disability and consequently the problem of trauma or work-related fibromyalgia syndrome needs to be carefully addressed. Id.}

As with most issues with widely divergent viewpoints, the truth of the matter most likely lies somewhere in between. There may be a subset of patients who develop fibromyalgia following trauma, but the absence of guidelines and objective tools, continues to make it a controversial diagnosis. Recently, there has been a shift from thinking of fibromyalgia as a rheumatologic musculoskeletal disorder to one of central
nervous system. Continued research using functional neuroimaging and the search for reliable biomarkers will be key in identifying the true nature of fibromyalgia and the possible consequences of trauma for the disorder.

In a legal setting, the court cases demonstrate that fibromyalgia remains a hit or miss proposition. Having the proper plaintiff and selecting an expert with knowledge of the nuisances of the disorder is critical to the success of a claim premised upon fibromyalgia. Because some other conditions exhibit similar symptoms of fibromyalgia and the disorder is one of elimination, counsel must obtain the claimant’s full medical records to make sure that fibromyalgia has not been misdiagnosed.

354 See Shaw, supra note 25, at 29-32. People with fibromyalgia process any somatic sensory information—for example, light to moderate pressure—as painful, which comes as the result of hyperexcitibility in the central nervous system. Id.

355 See id. Using tools like functional MRI, which show the brain’s response to pressure and heat stimuli, researchers have been able to measure how people with fibromyalgia process stimuli like pain and pressure.