

DEFENDING THE BACK INJURY CASE

Samuel D. Hodge, Jr.

Are “positive” findings on diagnostic imaging really clinically significant? In many cases, the answer is “no.”

“MEMBERS OF THE JURY, I am sure you have heard the phrase, ‘A picture is worth a thousand words.’ Well, I have objective proof that my client suffered a devastating back injury. I have the equivalent of an anatomical drawing of my client’s spine and it shows a her-

niated disk. This image was created by a computer-enhanced device called an MRI and provides unquestionable proof of my client’s problem. In fact, I will show you the image during the trial and you will be able to easily spot the painful abnormality on your own.”

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How often have you heard some version of that basic opening statement? Probably very often. Computers have had a profound impact on the ability of imaging modalities to diagnosis back abnormalities. For instance, CT scan technology links an x-ray machine to the computer to create a cross-section view of the back that allows the visualization of internal anatomy and boney structures. Magnetic Resonance Imaging employs computers to generate an image so exquisite in detail that it resembles an artist's rendition of the body.

As physicians have come to rely on these tests for diagnosis, lawyers have come to depend upon them in personal injury litigation. What used to be a routine soft tissue injury claim has now become a bulging or herniated disk on CT scanning or MRI findings. Is the dramatic increase in abnormal findings statistically relevant or a mere reflection of the refinement in diagnostic imaging? This article will examine the basics of spinal anatomy, factors that predispose some people to back ailments, and discusses the specifics of modern imaging technologies including how to minimize the effects of "positive" diagnostic findings.

ANATOMY OF THE SPINE • The spine extends from the base of the skull to the pelvis and consists of 33 bones, the vertebrae, each of which is separated by soft cushion-like pads, known as disks. Vertebrae are not uniform in size and generally become larger in a descending order because of their weight bearing responsibilities.

Major Regions of the Spine

There are five major regions of the spine. The cervical vertebrae consist of seven small and tightly grouped bones, which support the neck and provide a great deal of flexibility. The first vertebra starts at the base of the skull and the last one terminates at the first prominent nodule

which can be palpated it on the back of the neck. The thoracic spine is made up of the next 12 vertebrae and attach to the rib cage. Because these bones form a fairly rigid unit, very little movement is allowed in this region. The first thoracic vertebra starts at a location parallel to the collarbone and the 12th bone ends at the last rib. The lumbar region has the five largest vertebrae that are needed to support the increased body weight. The end of the lumbar spine is located at the waist. Below this level is the sacrum, a fused unit consisting of five bones that resemble an upside-down triangle and forms part of the pelvis. The coccyx or tailbone is the termination point of the spine and is made up of several small pieces of bone.

The Disks

Cushions or intervertebral disks separate each vertebra in the cervical, thoracic, and lumbar areas. These disks act as shock absorbers and allow the back to move, bend, and twist. Each disk consists of a soft liquid center known as the nucleus pulposus and a tough outer edge or annulus fibrosis. A jelly donut provides an adequate analogy of a disk. The jelly center is the nucleus pulposus and the fried dough is the annulus that keeps the soft center inside the donut.

Herniations

If a tear in the outer edge of the disk occurs, pressure may force the soft center to escape beyond the annulus causing an entrapment of a nerve root or an indentation into the spinal cord. This condition is known as a herniated disk and can be the source of intractable back pain or neurological compromise. For instance, a herniation may cause pressure on an adjacent nerve root resulting in weakness, numbness, or loss of function in the area served by the affected nerve. A disk herniation will almost always occur posteriorly (i.e. towards the back) and on the left or right side. In rare cases, the posterior part of the

disk may rupture centrally or in the middle causing a problem on both sides of the body.

Why Herniations Occur Where They Do

Herniations occur most frequently in people between the ages of 20 and 45 as the disk becomes brittle due to the loss of water content that occurs with aging. See John J. Gartland, *Fundamentals of Orthopaedics* 332 (W.B. Saunders Co., 4th ed. 1987). Herniations also tend to occur at very specific locations. Stability and mobility are the two dynamics that came into play. Those areas of the spine that have the greatest flexibility have the highest incidence of ruptures. For instance, 90 percent of herniated disks occur at the L4-L5 or L5-S1 levels. This location corresponds to the waist and is the area of greatest movement in the lumbar spine. *Id.* at 332-33. Herniations also occur with some frequency in the neck at C5-C6 or C6-C7, which is the location where the neck bends. It is most unusual to see a herniation in the thoracic region since that part of the spine has little mobility.

Spinal Cord Pathway

Vertebrae have evolved with a hole roughly in the center of the bone. This opening allows the spinal cord to travel from the base of the brain down most of the spinal column in a protected fashion. Nerve roots branch off the spinal cord throughout its length and exit the protective casing of the vertebrae through openings called foramina. These nerve roots then become part of the peripheral nervous systems and transmit motor and sensory signals throughout the body. Motor fibers carry signals away from the spinal cord and control movement in various parts of the body. Sensory fibers send information such as pain, temperature, or touch, back into the spinal cord for transmission to the brain. See *Spinal Cord Injury*, Penn State Milton S. Hershey Medical Center,

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available at www.hmc.psu.edu/healthinfo/s/spinalcordinjury.htm.

Dermatomes

Each sensory fiber originates from a single spinal nerve root and controls sensation in a specific area of the skin called a dermatome. These dermatomes travel through the body in predetermined pathways, which have great diagnostic significance. For instance, if an individual has pain and diminished sensation on the outside portion of the right arm, extending into the thumb, index and middle fingers, the involved dermatome is served by the right nerve root existing at C6-C7. Hence, these findings would suggest a C6-C7 herniated disk lateral to the right. Similarly, a person with such an abnormality should not experience pain in the left arm since that extremity is served by different nerve roots. A dermatome chart is a useful defense tool since the claimant's subjective complaints of pain may be anatomically compared against the known dermatome pathways and any abnormality discovered on diagnostic imaging for consistency and relevancy.

BACK PAIN • Back pain is a major health problem and extracts an enormous emotional and financial toll. Eighty percent of the population will experience low back pain during their lifetime and it is the second leading cause of missed time from work. Musculoskeletal problems cost the economy more than \$215 billion annually and each year 14 percent of the population suffers a back impairment that will limit activities of daily living. 47 *Am. Acad. Orthopedic Surgeons Bull.* (Oct. 1999). Back symptoms are the second leading reason for visits to physicians, and the most frequent cause for orthopedic and neurosurgeon consultations. Victoria M. Taylor, Richard A. Deyo, Danial C. Cherkin and William Kreuter, *Low Back Pain Hospitalization—Recent United States Trends and Regional Variations*, 19 *Spine* 1207 (1994). It is also the most common reason for disability in individuals under the age of 45. Linda S. Cunningham and Jennifer L. Kelsey, *Epidemiology of Musculoskeletal Impairments and Associated Disability*, 74 *Am. J. Pub. Health* 574 (1984). In excess of 65 million Americans suffer from low back pain each year and 50 percent of those who experience an episode of low back pain will have a repeat occurrence within one year. *Low Back Pain*, Health Resources: Neurosurgery://On-Call, Patient Resources, May, 2001, available at www.neurosurgery.org/health/patient/detail.asp?DisorderID=7.

The exact cause of back pain is generally unknown. Trauma may trigger the discomfort but some people may have a demonstrable abnormality, such as a herniated disk, and not even know it. *Id.*; *A Patient's Guide to Low Back Pain*, Medical Multimedia Group, LLC, available at www.medicalmultimedialogroup.com/pated/back/back/.html; *Low Back Pain*, Physical Medical and Rehabilitation, (Methodist Health Care System, Houston, Texas). Others may lift a heavy object, sleep awkwardly, or sneeze and develop severe pain. Most often, the problem is

the result of the micro-traumas of daily living that has a cumulative effect on the spine. Over time, these repetitive insults gradually cause degenerative or arthritic changes, which produce back discomfort. *A Patient's Guide to Low Back Pain*, supra.

Predisposing Factors

Researchers have identified a number of factors, which predispose people to spinal pain. These include:

- *Obesity.* Excess weight increases the pressure on both the spine and disks. *NINDS Back Pain Information Page*, National Institute of Neurological Disorders and Stroke, July 1, 2001, available at www.ninds.nih.gov/health_and_medical/disorders/backpain_doc.htm;
- *Smoking.* Smoking adversely affects bone mineral density and lumbar disk disease. Scott E. Porter and Edward N. Hanley, *The Musculoskeletal Effects of Smoking*, 9 *J. Am. Acad. Orthop. Surg.* 9 (2001);
- *Lack of exercise.* Individuals who lead sedentary lifestyles or who do not exercise regularly are at increased risk for back pain. *Low Back Pain*, Health Resources: Neurosurgery://On-Call, Patient Resources, supra;
- *Occupation.* Jobs that require lifting and repetitive activities, such as nursing, heavy industry and construction, have a higher incidence of back pain. *Education and Counseling to Prevent Low Back Pain*, Web MD Health, available at <http://webmd.lycos.com/content/article/1680.50521>; Penelope J. Venning et al, *Personal and Job-Related Factors as Determinants of Incidence of Back Injuries Among Nursing Personnel*, 29 *J. Occup. Med.* 820 (1987); Virginia Behrens, et al., *The Prevalence of Back Pain, Hand Discomfort, and Dermatitis in the U.S. Working Population*, 84 *Am. J. of Pub. Health* 1780 (1994);
- *Stress.* Workplace stress increases the risk of back difficulties. This problem is especially ap-

plicable to introverted people and workers who dislike performing repetitive tasks. *Job Stress May Lead to Back Injury for Some People*, Ohio State Research News, December 2000, available at www.acs.ohio-state.edu/units/research/archive/strsback.htm. Most people recover from back pain quickly. Most people recover from back pain quickly;

- *Gender*: Women experience a greater incidence of radicular syndromes than men. V. Kastova and M. Kolena, *Back Disorders and Some Related Risk Factors*, 192 J. Neurol. Sci. 17 (2001);
- *Arthritic and connective tissue disorders*. These degenerative conditions play a significant role in the development of back pain.

Typical Recovery

Most people recover from back pain quickly. For instance, the American College of Rheumatology reports that 70 percent of those afflicted with back pain usually recover within a month. *Oh, that Aching back!*, *CNN Interactive*, available at www.cnn.com/Health/indepth.health/safety/back.html. The Mayo Clinic notes that discomfort from back pain generally resolves within two weeks with such simple measures as rest and over-the-counter pain medication and that regardless of the treatment provided, 80 to 90 percent will resolve within six to 12 weeks even when there is a severe muscle strain or a strained ligament. *Back Pain: Guide to Treatments*, Mayo Clinic.com, November 5, 1998; See also: *Answers to Frequently Asked Questions: Low Back Pain*, Neurosciences at St. Vincent Health Center available at www.svhs.org/brainsfaqs.htm; J.D. Bartleson, *Low Back Pain*, 3 Current Treatment Options Neurol. 159 (2001).

DIAGNOSTIC TESTS • Personal injury claims are of little value unless supported by a physician's opinion based upon the claimant's subjective complaints, physical examination

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and findings of diagnostic tests. These test results, however, are perceived as providing objective proof of the claimant's injury. While doctors may utilize a variety of imaging modalities to support a diagnosis, these findings should be treated no differently than any other piece of evidence in which credibility issues exist.

The Limits of Imaging

Diagnostic imaging is not an exacting science and defense counsel should be mindful that physicians frequently disagree on test results. One study revealed that when the same doctor is shown a diagnostic study a second time, a different diagnosis will be obtained 20 to 30 percent of the time. Disagreement between physicians on the diagnosis is even higher "since it encompasses not only the vagaries of intra-observer detection variability, but also the differences in training, and in the professional dissemination of a rule for a specific disease." C. Carl Jaffe, *Why an Image?* 19 *Investigative Radiology* 248-249 (1984). See also Hodge, Currie and Purver, *Orthopedic Disability and Expert Testimony* (Wiley Law Publications, 4th ed. 1996) cumulative supplement at 21.

X-Rays

X-ray beams passed through the body, will cause a film plate to lighten or darken based upon the density of the body part through which the beam has passed. Solid bone is dense so it absorbs radiation causing the film to be less exposed or whiter. X-rays, therefore, provide graphic evidence of a fractured or misaligned bone as well as degenerative changes such as bone spurs and loss of intervertebral disk height. Soft tissues, such as the brain, muscles, disks and organs, have a very high water content and offer little resistance to x-ray beams. This causes the film to darken so little detail is available for diagnostic interpretation. Therefore, x-rays offer little assistance in the diagnoses of soft tissue injuries.

Does the Test Aggravate the Complaint?

X-rays account for 79 percent of all medical imaging procedures. *U.K. Rate of X-ray Examination less than Half of the U.S. Rate*, 322 *British Med. J.* 384 (Feb. 17, 2001). Physicians frequently order plain film x-rays of the spine following a routine automobile accident but the efficacy of the test in this setting must be questioned. It has been found that radiography of the lumbar spine in patients with low back pain of at least six weeks duration does not correlate with improved patient function, severity of pain, or overall health status. In fact, having an x-ray performed resulted in a greater proportion of patients reporting low back pain at the three-month interval, a longer duration of pain complaints and reduction in functioning. One possible explanation for this phenomenon is that the taking of an x-ray encourages the patient's belief that he or she is not well. Denise Kendrick et al., *Radiography of the Lumbar Spine in Primary Care Patients with Low Back Pain: Randomized Controlled Trial*, 322 *British Med. J.* 400 (Feb. 17, 2001).

Do X-Ray Findings Support an Inference of Soft Tissue Injury?

It is the rare occasion that a trauma-induced abnormality will be discovered. It is not uncommon, however, for the radiology report to note, "The cervical spine is negative for fracture but there is a straightening of the lordotic curve suggestive of muscle spasm." (If an x-ray cannot visualize soft tissue, how can it demonstrate spasms in the neck?) In some cases, however, a soft tissue injury to the spine may occasionally be implied from x-ray findings. The long muscles of the back run parallel to the spinal column and respond to injury with spasm. Since the muscles are attached to the various bony structures of the back, muscle spasm may be indicated by a change in the configuration of the spine. For example, there may be a straightening or reversal of the normal curvature of the back due to a pulling of the muscles. Samuel D. Hodge, ed. *Thermography and Personal Injury Litigation*, 10 (New York: Wiley Law Publications, 1987). On the other hand, this type of abnormal finding is just as consistent with improper patient positioning or a pre-existing asymptomatic condition.

Do "Abnormal" Findings Really Mean Anything?

A number of investigative studies have demonstrated that a sizeable portion of the asymptomatic population have abnormal findings on x-ray imaging including spur formations, spondylosis and disk space narrowing. These abnormalities are unrelated to trauma and the statistics should prove beneficial to the defense when attempting to discredit a physician's opinion causally relating the abnormality to the accident. For instance, a study of the lumbar spine of healthy people between the ages of 16 and 34 years found abnormalities in 58 percent of those x-rayed. John Korber and Bernard Block, *The Normal Spine*, 140 *Med. J. Austl.* 70 (1984).

Other researchers have reported abnormal findings in 46 percent of the lumbar spines of patients which abnormalities had a very low correlation to their actual complaints and physical findings. *Campbell's Operative Orthopaedics*, (S. Terry Canale ed.) Vol. 3 at 3020 (St. Louis, MO: Mosby 9th ed., 1998). See also: Z. B. Friedenberg and W.T. Miller, *Degenerative Disc Disease of the Cervical Spine: A Comparative Study of Asymptomatic and Symptomatic Patients*, 45-A. J. Bone & Joint Surgery 1171 (1963); *What Help and What Confusion Can Imaging Provide?* *Baillieres Clinical Rheumatology*, February 1998, 12(1) at 115-39; Panagiotis Korovessis, Marios Stamalakis and Andreas Bakousis, *Segmental Roentgenographic Analysis of Vertebral Inclination on Sagittal Plane in Asymptomatic Versus Chronic Low Back Pain Patients*, 12 J. Spinal Disorders 131, (1999). If the average rate of clinically insignificant findings on plain film x-rays is over 50 percent, how may a physician state with a reasonable degree of medical certainty that an abnormality found on x-ray following trauma is causally related to the accident?

What the X-Rays Can Tell the Defense

From a defense perspective, a radiologist or physician performing the independent medical examination should review x-rays taken shortly after the accident. Statistically, the chances of finding a pre-existing abnormality or obtaining a different diagnosis are good. Whether the pre-existing condition is the cause of the plaintiff's complaints and not the trauma of the accident creates a factual dispute to be decided at trial.

Myelography

Myelography allows the visualization of the spinal cord, nerve roots and disks. A contrast dye is injected into the dural sac or fluid filled area surrounding the spinal cord allowing the X-ray beam to peer through the back's boney structures to view the spinal cord and sur-

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rounding areas. Use of the procedure has declined in recent years but it remains valuable for detecting multiple level disk abnormalities, nerve root compressions and spinal lesions. The invasive nature of the test, however, usually limits its application to those contemplating surgery or when the results of other diagnostic test are inconclusive.

A Bulge Isn't Always an Injury

The detection of abnormal myelograms in the asymptomatic population is a problem with this long-used diagnostic test. A study as early as 1956 detected disc protrusion in 39 percent of the postmortem examinations of individuals believed free of such back problems. Donald L. McRae, *Asymptomatic Intervertebral Disc Protrusions*, 46 ACTA Radiologica 9 (1956). Comparable findings were achieved a decade later when 37 percent of asymptomatic volunteers tested positive for disk abnormalities on myelographic examinations. William E. Hitselberger and Richard M. Witten, *Abnormal Myelograms in Asymptomatic Patients*, 28 J. of Neurosurg. 204 (1968).

A study involving CT scanning of the low back in the asymptomatic population discovered that over 35 percent of these individuals had abnormal CT scans and more than 19 percent of those under 40 had herniated disks.

Computed Axial Tomography

Computed Axial Tomography depicts the spine's boney structures and detects soft tissue abnormalities such as bulging or herniated disks, tumors, and tissue swelling. A computer focuses x-rays beams to create a slice or cross sectional view of the body allowing a physician to exam a specific body segment and all of its contents at the same time. To use a loaf of bread as an example, an x-ray is only able to image the top, bottom or side of the loaf as a whole. The CT scan, however, will cut the bread into slices, and will allow the viewer to examine any desired slice, including the crust and doughy part at the same time. These cross sections are known as axial views of the body.

How CT Scanners Work

The machine resembles a square donut and the patient lies on a table nestled in a round hole located in the center of the device. An x-ray tube is then rotated around the person allowing the beam to pass through the body at different levels and angles. Multiple images are recorded during this process and reconstructed by the computer into slices for review. Dye may be also administered to provide more clarity or contrast to a specific body part.

What Does a Positive Result Really Mean?

Even though the monetary demand in a soft tissue injury claim will dramatically increase following the finding of a bulging or herniated disc on CT scanning, these findings may not be clinically relevant. A study involving CT scanning of the low back in the asymptomatic population discovered that over 35 percent of these individuals had abnormal CT scans and more than 19 percent of those under 40 had herniated disks. In fact, a 50 percent abnormality rate was discovered in this age group with the most common diagnosis being stenosis or facet degeneration. Sam W. Wiesel, et al. *A Study of Computer Assisted Tomography: The Incidence of Positive CT Scans in an Asymptomatic Group of Patients*, 9 Spine 549 (1984). Thus, the mere presence of a bulge or herniation does not guarantee that a person will exhibit pain.

Magnetic Resonance Imaging

Magnetic Resonance Imaging (MRI) combines a magnet, vastly more powerful than the magnetic pull of the earth, with radio waves to produce computer generated images that can visualize bone and soft tissue in extraordinary detail. No form of ionizing radiation is used and the test is painless with no known side effects.

How MRI Works

The nuclei in the body's hydrogen atoms act as tiny magnets. When stimulated by the MRI's magnetic field, about one half line up in the direction of the magnetic field and the balance line-up in the opposite direction. These excited nuclei are then exposed to radio waves which cause these "tiny magnets" to change direction resulting in the emission of signals that are utilized to generate the final diagnostic images. Jim Feeney, *Magnetic Resonance Imaging—A Window into the Human Body*, National Institute for Medical Research, Mill Hill Essays, 1996, available at www.nimr.mrc.ac.uk/MillHillEssays/

[1996/mri.htm](#); Hodge, *Thermography and Personal Injury Litigation*, supra, at 17-21.

Potent Examination Tool

The test is so sophisticated that slices of the spine are created in multiple planes and in varying thicknesses. These views are sagittal, (right to left slices) coronal (front to back slices), and axial (top to bottom slices) and provide great assistance in the diagnosis of herniated disks causing nerve root entrapment, or indentation into the spinal cord, tumors, infections, degenerative changes in the back and spinal stenosis. The studies even allow the visualization of very small tears to the muscles and ligaments and can discriminate between types of tissue within the same organ. Because the test can provide such clear images of soft tissue structures near and around bones, the Radiological Society of North America, Inc. has noted that MRI is the most sensitive exam for spine and joint problems. *MR Imaging (MRI)—Body*, Radiological Society of North America, Inc., available at www.radiology-info.org/content/mr_of_the_body.htm.

A Little Too Good?

Magnetic Resonance Imaging maybe too good at visualizing the anatomic details of the spine. A number of investigative studies have demonstrated that not all abnormalities discovered on MRI scanning are clinically significant or the cause of the patient's problems since multiple abnormalities have been discovered in the asymptomatic population undergoing MRI testing. *A Patient's Guide to Low Back Pain*, Medical Multimedia Group, L.L.C., supra. One MRI study of the asymptomatic population ascertained that about one-third of those tested had significant abnormalities in the lumbar spine and herniated disks were found in 24 percent of these volunteers. Jeffrey C. Weinreb et al., *Prevalence of Lumbosacral Intervertebral Disc Abnormalities on MR Images in Pregnant and*

Asymptomatic Nonpregnant Women, 170 *Radiology* 125 (1989). A research article in the *New England Journal of Medicine* concluded that 63 percent of the asymptomatic population had disk abnormalities on MRI scanning and 38 percent had abnormal findings at more than one level. This prompted the scientists to conclude that the finding of a protruding or bulging disk in patients with low back pain may merely be coincidental. Maureen C. Jensen et al., *Magnetic Resonance Imaging of the Lumbar Spine in People Without Back Pain*, 331 *The New Eng. J. of Med.* 69 (July 14, 1994). Another research team found that 73 percent of the asymptomatic population have positive anatomical findings at one or more levels with 37 percent of the subjects having herniated disks, 53 percent testing positive for bulging disks and 58 percent demonstrating annular tears. Kirkham B. Wood et al., *Magnetic Resonance Imaging of the Thoracic Spine and Evaluation of Asymptomatic Individuals*, 77 *A. J. Bone & Joint Surg.* 1631 (1995).

When there is No "Before" Study, Point out Frequency of Pre-Existing Condition

Insurance adjusters and defense counsel should use these statistics to their advantage. It should be standard practice to ascertain if an MRI of the spine was performed before the accident. If yes, the pre and post incident images should be compared for change. The lack of an appreciable difference in these studies should render an abnormality meaningless as it pertains to the claim. An actual change in the pre and post-accident studies may also have no trauma-related significance but may merely reflect an advancement of a degenerative condition, such as spur formation, discogenic disk disease or discitation, a process which involves the loss of water content in disks through the natural aging process. The lack of a pre-accident study allows an abnormality to be challenged

based upon the statistics presented in this article concerning positive MRI findings in asymptomatic people.

MEDICAL RECORDS • While this article has been limited to the defense of a back injury involving a positive finding on diagnostic imaging, investigative studies have been performed on many body parts to ascertain the sensitivity and specificity of each imaging modality. In many instances, researchers have discovered abnormal findings on the images of pain-free people regardless of the area studied. For instance, more than 25 percent of asymptomatic teenagers have meniscal abnormalities in their knees on MRI testing which abnormal finding increased sharply with age. Jeffrey Kornick et al., *Meniscal Abnormalities in Asymptomatic Population at MR Imaging*, 177 *Radiology* 463 (1990).

The Importance of the Pre-Existing Condition

When confronted with the studies that detail the number of asymptomatic people who have abnormal diagnostic results, counsel for the claimant may concede the pre-existing condition but argue the abnormality was quiescent until the trauma. To ascertain the accuracy of this credibility issue, the claimant's medical records should be reviewed. Because back pain is so prevalent in today's society, the chances of finding pre-accident complaints of pain are substantial. A creative investigation, however, requires more than just obtaining the medical records from the current treating or accident related physicians. The defense should also obtain the records of the person's family doctor, healthcare carrier and pharmacy. These materials provide a useful blueprint of the patient's treatment history.

Primary Physician Records

The family doctor is the first person that a patient visits for a medical problem especially when it is non-trauma related. Complaints of prior back discomfort, if they exist, should appear in these records. Reports of orthopedic and neurologic consultations should also be contained in this file as well as the results of blood tests, which may be positive for pre-existing arthritic type problems or other musculoskeletal conditions.

Insurance Records

Records from the claimant's healthcare carrier will provide a computer-generated list of healthcare charges, diagnostic codes, and names of treating physicians. Pharmacy records will list all medication obtained and the physician who issued the prescription. By knowing the purpose of a specific drug or the specialty of a physician, the defense may quickly ascertain if a pre-existing back problem exists which the claimant has failed to disclose.

CONCLUSION • In conclusion, insurance adjusters and defense counsel should not be intimidated by a positive finding on a diagnostic imaging. It is merely one piece of evidence that must be correlated with the patient's clinical picture. Because of the large percentage of asymptomatic people who have abnormal findings, a diagnostic image does not always provide objective verification of a claim. By using the research studies referenced in this article, one may be able to neutralize the imaging abnormality and make the case turn on the credibility of the claimant. Because of the great number of people who suffer non-trauma related back pain, the odds favor the defense in finding a pre-existing problem, which may not have been disclosed.

PRACTICE CHECKLIST FOR Defending the Back Injury Cases

Advances in diagnostic imaging have uncovered a greater number of structural abnormalities in back injury cases. But do these “positive” findings really mean much? Often, the answer is “no,” and it is up to the defense lawyer to show why positive findings do not translate into responsibility.

- Back pain is a major health problem but it is extremely common. Eighty percent of the population will experience low back pain during their lifetime and back symptoms are the second leading reason for visits to physicians, and the most frequent cause for orthopedic and neurosurgeon consultations. It is also the most common reason for disability in individuals under the age of 45. Additionally, most people recover from back pain quickly.

- Several factors predispose people to spinal pain. These include:

- Obesity.* Excess weight increases the pressure on both the spine and disks;
- Smoking.* Smoking adversely affects bone mineral density and lumbar disk disease;
- Lack of exercise.* Individuals who lead sedentary lifestyles or who do not exercise regularly are at increased risk for back pain;
- Occupation.* Jobs that require lifting and repetitive activities, such as nursing, heavy industry and construction, have a higher incidence of back pain;
- Stress.* Workplace stress increases the risk of back difficulties. This problem is especially applicable to introverted people and workers who dislike performing repetitive tasks;
- Gender.* Women experience a greater incidence of radicular syndromes than men; and
- Arthritic and connective tissue disorders.* These degenerative conditions play a significant role in the development of back pain.

- X-rays offer little assistance in the diagnoses of soft tissue injuries:

- Radiography of the lumbar spine in patients with low back pain of at least six weeks duration does not correlate with improved patient function, severity of pain, or overall health status;
- A sizeable portion of the asymptomatic population have abnormal findings on x-ray imaging including spur formations, spondylosis and disk space narrowing. These abnormalities are unrelated to trauma. Other researchers have reported abnormal findings in 46 percent of the lumbar spines of patients which abnormalities had a very low correlation to their actual complaints and physical findings;
- From a defense perspective, a radiologist or physician performing the independent medical examination should review x-rays taken shortly after the accident. Statistically, the chances of finding a pre-existing abnormality or obtaining a different diagnosis are good.

- Myelography allows the visualization of the spinal cord, nerve roots and disks. A contrast dye is injected into the dural sac or fluid filled area surrounding the spinal cord allowing the X-ray beam to

peer through the back's boney structures to view the spinal cord and surrounding areas. But the results of the test are not necessarily conclusive:

- Myleograms often reveal abnormalities in the asymptomatic population. Disc protrusion is found in as many as one-third (approximately) of cases in which there are no symptoms;
- Computed Axial Tomography (CT scanning) depicts the spine's boney structures and detects soft tissue abnormalities such as bulging or herniated disks, tumors, and tissue swelling. A computer focuses x-rays beams in order to create a slice or cross sectional view of the body allowing a physician to exam a specific body segment and all of its contents at the same time. Again, the results may not be conclusive:
- A study involving CT scanning of the low back in the asymptomatic population discovered that over 35 percent of these individuals had abnormal CT scans and more than 19 percent of those under 40 had herniated disks.
- Magnetic Resonance Imaging (MRI) provides great assistance in the diagnosis of herniated disks causing nerve root entrapment, or indentation into the spinal cord, tumors, infections, degenerative changes in the back and spinal stenosis. The studies even allow the visualization of very small tears to the muscles and ligaments and can discriminate between types of tissue within the same organ. But a number of investigative studies have demonstrated that not all abnormalities discovered on MRI scanning are clinically significant or the cause of the patient's problems since multiple abnormalities have been discovered in the asymptomatic population undergoing MRI testing:
- A research article in the New England Journal of Medicine concluded that 63 percent of the asymptomatic population had disk abnormalities on MRI scanning and 38 percent had abnormal findings at more than one level. This prompted the scientists to conclude that the finding of a protruding or bulging disk in patients with low back pain may merely be coincidental;
- Another research team found that 73 percent of the asymptomatic population have positive anatomical findings at one or more levels with 37 percent of the subjects having herniated disks, 53 percent testing positive for bulging disks and 58 percent demonstrating annular tears.
- Because back pain is so prevalent in today's society, the chances of finding pre-accident complaints of pain are substantial. The defense should also obtain the records of the person's family doctor, healthcare carrier and pharmacy. These materials provide a useful blueprint of the patient's treatment history.