

Examinee: James T. Example, Jr.
Date of Evaluation: March 27, 2012
Date of Injury: February 10, 2010

Brigham and Associates, Inc.
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970 North Kalaheo Avenue
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INDEPENDENT MEDICAL EVALUATION REPORT

Examinee: James T. Example, Jr.
Claim Number: 1234
Employer: abc
Carrier: abc

Date of Injury: February 10, 2010

Requesting Client: abc
abc

Date of Birth: December 4, 1958

Date of Examination: March 27, 2012

Examining Physician: Christopher R. Brigham, MD
Specialty: Occupational Medicine, Board-Certified

Examination Location: abc
abc
San Diego, California 92122

Type of Evaluation: Independent Medical Examination

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INTRODUCTION

This 51 year-old man was referred for an independent medical evaluation by the above client. This evaluation focused on case evaluation addressing the issues requested by the client in the referral letter. In advance of the evaluation the referral letter, transcript of interview with the examinee, and extensive medical records and other documents were reviewed. Special arrangements were made to see him in San Diego.

Mr. Example on time for his 8:00 am appointment and left at approximately 11:30 am. Identification was verified by his Hawaii driver license.

The independent medical examination process was explained to the Mr. Example, and he understood no patient/treating physician relationship was established. The examinee was advised that the information provided will not be confidential and a report will be sent to the requesting client. Informed consent was obtained with the examinee providing written permission to proceed with the evaluation, including the physical examination. The individual was advised not to do anything during the examination that would result in harm and agreed to notify us immediately of any difficulties during the examination.

The examinee was cooperative and was an adequate historian. The information he provided was overall consistent with the medical records provided. To ensure accuracy, the clinical history was dictated in the presence of the examinee. Mr. Example examinee reported no new difficulties occurring during the examination. He spontaneously expressed frustration with a prior independent medical evaluation, his employer and the insurer. He referenced the context of his case as his "lawsuit".

Accompanying Mr. Example was a friend who waited in the reception area.

At the conclusion of the evaluation he completed and signed a Satisfaction Survey agreeing with the four statements: 1) I was treated with dignity and respect by the staff, 2) The physician appeared thoughtful and thorough, 3) I did NOT sustain any new or future difficulties during the exam, and 4) Overall, I was pleased with the quality of tOvery's visit.

The entire process, inclusive of the extensive medical record and document review (5 hours), interview and physical examination (2 hours), analysis and preparation of the report (8 hours), took approximately 15 hours.

The medical records and other documentation provided will be returned to the client. The report, questionnaires, pain inventories, and other material specific to this evaluation will be retained electronically as scanned image files.

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MEDICAL RECORD REVIEW

Extensive medical records and other documents were provided for review, a stack approximately 8" in height (estimated > 2000 pages). These documents included, but were not limited to, the following:

- WC-1
- WC-5, dated June 1, 2010, September 27, 2010 and August 5, 2011
- Director's Decision dated July 29, 2011
- Claimant's Response to Employer / Carrier's First Request for Answers to Interrogatories
- Eric S. Kerry, MD
- Ronald Ken, DO
- Michael Cooper, MD
- Mover Chiropractic (These records include "Daily Progress Notes" that are forms, primarily with circled items and handwritten notes. He was under the care of Mover Chiropractic in 2008 (mid 1990s, May 30, 2008 through November 18, 2008 and subsequent to February 18, 2010.)
- Clinic Hospital

There are multiple low back injury claims:

- 1993
- 1994
- May 25, 2008 (attributed to going over a pronounced speed bump at 25 miles per hour)
- February 10, 2010 (attributed to stepping on the vehicle brakes hard)
- Cumulative trauma

In summary, this is a 51 year old man has the following history of chronic low back pain:

- In 1993 and 1994 had low back injuries attributed to work activities.
- 1998 diagnosed with lumbar radiculopathy.
- May 25, 2008 had injury to low back attributed to going over a pronounced speed bump at 25 miles per hour.
- June 30, 2008 an MRI was performed reviewing degenerative changes.
- June 11, 2009 Clinic records reported see chiropractors for 20 years.
- February 10, 2010, per Amended WC-1, dated May 11, 2010, reported "while operating a trolley employee felt major pain in the lower back and through the right leg." Allegedly due to stepping on the breaks hard.
- February 11, 2010 seen by Douglas T. Terry, DC for complains of low back and right leg pain.
- February 29, 2010 report by Masaki Takai, MD reference right leg pain for two to three months prior to the February 10, 2010 claim.

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- February 28, 2010 an MRI was performed reviewing degenerative changes.
- March 12, 2010 underwent physical therapy evaluation with Elvira Gabirel, PT with complaints of low back pain to right thigh, lateral calf and foot. Symptoms reported for few months.
- March 15, 2010 report by Merle Murray MD references “three to four month of right leg pain”.
- May 21, 2010 an independent medical evaluation was performed by Ronald Ken, DO with the diagnoses of “radicular pain to the right lower extremity with unclear clinical correlation. Chronic recurrent low back pain with recent severe flare up. Multilevel lumbar degenerative disc disease and facet arthrosis. Left leg relative atrophy of uncertain etiology.”
- June 2, 2010 an MRI was performed reviewing degenerative changes.
- June 30, 2010 a supplemental report was issued by Ronald Ken, DO.
- July 12, 2010 Dennis Mover, DC opined a permanent aggravation of the previous May 25, 2008 injury.
- August 2, 2010 record review performed by Michael Cooper, MD resulting in an 18 page report with a summary of records from May 30, 2008 through July 12, 2010. He concluded that Mr. Example had a long history of low back (over twenty years) and right leg symptoms. He found “it difficult to associate a significant lower back injury to the alleged 2/10/10 incident.”
- August 4, 2010 letter issued by Ronald Ken, DO.
- October 27, 2010 supplemental report by Ronald Ken, DO.
- October 28, 2010 office visit for chronic low back pain and radiculopathy with James Best, MD.
- November 20, 2010 consultation by Coswin Saito, MD for back pain and left leg sciatica.
- January 2, 2011 report issued by Francis G. Brooks, DC.
- March 31, 2011 orthopedic spine surgery consultation by Eric S. Kerry, MD.
- May 3, 2011 an MRI was performed reviewing degenerative changes.
- May 12, 2011 report by Eric S. Kerry, MD requesting surgical intervention (anterior lumbar decompression and fusion L4-5 and L5-S1 with allograft, cage and plate).
- June 9, 2011 report by Eric S. Kerry, MD opining that he requires surgical intervention.
- July 29, 2011 Disability Compensation Division Decision concluding that the May 25, 2008 injury ended November 18, 2008 with no permanent disability and that the compensation for the low back filed June 1, 2010 and September 27, 2010 are denied.
- August 5, 2011, form WC-5 filed alleging repetitive and cumulative trauma injury.

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The following are pertinent excerpts and summaries of these records.

December 2, 1994. An Independent Chiropractic Evaluation was performed by Michael Joseph, D.C.. Mr. Example had complaints of low back pain with interference in activities of daily living, with interference with sitting for a half hour. He felt that he could lift 10 to 15 pounds from the floor safely to ten times in a row. The assessment was "temporary aggravation of a prior lumbar sprain, now chronic lumbago. The patient has a history of two lumbar injuries in 1993." He apportioned current complaints approximately 75% to his two 1993 injuries, and 25% to his more recent injury. He stated that the patient will have flare-ups, prn care may be beneficial for a short time. He advised that exercise would be the patient's best long-term therapy. "Unfortunately, he has quit exercising as he feels it didn't make any difference for him."

July 26, 1995. James Over, M.D. saw Mr. Example for a permanent partial disability rating. He described two injuries, one in January of 1993 and the other in April of 1994. He reports ongoing problems with low back pain. Dr. Over found that he had a "chronic lumbar strain with no evidence of any radiculopathy or nerve root impairment. Using the AMA Guides to the Evaluation of Permanent Impairment, Fourth Edition, Mr. Example has a lumbosacral Category II, which is a five percent impairment of the whole man."

December 28, 1995. Report from Mover Chiropractic stating Mr. Example seen for evaluation related to symptoms arising on May 15, 1993 and April 30, 1994. Complains of "very slight intermittent dull pain in both sides of the lower back." Assessment was "chronic lumbar myositis."

June 30, 2008. MRI of the lumbar spine revealed L4-L5 small central disc protrusion with mild impingement on the thecal sac and mild encroachment into the bilateral L4 nerve root canal, L3-L4 small central disc protrusion with mild impingement on the thecal sac and mild encroachment into the left L3 nerve root canal, L4-5 facet joint osteoarthritis, and small L1, L2, L3 and T12 Schmorl's nodes.

November 18, 2008. Seen by Dennis R. Mover, D.C. with comment "patient is pre-injury. No PPD anticipated." It is noted that his weight was 150 pounds at that time.

February 10, 2010. Reported date of injury, per Amended WC-1, dated May 11, 2010. Completed by Jodie Ogata of First Insurance Company of Hawaii, limited. States "on 2/10/10 while operating a trolley, employee felt major pain in the lower back and through the right leg." Description was "lower back pain radiating down the right leg."

February 11, 2010, Seen by Douglas Terry, D.C. of Mover Chiropractic. The daily progress note is handwritten with circled items. States "LB pain/R leg pain. PT has to push down on the pedal of trolley frequently; LB sore and R leg sore. Pain in RR, LB and lumbosacral and sacroiliac area."

February 19, 2010, "Patient Care Messaging" at Clinic Hospital states "called the patient regarding ongoing back pain – was on WC a year ago for this. Wondering about MRI. Ongoing back issues – has been seeing his chiropractor. Needs an MRI done. Unclear if WC or not, but at this time, treating as though health plan. Was out of work for 1.5 years at one point. Pain shooting down the right leg x2 months at this time."

On February 27, 2010, a WC-5, Employers' Claim for Workers' Compensation Benefits, states "I had a new injury to my back with the same employer on February 20, 2010. First Insurance Company's doctor claims injuries from this May 25, 2008 claim."

February 28, 2010, an MRI of the lumbar spine revealed findings of "L4-5 broad-based disc bulge with central predominance abutting both descending at L5 nerve roots, slightly greater on the right; small annular tears with minimal bulges at L2-3 and L3-4, without stenosis; normal alignment and vertebral body heights without compression fractures; multi-level Schmorl's nodes from T11-12 through L2-3."

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March 15, 2010, report by Merle Murray, M.D., stating "patient is a 51-year-old with a three to four month history of right leg pain. Pain started in the right hip down to the right calf. This was followed by low back pain about one month ago. The right leg pain has gotten to be constant. There is intermittent pain in the left leg down to the thigh. He hurts when getting up from a sitting position. He has no problems getting out of the bed but he thinks it is due to sleeping on a good mattress. There has been no leg numbness, tingling or weakness of the legs. The leg pain feels like a Charley horse as if it were a device on his right hip. Precipitating factors: Possibly due to a new vehicle he has to drive at work. He feels the brakes are not good. Work-Related: See above. This is now covered under workers' compensation."

May 12, 2010, evaluated by Elvira Gabriel, P.T.. With history of "2/12/10, sudden onset of low back pain, patient said that he had problems with leg pain for months. Apparently, base of his vehicle is not good, so he has to press harder on it, and he thinks that it contributed to his leg pain. Presently, patient said that he continues to have low back pain that radiates to right thigh and lateral calf and foot. Last week he noted pain, said that he noted throbbing pain on left thigh also. He has been going to a chiropractor for a while."

May 21, 2010, Independent Medical Examination performed by Ronald Ken, D.O.. He provides the following summary: "This case involves in a 51-year-old male reporting an injury to his low back secondary to driving a Waikiki trolley. He associated chronic recurrent low back pain to frequently using the brakes as well as driving a trolley that has somewhat stiff springs. He has a history of a more significant prior injury that occurred on his job in 2008, when he went over a pronounced speed bump at about 25 miles per hour. He had more severe pain at that time, but it eventually resolved. He has now experienced continue significant discomfort to his low back and has remained off of work. An MRI has demonstrated significant long-term degenerative changes at multiple levels of the lumbar spine, as well as a large disc protrusion at L4-5 and facet arthrosis. At this time, it is clinically difficult to determine exactly what is the pain generator. The incident described could not have caused the significant lesions identified. It is medically likely that these lesions have been present for years, possibly caused by the more significant injury of 2008. Mr. Example continues to demonstrate significant range of motion deficits and relative atrophy of his left leg. Treatment suggestions include oral nonsteroidal anti-inflammatory, medications and/or cortisone, and focused injections (epidural versus facet). Surgery should be considered only if provocative discogram suggest a significant discogenic disease."

May 27, 2010, Form WC-5, Employers' Claim for Workers' Compensation Benefits was filed, stating "I was driving my trolley in Waikiki. I stepped on the brakes hard and felt a very sharp pain in my lower back and stabbing pain down my right leg. I called dispatch and stayed home the next day to see a doctor. I believe that the trolley I was driving (#55) had bad brakes which required extra pressure to stop. The extra pressure and road bumps caused the severe pain. An MRI showed disc bulge and pinched nerve; the MRI was taken on February 28, 2010." The reference date of injury was February 10, 2010, with the date disability began on February 18, 2010.

June 30, 2010, Ronald Ken, D.O., issued a supplemental report in regard to allegations that his independent medical examination reported an increasing symptomatology. Dr. Ken reported that the activities performed were similar to those performed with usual activities of daily living.

August 2, 2010. A medical file report was issued by Michael Cooper, M.D., MPH, FACPM. He prepared an 18-page report which included the review of records from May 30, 2008 through July 12, 2010. On page 14 of this report, Dr. Cooper states in summary "the claimant is a 51-year-old male trolley driver, who is reporting an injury to his low back while driving on February 10, 2010. The claimant initially reported injuring his back while stepping on the brake of the trolley forcefully. He was seen by a chiropractor, Dr. Terry, on February 11, 2010, with complaints of low back pain as well as right leg pain. He was evaluated by his primary care physicians at Clinic who ordered an MRI scan of the low back. The MRI revealed L4-5 small central disc protrusion with mild impingement of the thecal sac and encroachment of the bilateral L5 nerve roots. He was referred to a physiatrist but declined treatment preferring chiropractic care. The claimant has a history of low back pain and right leg symptoms. The chronicity and severity is difficult to ascertain with the available medical records. The claimant

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has a previous workers' compensation case involving the low back reported in 2008. There is also a report of workers' compensation back injury in the 1990s. The claimant reports a twenty year history of chiropractic care. The available medical records suggest that the right leg symptoms preceded the claimant's lower back symptoms. There is a suggestion also of chiropractic care preceding the February 10, 2010 injury for which there is no medical record. The claimant was seen by Dr. Ken who diagnosed A) radicular pain to the right lower extremity without a clear clinical correlation, B) chronic recurrent low back pain with recent severe flare-up, C) multi-level lumbar degenerative disc disease and facet arthrosis, D) left leg relative atrophy of uncertain etiology."

August 4, 2010, Ronald Ken, D.O., issued a report referencing a review of a letter from the treating chiropractor, Dennis Mover, indicating that Mr. Example had been treated for low back pain between February 11th and the writing of the letter. Seen on occasion as needed. Mr. Example had indicated that his back had become increasingly sore from constant driving in the trolleys and tasks such as securing wheelchairs and scooters. Dr. Mover noted his prior history of treatment for back pain between May 30, 2008 and November 18, 2008. Dr. Ken opined that this record corroborated his statement that "it is medically likely that the overall etiology dates back to the original injury of two years prior and that this more recent discomfort and exacerbation came on without significant traumatic event."

October 28, 2010, office visit with James Best, M.D. for low back pain. Notes ongoing back pain, and being treated with Oxycodone. Diagnosis is chronic low back pain and lumbar radiculopathy, poorly controlled. Notes tobacco dependency syndrome also poorly controlled.

October 27, 2010, supplemental report issued by Ronald Ken, D.O., based upon review of the additional medical records. These includes a reference to a work-related injury in the 1990s and correspondence from 1995 with various opinions on impairment for low back pain, bearing between 0% percent and 5% percent whole person permanent impairment. Dr. Ken states "after review of these additional medical records detailing prior injuries and lower back conditions in regards to the on-job injuries of January 22, 1993, April 30, 1994 and May 15, 1993, the opinions and conclusions expressed in my initial reports have not changed. These records further clarify that Mr. Example has a well-documented significant chronic low back condition that has bothered him on and off since 1993. It was actually declared a permanent injury, he having receiving a permanent partial impairment rating award. By the nature of such determinations, he was found to have a condition that was expected to remain with him and continue to cause problems and impairments. This has been the case, as he experienced situational recurrence of low back pain from nonspecific events. In regard to the date of injury of 2/10/2010, and the driving incident of May 25, 2008, these events represent essentially nonevents. He simply experienced recurrent low back pain secondary to his recognized permanent tendency to recurrence of back pain. In both events, he was not performing any strenuous activities and could not point to any specific event or injury. He simply noted that normal day to day activities of daily activities such as driving and bending may have resulted in back pain. The records are clear in indicating that no specific injuries occurred. In my medical opinion, his chronic low back pain cannot be related to either alleged events of February 10, 2010 or May 25, 2008. The basis for this opinion is the chronic and permanent nature of his underlying conditions documented and permanent partial impairment rating evaluation, as well as radiographic studies."

November 20, 2010. Consultation was performed by Cowin Saito, M.D.. The history was "this 51-year-old right-handed male presents with back and left leg pain. He noted the onset of symptoms in December of 2009, and when he reported to work at Enoa Tours on February 10, 2010, he states that the pain was so severe that he could not perform his duties as a driver. The pain predominates in his lower back and left leg. It is made worse with coughing and sneezing. He has also experienced pain in his right lower extremity. Since 2/10/2010, he has been unable to perform his duties as a driver for Enoa Tours. He was on temporary disability for the bus company until August of 2010, when his TDI benefits ran out. He has since been on workers' compensation/lost wages; however, he had a hearing with the Department of Labor and apparently there is a dispute as to whether this is a new injury from 2/10/2010, or an old injury from 5/25/2008. His major complaints continue to be low back pain, leg pain and difficulty ambulating. He states that he spends his day usually at Starbucks in the morning, where he has two cups

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of coffee. He then spends the remainder of the day in a reclining chair or in bed. He states that he feels he may be under surveillance by one of the insurance companies that is providing workers' compensation coverage. He has retained an attorney, Mr. Robinson, to help him with his workers' compensation claim." The impression was "presents with back pain and left leg sciatica. There is some correlation to the MRI dated June 2, 2010." Dr. Saito states "the patient has had previous consultation in neurology and states that he is not seeking any surgery or epidural injection. He states that the Vicodin also helps to relieve the pain and is requesting a refill of his prescription. He was provided 40 tablets with no refills. He also requests an extension of the work slip, and he will be doing so through January of 2011."

January 5, 2011. A record review report was provided by Frances Brooks, D.C. of Brooks Consulting Services. In this 15-page report, Dr. Brooks reviews medical records from 2008 through September 27, 2010. He notes specifically in 2008, that the patient did have subjective complaints of left-sided and right-sided low back pain. He noted the absence of clinical records submitted for review between November 18, 2008 and February 11, 2010. In his review, he notes various inconsistencies in the history presented, particularly in terms of symptomatology and injuries. Based on the information reviewed, he felt that it was unlikely that the May 25, 2008 incident caused any significant injury to the patient's disc or lower back. He felt within a reasonable degree of medical certainty that the patient did have at least some ongoing low back pain predating the May 25, 2008 episode. He did not feel that there was a specific injury or incident as referenced by the February 10, 2010 event. He noted the gradual worsening of low back symptoms coming on at least two months prior to February 10, 2010. He found that the patient's current symptoms and conditions are the consequences of the natural progression of his pre-existing condition together with a chronic history of pre-existing low back pain.

March 31, 2011, Orthopedic Spine Consultation performed by Eric S. Kerry, M.D.. History presented was "the patient is a 52-year-old right-handed male who at the time of his injury worked as a driver for Waikiki Trolley Tours. He states that on February 10, 2010, he hit a speed bump and his seat bottomed out. He felt pain in the lower back with pain radiating down both legs. He reported the injury to the dispatcher. He was seen by Douglas Terry, D.C. and Dennis Mover, D.C.. He was provided with conservative treatments and taken off work. He was apparently seen at Clinic and given medications. MRIs of the lumbar spine were obtained on February 28, 2010 and June 2, 2010. He has continued treating with Dr. Mover. The patient complains of pain in the low back radiating into the left leg. He rates the pain as 6/10. He describes tingling in the left knee and ankle. He also has right arm pain. Sitting and standing for more than one-half hour increases his pain. He is able to sleep without difficulty. He describes difficulty with urination. The patient has worked as a driver for Waikiki Trolley Tours since December 21, 2004. He worked 45 hours per week. His job requires frequent twisting, sitting and driving and repetitive hand movements. He has not worked since his injury." Examination at that time revealed no sensory or motor deficits. His gait was reported as antalgic and also notes a loss of 50% range of motion of the spine. Medical records were reviewed from February 11, 2010 through January 7, 2011. The impression was "disc herniation, L4-5, lumbar strain, degenerative disc disease, L3, L4-5 and L5-S1." He states "he has significant pain. He states that he cannot live with the pain at this level. He had previously felt that the pain was not severe enough for surgery or epidural steroid injection as he is afraid of these. However, he states that his pain has become much worse. Clearly, his symptoms have deteriorated, and I would recommend a new MRI of the lumbar spine as soon as possible. I have prescribed a Medrol Dosepak. Risks, benefits and alternatives were discussed with him. He should be started on a physical therapy protocol pending re-evaluation."

April 18, 2011, office visit with Eric S. Kerry, M.D., with complaints of low back pain, with pain burning down the left lower extremity. MRI requested.

April 28, 2011. Re-evaluation by Eric S. Kerry, M.D., with complaints of low back pain, with plan for MRI and physical therapy.

May 3, 2011, MRI of the lumbar spine, performed at Desert Medical Imaging, revealed "central and paracentral/subarticular zone focal disc protrusion is present at L4-5, abutting the descending bilateral L5 nerve

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roots, mild to moderate facet arthropathy is present from L2 to L5, and posterior annular fissuring is present at L2-3 and L3-4.”

May 12, 2011, request of surgery was issued by Eric S. Kerry, M.D.. The history was “on May 28, 2008, while working for Enoa Corporation, he injured his lower back. He treated with chiropractic care. He states his symptoms did not resolve. A workers' compensation claim was filed but not settled.” The report included records from 2010 and 2011, but not earlier. His impression was “disc herniation, L4-5 and L5-S1 with discogenic changes at L2-3, L3-5 and L5-S1.” He recommended a multi-level fusion, and provided references to literature with references to spine being from 1995 through 2001. (No reference was made to more recent spine publications, as noted in the discussion of this report).

June 9, 2011, Eric S. Kerry, M.D., primary treating physician, states complains of pain in low back and both hips, numbness and tingling in the left leg, with pain of 5/10. He reported decreased sensation L5-S1, with decreased strength of L5-S1, both being on the left. States he has approximately 60% loss of range of motion of the lumbar spine. The impression was “disc herniations, L4-5 and L5-S1, with discogenic changes at L2-3, L3-5 and L5-S1.” The patient requests a refill of medications and urine drug screen was performed. It was his opinion that the patient would require surgical intervention.

On July 29, 2011, a decision was issued by the Disability Compensation Division. The conclusions of all were: Director finds, based on the Finding of Fact and Principles of Law, the claim for 5/25/2008 has ended effective 11/18/2008. The director credits the reports of Dr. Mover. The director also findings based on the Finding of Fact and Principles of Law, the claimant did not sustain an injury on 2/10/2010 arising out of and in the course of employment. The director determines that the claimant's symptoms were present prior to the claim for 2/10/2010. The director further finds, based on the Finding of Fact and Principles of Law, the insurance carrier for D/A: 2/10/2010, CN: 21045294, is entitled to reimbursement for benefits paid pursuant to Section 12-10-34, HAR.”

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HISTORY (PER EXAMINEE)

PRE-EXISTING STATUS

Mr. Example reports that his first experience with low back discomfort was in the mid-1990s, associated with lifting furniture boxes. This resulted in work-related problems, and the need for chiropractic treatment, with Mover Chiropractic. Mr. Example reports that he did not miss any significant time from work, perhaps days or weeks, and returned to his prior status, without ongoing difficulties with his low back. He moved from Hawaii in 1999 to the desert in California. He returned to Hawaii in 2004.

Mr. Example reports that his only difficulty was with his left shoulder, having a left shoulder surgery; this was not work-related. He was involved in an exercise program, at the gym, to permit him to lift up to 80 pounds, in that he was performing work with those who were handicapped and needed that lifting capability.

He commenced employment with Enoa Corporation in December of 2004, approximately, as a driver. This involved driving tourist trolleys. With the trolleys, there were differing types, some where he would be in a left-handed driver position, and others where there was a central console.

INJURY – MAY 25, 2008

Mr. Example reports on May 25, 2008, he was driving the trolley at the Ala Moana and was driving a different route than usual which had speed bumps which were not marked. He went over a speed bump that he was not aware of at approximately 30 miles per hour, and the seat bottomed out, and he felt a sharp pain in his low back.

Mr. Example sought care again with Dr. Mover and reported that he had improvement and was able to return to work within weeks. He reported generally he was doing well; however, in clarifying his history with him, he does not feel that he returned to the status that he was at prior to the May 25, 2008 episode.

INJURY – FEBRUARY 10, 2010

In February of 2010, Mr. Example was aware of having problems with back pain, and on February 10, 2010, he described pain in his right leg. This had more of an insidious onset. Mr. Example feels that his problems were precipitated by activities of driving and going over speed bumps, also at hotel properties, such as at the Sheraton. He also relates the forces involved with pressing on the brake pedal, particularly with Trolley #55.

In reviewing his history with him, Mr. Example expresses concern with his employer, including the safety of the vehicles and the hours that he was asked to work. He notes that with the left console vehicle that it was easier than the middle console vehicle. In the middle console vehicle, he would need to turn all the way around to check the passengers entering and exiting and making payment. He relates particular problems with an older vehicle, Trolley #24, and each time that he would drive this that he would have increased pain. He reports that if they told him that he was going to drive that vehicle, he would ask that be sent home and that he would not be able to tolerate this.

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In February of 2010, he commenced care again with Mover Chiropractic. He was treated with a pressure spring-loaded device for adjustments, electrical stimulation, and a TENS unit was prescribed. In 2008, he had massage therapy, but did not have this in 2010. He was not involved in an exercise program.

CLINICAL CHRONOLOGY

Mr. Example reports that he had ongoing difficulties, with decreased tolerance for sitting, standing and other activities. The last of work was on February 17 or 18, 2010. He had imaging studies performed at that time which revealed a bulging disc, and his understanding was that this was hitting a nerve root and thus an explanation for his leg pain, e.g., the sciatica. Mr. Example underwent a physical therapy evaluation with Elvira Gabriel, P.T., but he does not recall the details of this. He had been seen also by physicians at Clinic, but while in Hawaii, his primary care was with Mover Chiropractic. He was involved with physical therapy at West Point Physical Therapy, with an evaluation and seven subsequent visits. Mr. Example reports that they did some stretching however the therapy did not result in any significant long-term gain.

He speaks with frustration about an evaluation he had with Ronald Ken, D.O., which occurred on May 21, 2010. Mr. Example reports that he was seen by Dr. Ken in March for problems with his knee. He states that the same back evaluation that was performed in May had been performed in March. Mr. Example reports that during the examination Dr. Ken did a straight leg raising, sitting (per the description that he provides) and he reports he had a marked increase in back pain which later prompted an MRI in June of 2010. Mr. Example reported that he felt that he dismissed his difficulties unfairly.

He reports that with ongoing problems with back pain, inability to work, and no money, that he moved from Hawaii in January of 2011, to live again with friends in Rancho Mirage, California.

Mr. Example states that he was seen by an occupational therapist in Cathedral City to explore options in his care. This involved him being seen for an orthopedic spine consultation by Eric S. Kerry, M.D., in March of 2011. Dr. Kerry had ordered an MRI of the lumbar spine with myelogram, which was performed on May 3, 2011. Dr. Kerry recommended surgical intervention, with a fusion at L4-5 and L5-S1. The procedure and the treatment with Dr. Kerry were not approved by the insurer, therefore, this has not occurred.

Mr. Example reports that he has no money and therefore has no options in terms of treatment. He states he has not been able to pursue the surgical intervention. In the past, he had been on hydrocodone, however, he states has not taken that for one year because of lack of money. As discussed below, his activities are significantly limited.

CURRENT STATUS

Mr. Example reports that his greatest concern is that whether his pain will ever go away.

The pain is primarily located in the lower back and will also involve the left or right legs, generally the left more than the right. The area of involvement will vary. The pain is described as sharp in the lower back and throbbing in the legs. It is made worse by standing or sitting for long periods of time, or lifting. The pain is improved with medication. He reports that the pain is constant. On a scale from zero (no pain) to ten (excruciating pain), he reports that his pain level at this time is a six, during the past month has averaged a six, with a high of nine and a low of five.

He reports problems with numbness just distal to his left knee on the lateral aspect.

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FUNCTIONAL STATUS

Mr. Example reports significant functional difficulties. He does not feel that he could safely carry a gallon of milk, a heavy bag of groceries, and he is not sure about a pale of water. He estimates his sitting tolerance as 30 minutes, standing 30 minutes, and walking 30 minutes.

He reports that his typical day will commence by waking up at 4:30 in the morning and then going to Starbucks, as not to disturb the other people in his house. He lives with a friend. He states that he is unable to work because of his pain, has no money because he is unable to work, is not receiving benefits, and his lifestyle is very limited.

OCCUPATIONAL HISTORY

He was employed by the Enoa Corporation since December of 2004, and he last worked in February of 2010. As noted, he was working as a driver, which involved the activities of driving, standing, bending, lifting and twisting. He previously had worked in delivery. He has a high school education, attending high school in Commack, Long Island.

SOCIAL HISTORY

He currently resides in Rancho Mirage, California, and reports being inactive (as discussed above). As a child he lived on Long Island, moving to Hawaii several years ago. He then lived for a while in Rancho Mirage returning to Hawaii; he has now returned to Rancho Mirage. He was divorced three years ago. He denies any significant alcohol consumption. He does smoke a pipe – 3 to 4 bowlfuls of tobacco per day.

PAST MEDICAL HISTORY

Medical: Unremarkable
Surgery: s/p Shoulder rotator cuff repair, left
Medications: Ibuprofen
Allergies: Denied

REVIEW OF SYSTEMS

He reports occasional ringing in his ears, neck stiffness for several months, and prior problems with reflux. Otherwise denies problems at this time, or significant problems in the past with: **general health issues** (weight loss or gain, fever or chills, trouble sleeping, fatigue), **skin** (rashes, itching, color changes, lumps, dryness, hair and nail changes), **head** (headache, head injury), **ear** (decreased hearing, earache, drainage), **eyes** (vision problems, glaucoma), **nose** (stiffness, itching, nosebleeds, discharge, hay fever, sinus pain), **throat** (dental problems, gum disease, sore throat, hoarseness), **neck**

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(lumps, swollen glands, pain, stiffness), **breasts** (lumps, discharge), **lungs** (cough, asthma, difficulty breathing), cardiovascular (heart attack (myocardial infarction) or angina, chest pain, palpitations, shortness of breath), **gastrointestinal** (swallowing difficulties, heartburn, nausea, diarrhea, constipation, change in bowel habits, bleeding), **urinary** (infections, excessive frequency, urgency, burning), **genital (male)** (penile discharge, sores, masses, pain with sex), vascular (leg cramping, calf pain with walking), **neurologic** (dizziness, confusion, memory difficulties, headaches, seizures, fainting, head trauma), **hematologic** (blood disorder, easy bruising, easy bleeding), **endocrine** (diabetes, thyroid disease, heat or cold intolerance, frequent urination, frequent thirst), **psychiatric** (psychiatric illness, anxiety, depression, stress).

FAMILY HISTORY

Positive for cancer, both parents. Not aware of any family history of arthritis or low back pain.

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PHYSICAL EXAMINATION

All range of motion measurements in this case were performed as instructed in the *AMA Guides to the Evaluation of Permanent Impairment*, Fifth Edition. These measurements were reproducible within 10%, unless otherwise noted.

OBSERVATIONS

The individual is well-developed, well nourished. Examination of the hands reveals no significant callus. No assistive devices were used. He reports weighing 183 pounds and being 5 feet 10 inches tall.

<PHOTO INSERTED HERE>

BEHAVIORAL OBSERVATIONS

The examinee was pleasant and cooperative, yet appeared very focused on his pain complaints and “injury”. During the visit the examinee appeared uncomfortable at times. He sat continuously for up to 30 minutes during the interview than would change position. Nonphysiologic findings were absent.

LOW BACK EXAMINATION

GAIT

Gait was slow, however with normal gluteal participation and no asymmetric hip rotation. Heel and toe walking was intact.

INSPECTION OF LOW BACK

There was flattening of lumbar curves. Pelvis was symmetric. There were no surgical scars.

PALPATION

There was reported mild, central tenderness. Examinee had no focal tenderness of the paraspinal muscles, vertebrae, sciatic notches, sacroiliac regions, or coccyx. There was no muscle spasm or active trigger points.

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LUMBAR RANGE OF MOTION

Range of motion measurements were performed using an inclinometer. He was advised to move actively within what he felt was safe reasonable for him.

Motion	Trial	True	Sacral
Flexion Forward	1	27°	15°
	2	39°	
	3	25°	
Extension Backward	1	5°	0°
	2	0°	
	3	0°	
Right Lateral Flexion	1	10°	
	2	5°	
	3	10°	
Left Lateral Flexion	1	15°	
	2	20°	
	3	20°	

The sum of the sacral flexion and extension components was to a maximum of 20 degrees. This was inconsistent with the tightest straight leg raising of 60 degrees. If the tighter SLR angle exceeds the sum of the sacral flexion and extension angles by more than 15 degrees, the lumbosacral flexion test is invalid.

In summary, his physical examination revealed complaints of tenderness and decreased motion, however given the failed sacral validity test it is questionable whether the demonstrated motion was accurate.

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NEUROLOGICAL EXAMINATION OF THE LOWER EXTREMITY

LOWER EXTREMITY DEEP TENDON REFLEXES

		Right	Left
Patellar	L-4	2+	2+
Achilles	S-1	2+	2+

LOWER EXTREMITY MOTOR EXAMINATION

Motor examination revealed normal and symmetric strength throughout the lower extremities and no muscle atrophy.

		Right	Left
Mid-thigh circumference (cm.)	10 cm. above the knee	45.0 cm	44.5 cm
Mid-calf circumference (cm.)	maximum mid-calf	35.5 cm	34.5 cm

LOWER EXTREMITY SENSORY EXAMINATION

Sensory examination was normal to soft touch and pinprick, with exception of reported "altered" sensation over a patchy area just distal to the left knee, laterally.

STRAIGHT LEG RAISING

	Right	Right Response	Left Angle	Left Response
Sitting	60°	Discomfort back of knee	60°	Discomfort back of knee
Supine	60°	Discomfort back of knee	60°	Discomfort back of knee

Supine straight leg raising was consistent with sitting straight leg raising.

NON-ORGANIC FINDINGS

Test	Negative	Positive
Axial Loading Causes Pain	x	
Superficial Touch Painful	x	
Range of Motion Inconsistent	x	
Sacral Validity Test Failed		x
Straight Leg Raising Inconsistent	x	
Sensory Deficits Non-Organic	x	
Muscle Weakness Giveaway	x	

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DIAGNOSTIC STUDIES

Study	Findings
MRI Lumbar Spine, Without Contrast, Including Adjective 3-D MR Myelogram - May 3, 2011	Printouts of the study performed were reviewed. There are findings of diffuse degenerative disease, with a central and paracentral/subarticular disc protrusion at the levels of L4-5, which did abut bilateral L5 nerve roots. Fissuring is noted particularly at the levels of L2-3 and L3-4, and mild to moderate facet arthropathy from L2 to L5.
MRI Lumbar Spine, June 30, 2008	Diffuse degenerative changes are noted with disc protrusion, L4-5, and diffuse facet arthropathy. (Studies were provided on DVD)

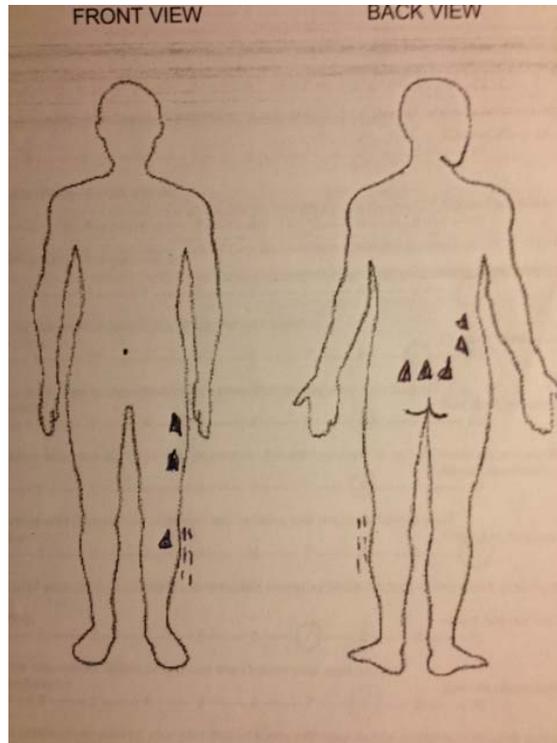
These studies provided by Mr. Example were returned to him.

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PAIN STATUS INVENTORIES

PAIN DRAWING

Mr. Example completed a pain drawing using symbols to describe sensations:



PAIN DISABILITY QUESTIONNAIRE – PDQ (SPINE AND PAIN)

His overall score was 110, with omission of one item, consistent with impression of severe disability. His responses are as follows:

1. Does your pain interfere with your normal work inside and outside the home?

Work normally

Unable to work at all

0 ----- 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- **7** ----- 8 ----- 9 ----- 10

2. Does your pain interfere with personal care (such as washing, dressing, etc.)?

Take care of myself completely

Need help with all my personal care

0 ----- 1 ----- 2 ----- 3 ----- 4 ----- **5** ----- 6 ----- 7 ----- 8 ----- 9 ----- 10

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3. Does your pain interfere with your traveling?
Travel anywhere I like *Only travel to see doctors*
0 ----- 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- 7 ----- **8** ----- 9 ----- 10
4. Does your pain affect your ability to sit or stand?
No problems *Cannot sit /stand at all*
0 ----- 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- **7** ----- 8 ----- 9 ----- 10
5. Does your pain affect your ability to lift overhead, grasp objects, or reach for things?
No problems *Cannot do at all*
0 ----- 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- 7 ----- **8** ----- 9 ----- 10
6. Does your pain affect your ability to lift objects off the floor, bend, stoop, or squat?
No problems *Cannot do at all*
0 ----- 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- 7 ----- **8** ----- 9 ----- 10
7. Does your pain affect your ability to walk or run?
No problems *Cannot walk/run at all*
0 ----- 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- **7** ----- 8 ----- 9 ----- 10
8. Has your income declined since your pain began?
No decline *Lost all income*
0 ----- 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- 7 ----- 8 ----- 9 ----- **10**
9. Do you have to take pain medication every day to control your pain?
No medication needed *On pain medication throughout the day*
0 ----- 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- 7 ----- 8 ----- **9** ----- 10
10. Does your pain force you to see doctors much more often than before your pain began?
Never see doctors *See doctors weekly*
0 ----- 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- 7 ----- **8** ----- 9 ----- 10
11. Does your pain interfere with your ability to see the people who are important to you as much as you would like?
No problem *Never see them*
0 ----- 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- 7 ----- **8** ----- 9 ----- 10
12. Does your pain interfere with recreational activities and hobbies that are important to you?
No interference *Total interference*
0 ----- 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- 7 ----- 8 ----- 9 ----- **10**
13. Do you need the help of your family and friends to complete everyday tasks (including both work outside the home and housework) because of your pain?
Never need help *Need help all the time*
0 ----- 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- **7** ----- 8 ----- 9 ----- 10
14. Do you now feel more depressed, tense, or anxious than before your pain began?
No depression/tension *Severe depression / tension*
0 ----- 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- **7** ----- 8 ----- 9 ----- 10
15. Are there emotional problems caused by your pain that interfere with your family, social and or work activities?
No problems *Severe problems*
0 ----- 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- 7 ----- **8** ----- 9 ----- 10

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BATTERY FOR HEALTH IMPROVEMENT - II

The Battery for Health Improvement – II was completed. The report is attached to this report, with the following excerpted from that report.

VALIDITY

This patient did not endorse any of the validity items. This reduces the risk that this profile was produced by random responding. **He disclosed an unusual absence of any psychological weaknesses, at a level seen in only the lowest 9% of patients. This level of self-disclosure was seen in only the lowest 30% of patients who were asked to fake good. Although this could indicate that he is unusually well adjusted and untroubled and that his life lacks significant dysfunction, it could also indicate a tendency to under-report information. Such patients may not value self-examination, may lack psychological mindedness, or may find it difficult to recognize or acknowledge psychological dysfunction.**

This patient may be reluctant to acknowledge any psychological frailties, perhaps out of fear that his physical symptoms will be taken less seriously if he reports any psychological problems. Given the fact that he is in litigation, he may be afraid that any personal information he reveals will be used against him. Secondary gain may also fuel a conscious or unconscious desire to bias the information he presents in an attempt to make a good impression. He may have concealed some personal information.

PHYSICAL SYMPTOM SCALES

This patient reported a **moderately high level of perceived functional limitations** that was higher than that reported by 97% of the community sample. These **problems with functioning are associated with a substantial level of pain.** He also reported severe peak pain (his Peak Pain score was 8 out of 10), which he perceives as disabling and intolerable (based on his Pain Tolerance Index score). This level of functional problems is not unusual for medical patients, who often have significant physical limitations. However, scores of this magnitude cannot be equated with wellness. This patient may see himself as having a significant level of problems with functioning. This may be objectively true, depending on the severity of his injury or illness. However, **his medical condition may have become an important feature of his self-concept, which may alter his aspirations and his sense of identity.**

If the patient seems to be more disabled than would be predicted given objective medical information, he may have an identity disturbance. He may have gravitated toward assuming a disabled role, perceiving himself as functionally limited even if he is not. This is more likely to be the case if psychosocial risk factors are present (for more information on psychosocial risk factors, see the BHI 2 test manual). These patients may report having problems with gainful employment or with a variety of activities of daily living. If this perception is not accurate, it can become a **self-fulfilling prophecy. If the patient wrongly believes that he cannot do something, he will be less likely to try to do it. This can lead to a constriction of life activities, physical deconditioning, and a further loss of function.** **If excessive disability is present, possible motivations for this should be explored. These could include fear of pain with pain avoidance, possible primary gain (e.g., the intrinsic appeal of being a patient or the use of symptoms as rationalizations to avoid guilt) or secondary gain (e.g., financial compensation or work avoidance).**

AFFECTIVE SCALES

This patient reported a low level of anger and hostility that is seen in only 3% of patients. This indicates a complete absence of reported angry or aggressive tendencies. He may be an easygoing person who faces few frustrations in life and accepts those he does encounter without rancor. However, if the

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patient's life history or clinical presentation does not support this picture, he may be prone to the denial of angry feelings and avoid confrontation. There may be a strong family history of punishment or other sanctions for expressing anger. He may seem passive and compliant, and he may have problems asserting himself.

PSYCHOSOCIAL SCALES

This patient's **Job Dissatisfaction score is higher than those seen in 93% of patients in rehabilitation. He probably feels resentment toward his employer, and he may make demands for accommodation in the workplace and have conflicts with his supervisor.**

It is important to determine if there is a reasonable basis for this patient's anger. If his symptomatic complaints appeared in association with upsetting incidents at work, the possibility that the symptoms are directly influenced by psychosocial forces should be considered. This influence may occur in one of several ways.

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CONCLUSIONS

Based on the information provided via medical records, other documentation, interview, physical examination and review of clinical studies, and applying current science and evidence-based medicine the following conclusions are made, to a reasonable degree of medical probability:

DIAGNOSES

1. Chronic low back pain syndrome
2. Lumbar degenerate disc disease, multi-level, with broad based disk herniation at L4-L5
3. Pain disorder associated with psychological and physical factors
4. Overweight (Body Mass Index 26.5, height 5' 10", weight 185 pounds)
5. Deconditioning
6. Tobacco usage (pipe smoker)
7. s/p left shoulder surgery
8. Gastroesophageal reflux, mild, intermittent

Mr. Example has underlying lumbar degenerative disk disease, without objective evidence of radiculopathy, and this is associated with chronic low back pain. His degenerative disk disease is not due to injuries, rather reflective of the natural progression of underlying degenerative changes; this will be explained in this report. His physical issues are associated with significant behavioral issues, including what appears to be an external locus of control versus internal locus of control, e.g. self-responsibility. He has been inactive (resulting in deconditioning), overweight and tobacco user; wiser choices would have resulted in a different outcome. He attributes his problems to "injuries" (external) and seeking "fixes" (such as surgical intervention) versus understanding of the natural progression of underlying degenerative processes and personal risk factors.

CLIENT QUESTIONS AND ANSWERS

In the client referral letter, several questions were posed. Based on the available information, current medical science, and my knowledge, skills and experience, the following assessment is made, to a reasonable degree of medical probability.

1. **The etiology of Claimant's low back condition related to the alleged injury of February 10, 2010. Specifically, whether it was caused, aggravated or accelerated by his alleged injury of February 10, 2010 or his employment as described in the Form WC-5 filed August 5, 2011. Please provide a basis for your opinion.**

Based on the available information, to a reasonable degree of medical certainty, his low back pain complaints relate to the natural progression of his underlying lumbar degenerative disk disease. To reasonable degree of medical probability, the underlying degenerative disk disease is attributable to non-occupational factors; his back pain is not due to discrete injuries nor to cumulative trauma. Both the facts in this case and current science support these conclusions.

Research in the last five years has altered dramatically our understanding of the etiology of degenerative disk disease. Degenerative changes occur early in life and are primarily related to genetics and early childhood environment, rather

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than occupation. A literature review by Michele C. Battie and Tapio Videman, M.D., of the University of Alberta, published in *Spine* in 2004¹ concluded that 74% of variance in degenerative disk disease relates to genetic factors:

STUDY DESIGN: A literature review. **OBJECTIVE:** To synthesize the scientific literature on the prevalence of lumbar disc degeneration and factors associated with its occurrence, including genetic influences. **METHODS:** A literature review was conducted of the prevalence of disc degeneration. Studies of the etiology of disc degeneration were summarized, with particular attention given to studies of genetic influences. **RESULTS AND CONCLUSIONS:** There are extreme variations in the reported prevalence of specific degenerative findings of the lumbar spine among studies, which cannot be explained entirely by age or other identifiable risk factors (e.g., prevalence figures for disc narrowing varied from 3% to 56%). It is likely that these variations are due, in great part, to inconsistencies in case definitions and measurements, which are impeding epidemiologic research on disc degeneration. Research conducted over the past decade has led to a dramatic shift in the understanding of disc degeneration and its etiology. Previously, heavy physical loading was the main suspected risk factor for disc degeneration. However, results of exposure-discordant monozygotic and classic twin studies suggest that physical loading specific to occupation and sport has a relatively minor role in disc degeneration, beyond that of upright postures and routine activities of daily living. Recent research indicates that heredity has a dominant role in disc degeneration, explaining 74% of the variance in adult populations studied to date. Since 1998, genetic influences have been confirmed by the identification of several gene forms associated with disc degeneration.

In this paper they do reference the 1999 study by Sambrook PN et al which demonstrated the genetic influences on cervical and lumbar disc degeneration²:

OBJECTIVE: Degenerative intervertebral disc disease is common; however, the importance of genetic factors is unknown. This study sought to determine the extent of genetic influences on disc degeneration by classic twin study methods using magnetic resonance imaging (MRI). **METHODS:** We compared MRI features of degenerative disc disease in the cervical and lumbar spine of 172 monozygotic and 154 dizygotic twins (mean age 51.7 and 54.4, respectively) who were unselected for back pain or disc disease. An overall score for disc degeneration was calculated as the sum of the grades for disc height, bulge, osteophytosis, and signal intensity at each level. A "severe disease" score (excluding minor grades) and an "extent of disease" score (number of levels affected) were also calculated. **RESULTS:** For the overall score, heritability was 74% (95% confidence interval [95% CI] 64-81%) at the lumbar spine and 73% (95% CI 64-80%) at the cervical spine. For "severe disease," heritability was 64% and 79% at the lumbar and cervical spine, respectively, and for "extent of disease," heritability was 63% and 63%, respectively. These results were adjusted for age, weight, height, smoking, occupational manual work, and exercise. Examination of individual features revealed that disc height and bulge were highly heritable at both sites, and osteophytes were heritable in the lumbar spine. **CONCLUSION:** These results suggest an important genetic influence on variation in intervertebral disc degeneration. However, variation in disc signal is largely influenced by environmental factors shared by twins. The use of MRI scans to determine the phenotype in family and population studies should allow a better understanding of disease mechanisms and the identification of the genes involved.

In 2004 MacGregor,³ et al. again documented the strong relationship between genetics and the development of neck and back pain. They reported:

1 Battie MC, Videman T. Lumbar Disk Degeneration. *Epidemiology and Genetic Influences Spine*. 2002, 29(23) 2679-2690, 2004.

2 Sambrook PN, MacGregor AJ, Spector TD. Genetic influences on cervical and lumbar disc degeneration: a magnetic resonance imaging study in twins. *Arthritis Rheum*. 1999 Feb;42(2):366-72.

3 MacGregor AJ, Andrew T, Sambrook PN, Spector TD. Structural, psychological, and genetic influences on low back and neck pain: a study of adult female twins. *Arthritis Rheum*. 2004 Apr 15;51(2):160-7.

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OBJECTIVE: To assess genetic and environmental influences on low back and neck pain in a classic twin design and to examine the extent to which these are explained by structural changes seen on magnetic resonance imaging (MRI) and psychological and lifestyle variables. **METHODS:** The subjects comprised 1,064 unselected women (181 monozygotic [MZ] and 351 dizygotic [DZ] twin pairs) recruited from a national registry of twin volunteers. Outcome measures included lifetime history of low back and neck pain (using a range of increasingly stringent definitions), MRI scores of disc degeneration in the lumbar and cervical spine, psychological distress as assessed by the General Health Questionnaire (GHQ), and lifestyle variables assessed by questionnaire. **RESULTS:** For all definitions of pain, there was a consistent excess concordance in MZ when compared with DZ twins, equating to a heritability for low back pain in the range of 52-68% and for neck pain in the range of 35-58%. The strongest associations were between low back pain and MRI change (odds ratio [OR] 3.6, 95% confidence interval [95% CI] 1.8-7.3) and between neck pain and response on the GHQ (OR 3.3, 95% CI 2.1-5.0). These associations were mediated genetically. **CONCLUSIONS:** Genetic factors have an important influence on back and neck pain reporting in women. These factors include the genetic determinants of structural disc degeneration and an individual's inherited tendency toward psychological distress. MRI changes are the strongest predictor of low back pain.

A study by Boos et al that was published in Spine 2002⁴ and won the Volvo Award in Basic Science had documented the progression of degenerative disk disease, with linear progression ages 2 – 88 years, and end plate cartilage pathology seen in ages 3 to 10 years. They concluded that diminished blood supply to the intervertebral disc in the first half of the second life decade appears to initiate tissue breakdown. Therefore degenerative disease is a progressive disease starting early in life.

Battie had also demonstrated the importance of genetics in a case-control study of twins who had very different histories of occupational driving during their life; this study was published in Lancet in 2002.⁵ This study concluded that “Although driving may exacerbate symptoms of back problems, it does not damage the disc. Our inability to identify structural damage should be encouraging to those employed in occupations involving motorized vehicles and operation of heavy equipment.”

Research supports earlier work by Videman and Battie demonstrating that occupational risk factors appear to be far less important than genes and early childhood environment in the development of lumbar degeneration.⁶

Therefore, in consideration of our current understanding of the etiology of degenerative disk disease and the facts of this case, it is determined that the degenerative disc disease is non-occupational.

Your diagnosis of Claimant’s low back condition related to the alleged injury of February 10, 2010.

Mr. Example has a “chronic low back pain syndrome” with underlying degenerative disc disease and superimposed behavioral and psychological issues, consistent with a pain disorder associated with psychological and physical factors. He is deconditioned and overweight.

4 Boos N, et al. Classification of age-related changes in lumbar intervertebral discs: 2002 Volvo Award in basic science. Spine. 2002 Dec 1;27(23):2631-44.

5 Battie, et al. Occupational driving and lumbar disc degeneration: a case-control study. Lancet. 2003 Feb 8;361(9356):531.

6 Videman T, Battie MC. The influence of occupation on lumbar degeneration. Spine. 1999 Jun 1;24(11):1164-8.

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It is probable that his "injury" of February 10, 2010 was a temporary exacerbation of his chronic low back pain. The facts in this case and science support the conclusion that it was not a permanent aggravation.

2. If work-related, whether Claimant's low back condition related to the alleged injury of February 10, 2010 is permanent and stationary, (i.e. has reached medical improvement). If so, please provide an approximation as to when Claimant's condition became medically stable.

As discussed, his current condition is not work-related. With a temporary exacerbation it is probable that the impact of an acute injury was no more than days.

Eugene Carragee, MD, highly regarded spine surgeon and Editor of *Spine* reported on a study in 2006 that concluded minor trauma does not appear to increase the risk of serious LBP episodes or disability.⁷ The vast majority of incident-adverse LBP events may be predicted not by structural findings or minor trauma but by a small set of demographic and behavioral variables. He and his colleagues state:

There was no association of minor trauma to adverse LBP events. For each 6-month study interval, the risk of developing a serious LBP episode was 2.1% unassociated with minor trauma and 2.4% following minor trauma ($P = 0.59$). Neither the frequency of minor trauma events nor the reported severity of the event correlated with adverse outcomes. Subjects with advanced structural findings were not more likely to become symptomatic with minor trauma events than with spontaneously evolving LBP episodes. Follow-up magnetic resonance imaging evaluating new serious LBP illness rarely revealed new clinically significant findings. Age and sex-adjusted prediction models, including abnormal psychometric testing, smoking, and compensation issues, accurately identified 80% of serious LBP events and 93% of LBP disability events.

3. If work-related, whether Claimant is required to receive essential medical services necessary to prevent deterioration of his low back condition related to the alleged injury of February 10, 2010 or further injury. If so, please provide your recommendations for further treatment.

As discussed, his condition is not work-related; therefore no further treatment is required for the February 10, 2010 event.

4. Any other comments you deem necessary.

It is likely that he will have recurrences and exacerbations of his chronic low back pain, particularly if he does not reduce his risk factors, e.g. use of opioids, deconditioning, overweight, tobacco use and behavioral issues.

In reviewing his care, there are concerns. He has significant risk factors that he were not been dealt with adequately, including inactivity (deconditioning), tobacco use, being overweight and behavioral issues (including victimization).

From a clinical perspective, guidance is provided on what occurred and what should have occurred. Treatment should be consistent with evidence-based guidelines, e.g. American College of Occupational and Environmental Medicine

⁷ Carragee E, Alamin T, Cheng I, Franklin T, Hurwitz. Does minor trauma cause serious low back illness? *Spine* 2006 Dec 1:31(25):2942-9.

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(ACOEM) or Official Disability Guidelines (ODG). The primary focus should be on activity, including aerobic exercise. ACOEM Guidelines recommend walking at least 4 times a week at 60% of predicted maximum heart rate is recommended. A graded walking program is generally desired, often using distance or time as minimum benchmarks – e.g., start with 10 to 15 minutes twice a day for 1 week and increase in 10 to 15 minute increments per week until at least 30 minutes walking a day is achieved. Theoretical benefits of aerobic exercise include improved aerobic capacity, improved blood flow, lower depression, and higher pain thresholds and pain tolerance. These exercises include walking, running, bicycling, and many other activities. For most patients, a structured, progressive walking program on level ground or no incline on a treadmill is recommended. Aerobic exercise, particularly self-directed, is low cost, not invasive, and has low potential for adverse effects.

Physical therapy should have focused on exercises, e.g. flexibility, strengthening and endurance, and not involve passive modalities. For decades, exercises have been considered among the most important therapeutic options for the treatment and rehabilitation of LBP. Unfortunately, despite a plethora of literature, the vast numbers of possible permutations and combinations of exercises impairs the ability to identify specific exercises that demonstrate particular benefit. Given the chronic nature of his problem treatment frequency of 1 to 3 sessions a week progressing to 2 to 4 sessions a week would have been recommended depending on patient compliance, objective functional improvement, and symptom reduction. Reassessment should have occurred after 10 sessions with continuation based on demonstration of functional improvement. The upper range is 20 sessions. The focus should be learning the skills to perform an independent exercise program.

Given his chronic low back pain, if there is a need for medications at night, recommend first the use of over the counter non-steroidal anti-inflammatories. If the patient does not respond to this and there is interference with sleep, a trial of norepinephrine reuptake inhibitor antidepressants (TCAs) – e.g., amitriptyline, imipramine, nortriptyline, maprotiline, doxepin could be considered. Generally prescribed at a low dose at night and gradually increased (e.g., amitriptyline 25mg QHS, increase by 25mg each week) until a sub-maximal or maximal dose is achieved, sufficient effects are achieved, or adverse effects occur. Most practitioners use lower doses, (e.g., amitriptyline 25 to 75mg a day to avoid adverse effects and necessity of blood level monitoring), as there is no evidence of increased pain relief at higher doses. Imipramine is less sedating, thus if there is carryover daytime sedation, it may be a better option. If the patient cannot sleep at night, amitriptyline is the recommended initial medication to prescribe. This could be managed by his primary care physician.

His tobacco use is a significant risk factor; he needs to discontinue smoking for several reasons, including his chronic low back pain. Studies have documented a significant association between smoking and chronic or disabling back pain. Smokers have a higher prevalence and incidence of low back pain than never smokers.

Patient education about progressive management of low back pain would be appropriate.

There is no evidence that surgical interventions are required and consideration of surgery, such as spinal fusion, is not appropriate in this case. Recent studies of “Long-term Outcomes of Lumbar Fusion Among Workers’ Compensation Subjects” conclude that “Lumbar fusion for the diagnoses of disc degeneration, disc herniation, and/or radiculopathy in a WC setting is associated with significant increase in disability, opiate use, prolonged work loss, and poor RTW status.”⁸ This more recent citation was not provided by Dr. Kerry. Surgical intervention would be particularly problematic given the behavioral issues, the context of litigation, and not being involved in approaches that he could independently pursue that would improve his level of functioning. Performance of a spinal fusion within the context of the issues of this case would not be consistent with current standards of care and evidence-based medicine.

8 Nguyen TH, Randolph DC, Talmage J, Succop P, Travis R. Long-term Outcomes of Lumbar Fusion Among Workers’ Compensation Subjects. *Spine (Phila Pa 1976)*. 2011 Feb 15; 36(4):320-31.

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QUALIFICATIONS

Christopher R. Brigham, MD is President of Brigham and Associates, Inc., with primary office in Kailua, Hawaii. He is licensed to practice medicine in Hawaii and in California. Dr. Brigham was the Senior Contributing Editor for the AMA Guides to the Evaluation of Permanent Impairment, Sixth Edition, and was a contributor / author for several chapters, including Upper Extremities, Lower Extremities and Spine. With the Fifth Edition he served on the Advisory Committee and as a contributor. Dr. Brigham is Board-Certified in Occupational Medicine (ABPM), Founding Director of the American Board of Independent Medical Examiners (ABIME), a Certified Independent Medical Examiner (CIME), a Certified Impairment Rater (CIR), a Fellow of the American Academy of Disability Evaluating Physicians (FAADEP) with Certification in Evaluation of Disability and Impairment Rating (CEDIR), a Fellow of the American College of Occupational Environmental Medicine (FACOEM), and a graduate of the Washington University School of Medicine – St. Louis. He is the Editor of the AMA publications The Guides Newsletter and The Guides Casebook. He is co-author of the text Understanding the AMA Guides in Workers Compensation, has written over one hundred published articles on impairment and disability evaluation and other texts, chaired the Medical Advisory Board for the Medical Disability Advisor, Fourth Edition, is featured in several video, audio and web-based productions in the medicolegal field, and has trained thousands of physicians, attorneys, claims professionals and fact-finders, throughout the US, Canada and internationally. He is an experienced professional speaker. As a clinician with over thirty years experience, he has performed several thousand independent medical and impairment evaluations, providing him with excellent insight to the complexities of human potential, impairment and disability. As a result of this experience he has consulted for numerous organizations (including governmental jurisdictions). His curriculum vitae is available at http://www.impairment.com/PDFFiles/BrighamC_CV.pdf.

DISCLOSURE STATEMENTS

The above analysis is based upon the available information at this time, including the history given by the examinee, the medical records and tests provided, the results of pain status inventories, and the physical findings. I have reviewed the excerpts and entire outline if provided and taken my own history, made additional inquiries and examinations as are necessary and appropriate to identify and determine the relevant medical issues. It is assumed that the information provided to me is correct. If more information becomes available at a later date, an additional report may be requested. Such information may or may not change the opinions rendered in this evaluation.

My opinions are based upon reasonable medical certainty. Medicine is both an art and a science, and although an individual may appear to be fit for work activity, there is no guarantee that the person will not be reinjured or suffer additional injury. If applicable, employers should follow the processes established in the Americans with Disabilities Act, Title I. The opinions on work capacity are to facilitate job placement and do not necessarily reflect an in-depth direct threat analysis. Comments on appropriateness of care are professional opinions based upon the specifics of the case and should not be generalized, nor necessarily be considered supportive or critical of, the involved providers or disciplines.

Any medical recommendations offered are provided as guidance and not as medical orders. The opinions expressed do not constitute a recommendation that specific claims or administrative action be made or enforced.

Thank you for asking me to see this examinee in evaluation. If you have any further questions, please do not hesitate to contact me.

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