

The injury potential would be present during the head lag phase of injury, and as seen in the above visual representation, it would account for the insured's headaches, initial sinus discomfort post-collision, and current complaints of light-headiness, dizziness due to its effect on autonomic function. After showing and describing the pain referral patterns in the above diagram to the insured, she agreed with my determination and findings.

Sacroiliac Sprain/Strain

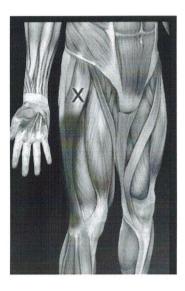
The injury mechanism potential would occur during the flattening of the thoracic curve and striking of the pelvis against the seat back. Then sacroiliac (SI) injury would account for the insured's inability to maintain prolonged postures without pain and when testing during examination, muscle palpation of the gluteus medius muscle on the right reproduced the insured lumbar spine pain and discomfort.



Knee Injury - IT Band

The injury mechanism potential would be present as the legs begin to extend. This would allow the IT band to slide from a lateral to medial position. The IT band will refer pain over the reported area of

discomfort. Though the insured's knee does "give out," I do not believe it is associated with the motor vehicle accident. Meniscus injury is the most common cause for knee giving way, however arthritis and poor physical conditioning are also causes. I asked the insured to complete a wall squat, and used the "Coaches Eye app" with her permission to record this. I was hopeful that watching this maneuver in slow motion would allow for a better understanding of her knee injury, however what was found is that she could not preform one full wall squat repetition. Finally, during palpation of the insured's IT band, I was able to reproduce her right knee symptoms.



Outcome Assessment Evaluation

Measuring Pain Intensity:

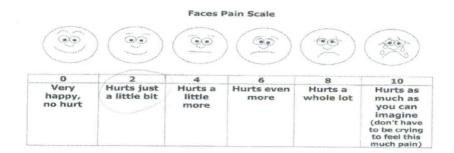
Pain intensity is the most commonly used indicator to evaluate efficacy of pain treatments. Pain intensity measures generally fall into three categories.

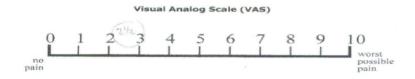
"The Pain Visual Analog Scale (PVAS) is a reliable and well-validated measure of pain intensity in acute, cancer and chronic pain. The PVAS was presented as a 10 cm line anchored with the phrases "no pain" and "worst pain possible"

Clark M, Gironda R, Young R: Development and validation of the Pain Outcomes Questionnaire –
 VA. Journal of Rehabilitation Research and Development. Vol 40, No 5, September / October 2003. Pages 381-396

In addition, numeric rating scales and pain faces scales were also used during the examination.

Screen shot of completed outcome assessments:



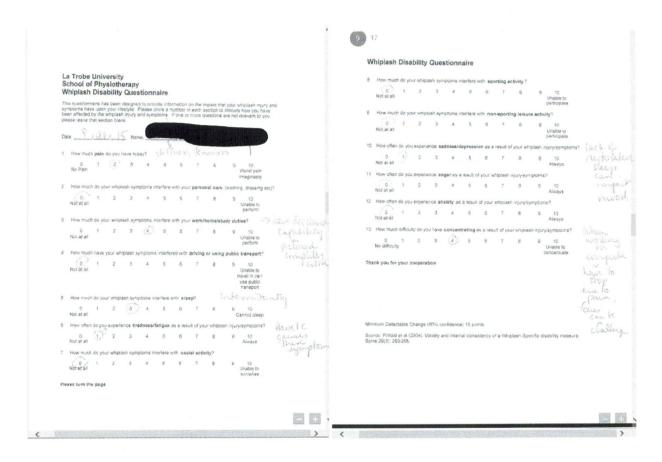


La Trobe University School of Physiotherapy Whiplash Disability Questionnaire.

This questionnaire has been designed to provide information on the impact that whiplash injury and symptoms have upon a person's lifestyle. The insured score indicates a continued whiplash impact of 11.53%.

- Pinfold *et al.* (2004) Validity and internal consistency of a Whiplash – Specific disability measure. Spine 29(3): 263-268.

Screen shot of completed outcome assessments:



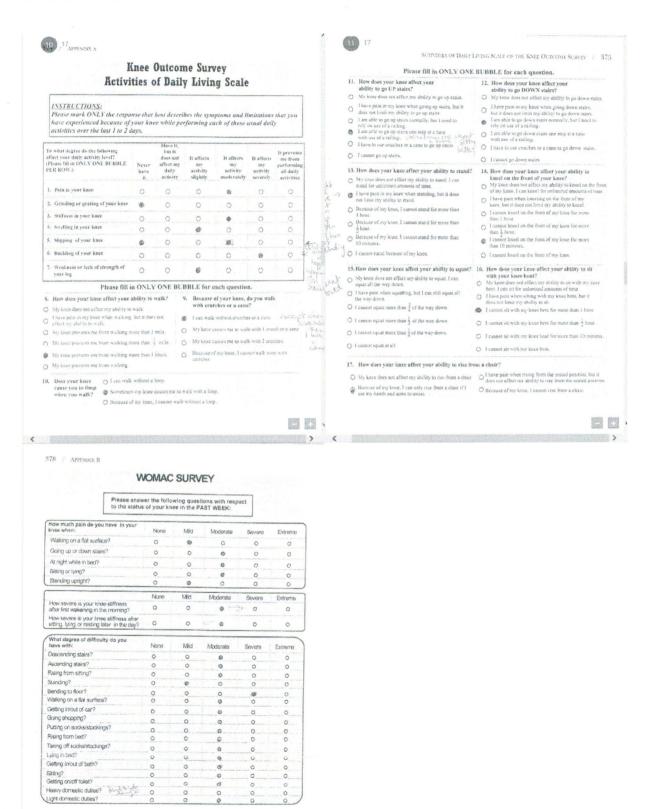
Knee Outcome Survey Activities of Daily Living Scale and WOMAC Survey

These two questionnaires look to evaluate the functional ability of the knee joint.

The insured's score on the Knee Outcome Survey Activities of Daily Living Scale indicates a loss of 40.50% functional ability. The insured's WOMAC survey indicates OA affecting 43.47% of her normal activities of daily living.

Screen shot of completed outcome assessments:

Claim Number:



Back Bournemouth Questionnaire.

This questionnaire was designed to consider both musculoskeletal pain as well as the effect of cognitive function related to pain. The insured's response today shows a 25.71% impairment related to lower back pain.

- Bolton JE, Breen AC: The Bournemouth Questionnaire: A short form comprehensive outcome measure. I. Psychometric Properties in Back Pain Patients. JMPT 1999;22(9): 503-510

Screen shot of completed outcome assessments:

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The insured reported that she is attending physiotherapy a provided by She reported that the treatment consists of exercise (provided handout) and

ultrasound to her shoulders, right knee, and back. She also reported receiving visualization training. Overall, the insured reported that her symptoms have improved 90% to date.

When specifically asked about the specificity of the treatment, the insured reported that most times she would point to the area of pain, and then ultrasound would be performed over that area. When asked about the post-treatment benefit, the insured reported that the treatment is usually only beneficial for 1 hours post-care.

Specific Questions

Answer to Question(s)

1. Please provide your diagnosis of any injury sustained as a direct result of the motor vehicle accident. Do the reported complaints, as they relate to any injury sustained as a direct result of the accident correlate with your objective findings?

During the assessment, there were continued findings of muscular dysfunction, tender points and trigger points in the SCM, gluteus Medius, Gluteus Minimus and IT Band musculature. My diagnosis is WAD 2, Sacroiliac Sprain Strain and IT Band Syndrome. The insured's complaints correlate to my findings. It appears that the insured's injuries were initially misdiagnosed and not specifically treated by her provider, thus resulting in the delayed response to care and continued reported pain process by the insured.

- 2. Does the claimant suffer from any medical condition that existed prior to the motor vehicle accident? If so,
 - a) Has this pre-existing condition been exacerbated as a result of the accident? And if so, to what degree?
 - b) How might this condition affect the recovery from injuries sustained in the accident?
 - c) Did this medical condition affect the claimant's ability to work/attend school/Activities of Normal Life before the accident?
 - d) And if so, which activities were affected and to what degree?

In review of the provided documentation along with direct questioning to the insured, the following past medical history was indicated;

- 1. GERD
- 2. Duodenal Ulcer
- 3. Interstitial Cystitis
- 4. Rhinitis
- 5. PTSD
- 6. Anxiety
- 7. Tonsillectomy
- 8. Laparoscopy
- 9. Basil Cell Cancer Removal
- 10. Pre-Knee Pain
- 11. Fibromyalgia
- 12. Backer's Cyst

In review of the past medical history, the conditions though present have not had an effect on the insured's recovery or potential to recover. The insured's overall pain was reported as infrequent mild stiffness and rated only at a 1-2/10, with 10 being the worst possible pain. She reported a 90% improvement and lieu of the fact that her treatment has been unspecific and did not account for her primary injury areas including the SCM, SI joint and IT Band. Further, when directly questioned in regards to the insured's past medical history pre and post-collision, the insured reported that her symptoms were not aggravated and did not worsen post-collision.

However, it is my opinion that her injuries were minor and only musculoskeletal in nature. Research has shown that muscle recovers through three stages, degeneration and inflammation, muscle regeneration and finally development of fibrosis. The severity of the injury and the ability of the immune system to function can influence overall recovery. Advancements in muscle therapy and prevention of fibrosis development techniques in recent years has allowed for improved muscle heeling times and recovery. The insured did present with a past medical history of right meniscus injury, though during evaluation bilateral menisci testing were found within normal limits and pain free.

Several of her past medical conditions did affect her ability to work pre-collision. The insured's development of PTSD and anxiety were directly related to a work place incident and her Interstitial Cystitis was the cause of her being placed on disability. However, she continues to be active and socially engaged, presiding as a wedding officiant, attending wedding fairs and shows, writing a book, providing/teaching meditation and visualization services. Thus, her past medical history has not prevented her from preforming general activities of daily living and/or work activities not associated with her prior employment pre-disability claim.

3. Do you concur with the diagnoses/impairment descriptions provided by the various health practitioners/professionals to date? If not, please provide us with your rationale.

I do concur with the diagnosis of WAD 2 and as an unspecific diagnoses, Lumbar Spine Sprain/Strain and Lower Leg Injury. In review of the history, medical documentation, crash forensics analysis and physical examination, it is my opinion that the insured has sustained simple soft tissue injuries to the neck, back and hip consistent with the definition of minor injury. It is my opinion that the insured's neck pain is primarily due to trigger points in bilateral SCM muscles, thereby resulting in both pain referral pattern's (headaches) and changes in autonomic function. It is my opinion that her low back pain is primarily due to a right SI sprain/strain with Gluteus Medius and Minimus involvement and that her continued right knee pain is due to a right hypertonic IT Band.

Though I do concur with the diagnosis codes, I do not concur with the provided treatment to date. These codes cover a large anatomical region. In review of the documents and questioning of the insured, it appears that her right lower leg injury was diagnosed and treated as a meniscal tear, when in fact her current symptoms are due to IT Band hypertonicity, which on palpation during examination reproduced the insured's chief complaints. The insured's lower back pain treatments were reported to occur in the para-lumbar region and not over the right SI joint region were positive testing occurred during evaluation. Finally, the insured's neck treatment occurred over the posterior cervical spine muscles and not the anterior cervical spine muscles, which presented with hypertonicity, trigger points and tender points during examination.

4. Do you concur with the medical and rehabilitation intervention provided to date, including but not limited to treatments, assessments and prescription or over-the-counter medication? Please provide reasons to support your findings and opinion, being specific as to service and estimated frequency and duration.

I do not agree with the provided medical and rehabilitation intervention to date. As noted above, the insured has sustained three specific injuries and these injuries to date have not been specifically treated. The insured's primary care has been physiotherapy consisting of exercises and ultrasound with some visualization techniques. The insured had provided an exercises handout during examination for review. The handout provided by the insured did not include exercises for her sustained injury areas, as it did not consist of therapeutic stretches for the SCM, gluteus medius, gluteus minimus and/or IT Band, nor were any strengthening and/or stabilization exercises, such as cervical isometrics, wall squats and/or single leg stances included.

Furthermore, ultrasound was used as a therapeutic modality during the insured's treatment to date. However, ultrasound would no longer provide a benefit to injuries sustained at this time. Ultrasound is primarily an acute pain modality. Ultrasound aids with stimulation of fibroblasts, protein formation, while reducing edema, calcium deposits and inflammation. The use of ultrasound modality during treatment would be more appropriate if there was a continued pain process and/or muscle injury present. At this point in time, the insured's injuries are strictly endurance based. The insured does not even consider or report her symptoms as painful and only described them as stiff or tense. Her neck stiffness, headaches, right knee pain and lower back pain were reported to all occur after maintaining prolonged postures, some as long as an hour. The continued use of ultrasound during treatment at this time is only causing a neurological reflex, allowing the insured to feel better for a short amount of time and when specifically asked, the insured concurred with this statement by stating that treatment

allowed for about 1 hour of pain relief post care. Furthermore, ultrasound has also been used incorrectly over the posterior aspect for the insured's neck pain, as during examination bilateral SCM muscles reproduced the insured's neck pain. Thereby, the use of ultrasound as a safe modality cannot be utilized for the insured's neck pain due to risk factors associated with the vasculature in the anatomical region surrounding the SCM musculature. Thus, ultrasound as a treatment modality should not be used in the anterior neck region for the insured in the future.

The insured has sustained typical soft tissue injuries associated with her specific mechanism of injury. It is my opinion that treatment should have not exceeded 6-8 weeks of care post-collision at a frequency of 2-3 times per week. Continued care, as well as continued reports of stiffness and tension in my opinion are solely related to treatment not specific to the insured's injuries.

I have no comment regarding prescription medication.

5. Are the assessment and/or treatment services contemplated in the recently proposed, unapproved Treatment and Assessment Plan (OCF 18) dated June 23, 2015 in the amount of \$1,645.48 reasonable and necessary as a direct result of injuries sustained in this accident? If not, please provide reasons to support your findings and opinion. Please be specific as to service and estimated frequency and duration.

The Treatment and Assessment Plan (OCF 18) dated June 23, 2015 is not reasonable and necessary. The insured has sustained simple soft tissue injuries that should have a normal heeling time of 6-8 weeks. This plan further indicates a generic continuation of the same treatment that the insured has received since February 2015. Vestibular testing was also conducted today. The insured was asked to preform Romberg's Position and Test after signing the consent form. The examination took just over an hour, and then the test was re-preformed post-examination. As shown in the results below, there is no significant increase in sway noted. This in combination with the fact that the insured's pain patterns were diagnosed and reproduced with physical testing disallows the possibility of the insured's pain being chronic. As the injury is muscular in nature, and the insured has no signs and symptoms of chronic pain, the requested Treatment and Assessment Plan (OCF 18) dated June 23, 2015 is not reasonable and necessary.

Insured's Picture with Cast:

6. Please provide your prognosis for any injury sustained as a direct result of the motor vehicle accident.

The insured's prognosis is excellent. She has reported a 90% improvement while receiving non-specific, generic treatment. With the provision of specific exercises to improve muscle strength, stability and

endurance, there is no reason she should not have a full and complete recovery without continued facility based care.

7. Do you find any indication of concurrent medical conditions outside your scope of expertise that you believe warrants further consideration? If so, please specify the type of examination or other recommendations.

No, all areas are within my scope and area of expertise. Please see Appendix A.

- 8. Is the Impairment predominantly a Minor Injury as defined in Section 2 of the Minor Injury Guideline? For the purposes of the Guideline:
 - a. Minor injury means a sprain, strain, whiplash associated disorder, contusion, abrasion, laceration or subluxation and any clinically associated sequelae. This term is to be interpreted to apply where a person sustains any one or more of these injuries.
 - b. Sprain means an injury to one or more tendons or ligaments or to one or more of each, including a partial but not a complete tear.
 - c. Strain means an injury to one or more muscles, including a partial but not a complete tear.
 - d. Subluxation means a partial but not a complete dislocation of a joint.
 - e. Whiplash injury means an injury that occurs to a person's neck following a sudden acceleration-deceleration force.
 - f. Whiplash associated disorder means a whiplash injury that:
 - does not exhibit objective, demonstrable, definable and clinically relevant neurological signs,
 - ii. does not exhibit a fracture in or dislocation of the spine.

The insured's impairments are by definition minor, and would be consider minor injuries.

9. If the impairment is predominantly a Minor Injury, is there any compelling evidence that the person has a pre-existing medical condition that was documented by a health practitioner before the accident that would prevent the person from achieving maximal recovery if subject to \$3,500.00 limit or if limited to Goods and Services available in the Minor Injury Guideline?

No, there is no compelling evidence of pre-existing medical conditions that would prevent the insured from achieving maximal medical improvement in a timely fashion well within the allotted time of the minor injury guideline. The insured did present with a number of past medical conditions, however as noted above, these conditions would not have presented a significant barrier to recovery. Her

continued symptoms are genuine, and in my opinion are directly related to receiving generic nonspecific treatment.

Disclosure

The opinion provided in this report is that of the examiner and has been based on the documents provided for review, the history reported by the claimant, and the results of the present examination. The examiner's opinion is independent of the referral source. The examiner reserves the right to change or modify the opinion provided in this report should additional information become available at a later date. In that circumstance, the examiner upon request will provide an addendum to this report.

Dr. Jason Mazzarella, DC, DAAPM, DCAPM, DAAETS, FIAMA, MVC-FRA, CATSM, CBIS, CMVT, CPM, BSc Kin, BSc HPA

Director North American Spine Institute

Lo MM.

Doctor of Chiropractic

Diplomat American Academy of Pain Management

Diplomat Canadian Academy of Pain Management

Diplomat American Academy of Experts in Traumatic Stress

Fellowship International Academy of Medical Acupuncture

Certification Motor Vehicle Trauma

Certification Pain Management

Certification Acute Traumatic Stress Management

Certification Motor Vehicle Crash – Forensics Risk Analysis

Certification Brain Injury

Cert. Whiplash and Brain Traumatology

Advanced Certificate of Competency Whiplash and Brain Traumatology

NBCE Certified Physiotherapy Competency

BSc. Kinesiology Movement Science

BSc. Helath Policy and Administration

Crash Data Retrieval System Operators (Technician) Certification

Crash Data Analysis and Application Certification

Cert. Accident Investigation

Cert. Accident Investigation and Reconstruction Level 2

Cert. Accident Investigation and Reconstruction Level 3

Appendix A

I am a doctor duly licensed to practice in the province of Ontario. I have a certification in motor vehicle crash forensics injury risk analysis and additional training in kinesiology, movement sciences, accident investigation and accident reconstruction. My area of concentration is neuromusculoskeletal impairment, chronic pain and occupant kinematics that occur during motor vehicle crashes.

Clinically, I have treated and assessed approximately 12,000 patients to date. I have also performed approximately 8,000 Independent Medical Assessments to date include brain injury assessments, chronic pain assessments and crash forensics analysis assessments.

Academically, I have participated in over 400 hours of whiplash traumatology training, over 320 hours of accident investigation and reconstruction training and I have taken over 140 CME courses in Pain Management. Due to this training I have obtained a certificate or certifications in the following:

- Diplomate American Academy of Pain Management
- Diplomate Canadian Academy of Pain Management
- Diplomate American Academy of Experts in Traumatic Stress
- Fellowship International Academy of Medical Acupuncture
- Certification Motor Vehicle Trauma
- Certification Pain Management
- Certification Acute Traumatic Stress Management
- Certification Motor Vehicle Crash Forensics Risk Analysis Certification Brain Injury
- Advanced Certificate of Competency Whiplash and Brain Traumatology
- NBCE Certified Physiotherapy Competency
- Crash Data Retrieval System Operators (Technician) Certification Crash Date Analysis and Application Certification
- Cert. Accident Investigation and Reconstruction Level 2 and 3
- Cert. Accident Investigation

In addition, I have a Kinesiology Movement Science degree and participated and received a certification for live full scale human volunteer crash testing. This certification was achieved through completion of a comprehensive training program and qualifying exam topics include in this program where: principles of auto crash reconstruction, human subject crash testing/occupant kinematics, pedestrian crash reconstruction, the latest in human anatomical research and injury biomechanics, current methodologies and strategies in injury prevention using design engineering, motor vehicle injury diagnostic and non-invasive and invasive clinical management methods, soft tissue injury referral patterns and pain management. This hands on training has allowed for a better understanding and appreciation of occupant kinematics that occur in different vector collisions and varying speeds in combination with associated risk factors and vehicle dynamics.