Date: 19961022
Docket: B910142
Registry: Vancouver

IN THE SUPREME COURT OF BRITISH COLUMBIA

BETWEEN:

LANCE RONALD GIBSON

PLAINTIFF

AND:

KARL RAYMOND RICKETT and
VAN HERRICK'S ENVIRONMENTAL PLANTING LTD.

DEFENDANTS

AND:

INSURANCE CORPORATION OF BRITISH COLUMBIA

THIRD PARTY

Date: 19961022
Docket: B910143
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IN THE SUPREME COURT OF BRITISH COLUMBIA

BETWEEN:

RONALD ALBERT GIBSON and LANCE RONALD GIBSON

PLAINTIFF

AND:

GEOFF HALL

DEFENDANT

REASONS FOR JUDGMENT

OF THE

HONOURABLE MR. JUSTICE COULTAS

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I N D E X

Page

PART I

The Actions . . . . . 4 - 5

PART II

Issues . . . . . 5 - 6

PART III

Discussion . . . . . 6 - 7

PART IV

The Plaintiff . . . . . 7 - 10

PART V

The Plaintiff's Car - The First Accident . . . . . 10 - 14

The Second Accident 14

The Third Accident . . . . . 14 - 15

PART VI

Medical Condition, April 5, 1990 - March 1991 . . . . . 15 - 20

Winging of the Scapula . . . . . 20 - 23

PART VII

The Issue of Causation . . . . . 23 - 30

The Long Thoracic Nerve and the Serratus Anterior Muscle . . . . . 25 - 30

PART VIII

The Medical Evidence as it Relates to Causation

- **Dr. Hershler** . . . . . 30 - 38
- **Dr. Toews** . . . . . 38 - 40
- **Dr. Bozek** . . . . . 40 - 44
- **Dr. Taunton** . . . . . 44 - 47

The Defendants' Medical Evidence

- **Dr. Reebye** . . . . . 48 - 52
- **Dr. Allan** . . . . . 52 - 66
- **Dr. Elson** . . . . . 66 - 73

I N D E X (Cont'd.)

Page

PART IX

Rebuttal Evidence
- **Mark Bailey** . . . . . 73 - 77
- **Dr. Taunton** . . . . . 77 - 80
- **Dr. Bozek** . . . . . 80 - 87
- **Dr. Hershler** 87

PART X

Findings of Fact with Respect to Causation . . . . . 87 - 97

PART XI

Conclusions with Respect to Causation . . . . . 98 - 101

PART XII

Other Possible Causes 101

The May Incident . . . . . 102 - 108

PART XIII

Liability 108

PART XIV

Damages . . . . . 109 - 110

The Medical Evidence in Respect of Soft Tissue Injury
- **Dr. Toews** 111
- **Dr. Greenwood** . . . . . 111 - 112
- **Dr. Taunton** . . . . . 112 - 113
- **Dr. Hershler** 113
- **Dr. Bozek** 113
- **Dr. Allan** . . . . . 113 - 114
- **The Plaintiff** . . . . . 114 - 115

Non-Pecuniary Damages Award . . . . . 115 - 117

Loss of Capital Asset, Loss of Future Capacity and Future Wage Loss 117

Past Income Loss . . . . . 117 - 121

Past Special Damages 121

PART XV

Apportionment of Damages . . . . . 121 - 123

PART XVI

Issues to be Addressed 123

[1] On April 5, 1990, the plaintiff Lance Gibson was driving his 1970 Volkswagen "Beetle" en route home. He travelled down Mundy Road which has a steep downhill grade just before it intersects with Cape Horn Road in Coquitlam. He stopped at the stop sign at the "T" intersection, looked into his rear-view mirror and saw a truck proceeding down Mundy Road, travelling quickly; he expected it to stop. It did not stop and struck his car in the rear, driving it forward 10 - 15 feet. His car stalled. He was struck again by the truck and his car travelled to the top of a driveway of a house in front of him. His car was struck a third time and then pushed by the truck the length of the driveway, against and up the front steps of the house.

[2] The Volkswagen was badly damaged and written off by the insurers. Lance Gibson was seriously injured.

[3] That is the first accident.

[4] Two weeks later, on April 19, 1990, Lance Gibson was a passenger in his father's vehicle when it was struck in the rear. The plaintiff's injuries suffered in the first accident, were aggravated.

[5] That is the second accident.

[6] On August 29, 1992, in California, a vehicle struck his on the front passenger's side causing him injury.

[7] That is the third accident.

PART I

THE ACTIONS

Action B910142, *Lance Gibson v. Karl Raymond Rickett and Van Herrick's Environmental Planting Ltd*.

[8] The defendant Karl Rickett was the driver of the one-ton truck which struck the plaintiff's car on April 5, 1990. The truck was owned by the defendant Van Herrick's Environmental Planting Ltd. ("Van Herrick's") and Rickett was driving it in the course of his employment. Rickett did not enter an Appearance to the action and at the commencement of trial, default judgment was entered against him. The Insurance Corporation of British Columbia entered the action as Third Party. Liability and damages are at issue in that action.

[9] About six weeks before April 5, 1990, Lance Gibson and Karl Rickett were in a fight at a car wash. The April 5 collision was deliberate. Rickett was charged criminally with dangerous driving and mischief, convicted and sentenced to 30 days in prison, prohibited from driving for two years and placed on probation for a year.

Action B910143, *Ronald Gibson and Lance Gibson v. Geoff Hall*

[10] The action was brought as a result of the second accident. Before Trial, Ronald Gibson, the father of Lance Gibson, settled his claim. The defendant Hall was the driver of the vehicle that rear-ended Ronald Gibson's vehicle. Liability for that accident is admitted. Damages are in dispute.

[11] Those two actions were tried together.

Third Accident - California 1992

[12] No action has been commenced. Counsel for the plaintiff and the Insurance Corporation of British Columbia have agreed that 5% of damages awarded to the plaintiff in the two actions, (supra) will be attributable to that accident.

PART II

ISSUES

[13] Liability for the first accident, while not admitted, is not disputed.

[14] The plaintiff Lance Gibson suffered injuries in all three accidents. The extent of the injuries and the damages flowing from them is in contention.

[15] The crucial issue is causation. In March 1991 the plaintiff was found to have an injury to his left long thoracic nerve resulting in palsy of the left serratus anterior muscle. He attributes that injury to either the first or second accident and seeks large damages for it. It has had a devastating effect on his health and the career he had embarked upon) as a stuntman in films and a personal fitness trainer. The defendants say the injury was not caused in either accident.

PART III

DISCUSSION

[16] There is nothing easy about this case. A long thoracic nerve injury is uncommon. An isolated injury of that character is rare indeed. An isolated injury to the nerve resulting from a rear-end motor vehicle collision is scarcely found in the literature or in clinical practice. Extensive medical evidence was called. No medical person who testified can say with certainty the cause of the nerve injury. Each proved to be an excellent witness, which does not diminish my difficulty.

[17] The Trial was scheduled to last nine days. It took up 20 days) evidence was heard in April, May and November 1995, and because fresh evidence was heard in November, continued in March 1996 with extensive rebuttal and submissions.

[18] I have been assisted by transcripts of all the evidence and submissions. When I refer to the transcripts, it should not be thought that I rely on that evidence to the exclusion of other evidence. I have read, briefed and weighed all the evidence with care. Where I rely on the transcripts to recite medical opinion, I do so because it is preferable to attempting to summarize in that particular instance. By no means do I refer to all the medical evidence, but I have considered it, for all of it is important.

[19] Because the injury is so uncommon and the medical evidence with respect to causation so contentious, I have recited that evidence in much greater detail than is my custom.

PART IV

THE PLAINTIFF

[20] Lance Gibson was 19 years of age in April 1990 and 24 when the Trial commenced. His body configuration bears on the nerve injury and the detection of that injury. His mother is black, his father white. Lance Gibson's skin is chestnut coloured, which gives him versatility in film roles, for he can pass as a Black or a person of Latin blood.

[21] He spoke of having excellent genes. His uncle on his maternal side was a body builder and actor; Lance Gibson's father was a weightlifter in his younger years. At the age of

12, Lance Gibson began to lift weights. By the age of 15, he had developed a body that Michelangelo might have been pleased to sculpt. At the time of the first accident, he had a powerful body with a highly developed musculature. Many of the doctors spoke of it and attribute the difficulty in detecting the nerve injury to his muscle bulk. The development of his body was important to him; he worked hard to develop his body and was proud of it.

[22] He was a superb athlete. At 13 years of age, he commenced BMX racing which consists of bicycle riding over difficult terrain and bicycle jumping. Within 3 years he had won 120 trophies in the sport. In 1986, at age 16, he won the North American BMX Championship.

[23] At Centennial High School in Coquitlam he was first in men's singles and doubles tennis, and the school won the B.C. High Schools Tennis Championship. He excelled in soccer and wrestling. He was rated fifth in wrestling in the Provincial Championships. He played lacrosse, football and boxed. He won awards in track and field, basketball and soccer, weightlifting and gymnastics.

[24] In 1988, he was in his first professional film. His goal was to become a stuntman in films. He hoped his physique and his colour would carry him far. He played two professional stunt roles before the first accident, and he had obtained his certificate as a personal fitness trainer. He was training to

engage in body building competitions which he hoped would assist his work as a professional trainer and provide prize money and endorsements.

[25] He has been described as a dedicated, competitive, intelligent and sensibly proud person at the time of the first accident) a quiet person, not given to complaining or talking about himself. He had enrolled at Douglas College in 1988 to obtain a diploma in business. He graduated in June 1992. He enjoyed physical work) at times holding down three jobs, simultaneously. I conclude he is very bright.

[26] The nerve injury has radically affected the career he planned for himself. It has led to significant body deformity in the left shoulder and left upper back. It prevents him engaging in heavy stunt roles. It prevents him lifting heavy weights) that limitation and his obvious body deformity have ended his career as a personal fitness trainer. It has led to continuing pain caused by other muscles compensating for the atrophy of the serratus anterior muscle. He no longer plays tennis or engages in aggressive sports.

[27] It is not disputed that he suffered significant soft tissue injuries in the first accident. One of the difficulties the case presents is that in the initial stages after April 5, 1990, and before the nerve injury was diagnosed, the symptoms of pain and disability were those associated with both flexion/extension soft tissue injuries and a serratus anterior

muscle palsy. The second and third accidents aggravated his soft tissue injuries, if they did nothing else. It was impossible for him and difficult for the court to distinguish between the pain resulting from the muscle palsy and that from soft tissue injuries. There is clear evidence that the pain he has experienced in his low back since 1990 is a soft tissue injury.

[28] All of these matters I shall discuss in greater detail later.

PART V

THE PLAINTIFF'S CAR) THE FIRST ACCIDENT

[29] A Volkswagen is a small car, the plaintiff is not a small man. He drove it with the seat slightly reclined. The car was equipped with "California" seats which are higher than the seats in an average Volkswagen Beetle. The headrest was built into the back of the seat. The top of the seat came up to Lance Gibson's mid-head. The seat belts were retractable, running over his left shoulder down to a fixation device located between the two front seats. The seat belt fitted snugly across the shoulders and chest and held the driver well in place, permitting his upper body to move about half an inch forward before it engaged.

[30] Lance Gibson was wearing shoulder/lap restraining devices at the time of all three collisions.

[31] At Trial, he described the first accident. Before he was struck at the stop line on Mundy Road, he looked in his rear-view mirror and saw the truck coming quickly down the hill. He looked down from the mirror before the first rear-end impact. His car was driven 15 - 20 feet into the middle of Cape Horn Road, where it stalled. He does not remember if his foot was on the brake at the time of impact; he recalls he was looking directly ahead at the time.

[32] His body was whipped back and forward (extension/flexion). His head hit the back of the seat on extension, and on flexion his chin went down to his chest. He could not estimate how far his head went back before hitting the seat, but he described the motion as a full head tilt with his neck raised upwards. When his car came to rest, he looked over his left shoulder to see what had hit him, turning his head left. From his description, his head was fully extended to the left and back with his chin elevated, and was in that position when his car was struck again in the rear. His head again snapped back and forth. His car was driven forward to the top of the driveway of the house facing him. He was struck again and this time the truck remained in contact with the Volkswagen, pushing it down the driveway to and up the front steps of the house where it hit and damaged an ornamental lion situated at the top of the steps. The Volkswagen was rocked back and forth against the

steps. When his car hit the steps and was being pushed, the plaintiff's neck and back were thrown forward repeatedly. The seat belt, he said, strapped his upper body down but his head was free to move.

[33] Lance Gibson was interviewed by Constable Hartle of the R.C.M.P. who took a signed Statement from him at 12:26 on April 5, 1990, about 40 minutes after the collision. In that Statement, Gibson's account of the collision differed slightly from the account he gave at Trial. He told Constable Hartle that when he noticed the truck was not slowing down, he proceeded forward. The truck ran the stop sign and hit his car. It continued to apply gas and "rammed" him further across Cape Horn Road into the driveway and then was pushed by the truck right up onto the front steps.

[34] Constable Hartle testified that on his arrival, Lance Gibson was in an excited state and was so when he gave his Statement and seemed to be in a "bit of a shock". Hartle took notes of what he was told by the plaintiff before the Statement was taken, and his notes suggest to him that the plaintiff implied there had been one contact) the initial one and thereafter, pushing. Constable Hartle did not ask him if the vehicles had parted after the first impact.

[35] With respect to his Statement, at trial the plaintiff said he did not go into every detail and when he gave it, was in extreme shock and frantic. He reiterated he was stopped at the

stop sign when hit and had not proceeded forward. He said that to him "ram and hit" are synonymous. In my findings of fact, I shall resolve the location of the Volkswagen when it was first hit.

[36] The plaintiff called Mark Bailey who was qualified as an accident reconstructionist and an expert on occupant motion in motor vehicle collisions. He reviewed the evidence of the first accident, including photographs of the scene and vehicle damage. In Mr. Bailey's opinion, likely there were secondary impacts, but not comparable in force to the first. The severity of this motor vehicle collision is characterized by speed change of the Volkswagen. Mr. Bailey estimated the speed change in the first impact was approximately between 17 - 25 k.p.h. He estimates the speed of the truck at the time of first impact to have been approximately between 21 - 30 k.p.h. He estimated the speed change at the final impact with the steps was approximately between 15 - 18 k.p.h. If the Volkswagen was moving at the time of the impact, its speed is added to the truck's estimated speed, but that does not alter the speed change of the Volkswagen, which is the measure of severity.

[37] Mr. Bailey described the first impact as upper end of moderate, but not severe.

[38] In Mr. Bailey's opinion, the second and subsequent impacts in the first accident were much less severe than the initial

one. If the brakes of the Volkswagen were being applied at the time of the first impact, the vehicles would separate after it. He is virtually certain that the two vehicles separated after the first impact. Judging by the photos of the vehicle damage, he believes the truck's bumper hit the Volkswagen's bumper causing the back end of the Volkswagen to pitch downwards causing the truck's bumper to pass over it, striking the rear of the Volkswagen in and above the taillight area) the area of the most obvious damage.

THE SECOND ACCIDENT

[39] Ronald Gibson's vehicle was struck in the rear by a skidding car driven downhill by the defendant Hall who believes he was travelling at 5 - 10 k.p.h. at the time of impact. Lance Gibson braced before the impact. Mr. Bailey estimates the speed of Hall's Toyota in the range of 8 - 16 k.p.h. and Lance Gibson would have been propelled forward at a speed of 5 - 10 k.p.h. Gibson described his neck being "whipped" back and forth but not with the same intensity as in the first accident. He tried to brace himself by holding onto the middle console and the door handle. Later, I shall speak of the effect of that accident on the plaintiff.

THIRD ACCIDENT

[40] It occurred on August 29, 1992 in Los Angeles. The plaintiff was driving a 1988 Mustang and his car was struck by

another rolling down a driveway, striking the Mustang in the right front side. The plaintiff was jerked forward in the accident and suffered a fresh injury to his neck and aggravation of his pre-existing injuries.

PART VI

HIS MEDICAL CONDITION FOLLOWING THE FIRST ACCIDENT UNTIL THE NERVE INJURY WAS DIAGNOSED IN MARCH 1991

[41] Within 45 minutes of the April 5 accident, Lance Gibson told Constable Hartle that his back and neck were sore. At Trial, he spoke of the pain he experienced from April 5 to April 19) pain in his neck, upper and lower back, predominately on the left side, and ankle. His back pain ran from the lower waist left side up the thick muscle in the back into the scapular area. He had spasm in the trapezius and the left side of his neck up to his ear. He also had pain in the right side of his lower back and in the rhomboids. He experienced severe headaches, extending up his neck over his head and into his eyes. He noticed swelling in the left trapezius and experienced much pain there and in the left lower back. He had a left ankle injury which caused him to use crutches for a short time. To relieve swelling which was noticed just before the second accident, his parents applied ice two or three times a day and they continued to do so after the second accident. The swelling did not improve. That was

the plaintiff's evidence of his condition in the 14-day interval between the first and second accidents.

[42] Dr. Bernhard Toews had been the plaintiff's family physician since 1980. He treated Lance Gibson for his injuries from 1990 on. He first saw him on April 9, 1990, four days after the first accident. On examination, he found 80% of normal neck movement with pain on movement, especially turning to the left, and tenderness in the left paracervical and trapezius muscles and in the lower neck. Dr. Toews found good range of motion in the low back but tenderness in the lumbar spine and left para-lumbar area. He diagnosed soft-tissue injuries of the neck, low back and ankle. He advised the application of heat and ice, and analgesics for pain. He advised Gibson to rest and to stop stunt and acting work.

[43] By the time of the second accident the ankle had improved significantly and by approximately May 19, 1990, the ankle condition had fully resolved. He suffered no fresh injury in the second accident, but all his pain was exacerbated. His headaches and sleeplessness were worse. Walking, standing and sitting for any length of time increased his pain, generally. He did not work in summer 1990.

[44] He returned to Douglas College in September 1990 and found prolonged sitting aggravated his neck pain which had been constant since April 5. The pain he was experiencing in his left shoulder and upper back increased over time. He

experienced spasm in those areas) he described it as "muscles knotting") a deep rooted pain in the muscles.

[45] Three to four months after April 5, he began to experience arm pain. The pain travelled from his left shoulder down his left arm, through the elbow, under the forearm, into two fingers of his left hand. A numb, tingling feeling was also felt in those fingers. That pain was sporadic but increased over time. His lower back pain remained constant. All his pain was predominantly left-sided.

[46] Generally speaking, that was his condition from the time of the second accident until the end of 1990.

[47] On Dr. Toews' advice given on April 20, 1990, he commenced to lift light weights, trying "to rebuild what was damaged". Initially, he says he lifted about 10% and by the end of 1990, he was lifting about 50% of his previous weights. Some previous weight exercises, he could not do at all. He told Dr. Reebye in September 1990 that he was lifting weight of 135 pounds.

[48] Dr. Toews saw him the day after the second accident. Examination revealed similar areas of tenderness with some improvement in range of neck motion. Dr. Toews recommended chiropractic and massage. On July 16, Lance Gibson told Dr. Toews that his low back pain was aggravated whenever he walked, sat or stood beyond a short time. He mentioned occasional

numbness in his arms. On examination that day, Dr. Toews found full R.O.M. in neck and low back, and tenderness in the left rhomboid, trapezius muscles and low back. He concluded there had been some improvement and encouraged him to "step up his exercise".

[49] Seen again on July 30, his back pain had not improved. Gibson reported he had to be rushed to chiropractic because of acute back pain; he believes that was after a tennis match. On August 31 he complained of left arm pain, headaches and pain in neck and back.

[50] On October 16, he told Dr. Toews of headaches, pain in neck and back, arms and legs. He had been taking massage twice weekly and chiropractic once weekly. On that day, Dr. Toews made this important clinical finding:

> "Swelling of left trapezius versus right trapezius."

That was asymmetry.

[51] In his Report of June 15, 1992, Dr. Toews wrote:

> I should mention at the outset that one very important injury, namely the injury to the long thoracic nerve with serratus anterior muscle palsy, did not become obvious to anyone until Lance himself pointed out trapezius muscle asymmetry to me on October 16th, 1990, and until he was seen at the UBC Sports Medicine Clinic by Dr. Jack Taunton, who referred him to Dr. Steve Bozek, Neurologist. Dr. Reebye, who was asked to see Lance by ICBC on

> September 7, 1990, made no mention of any such problem, and he felt Lance had recovered. In fairness to Dr. Reebye, the obvious muscle asymmetry and scapular winging may not yet have been present on September 7th when he saw Lance.
>
> Be that as it may, it was my opinion that Lance was still disabled at the time he saw Dr. Reebye. He was having prolonged headaches, pains in his neck and back when standing for any length of time, and pains in the left arm.

[52] I pause to say something of "swelling". It was noticed by Lance Gibson's parents about the time of the second accident. It was in the area of the upper back, and later was seen in the left trapezius area. Despite the application of ice, the swelling did not subside. Curiously, Lance Gibson did not speak of it to Dr. Toews. Only on October 16 did he speak of asymmetry between the left and right shoulders. Nor did he speak of swelling when he saw Dr. Reebye in September 1990, at the request of the insurers.

[53] Lance Gibson kept a diary from April 6, 1990, until the commencement of Trial in 1995. On May 1, 1990, he recorded "left side swollen", which he says referred to the left trapezius and shoulder. On May 15, he noted the left side was still swollen, and again on May 18. On May 21, he noted "shoulder both sides swollen". At Trial, he said that last note was not accurate) that he was having pain both sides, but swelling only on the left side, and that has always been so; and it never subsided.

[54] Dr. Greenwood, a chiropractor, first treated Lance Gibson in 1987 for a minor neck injury which soon resolved. As a result of the two accidents in 1990, Dr. Greenwood saw him first on June 6, 1990. He treated him 26 times in 1990, 13 in 1991, and in subsequent years. He never treated his left shoulder. In late 1990 or early 1991, he noted asymmetry in the shoulders.

[55] He testified that swelling and spasm of the trapezius muscle was "somewhat apparent" when he saw the plaintiff in June 1990. Over time, asymmetry increased. He did not record swelling in his clinical notes. He had treated Gibson in January and March 1990 and did not notice asymmetry or swelling. Initially, he believed the asymmetry he later observed to be muscle spasm.

[56] Lance Gibson took chiropractic and massage treatments throughout 1990 and received temporary but not permanent relief of pain.

WINGING OF THE SCAPULA

[57] Frequently, the only manifest sign of a long thoracic nerve injury is scapular winging. The plaintiff was physically examined by Dr. Reebye, a doctor of physical medicine and rehabilitation and an orthopedic surgeon, on September 7, 1990. Dr. Reebye did not notice scapular winging; he did not see any

asymmetry; in his Report he did not speak of swelling and did not list swelling as a subjective complaint.

[58] In his Report of September 7, 1990, Dr. Reebye wrote:

> There is no increase in tightness over the paraspinous muscles. No tenderness or tightness over the trapezius muscles.... All movements are performed in a smooth way and without any discomfort reported. He can also lean his head to the right and to the left with either ear touching the corresponding shoulder.
>
> . . .
>
> UPPER EXTREMITIES - shoulders have well maintained contours. Excellent musculature. No abnormalities of bony prominences noted in either shoulder. Good muscle bulk, well maintained in the arms, forearms and small muscles of both hands. Full ranges of movement at both shoulders. He is able to lift both arms high above his head and clap his outstretched hands above his head. He can also reach the opposite shoulder with either hand, both with his arm across the front and behind his chest. He can also reach the back of his head with either hand. All above movements are performed smoothly and without any discomfort in his shoulders.

[59] Dr. Reebye diagnosed mild to moderate soft tissue injury arising from the first accident, exacerbated in the second.

[60] Seeing asymmetry in October 1990, Dr. Toews referred Lance Gibson to Dr. Taunton at U.B.C. Sports Clinic. Dr. Taunton is a Sports Physician and coordinator of the Allan McGavin Sports Medicine Centre at the University of British Columbia. He first examined the plaintiff in January 1991. He recorded his impressions in a report to Dr. Toews of January 18, 1991, writing:

Impression

1. Resolving cervical ligament sprain with secondary left trapezius and rhomboid spasm and tenderness.

2. Lumbosacral ligament sprain with no root signs but with persistent central low back pain.

[61] He did not find any evidence of long thoracic nerve injury, serratus anterior muscle palsy or winging.

[62] Dr. Taunton recommended a progressive weight program adding 10% weight a week to his 50% level, doing endurance rather than power sets, together with physiotherapy to reduce the local irritation and to increase his strengthening program.

[63] The recommended physiotherapy was given by Clyde Smith at U.B.C. Sports Clinic. After about a month of treatment, Mr. Smith noticed mild winging and spoke of it to Dr. Taunton, who performed further tests. He saw mild scapular winging on the left side and referred Mr. Gibson to Dr. Bozek, a neurologist and specialist in electromyography (E.M.G.). Dr. Bozek examined the plaintiff and conducted E.M.G. studies on March 26, 1991, and on that day reported to Dr. Taunton.

[64] Dr. Bozek noticed the plaintiff had well-built upper musculature and strength in his arms. He noted hypertrophy to the left trapezius muscle compared to the right. He administered tests for scapular winging) keeping arms close to the body, placing hands against a fixed object and pushing.

That is the most efficient diagnostic test to determine scapular winging. Dr. Bozek found a mild left scapular winging and an indrawing of the scapula by about 3 cms. compared to the right side together with mild weakness to the external rotation of the left arm. The trapezius muscle function was normal, the rhomboids appeared normal and the latissimus dorsi bulk and power were normal. Dr. Bozek performed a needle study of the infraspinatus muscles. He found the right trapezius and right infraspinatus, right serratus anterior muscle, were all normal. He gave his impression to Dr. Taunton, writing:

> IMPRESSION:
>
> This man has evidence of predominantly a serratus anterior palsy or involvement of a long thoracic nerve. This can get traumatized in a variety of situations including secondary to the trauma of a motor vehicle accident. I think this has created the winging of his scapula which is partially compensated for by the bulk of his trapezius muscle and the rhomboids. I think, however, the serratus anterior muscle is creating the instability in his shoulder which is leading to pain and ongoing muscle spasm in that region as well as the asymmetry noted to the muscle bulk there which of course will limit his activities as a stationary weightlifter.

PART VII

THE ISSUE OF CAUSATION

[65] Was the long thoracic nerve injured in either or both of the first two accidents?

[66] The medical history of the plaintiff to which I have referred in Part VI, until Dr. Bozek's diagnosis, bears on the issue of causation. I need not repeat that evidence under this Part.

[67] The plaintiff has been treated by some and examined by many medical people who wrote reports and testified. I shall list them and give their expertise, in the order they testified.

For the Plaintiff

[68] Dr. Hershler, a specialist in physical and rehabilitation medicine, which involves treating chronic soft tissue, nerve, muscle, spinal cord and brain injury. He has a sub-specialty in electromyography and nerve conduction studies which is an objective technology to determine nerve and muscle injury. He was qualified in those fields and also in the mechanism of injury as it relates to soft tissue and nerve injuries.

) Dr. Greenwood) treating chiropractor.

) Dr. Toews) treating general practitioner.

) Dr. Bozek) I have recited his expertise.

) Dr. Taunton) I have recited his expertise.

) Marianne Cheng) acupuncturist.

) Colleen Schmitt) massage therapist.

) Mark Bailey) I have recited his expertise.

For the Defence

) Dr. Reebye) I have recited his expertise.

) Dr. Barbara Allan) neurologist.

) Dr. Lawrence Elson) an anatomist with a specialty in forensic and clinical anatomy and in causation of injury in vehicular collisions and the biomechanics of injury.

THE LONG THORACIC NERVE AND THE SERRATUS ANTERIOR MUSCLE

[69] Medical people described these parts of the body and my brief description summarizes their evidence.

[70] The long thoracic is the nerve closest to the neck and has its origin there. It comes from C-5 and is fed from C-5 to C-7 cervical roots. C-5 is in the mid to low neck. The nerve branches off close to the neck, goes under the clavicle, and attaches to the serratus anterior muscle. Its sole function is to feed that muscle through the fibers it sends into it.

[71] The serratus anterior muscle is attached to the ribcage at many locations and eventually attaches underneath the shoulder blade. The muscle serves to hold the shoulder blade against the ribcage; other muscles also serve to do so) the rhomboids, trapezius and all the muscles surrounding the scapula. In full function, those muscles act in harmony with each other. The rhomboid is attached along the medial side of the scapula and its function is to assist in controlling its movement.

[72] The long thoracic nerve is a soft tissue, but throughout the medical evidence, and in these Reasons, where soft tissue injury is mentioned, the nerve is not included; it is spoken of separately. I do not include the serratus anterior palsy when I speak of soft tissue injury.

[73] The long thoracic nerve has been variously described in this Trial:

) the nerve is long and could be injured in many locations) Dr. Hershler.

) the nerve is unique for it serves only a single muscle and therefore it does not carry a lot of nerve fibers. It is a smaller nerve and travels deep but also travels on top of ribs and through muscles. It can be injured by traction and compression forces on neck and shoulders. The most common cause of injury is a viral, flu-like illness) Dr. Bozek.

) the left nerve runs down the left side. Turning the neck to the right, tends to stretch it) Dr. Bozek.

) it is incorrect to say (as Dr. Bozek did) the nerve travels down the back. It travels through the thoracic outlet, under the clavicle, in front of the shoulder and then over the first and second ribs and underneath the pectoral muscles) Dr. Taunton.

) the nerve is long and can "give" a significant amount. A neck injury in the absence of fracture, is unlikely to harm the nerve) Dr. Reebye.

) the nerve is long, approximately 28 - 29 cms. The amount of stretch it will withstand is fairly limited. The literature suggests it will accept at most a 6 - 10% of stretch, so the most is approximately 1 inch) Dr. Taunton.

) the nerve is a motor, not a sensory nerve) Dr. Reebye.

) the nerve does not fray. Nerves are very, very strong tissues) Dr. Allan.

) the nerve is relatively protected. It runs a deep course. Often nerves become trapped in fibrous tissue, especially with much muscle use. Entrapment of the nerve in the scalenus muscle is unlikely) Dr. Allan.

) with some people, the nerve runs over the second rib, in others it runs under it, so many factors are involved in a nerve injury, not the least of which is the person's anatomy) Dr. Allan.

) the long thoracic nerve is a motor, not a sensory nerve. Were it a sensory nerve it would "scream" when pulled. One can pull the nerve out of its attachment to the muscle to render it functionless, but it will not hurt because there are no sensory receptors near it) Dr. Elson.

) "in view of the many variations in the composition, mode of formation and relations of the long thoracic nerve, it is easy to understand why identical trauma only occasionally produces an injury to this nerve... The occurrence of this paralysis following sudden direct stress to the shoulder and scapular regions, or after prolonged, heavy weight bearing, has frequently been noted. In the cadaver the nerve is seen to become deflected in its course and angulated over the second rib. This angulation become exaggerated and the nerve is made tense by downward thrust of the shoulder girdle, or bilateral tilt of the head and neck in the opposite direction."

Article by M. Horwitz and Leandroa Tocantins, The Anatomical Record, Volume 71, No. 4, published August 1938 (Ex. 24).

) I agree with the statements in the article (immediately above)) Dr. Allan.

[74] The serratus anterior muscle, too, and the effect upon it of a long thoracic nerve palsy have been variously described:

) atrophy of the muscle is caused when the long thoracic nerve supply to it has ceased. It will live on its own for a time, but eventually will not have nutrients to sustain it and will gradually wither. That takes time) weeks to months, depending on the muscle bulk. The plaintiff has huge muscles and it would take longer for it to be seen. One would look for functional effect which is the imbalance of the scapula) medial winging, which is difficult to detect and does not occur for sometime. In most cases one would see winging after six months) with others longer) Dr. Hershler.

) it takes time for scapular winging to occur. Lance Gibson had only mild scapular winging and he has a muscular development which masks it) Drs. Taunton and Bozek.

) in most cases of isolated winging, it is noted in a couple of weeks. Atrophy takes time to occur and with an athletic build, even longer than average) Dr. Reebye.

) with a traumatic injury to the serratus anterior muscle, the winging would be evident right away, but "occurring

and display" are two different things. A patient should notice it within a few days) Dr. Allan.

PART VIII

THE MEDICAL EVIDENCE AS IT RELATES TO CAUSATION

Dr. Hershler

[75] He saw the plaintiff on May 12 and August 18, 1993, for treatment, not diagnosis, on referral from Dr. Toews. The plaintiff reported he had been flung repeatedly in different directions inside his car.

[76] On examination, Dr. Hershler saw a clear abnormality in the left scapula showing obvious medial winging. On specific testing, the left rhomboid muscle showed weakness. Hypertrophy of the left trapezius was obvious, caused by muscle compensating for the palsy of the long thoracic nerve. Dr. Hershler concluded that the injuries were a direct result of the accidents in April 1990 and August 1992, and were permanent. He wrote:

> I do not feel there will be any change in Lance Gibson's condition with time. There will not be any significant recovery and he will remain with his existing limitations permanently. Although he will be able to work as an actor and stuntman, clearly he will be limited in his flexibility to do parts that involve extensive use of the upper extremities, shoulders and neck. He will be able to return to being a weight lifter but will not be able to go back to his pre-accident status.

[77] I pause to say that all doctors who testified conclude that Lance Gibson will not have a recovery from the nerve injury.

[78] Dr. Hershler saw him again in April 1994. Gibson reported having intermittent spasms in the infraspinatus muscle, resulting in pain radiating across the shoulder and down the arm. The only therapy for it is deep massage to release the spasm. Dr. Hershler ordered a single trial of anabolic steroid therapy which did not help his pain or improve his function. Dr. Hershler's diagnosis in his April 1994 report reads:

> **DIAGNOSIS:**
>
> The findings are still consistent with injury to the long thoracic nerve on the left side with weakness and partial paralysis in the serratus anterior and subsequent medial winging of the left scapula. There is evidence of weakness in the left rhomboid muscle and evidence of inappropriate compensation as a result of this weakness with clear hypertrophy of the left trapezius muscle and altered position and functioning of the left shoulder, particularly against resisted exercise.
>
> . . .
>
> **PROGNOSIS:**
>
> . . .
>
> I do not know of any therapy that would be useful to him.
>
> Basically he will always need access to a massage therapist particularly to help him with his pain and spasm on an intermittent but continuous basis.

[79] Dr. Hershler believes Dr. Reebye may have inadvertently missed winging in his September 1990 examination or it may have been too early for it to develop.

[80] Dr. Hershler spoke of the mechanism of injury to the nerve:

> Q So, Dr. Hershler, the shoulder chest would have to be stationary essentially, or held down --
> A That's right.
> Q - to some extent?
> A There has to be a relative difference between the two ends.
> Q And you are saying the head would be suddenly pulled away from the shoulder?
> A Right.
> Q Or in opposite direction?
> A Correct.
> Q Okay. So it strikes me that clearly this is a type of mechanism of injury that could occur if somebody is seat-belted in a motor vehicle accident?
> A It could.

[81] He said:

> A I have read Dr. Allan's report and Dr. Reebye's and I don't see anything in them that would change my opinion as to the most likely and most probable cause of injury.

[82] He spoke of the reason for Gibson's chronic pain in the upper body:

> Q Can you perhaps explain in your opinion why it is Mr. Gibson continues to have chronic pain in this whole area when the nerve itself has been paralysed?

A I think the most likely explanation for ongoing discomfort is the fact that the other muscles are doing inappropriate work and much more work than they normally do. I am talking about the other muscles that are attached to the scapula in the region of the shoulder.
Q Okay. And you indicated that there is damage to the Rhomboids as well?
A My feeling was that the Rhomboid was definitely weaker on clinical examination and was still tender a number of years after the accident, therefore I felt that it was part of the injury.
Q And you indicate in your most -- well actually in each of your reports that you also found spasms in the infraspinatus muscle?
A Yes.
Q Where is the infraspinatus?
A The infraspinatus is the muscle attached over the surface of the scapula.

[83] He spoke of Gibson's recent improvement (1994 - 1995) from working with a martial arts trainer:

> He has learned an extra facility in stretching. Stretching is absolutely necessary, everyday, all the time) it brings the muscles back from spasm (contracted state) to its resting length.

[84] Under cross-examination, he spoke of pain associated with a long thoracic nerve and soft tissue injury:

Q Now if there were damage to the long thoracic nerve, when would the patient begin to feel some sort of pain or discomfort associated with certain motions of his arm?
A Well I think we are, again, getting into this area of how long does it take to get severe atrophy and weakness. I think it must certainly is an individual -- on an individual basis and I think I have mentioned before it depends on the residual strength of the other muscles on the initial bulk of the muscle before it starts to atrophy. So there is a number of factors that would mitigate this, but I would imagine that he would -- first of all, he would feel immediate

pain if he has had, you know, acute pain, but as time would go on gradually the other muscles would start working more and more in an inappropriate manner and they would start to be the source of pain.

Q Where would the initial acute pain be?

THE COURT: Question again.

MR. HULLEY:

Q Where would the initial acute pain be located?

A You are talking about after a neck injury of any sort or just his particular injury?

Q Well talking about an injury to the long thoracic nerve, I believe your evidence was that there would be an initial acute pain and then gradually the other muscles would start to over-compensate and there would be pain associated with that.

A Right.

Q I am interested in the acute pain.

A It would depend on where the locus of the initial trauma was. I would imagine in that region there would be soft tissue pain most certainly. Now if the locus was close to the neck then I would imagine that he would have pain over the left side of the neck and the angle of the neck across the left shoulder.

. . .

Q The acute pain, what sort of duration are we talking about?

A Well, you know, if I had to go to my practice I would say that 70 percent of people would probably have a resolution of acute soft tissue pain within three to six months, but the other 25 to 30 percent could have ongoing soft tissue pain for months to even years, so it would be totally dependent on what category he fell into, and that would depend on the severity of the soft tissue injury.

Q Okay. Now the soft tissue pain that we're talking about then, which I think we have characterized as acute, are you saying that in some people that pain will persist and the other pain, the compensation pain, will also kick in and they both will be present at the same time?

A They could be.

[85] In re-examination he said:

Q Okay. Now my friend was asking you about -- it was a little confusing to me and I am not sure I

have it -- acute pain and long thoracic nerve pain and --

A I was trying to separate the two things out. I think we were talking initially about soft tissue injuries in general and I said to him there is acute pain which we agreed on is the pain that could be present for three to six months and then go away. And there is chronic pain that would continue for months and even years, and I think we agreed about that definition. And I split, I said about 30 percent of cases probably continue chronically. We then talked -- I said separately about an injury to a nerve, and that is a separate issue and is not in that definition of acute.

THE COURT:

Doctor, if I, as a lay person, was injured as Mr. Gibson was, would I be able to distinguish the pain emanating from the soft tissue damage as opposed to the nerve damage?

A No. I don't think we are able to distinguish that.

[86] In his five years of private practice, Dr. Hershler has seen 3 - 5 cases of isolated long thoracic nerve palsy, of whom the plaintiff is one. Of these, he cannot estimate how many were caused in a motor vehicle collision, nor can he say if any of the long thoracic nerve injuries were caused in a rear-end collision, but all were the result of a traction injury. Dr. Hershler sees hundreds of cases of soft tissue injury each year. It is his impression that most result from rear-end collisions, but a good percentage are side impacts causing rotation.

[87] He spoke of the seat belt as the cause of Gibson's injury:

A I think it is virtually impossible for one to know exactly what happened after an impact. One can make certain best guesses. I think the key thing is seat-belt. I think that's a key

element because it is holding part of the body down and the head and neck are then free to move depending on the type of forces they are going to be subjected to. I think in principle it can occur with any type of angle. It will depend on how the person was sitting in the very first place, whether they braced their neck, how repeatedly that happened. There are many factors that could go into that, but I think a key element is holding one part of the body fixed and allowing the head and neck to move as a lever.

[88] He spoke of the symptoms recorded by Gibson being consistent with soft tissue injuries:

Q Okay. Now you were asked concerning the symptoms that Mr. Gibson reported to his general practitioner, headaches, neck pain, pain in his trapezius, and I believe your evidence was that that could be consistent with a long thoracic nerve injury; was that your evidence?
A Well I think I said it is consistent with the soft tissue injuries to that side of the neck. It also turned out that the C-4 to C-7 are the very segments that that nerve gets its innovation [sic] from. So if the word consistent is used, it is consistent with a long thoracic nerve injury.
Q But would you agree with me that those same injuries could be consistent with what I would call a whiplash injury without any involvement of the long thoracic nerve?
A Correct. I think if you just gave me a person was tender C-4 to C-7, left side soreness, on the basis of that information alone I could not make a diagnosis of long thoracic nerve.
Q You would think, as I call it, whiplash?
A Well, soft tissue injuries.

[89] He was asked about other possible causes of the nerve injury:

Q Okay. Now with respect to your diagnosis of what's caused this injury, if the plaintiff, Mr.

Gibson's history had included evidence that around the time of the April motor vehicle accidents he had been involved in other very strenuous activity or situations that might have involved some trauma to the neck, could that possibly change your diagnosis as to what was causing that?

A It would depend on the nature of that trauma. If it again, as I have said before, involved an abrupt traction to the head and neck in an unbraced manner without warning, then clearly that would have some bearing on the matter.

Q As I believe you have testified before, there are many different types of traction situations that could cause it?

A Exactly.

Q Now would your opinion concerning the extent of the plaintiff's pain and disability change if the plaintiff's history revealed, or was changed to show that he was in fact doing much heavier weight work-outs and in a much greater -- doing more types of weight-lifting maneuvers than you had been led to believe?

THE COURT: Doing much heavier what?

MR. HULLEY:

Q Weight-lifting maneuvers.

A I don't think that would change because, firstly, people who are trained to lift weights do it with the appropriate postures and bracing. It is not at all the same mechanism that one is talking about here.

Q Wouldn't it depend on the particular types of weight-lifting maneuvers that the individual was performing?

A Even if he were performing a manoeuvre that was going to cause him pain he would stop because of pain and he wouldn't be able to continue further, so it's --

Q Yes, that is my question. If, in fact, he was performing those difficult maneuvers to a degree greater than you understood him to be performing, would that give you some indication that the pain level was in fact less than you have diagnosed?

THE COURT: Before or after the accident?

MR. HULLEY:

Q I am speaking of after the accident.

A I mean I can't see if he has had an injury and he is doing as much weight-lifting as he can within his function and he is limited by pain, the pain itself would not indicate that there is a traction occurring on the nerve. It wouldn't be, no.

Q The important part of your answer is if he is limited by pain. Let's make it a more specific

example. Weight-lifting, say, of weights above your head, would that possibly cause pain and difficulty with respect to the serratus anterior?

A Well the serratus anterior itself may not cause pain there, but it most certainly would involve compensation with other muscles. It would also involve weakness. So he would be limited both by pain and weakness and that would stop him from doing unusual things to himself.

Q Okay. So can I say that the greater the pain and disability, the chances are that he would be able to do less weight-lifting?

A The greater your weakness and the greater your pain, the less you are able to function.

DR. TOEWS

[90] The plaintiff was his patient for 10 years before the first accident and before it he was in "superb condition and excellent health". Over the years he had seen Dr. Toews for sports injuries) in 1987 for spasm of the trapezius; in 1988 for injury to the rotator cuff of the left shoulder and for persistent spasm in the left rhomboid; in 1989 for a left ankle sprain. All those problems resolved in the normal course.

[91] Dr. Toews did not detect winging) it was not something he would normally expect to occur after a motor vehicle accident.

[92] On July 16, he noted tenderness in the left rhomboid and left trapezius. He thinks it likely the injury was caused by the seat belt but concedes he does not have an expertise in causation of injury and in nerve function.

[93] He was asked:

Q Now, Doctor, when I review your clinical notes I notice there appears to be a gradual -- gradually more and more comments about left sided shoulder pain and arm pain as the notes progress, it seems to actually get worse, is that consistent -- is my reading consistent with what you have written down?
A Yes, it is.
Q What does that tell us, Doctor?
A What that tells me is that Lance was trying to compensate for a paralyzed serratus anterior muscle by using his trapezius more and more and the result of that is you end up with spasm and pain in the shoulder. It is logical in retrospect that that is what was happening. I am not an expert in this, this is a very unusual injury to see in a general practitioner's office, but in retrospect that is clearly what was happening.

[94] He was asked about the predominance of left-side pain:

Q Is it remarkable per se for someone to come in complaining about pain more on one side of their neck as opposed to the other after a whiplash type of situation?
A No, it's not unusual. My lord, it depends on which way they had their head turned at the time of impact, but what tends to happen is that most people will change from side to side as to their description of the pain.
THE COURT:
What do you mean by that, Dr. Toews?
A I am thinking of a few cases I have seen recently where somebody had come in several weeks before complaining of pain on the left, next week it is pain on the right. I can't necessarily explain that except to say that both sides were injured...

[95] Dr. Toews has been in practice since 1975; he has seen but one other case of serratus anterior palsy but sees at least 20 to 30 or more cases yearly of soft tissue injury emanating from a rear-end vehicle collision.

[96] Dr. Toews referred to swelling in his October 16, 1990, examination and says that hypertrophy is a synonym for the swelling he observed.

DR. BOZEK

[97] He has been in clinical practice for 9 years. He does not have an expertise in causation of injury.

[98] He believes Gibson's muscle bulk prevented the earlier detection of winging. The physical tests conducted by Dr. Reebye would not assist in detecting winging.

[99] Dr. Bozek has diagnosed 25 - 40 cases of long thoracic nerve palsy in 9 years. Of that number, 3 to 4 arose from motor vehicle collisions but he does not know the mechanics of the collisions. He had just diagnosed a partial nerve injury arising from a rear-end collision but he did not describe the mechanics of the collision) speed change, and whether the occupant was wearing a properly functioning seat belt.

[100] Drs. Bozek and Taunton were taught by Dr. Barbara Allan; Dr. Bozek considers her an excellent neurologist with much experience.

[101] Gibson reported to him that he had shoulder discomfort, and instability and loss of power in his left shoulder when lifting weights. Those symptoms are typical in a

case of undiagnosed serratus anterior palsy. To Dr. Bozek, it was "pretty clear" that the injury was caused in the first motor vehicle accident.

[102] Dr. Toews' finding on April 9, 1990, of tender paracervical muscles is not helpful in establishing a palsy, for a flexion/extension injury to the neck will render muscles tender and painful.

[103] Dr. Bozek has encountered a long thoracic nerve injury arising from sports and it has been described in the literature as emanating from motor vehicle accidents. He has seen it when pressure is put on the shoulder. Not uncommonly, the cause of a long thoracic nerve injury is unknown. Dr. Bozek ventured into the realm of causation:

> A ...there would be acceleration and deceleration forces and a nerve would be stretched or pulled in a course of these acceleration and deceleration forces.
> Q Right.
> A I think when he described the accident to me he was read (sic) ended -- he had repeated hits and he had a seatbelt on so he was being pulled forward and back across his neck and shoulder with each hit and these are quite rapid accelerations to the neck and shoulder on a repeated basis.
> Q Okay.
> A That in itself would be quite clearly a traction type of injury or cause for a traction injury.

[104] He believes the plaintiff told him he had resumed pre-accident weightlifting but was finding it very much more difficult to do.

[105] Serratus anterior palsy can result from diverse causes) including chronic traction; it is seen in tree planters, backpackers, arising from motor vehicle collisions, weightlifting, tennis and wrestling.

[106] With respect to the first accident being the cause of injury, he said:

> A The forces that I would envision would be those that would be strictly flex extension forces of your neck and shoulder and more sort of the whole body being moved forward and back. That would do it.
> Q The whole body?
> A The whole neck and shoulder region being driven forward and back. I don't think the actual position of the neck would be as important in this situation.
> THE COURT: Would be?
> THE WITNESS:
> Wouldn't be. I think it would be more a matter of the neck and shoulder region being driven forward and back to cause this sort of stretch injury as opposed to like a nerve root in the neck very clearly related, as he was stating, to the position of the neck -- keeping the stretch away from the nerve root of the neck.
> MR. HULLEY:
> Q How many soft tissue injury patients have you seen in -- let's restrict it to soft tissue injuries like of the upper back and the neck, whiplash situations, how many patients have you seen like that in your practice?
> A Hundreds. It is frightening.

[107] Dr. Bozek concedes that a flexion/extension injury very rarely results in a nerve injury.

[108] He was asked to assume that Lance Gibson had engaged in heavy weightlifting around April 5, 1990, and asked if that activity could have caused the serratus anterior palsy:

> Q Doctor, would you agree that if the -- this is a hypothetical, if Mr. Gibson had engaged in some heavy weightlifting around the time of the accidents or even afterwards it is possible that this could cause his Serratus anterior palsy?
> A I guess it could have, yes. It could have. I guess why I felt that it most likely was not the causative factor is because he is not new to this game of weightlifting. His discomfort and shoulders stability did not come on like starting in July or August when he was trying some new weights or something. In fact he probably was doing a little less weightlifting than what he was normally doing because of the pain and discomfort he was having in his back and neck yet it came on.
> Q So, if he would have an episode in July or August of increased pain or something unusual then that might be indicative that there is another cause such as weightlifting, would you agree with that?
> A Yes, this -- no, if he started suddenly increasing his weightlifting activity or something like that then I could see that as potentially -- you have to increase your activity to bring it on. You would have to do something to increase the potential for trauma to your nerve.
> THE COURT:
> He had been lifting weights for a long time, is that your understanding?
> THE WITNESS: Yes.
> MR. HULLEY:
> Q How about if he took a hiatus from weightlifting for a little while because of injuries and then went back and tried to get right back into a heavy weightlifting program?
> A I guess it is possible. He was complaining of his shoulder pain though from that point on. You could think, well, maybe the shoulder pain was unrelated to this. The trouble is the bulk of everything is pointing to it as being the problem. This was the shoulder stabilization that was also the problem. The problem with the -- when the arm was away from his body the discomfort in the shoulder stayed pretty much the same all the way through there. Time-wise

it seemed to all occur in one smooth area. There is also a slight possibility of other things and I cannot say that I can be absolutely definite but it is most probable that it would be related to the accident.

[109] He was asked about the predominance of left-sided pain:

Q It was also your evidence in chief that the constellation of symptoms that he exhibited after the accident are completely consistent with a flex extension injury?
A Well, the neck pain, yes, not the shoulder pain. It was the neck pain.
Q Is it your evidence that whiplash patients don't sometimes complain of pain radiating into the trapezius area?
A Often and usually bilateral.
Q Yes.
A But this is -- this was very one sided.
Q So --
A It has interfered with his ability to use his shoulder.
Q Is it your evidence that there are no circumstances where whiplash patients don't complain of one sided pain radiating?
A They can.

[110] Dr. Bozek did not test to find the locus of the nerve injury.

[111] He gave further evidence in rebuttal, and I shall consider that evidence later.

DR. TAUNTON

[112] A sports medicine specialty covers the fields of exercise, medicine and rehabilitation.

[113] He first saw Lance Gibson on January 18, 1991, who reported left trapezius hypertrophy with intermittent spasm and that he had recently returned to lifting 50% of the weight that he had before the April 5 accident. He complained, too, of neck, shoulder girdle and back pain. Dr. Taunton conducted a thorough examination and failed to find winging. He believes the winging was there to be seen but his muscle development masked it. He spoke of it being a very uncommon injury) neurologists report they see it in one in every 4,000 referrals.

[114] On examination he found maximum tenderness at the lower two vertebrae in the lumbar spine and minor tenderness at levels above.

[115] He said:

> The long thoracic nerve may recover, depending upon the injury. We know Gibson's nerve was completely severed and did not recover and the serratus anterior muscle is now paralyzed.

[116] He, too, ventured into the realm of causation:

> Q Okay. And how is it, do you believe, that a person could receive an injury such as this, such as the long thoracic nerve palsy, in a motor vehicle accident?
> A Well it is usually -- well I can't say -- it could be one of two mechanisms in a motor vehicle accident. One could be a direct trauma. If you were hit on the driver's door side and this is your left chest and you had a severe traumatic injury, that would be a possibility,

injuring the nerve directly as it lays on the muscle and the ribs, so that could be a direct injury to the chest wall.

The other is a traction injury where being held in place with a seat-belt and shoulder restraint and your head is thrown forward and back, each more so if you didn't have a shoulder-belt on where you were really thrown about, you know, in the car. You could get it either by being thrown forward and back or possibly -- even more commonly, possibly being rotated to the side.

THE COURT: Speaking of head?

A Your head, that's right. Your head being snapped forward or back or being twisted to the side, it could occur in either mechanisms.

[117] Dr. Taunton does not agree that pain is associated with scapular winging when lifting arms:

Q Doctor, would you agree that the two most common or prominent signs of serratus anterior palsy are scapular winging and also pain on abduction of the arm above 90 degrees?

A Not necessarily. Winging, yes. You may not be able to achieve full abduction and elevation -- that's certainly commonly noted -- because abduction is a function of deltoid and supraspinatus, and if you have got purely a nerve injury you will not have pain on motion at all. You may get secondary pain because they are trying to over-use the shoulder, but just with long thoracic palsy usually you won't have pain in resisted testing.

Q So it is your evidence that on lifting his arm to 90 degrees he wouldn't necessarily experience any pain?

A No. You can if you have over-used that. That is a rotator cuff function test. That is not a scapular stabilization test.

[118] He said:

Q Okay. So my friend was asking you about the mechanism of injury. If a seat-belt is running over your clavicle, is there also an opportunity

> for nerve injury at that level of the long thoracic nerve or is it too deeply buried?
> A It is usually too deeply buried, but sometimes you can see individuals get problems -- if they get a lot of scarring in that area of the thoracic outlet. So if you had a lot of soft tissue swelling and hemorrhage there, it wouldn't be impossible to get the nerve there. There usually it would be associated with a clavicular fracture to laserate [sic] the nerve.

[119] Dr. Taunton has seen approximately 20 - 25 cases of isolated serratus anterior palsy attributed to various causes) a skiing fall, volleyball, tennis. Although weightlifting is given as a cause in the literature, Dr. Taunton has not seen it. Sometimes the cause is never known.

[120] He has not seen a palsy as a result of a soft tissue injury arising from a motor vehicle collision) the literature speaks of it but does not describe the mechanism of the collision.

[121] He concludes it is possible to injure the nerve when weightlifting) doing a military press or overhead lifting, but very unlikely to do so in a bench press.

[122] Dr. Taunton was called in rebuttal and I shall consider that evidence later.

THE DEFENDANTS' MEDICAL EVIDENCE

DR. REEBYE

[123] He is in private practice and a physiatrist at the Spinal Unit at the G.F. Strong Rehabilitation Centre. In his specialty he is concerned with soft tissue, nerves and the musco-skeletal system. He does not have a specialty in neurology but he is an orthopedic surgeon.

[124] He examined Lance Gibson on September 7, 1990, observing the movement of his neck, shoulders, elbows. He moved those areas by hand followed by movements against resistance and palpated him to determine pain and abnormalities. He did not perform the most common and efficient test for scapular winging that I spoke of earlier.

[125] Dr. Reebye spoke of seeing serratus anterior palsy in many cases, particularly in cases of severe injury. He has seen very few cases of isolated palsy, unaccompanied by fracture of ribs, surgery to the breast, dislocation of the shoulder, broken bones. He has never seen a case of isolated serratus anterior palsy as a result of a flexion/extension injury to the neck or back, but has seen thousands of that kind of injury.

[126] Before testifying, Dr. Reebye reviewed the literature relating to isolated serratus anterior palsy and found that sometimes the cause is not known. He opines that winging of

the scapula is usually noted within a few weeks, but in a person with a large muscle bulk it is difficult to see. He believes there would be immediate acute pain at the time of the injury to the long thoracic nerve. Either the winging developed gradually or the injury occurred subsequent to the April accidents.

[127] Dr. Reebye concluded that the nerve injury was not caused in the subject accidents, but by heavy activities and heavy weightlifting. In his 1994 Report, he wrote:

> In my opinion, it is highly unlikely that the paralysis of the long thoracic nerve is from an injury to his neck. The nerve has several roots. An injury to his neck would not give rise to specific paralysis of damage to this one nerve alone and leaving the other nerves intact. Therefore, the damage is much more distally i.e. at a level away from the neck where it has formed a separate nerve in its rather long course.
>
> The accidents of April 5, 1990 and April 19, 1990 do not bear evidence of significant injuries in the region of his shoulder or his chest or shoulder blade to have caused such damage.
>
> He is involved in very strenuous, heavy activities and heavy weight lifting. It is quite likely that he may have damaged some muscles during the course of these activities.

[128] Under cross-examination, Dr. Reebye conceded he had no personal training or experience in weightlifting, and the only information he had with respect to the plaintiff's weight training was mentioned in his September 7, 1990, Report, which reads:

> He is interested in body building. He gave it up for a period of about one month and then started again gradually and going regularly to his gym workups but he is not still back to his previous strength and endurance. He used to powerlift and do neck presses of 225 previously. Presently doing 135. Still cannot do squats. Feels that he is gradually getting better and is slowly increasing the amount that he is doing. He attends the gym every second day.

[129] He believes the long thoracic nerve injury occurred sometime between April 5 and October 16, 1990, and the history of the plaintiff's physical activities including weightlifting between those dates would be important to his conclusion that they were the cause; but added that the "very strenuous heavy activity" included stunts, and if he were doing them they could be the cause. (I find he was not doing stunts).

[130] The injury would be less likely to occur in a person who has been lifting weights for years.

[131] Causation was put to him, in cross-examination:

> Q Now, the doctors that have testified before you have indicated that one of the mechanisms that leads to a long thoracic nerve injury is traction?
> A Yes.
> Q You agree with that?
> A I agree with that.
> Q And other mechanism would be a blunt trauma?
> A A direct blunt trauma. I agree with that.
> Q Now, in a traction type injury a traction would occur when the shoulder is fixed and the neck is hyperextended and pulled in the opposite direction or away from the shoulder rapidly, a rapid acceleration and deceleration with a fixed shoulder; is that true?
> A That could cause traction at the neck.

Q And it could cause traction and injury of the long thoracic nerve?
A Very unlikely.
Q Possible?
A Extremely unlikely for the simple reason that the long thoracic nerve is a very long nerve, as the name implies, and the fact that it is long, it can give to quite a significant amount. So that if the movement is only at the neck, it has to be very severe and would cause other injuries. The more likely traction is when the arm is also pulled, but if it is only the neck without any fracture, that mechanism would be an unlikely mechanism to tear that nerve because it is such a long nerve that it allows movement to occur, my lord.

. . .

Q All of the doctors before you have testified separately, but in agreement that if one pins the shoulder, takes the neck through a sudden traction movement, hyperextension being the example we are working with, that this could lead to a severance or partial severance of the long thoracic nerve. Do you disagree with their opinions, doctor?
A In isolation I would disagree.
THE COURT: Sorry, sir?
THE WITNESS:
If it is only in isolation. The mechanism explained I agree can cause pull of nerve fibres and cause damage to the nerves in that area. But for it to cause damage only to the long thoracic nerve is very highly unlikely.

. . .

Q Doctor, if other doctors in this case have testified that one can receive damage to the long thoracic nerve in a motor vehicle accident as a consequence of having the shoulder braced and rapid acceleration and deceleration forces, and if they have concluded that a motor vehicle accident of this nature is a potential etiology for paralysis to the long thoracic nerve, do you disagree with them or do you simply mean to tell us that that is not your clinical experience?
A As I have said again, it's the nature of the injury. If there are other injuries associated, this is the most likely cause of thoracic nerve paralysis, where they break other bones, they damage other nerves, but the theoretical picture that you are presenting to me, if a person is restrained, his neck either goes forward and backwards or his neck goes sideways and there is no broken bones, there is no other major damage

to tissues and no other damage to other nerves, then in my opinion it is very unlikely that this injury would have caused the specific long thoracic nerve injury.

Q Unlike?
A Very highly unlikely.
Q Not impossible?
A Not impossible.
Q And simply not in your clinical experience?
THE COURT: And not in --
MS. McGEE:
Q Not in your clinical experience?
A Yes. That's the reason I'm fairly clear about it. It's not in my experience, although I have seen a large number of injuries to the neck from the very minor to extremely major, with severe paralysis of all limbs, my lord.
Q But what you also told us, doctor, is you have not seen any or treated any motor vehicle cases with isolated long thoracic nerve palsy; is that true?
A We don't treat it.
Q You haven't even diagnosed any?
A It is there. There is no need to diagnose it. A person with major injuries, there is the winging of the scapula, we are looking after him for other problems. That is what I have said.
Q Let me go back to your answer, doctor. I'm not trying to be difficult here. I think you advised the court that you have never had a patient with isolated long thoracic nerve palsy from a motor vehicle accident?
A Yes, my lord.
Q You have never had a patient like that?
A An isolated one without anything else.

[132] He said if hypertrophy was apparent in October 1990, Lance Gibson had a paralysis of the long thoracic nerve for several months before that time.

DR. BARBARA ALLAN

[133] Dr. Allan has practised as a clinical neurologist for 30 years and has taught in that discipline.

[134] She has seen serratus anterior palsy many times. She has seen isolated serratus anterior palsy perhaps twice a year. She has seen many hundreds of flexion/extension injuries but never has encountered a serratus anterior palsy emanating from such an injury.

[135] She had reviewed the literature) journal reports, reviews and neurology textbooks with respect to serratus anterior palsy arising from motor vehicle accidents and found a paucity of reports of injury to the muscle or nerves, saying:

> I haven't really found anything to describe an injury such as this. The few cases -- and there are very few cases of serratus anterior palsy associated with motor vehicle accidents -- the few cases there are very serious accidents; one for example where the car turned upside down and the patient was left hanging upside down, restrained by his seatbelt, and there was a traction injury on the nerve as a result of that. Another was a motorcycle accident where there was very severe injury. I didn't encounter a single one describing an extension/flexion injury to the neck or back causing an isolated serratus anterior palsy.

[136] She believes that were a serratus anterior muscle injury to occur from trauma, it would be evident within the first 24 hours of the injury and the patient would detect winging within a few days although a physician might not see it that early.

[137] She saw the plaintiff only once) on November 18, 1992, when she physically examined him. She found hypertrophy of the upper left trapezius with tenderness in the left

posterior neck and upper shoulder region) all other muscle groups were strong in the upper limbs and trunk, save for weakness in the left serratus anterior muscle.

[138] She spoke of pain resulting from other muscles compensating for the loss of function:

> A If someone has damage to a nerve and the muscle supplied by that nerve is not working properly and this acts as a disability to the person, for example, in this type of lesion, because of the difficulty that the person has with getting the arm above the head or the arm out in front, they may exercise, doing shoulder exercises, for example, using other muscles that will allow them to do similar actions, not to the same extent, but similar actions, and those muscles that they are using that are supplied by other nerves, because they are being overworked, can hypertrophy, become very large as a result.
>
> Now, on the other hand, some people who have an injury such as this or some abnormality giving rise to the serratus anterior palsy, they tend to protect the arm because it not working properly and they will hold it at the side and they won't use it at all. Their muscles become quite atrophied, shrunken. The whole shoulder girdle will become shrunken. In that setting often pain sets in because they get soft tissue changes around the shoulder joint and they get a lot of pain then.
>
> The person who exercises a great deal and gets hypertrophy, he may develop some pain, but pain is not a prominent symptom with that.
>
> THE COURT: With what?
>
> THE WITNESS:
>
> With that process, with the exercising of the other muscles that are trying to compensate for the weak muscle. Pain is not prominent as a rule, unless the person exercises beyond reason; over does it, in other words.

[139] In her Report, she wrote that the mechanism of damage to the left long thoracic nerve causing a serratus anterior

palsy is "uncertain". She said so because she found it difficult to explain, which I take to mean to relate to the subject accidents. At Trial she said:

> A ...I didn't obtain a history of any other injury or event that would have caused the nerve lesion, although realizing that this gentleman is a weightlifter, an athletic person, athletes are very prone to nerve lesions of this type. Any other process, any other injury could have caused it, but there wasn't any history of any other injury, as far as I knew at that time.
>
> THE COURT: Dr. Allan, didn't he say that the winging of his left scapula probably began after the first accident, although it was definitely present after the second accident? He was talking about winging?
>
> THE WITNESS: Yes.
>
> THE COURT: He wasn't talking about damage to the left long thoracic nerve specifically, was he?
>
> THE WITNESS: No, my lord. But the winging would be due to damage to that nerve.

[140] She was asked if a side impact versus a rear-end impact would make a difference in her opinion, and said:

> A ... I think a rear impact is much more likely to cause an extension/flexion injury to the neck because the head is forced backward and then forward and then it may go back again; whereas a side impact, depending on where the injured person is sitting in the vehicle, might cause a more severe injury, and if it was a very severe injury where there was compression of the chest from the side, then this nerve might be damaged in that situation.

[141] In her Report, she wrote:

> However, it is possible that the nerve was damaged at the time of his April 5, 1990 accident, but in my opinion it would be most unusual for this to happen in this type of accident and the mechanism of possible injury to the nerve is far from clear.

[142] She explained:

> A Well, what I mean is that I can't say with absolute certainty that it wasn't damaged at the time of the April 5, 1990 accident, but my opinion was that it is very unusual and in fact I have never seen it happen as a result of that type of accident.
> Q So what is your opinion there with respect to the likelihood that this accident cause it?
> A Well, I think it's unlikely based on my experience and based on the experience of others who do the same type of work with whom I have discussed the situation.

[143] She was asked about fibres along the thoracic nerve and whether they would fray or break over time as a result of the collision:

> A I don't agree with that mechanism. I think in an injury to a nerve such as would occur in a motor vehicle accident the injury is maximal at the time of the accident and makes its effect known quite soon, within hours or days. The nerve doesn't fray. Nerve tissue is very, very strong tissue. Even though a nerve may be relatively small, it is still quite tough. It doesn't fray.
>
> We just don't see that in people who have nerve injuries. They don't develop gradually progressive lesions. If they do develop gradually progressive lesions and symptoms related to that, it is usually because there is some other process involving the nerves; for example, a benign tumor on the nerve can cause a progressive neurological deficit in the muscle supplied by that nerve, in which case the trauma

> may only have brought the problem to light. It may have been coincidental.
>
> I don't think that is the situation here. I think it is likely that the maximal nerve damage occurred at a particular time and the muscle showed its weakness and then the hypertrophy developed later.

[144] In her Report, she said it was unlikely the seat belt was responsible for the nerve lesion. At Trial, she concluded that one would expect to see bruising or scraping over the site of the seat belt if the nerve was damaged by it. She would expect the paralysis would be evident within a few hours or days at the most had the seat belt been responsible.

[145] She does not agree with other medical opinion that winging would be masked by muscle bulk.

[146] She spoke of weightlifting being a possible cause:

> A Usually by entrapment of the nerve in fibrous tissue surrounding the muscle. All muscle is encased in a thin sheet of fibrous tissue which at the ends of the muscle inserts into the bone. This fibrous tissue can become very dense. Some patients have very dense fibrous tissue and others don't. Men have it much more than women do.
>
> Nerves often become trapped in this fibrous tissue, especially in people that use their muscles a great deal. For example, people who are athletes tend to get entrapment lesions of nerves very commonly from this sort of a process. The nerve is stretched and compressed by the fibrous tissue as the muscle increases in size.
>
> . . .
>
> I think the person who has been weightlifting for ten years as opposed to one year is more likely to have a lot of fibrous tissue around

his muscles and also he is going to be older, which would give rise to more fibrous tissue. Young people, children for example, who are very active in athletics, don't develop these types of nerve lesions, although I must say I'm not a pediatric neurologist. I would like to make that very clear.

[147] She had not received a history of the plaintiff's weightlifting activities between April and October 1990. In trauma, she said, where a nerve is cut very often there is no pain. She believes the plaintiff's pain was related to the extension/flexion injury) to muscle and ligaments stretching.

[148] She commented on Dr. Bozek's evidence:

Q Now, Dr. Bozek has testified that being restrained by a seat belt and being rear-ended and having a flexion/extension force applied to the body would constitute a traction injury of the type that would give rise to this sort of injury.
THE COURT: Could.
MR. HULLEY:
Q That could. Do you agree or disagree with that?
A Well, I disagree. Well, it could conceivably, but we just don't see that in practice. There are countless numbers of people who have this type of accident and I must say I have never seen one with a serratus anterior palsy.
I have seen people with seat belt injuries, with bruising and sometimes even abrasion of the skin overlying the seat belt, so that has been quite a severe type of injury from the seat belt, and even those people I have never seen with a serratus anterior palsy. It's not reported in the literature, that mechanism.
THE COURT:
An accident -- when you say it's not reported in the literature, you are speaking of an accident such as this?
THE WITNESS: Yes, my lord.
Q Now, Dr. Bozek was asked a question concerning the positioning of the head at the time that force is applied to the neck. It was the

> doctor's evidence that the actual positioning of the head and neck wouldn't be all that important. The question I put to him is whether or not turning the head to the left would tend to take the strain off of the nerve and does that matter at all and his answer was that no, the positioning of the head and neck does not matter. Do you agree with that?
>
> A No, I don't agree with that. I think the position of the head and neck does matter, but in order for a traction type injury to occur the head would have to be turned to the right to cause a traction injury to the left long thoracic nerve supplying the left serratus anterior muscle. If the head were turned to the left, the nerve on the left side would tend to be much more relaxed.

[149] That was her evidence in chief.

[150] Dr. Allan wrote a second Report, dated March 23, 1995, in which she related her difficulties attributing the injury to the accident:

> I have indicated in my report to you dated December 21, 1992 that I do not know the cause of his left serratus anterior muscle paralysis, which is due to damage to the long thoracic nerve supplied by the C5-7 segments. I have never seen this condition develop following a motor vehicle accident such as Mr. Gibson described on April 5th, 1990 and April 19th, 1990, nor indeed in relation to the August 29th, 1992 accident. I have seen many, many cases of patients injured in accidents such as these, during my 30 years in clinical neurologic practice, during which time I have done a great deal of medical-legal work. That is not to say that damage to the long thoracic nerve could not occur as a result of trauma due to a motor vehicle accident, but certainly if must be a very rare occurrence and when it does occur it is usually related to a sudden blow to the shoulder or lateral thoracic wall. I had wondered if damage from the seatbelt might have precipitated such a lesion, but if so, one would expect the muscle paralysis to be evident within a few days of the accident at the very least, which does not appear to be the case, judging by the history.

. . .

> Blows to the shoulder can cause the lesion and it also occurs in individuals who carry heavy weights during weight lifting and also following surgical trauma. None of these factors seem likely except for weight lifting, although I did not obtain a history of Mr. Gibson doing weight lifting between April and October 1990, so that the inflammatory process affecting the nerve is probably more likely. However, I cannot be certain of this nor can I be certain that the accident did not cause the nerve lesion but in my opinion the mechanism of the accident was not such that sufficient blow occurred to the left shoulder to cause such a severe nerve injury. The nerve injury has been severe judging by the degree of wasting and weakness in the left serratus anterior muscle and the very abnormal electrical findings when Dr. Bozek carried out his testing.
>
> . . .
>
> Based on the history he provided and on review of the records and reports, there does not appear to have been sufficient force applied to the shoulder area nor to the lateral chest wall to cause this lesion at the time of the accidents. It is more likely, I think, that he developed the isolated long thoracic nerve lesion either as a result of weight lifting some time following the April 1990 accidents, but before October 1990 which gave rise to gradually progressive wasting of the muscle with resultant hypertrophy of the other shoulder girdle muscles. This is what was noticed by his family physician, Dr. Toews, in October of 1990.
>
> . . .
>
> Based on probabilities, I think it is more likely that the winging of the scapula developed as a result either of weight lifting after April of 1990 or as a result of some other physical activity with stretching of the neck and shoulder girdle, causing damage to the nerve. This would have to be a traction type injury. The motor vehicle accident does not appear to have caused such an injury, judging by its mechanism.

[151] When she wrote the 1995 Report, she did not know the weight he was lifting or if he was lifting over his head. She

was asked about her conclusion that the mechanism of the motor vehicle accident was not such to cause the injury:

> THE WITNESS:
> I was -- I was concluding that based on what Mr. Gibson told me about the details of the accident -- in other words, he told me about the vehicle being struck from the rear and the fact that his head had been forced forward and then back and that it was a repetitive type injury. There was no impact from the side to suggest that his lateral chest wall had been injured nor the lateral neck and furthermore he told me that when his car came to a stop he was able to get out immediately and run after the person who struck him and I think that piece of information helped me to conclude that he didn't have any significant injury to his spinal cord which he could have had from that type of injury. I'd have thought much more likely than a serratus anterior palsy because the spinal cord is much more vulnerable than the nerve so I concluded that that mechanism of a flexion/extension injury to the neck was not likely, based on my experience and based on my knowledge of the literature, and the fact that we just don't see this type of lesion in the hundreds and hundreds of cases of this type that are referred.

[152] She agreed that the neck would extend to its full ability to do so depending on the position of the seat and the position of the headrest.

[153] Dr. Allan regretted that the evidence did not disclose the locus of the lesion; were it known it might have helped in determining its cause.

[154] She believes that a scalenus entrapment of the subject nerve would be unusual and unlikely.

[155] The damage to soft tissues is the most likely cause of pain and it would be very difficult for a patient to distinguish pain in the shoulder girdle resulting from nerve injury and pain resulting from soft tissue injuries.

[156] She spoke of fibrous tissue entrapment:

> It's accepted widely, generally, that fibrous tissue entraps nerves and causes nerve lesions and fibrous tissue is intimately associated with muscle. It surrounds muscle and muscle inserts into it at either end of the muscle so it is a common situation... I think there is lots of medical authority for that proposition. If you ask any surgeon who operates on an entrapped nerve, there is lots and lots of authority for that.

[157] Dr. Allan does not accept that all persons would necessarily have immediate symptoms such as weakness in the left arm and shoulder or the sensation that a shoulder was giving out:

> A Well, not necessarily, because many people -- again, regardless of the etiology of the nerve lesion, many people with a serratus anterior palsy don't have symptoms. They don't have pain. They don't complain of weakness of the shoulder. They come complaining that their shoulder blade is prominent, somebody has noticed this or they have noticed it.
> ...
> I think I've already answered this in saying that the pain that's experienced is more likely to be related to involvement of other muscles doing more work than they ordinarily would be doing in that particular movement because of the sudden weakness of the serratus anterior which isn't able to do its work. In other words, an isolated nerve lesion doesn't necessarily give rise to pain so because the man had pain doesn't mean that he had a nerve lesion.

[158] She cannot say if an experienced weightlifter is less likely to receive a long thoracic nerve injury than would a novice, because she does not know enough about weightlifting.

[159] Under cross-examination, with respect to the March 23, 1995, Report, Dr. Allan conceded that when a shoulder is pinned by a seat belt in an accident it will be held down, but to a limited degree, while the neck is left free to accelerate or decelerate rapidly:

> Q And with the shoulder being braced and the head flexing and extending, is it not true that the long thoracic nerve, which is exiting from C5, 6 and 7, may undergo extensive traction or stretching as a consequence of that mechanism of injury?
> A I don't think so, no. For instance -- for one reason, as I have already stated, we just don't see people with extreme extension/flexion injuries to the neck with a paralysis of this muscle and damage to this nerve. And this nerve is formed by fibres from the fifth, sixth and seventh cervical segments.
>
> Now, those same nerve fibres go to supply other muscles as well; for instance, the biceps muscle, the muscle that flexes the elbow; for instance, the muscle that allows you to extend the wrist and the other major muscle here is one that allows a person to extend the arm, the triceps muscle. And it would be most unusual to affect by means of a neck injury -- to affect only the serratus anterior, the long thoracic nerve supplying this muscle, and not affect these other muscles. This is one of the reasons why serratus anterior palsy as a result of trauma is such an unusual thing.
> Q It's unusual; that's what you are saying?
> A As a result of trauma, but I didn't say motor vehicle accident. I said trauma in general.
> Q It's not impossible, it's just unusual?
> A It certainly occurs in trauma, yes.

[160] She was asked about the rhomboid muscle which is fed by a nerve emanating from C-5, and agreed that if weakness of the left rhomboid muscle is found, it would be an indication of damage out of C-5 as well. She did not find that weakness when she examined the plaintiff but conceded Dr. Hershler had examined him on more occasions than she. (I note Dr. Bozek found the rhomboids to be normal in his March 1991 examination).

[161] After the trial adjourned in May 1995, Dr. Allan was provided with a transcript of a trial of the plaintiff on a charge of assault arising from an altercation in May 1990. The defendants were given leave to adduce a further opinion of Dr. Allan, and it is dated September 19, 1995. She wrote:

> I have reviewed the excerpt of the records of Proceedings at Trial, dated May 28, 1991, with reference to a physical confrontation between Mr. Gibson and a third party, and also excerpts concerning subsequent police treatment of Mr. Gibson.
>
> An altercation with a third party is described by Mr. Gibson, who stated that "I went back and I came back, I punched him back, and then my jacket, I was trying to get my jacket over and it came off and went over my head and he was hitting me when I had it over my head. I'm trying to get my jacket off and I got one arm out. I threw one more -- one punch at him and he kept on -- he was hitting me..."
>
> **COMMENT:**
>
> There is no mention of which arm Mr. Gibson was using to punch the other person, nor is there mention of where Mr. Gibson was hit. It is theoretically possible that his left long thoracic nerve, which supplies the serratus anterior muscle, could have been damaged at this time, if his left arm was stretched out in front of him and elevated above his head, with his head slightly flexed forward and

> rotated so that he would be looking toward his right shoulder. It is likely that one or both arms were above his head when he was trying to remove his jacket, and if he had been struck about the head, sudden movement of his head to the right could have provided the critical position for damage to this nerve, as a result of traction on the nerve.
>
> Had the nerve been damaged at this time, it is probable Mr. Gibson would have noted difficulty elevating his left arm and/or flexing it in front of himself, although he could have compensated by using his right arm, in which case he might not have noticed any problem at the time of the altercation. Pain due to a nerve injury would not necessarily occur at that time.

[162] Counsel for the defendants concede it is unlikely that the nerve was damaged in that altercation. They do not make that concession with respect to the arrest procedure of Gibson following it. Dr. Allan recites Gibson's evidence on the assault trial and comments upon it:

> **PAGE 29 - LINES 32 - 44:**
>
> Mr. Gibson stated that "he pushed me in the chest, shoved me back in the chest, ... came up with a night stick and put it around my throat."
>
> Line 31: "Just came at me with his night stick ... came over across my neck and pulled me back and choked me. Gagged me 'til I fell on my knees...."
>
> Line 35: "I kind of blanked out."
>
> **LAST PAGE (NOT NUMBERED) - LINES 8 - 11:**
>
> "He came over with a night stick, put it around my throat and choked me, and slammed my face to the ground, and dragged me ... to the police van...."
>
> **COMMENT:**
>
> This description of handling of Mr. Gibson by the police suggests that Mr. Gibson's neck was probably extended by the actions of the police officer in applying the night stick. Whether or not there was

> rotation of the neck is not known. The position of Mr. Gibson's arms is not mentioned.
>
> It is theoretically possible that the left long thoracic nerve supplying the serratus anterior muscle was damaged at this time, rather than at the time of the altercation with the third party. The mechanism of damage to the nerve would likely be traction and stretching of the nerve, as a result of the position of his left arm and his head.
>
> While neither the altercation with the third party nor the handling of Mr. Gibson by the police is detailed enough to state with certainty that the long thoracic nerve was damaged at either of these times, it is certainly possible that damage to the nerve occurred at one or other of these times. There are innumerable instances of damage to this nerve occurring with much less detailed description of the traumatic event that likely caused the nerve lesion.
>
> I have already indicated, in my previous reports to you, that damage to the left long thoracic nerve is unlikely to have occurred as a result of Mr. Gibson's motor vehicle accidents. The rather scant description of the position of Mr. Gibson's head and arms during the altercation (described in the records of the Proceedings at Trial), and also during the handling by the police, suggests the possibility of a traction injury to the nerve at one or other of these times. Based on this information and information regarding the motor vehicle accidents, it is more likely that injury to the long thoracic nerve occurred either as a result of the altercation or of the police handling.

DR. LAWRENCE ELSON

[163] Dr. Elson was a defence witness. He was qualified at Trial, but the weight to be given his evidence was left for my determination and for that reason I shall relate some of his background bearing on his expertise.

[164] He is a graduate in human anatomy from the University of California at Berkeley, and obtained his doctorate in that

field in 1968. He has lectured in medical anatomy at universities and colleges in the United States. For 23 years he has engaged in private practice as an investigator with respect to causation of injury in traumatic events of various kinds, including motor vehicle collisions. He has studied thousands of motor vehicle accidents causing soft tissue injury to determine the probability of injury.

[165] He said he is one of three forensic anatomists in North America. "Forensic anatomy" simply means he specializes in litigation matters. He has been qualified as an expert on "causation" in Canada in this Province, Alberta and Saskatchewan.

[166] He concedes he is not an accident reconstructionist and he does not have an expertise in estimating speed and speed changes of automobiles. In his Report when he speaks of those two matters, I find he does not do so as an expert.

[167] He was qualified at Trial as an expert in forensic and clinical anatomy and a specialist in causation of injury in vehicular collisions. He was a knowledgeable and capable witness; he has great experience in his specialties, and I give weight to his opinions.

[168] "Clinical anatomy" means he relates his knowledge of anatomy to medical and surgical situations. "Causation of

injury" requires a knowledge of medicine or accident mechanisms; his expertise is medical-related anatomy.

[169] Dr. Elson researched the literature and his own records with respect to long thoracic nerve injury and accessed the National Library of Medicine in Maryland which contains reports from around the world) by computer for the years 1966 - 1995 and, but for one, found no reference to a long thoracic nerve injury resulting from a motor vehicle accident; the one exception was a paper prepared in 1979 in which the researcher spoke of one patient that received a serratus palsy in a motor vehicle accident, but the dynamics of that accident were not mentioned.

[170] In his written Report, Dr. Elson gave his opinion, in part:

> 1. The Plaintiff occupant/driver of the Volkswagen experienced a rapid movement backward into the seatback and molded head restraint at the moment of initial impact. In this movement, his head and neck would be subjected to extension beyond neutral but well within the normal range of motion. As the vehicle was pushed forward by the truck, the velocity was fairly constant, yielding no significant velocity changes to the Plaintiff. On impact with the steps/stone statue, the vehicle decelerated to a stop and the Plaintiff moved forward into the restraints. The head/neck would flex forward as the torso moved forward and was restrained by the shoulder harness.
>
> . . .
>
> 3. The opinion on occupant movement is based on my experience in evaluating rear-end motor vehicle accidents, my study of the literature and visual evidence on occupant movement in collisions, and the well-accepted scientific fact based on empirical evidence: in a rear end collision, the occupants

> move in the direction from which the force is imposed. My opinion that the range of motion of the neck was within normal limits is based on my experience in studying volunteer occupant movements in such accidents on film, and the reports of others in the literature.
>
> 4. Understanding the movement of the head and neck of Mr. Gibson during these collisions, I can state with anatomic certainty that the long thoracic nerves are not subjected to strain or disruption secondary to stretching during the movement described above...
>
> 6. The long thoracic nerve is subjected to stretching injuries when the head is sharply moved laterally with the neck, and there is a compressive force maintaining that lateral movement. Such movement/stretching injuries can occur during head standing in hatha yoga, when the individual falls off to one side while the head is planted. Avulsion (over-stretch to rupture) of the long thoracic nerve can and does occur during athletic activities, such as wrestling...
>
> 8. ... The movement of Mr. Gibson's head and neck at the time of impact was into the seat back and head restraint. Such a movement does not put an undue stretch on the long thoracic nerves, and therefore, would not be injurious to those nerves. Please see paragraph 4 above.

[171] When he wrote his Report, Dr. Elson had estimated the velocity changes experienced by the plaintiff. By the time he testified, his calculations had been checked by Dr. Stewart, a physicist and accident reconstructionist who found Dr. Elson's estimates of speed changes in the first impact to be low. Dr. Stewart estimated the speed change to be 20 - 35 k.p.h., while Elson's had been 10 m.p.h. or lower. At Trial, Dr. Elson accepted Dr. Stewart's estimates but said that did not change his opinion with respect to causation, because the movement of Gibson's body was the same at either speed and it would remain the same at speeds of 0 - 50 k.p.h.

[172] At Trial, he resiled from the conclusion reached in his Report that it was a low velocity collision.

[173] He described the origins of his familiarity with the nerve:

> A (My knowledge) arises from my initial studies back in the Sixties when I dissected my first cadaver and the long thoracic nerve is such a nerve that everybody who takes gross anatomy dissects that nerve. Over the years following I have dissected over 800 cadavers either by myself or in conjunction with medical students and we made sure that every student dissected out the long thoracic nerve from its origin in the neck on both sides, so if I have done 800 cadavers I have seen 1600 long thoracic nerves.

[174] He spoke of winging of the scapula resulting from an aggressive athletic activity:

> Q ... You used the words "during aggressive and/or athletic activity"; can you describe what you mean by that?
> A Yes, aggressive activity with respect to this nerve means sustained movement of the head relative to the torso putting the neck on stretch in some manner. If you are going to involve the long thoracic nerve then that movement must be sideways, because flexion and extension don't put that nerve under traction, but if I take my head and I move it laterally over onto my shoulder then the nerve on the opposite side is subjected to a stretch.
>
> In wrestling, in weightlifting, in soccer, in football, where the body is subjected to movements where the head can be forcefully bent to one side the nerve is under duress in that situation and again it's a lateral movement and we can imagine, I think, wrestling, soccer, and weightlifting might be a little bit more -- not quite as understandable. May I go into that a little bit?
> Q Um-hum.

A This nerve that goes to serratus anterior, the long thoracic nerve, as it comes down over the thorax the second rib sticks out more so than the other ribs and so in effect the nerve is coming over on an angle. Now, when you are weightlifting and you pick up some bar with weights on the end of it and you drop it down in preparation to do a lift you pull the scapulas down. And when you pull the scapulas down you put that nerve on stretch just by the weight of it. By pulling it down, pulling down the scapulas, pulling down the clavicles in that particular roll and also in an overhead roll you can put a stretch on this nerve.

[175] The nerve injury often is "silent":

Q ... Does silently mean that it occurs without being noticed?
A That's correct. And the reason for that it is because it is a motor nerve. It is not a sensory nerve. If it were a sensory nerve it would scream when you pulled it. You would feel this pain. But you can pull the long thoracic nerve enough out of its attachments to the muscle to render it functionless, but it won't hurt because there are no sensory receptors near it.

[176] He spoke of the headrest:

Q And equally true, Doctor, the further away our head is from the headrest the more room is available for the head to hyperextend back before striking the headrest?
A No, because the body and the neck move at one speed. If you have a change in velocity of 10 miles an hour your body, your neck, your head, will all continue to move together as the back hits the back of the seat. And if the restraint is a little aft of that then as the torso stops, the head and the neck will continue back, but with the head restraint that movement of the neck and head relative to the torso will only be a number of - oh, 10, 20 degrees beyond neutral, beyond the vertical.

Q But the greater angle of the seatback the less protection one has from the headrest, or the less protection that is going to be available from the headrest?
A If you have a head restraint that is well back of the seatback that is true. He had a molded headrest and so it was continuous with the seatback.

[177] He conceded he had not viewed films of accidents involving human occupants at speeds greater than 20 m.p.h. He had seen films of rear-end collisions using anthropomorphic dummies at speeds from 9 to 50 m.p.h.

[178] Dr. Elson testified that a long thoracic nerve can be injured by carrying backpacks, by depressing the scapula:

Q How would one get a long thoracic nerve injury carrying a backpack?
A Depression of the scapula.
Q Okay.
THE COURT: Sorry, Doctor.
THE WITNESS:
I'm sorry, depression of the scapula; may I explain?
MS. McGEE:
Q Yes.
A The long thoracic nerve is too deep, it's covered up by so much external structure that if you compress it you're not going to affect it, you are not going to touch. You'd fracture the clavicle before that happened. But when you're wearing a backpack it's being carried by the muscle also that connect the scapula to the main body wall and so if I may stand, when these straps are over your shoulder they push your scapulas down. You may work to prevent that, but they are still going to depress them and the current theory of injury mechanism is that depression of the scapula puts the nerve on traction and over that second rib it does it enough that it starts to break down.
Q Right?
A And backpacking would be a sustained pressure on that nerve.

[179] Dr. Hershler's evidence was summarized for him by Ms. McGee, plaintiff's counsel, in this exchange:

> Q Dr. Hershler testified and I am summarizing, that the seatbelt that would have travelled across Mr. Gibson's shoulder would have provided traction to the left shoulder and that the hyperextension and flexion forces that would have been exerted upon Mr. Gibson during these repetitive impacts, the combination of those two, would have resulted in the injury that Mr. Gibson experienced in this first motor vehicle accident; do you agree that that is possible?
> A It's possible, but not likely.

PART IX

REBUTTAL EVIDENCE

Mark Bailey

[180] To repeat, Mr. Bailey was qualified as an expert in accident reconstruction and occupant motion. He considers himself qualified to give opinion evidence with respect to the operation of a seat belt and the forces exercised by it upon a vehicle occupant. Mr. Bailey has published papers on occupant motion in minor rear-end collisions. He has participated in testing in 2,000 staged accidents. He has a degree of Bachelor of Science in mechanical engineering and a Master of Applied Sciences, Metals and Materials Engineering. He lectures to other practising in his field. Mr. Bailey was the only accident reconstructionist called at Trial.

[181] He had reviewed Dr. Elson's Report and evidence and the Report of Dr. Stewart, upon whose opinion with respect to vehicle speed changes and accident reconstruction Dr. Elson relied.

[182] I have recited Mr. Bailey's opinions with respect to the April 5 accident and need not repeat them. He distinguished between occupant motion and the biodynamics of injury) occupant motion addresses the way people move in car crashes; biodynamics relates those motions to injury causation.

[183] He concluded that the plaintiff likely resisted approximately 20 times his body weight on extension/flexion in the first impact.

[184] In the first impact the seat itself was forced backwards by Gibson's body and when the seat regained its original position, it had the effect of pushing his body forward. Further, there was an axial motion which he described as an up/down motion of the head independent of the body, creating compression forces inside the neck. That axial motion is found in all rear-end collisions.

[185] When a seat incorporating a headrest is angled back, its effectiveness in limiting head "extension" is diminished, but not eliminated.

[186] With respect to Dr. Elson's study of the research by Biodynamics Research Corp., Mr. Bailey believes Dr. Elson understood the content of the study, but he had a concern that he extrapolated the results to this accident. That study was based on severity of collisions well below that of the subject accident, and because the study was empirical in nature, not theoretical, Bailey believes there is a danger in extrapolating them.

[187] Other factors that can affect body change on impact are:

1. Did the person know he was going to be hit?
2. How was the person seated at impact?
3. Whether the head was turned to the right or the left.
4. The flexibility of the seat. There is a dispute amongst experts) is a flexible or non-flexible seat better able to provide protection from injury? Mr. Bailey did not give his opinion.
5. If an occupant does not remain positioned directly forward during impacts, the worse off that person will be. The further the head is from the head restraint, the less effective it is.

[188] Mr. Bailey believes the flexion force from being thrown forward in the seat belt in the first impact cannot be characterized as modest) it was "pretty harsh".

[189] The absence of seat belt lesions or shoulder bruising is not helpful when determining if an injury was caused by it.

[190] Mr. Bailey was asked about downward pressure exerted by a shoulder seat belt and said per se it would not occur; that one may get an impression of that) a feeling that the seat belt is pushing the body down when it is actually preventing the body from rising.

[191] He was asked:

> Q ... So if we assume the seat belts were redone at the same time that the interior of the interior was done and retractable seat belts were in place, how does that change your opinion about the function of the seat belt on this initial impact?
> A On the initial impact, as I have said, we have tested early eighties Volkswagen Rabbits and with those types of seat belts the person would go back into the seat and it causes the seat to recline and then the seat belt actually reels in and then locks. So when the seat tries to rebound, the person has a sensation that they were being cinched down into their seat by their seat belt, which is now pulling down on their shoulder.
> Q So if the seat belt is preventing the body from thrusting forward in the manner in which I guess the impact forces are wanting it to, is the seat belt also limiting the amount of axial movement the body is going through or is the body free to have full axial movement?
> A It will tend to -- like I said, it does a good job of holding the hips down. The rest of the body wants to continue upward. So then you get some pushing and pulling going as if someone was almost grabbing you by your ears and pulling you up by your head in a sense.
> Q And my friend asked you some questions about whether the seat belt would grab you in certain ways. Does that evidence change if the body is rotated in any way during these impacts? Does

the effectiveness or perhaps the bracing aspect of the seat belt change in any way?

A Yeah, anything the occupant does that would apply some amount of tension to their shoulder belt could change it. In other words, if you try to look towards your right shoulder, you may apply a little more tension to the shoulder belt.

THE COURT: Or left?

THE WITNESS: Then you would apply less tension.

DR. TAUNTON IN REBUTTAL

[192] Soft tissue injury usually resolves within 18 - 24 months. The plaintiff is still experiencing pain and muscle spasm, and given the 6-year passage of time, it is unlikely that the soft tissue damage will improve. The relationship of the nerve injury to his ongoing complaints of pain is complicated by the unstable scapula muscles compensating for the loss of function of the serratus anterior muscle. Hypertrophy has developed which can cause problems.

[193] Dr. Taunton has never seen a case of long thoracic nerve injury arising from a motor vehicle accident, nor has he seen much reference to it in the literature, unlike literature describing the injury arising from sporting activities. He suspects there must be a number of clinical cases that do not "make it" to the literature.

[194] Dr. Taunton agrees with Mr. Bailey that bruising of the skin and chafing would not be seen in all cases of seat belt injury, particularly if one is heavily muscled.

[195] He believes an impact force of 21 - 30 k.p.h. is considerable, particularly if it is repetitive.

[196] In contrast with Dr. Elson, Dr. Taunton has not viewed video tapes of staged collisions nor reviewed the literature with respect to rear-end collisions and he would defer to him in respect of Elson's knowledge of injury caused in rear-end collisions.

[197] Traction associated with such a nerve injury arises particularly with a side flexion or a rotation of the head side to side, and he was not told that had occurred in the subject accidents. He agrees that if the plaintiff's head was turned to the left at impact, that could reduce the degree of force of traction to the left side. With a head rotation to the left, the seat belt would be looser on the left side, reducing the chance of left-sided injury.

[198] He believes a traction injury would be more likely to occur during extension:

> Q Mr. Gibson gave evidence that he felt a chin-to-chest movement in that flexed position, so you would expect in that position there wouldn't be a traction injury to the long thoracic nerve; there would be a relaxation of that nerve in the flexed forward position, is that correct?
> A Generally, yes.
> Q So what we are talking about in terms of the flexion/extension mechanism is a probable traction, if traction is going to occur at all, on extension, correct?
> A Right.

Q Okay. Now, if there is a seat -- a headrest in the vehicle that reduces the range of motion and extension, then that also is going to reduce the traction that one experiences during a rear-end collision, is that correct?
A Yes, if the seat belt is of the right height, the seats hasn't shifted or broken in the accident. Yes, a very good seat belt should restrict the amount of extension.
Q Also a headrest is going to restrict the amount of extension of the head back in this situation, is it not?
A In the ideal situation, yes.
Q And that is also going to reduce the traction on that nerve, is that correct?
A It should, again, as long as the, you know, if it's fitted probably, you know, the seat is fixed properly to the floor boards, it should.
Q The evidence that we have heard so far in this case is that the seat which the plaintiff was occupying was slightly reclined back so that probably the back -- his back was not flush against the seat when the accident occurred, there was some space between them. Even in that situation, if you have a headrest, that is going to reduce the extension motion of your body, isn't that right?
A If you are leaning forward you are going to have a greater momentum. It all depends in these injuries, as I'm sure you know from reading the literature -- it's the speed of the force and the snap that occurs with these impacts. The ideal setting is you are going to be fixed right up against the seat and you will have a seat belt there, so you don't have any moment of force to create that greater force.
Q That's the optimum and the engineer stated that as well.
A Force and acceleration or mass and acceleration.
Q But even if you are at a point where you are at less than the optimum, if you have got the headrest there it is going to keep your head from extending back and getting a huge stretch on the neck?
A You are not going to end up in the back seat hopefully.
THE COURT: You would not what?
THE WITNESS:
You would not end up in the back seat hopefully.
MR. GIUSTRA:
Q And you are not going to end up with your neck extended fully, fully back either, are you, if the headrest is there?
A I would hope not.

[199] If the body is not directly against the back of the seat there is room for it to move, hence the chance to generate force and more stretch.

DR. BOZEK IN REBUTTAL

[200] Before testifying in rebuttal, Dr. Bozek discussed the case with Dr. Taunton, reviewed a portion of Dr. Reebye's evidence and the written opinions and testimony of Drs. Elson and Allan. He did not resile from his opinion that the accidents were the most likely cause of the nerve injury.

[201] He spoke of the size of the plaintiff's muscle bulk "theoretically" causing a stretch of the nerve. He had not spoken of that before in his Reports or in his earlier evidence, nor did any other medical person who testified:

> A ... The other thing, though, that you've got to think about when you look at Lance is that he has a fairly uncommon body habitus. He's not the typical guy that gets involved in a car accident. He's a big, bulky, hypertrophied man, and these muscles when they get hypertrophied could, theoretically, if we're talking theory here, could further cause a bit of stretch to this nerve.... So in this sort of individual, a muscle hypertrophy of the scalenus muscle where the nerve comes out could potentially create a bit more of stretch itself, so there would be even less of a flexion involved to create injury to that nerve.
>
> Q So just so I understand you, what do you mean when you say Lance is all hypertrophied? Do you mean that he's already well-muscled?
>
> A He's a well-muscled individual, that's right.

> Q And the process of building up muscle, as Lance had before this accident, you're saying could already cause a nerve to be under a certain about of stretch just normally, even at rest?
>
> . . .
>
> A That's right, than the normal individual. We're looking at, say, cadaver studies, et cetera, we're looking at usually people who are fairly thin-muscled and don't have a great deal of bulk in their muscles. And it is theoretically possible that because of his body habitus, because of the hypertrophy of his muscles, there could be somewhat more stretch than what is normally there, so less propensity for it to stretch than normally under an abnormal situation like a flexion injury.

[202] He was asked if he agreed with Dr. Allan's opinion that:

> It is more likely that injury to the L.T. nerve occurred either as a result of the altercation or of the police handling (on May 4, 1990),

and replied:

> A Yeah. Well, I would have to disagree, because there is some literature there based on the flexion/extension injuries of an accident that could cause injury to this specific nerve, whereas if you look at what he was through with a hit to the face, with a bit of struggling, and with basically a night stick across his neck, I don't see anything there that would have provided a sufficient enough flexion injury to the upper body and neck and head to have created this sort of injury. Now, if someone had stabbed him in the back, if someone had directly hit the back of his chest, then maybe we could be talking about something different here, but I don't see any of that in this review. So I would have to say that I think, you know, based on all of this, it is more likely that it occurred at the time of his accident, not at the time of these altercations.
> Q Now, is there anything in Dr. Elson's report or his testimony when you reviewed it that has

given you cause to reflect or perhaps change or alter your testimony in any way?

A Not really, you know. Dr. Elson is someone who looks at anatomy, who does studies not really based out there in clinical experience; whereas, you know, myself and Dr. Allan, Dr. Taunton, these physicians, we more go on clinical experience and things that have occurred. Dr. Elson has given some points and I think some of the points are based around certain types of flexions and whether there's a bit more of a lateral component and a bit more of a sideways flexion. I think if you look at things and if you look at a car accident, I don't think it's as simple as just a simple, you know, forward and back. And there's a seatbelt involved. There is potentially his head looking back. I remember even my initial report I made a point that he was probably looking back to see what had hit him and had twisted his head. Potentially further hits could have created, in fact, these lateral flexion forces that Elson talks about are so important in this. It's too complicated to sort of sort out in isolation, especially when I saw him even a year after the fact. But to me, you know, just on a simple basis, nothing takes away from the fact that he has a long thoracic nerve palsy.... And I guess you can search around for other causes and other potential things, but clinically it appears to be there.

Q Now, Dr. Elson in his report says it's an anatomical impossibility to have this injury in what he describes at that time as a low velocity impact. He then conceded this was probably a moderate velocity impact and he went on to conclude that it was then "possible, but not likely", were his words, that the injury occurred as a result of this accident. What is your opinion in that regard?

A Well, we are dealing with unusual circumstances here. There's no question. You know, I think I mentioned in the last time I was up here that, you know, if you go over a number of whiplashes -- and we, you know, we see hundreds of whiplash injuries, unfortunately. And I see them, family doctors see them. You know, a lot of people see them. And yeah, this is a very unusual thing that hs happened here. But there is some theory around the fact that there was a significant stretch injury and he has this nerve injury, you know. We've got to deal with that. That is a nerve injury that's occurred to him. And I think that he, in fact, in the end, from my review of the transcripts, he seems to almost

support the situation that yeah, it could have been, it could have been.

THE COURT: When you say "he" --

A Dr. Elson.

THE COURT: Elson.

A People don't see these every day. People have not seen them. Does that mean that it doesn't exist? Well, you know, Ebola virus exists and I've never seen a case. I don't think any physician in B.C. has seen a case. But we know it exists, right, because there's things written and things are out there to show that it exists. It is uncommon, though.

[203] Under cross-examination, Dr. Bozek testified the arrest procedure in May could possibly have caused the injury:

Q With the arrest procedure with the police officer coming up behind the plaintiff and putting a night stick around his neck and choking him with it, would that not -- that same mechanism not exist in that situation?

A It's possible. If you look at the wrestling injuries, usually when something happens there and they're putting a lot of force and resistance there, they feel something fairly immediately, as in a pain. And I don't know if Lance felt a pain or anything like that. I just -- you know, I guess it's possible. No one is saying here that that's impossible, and in fact you're very right that you have to weigh out this and say: Which is more likely and which is least likely? And I must say I did not know about that sort of event when I went over the case with Lance.

Q All right.

A But even based on what I know now -- and you can give me more information for me to look over to show me -- but even based on that, I really think, in the balance of things, that it's more likely that it was the motor vehicle accident. He was complaining of problems in his shoulder for that month between the accident and the altercation, from what I can get of my notes.

Q Well, my recollection is that the shoulder problems that he was feeling at the time were rather generalized. Would you agree with that?

A Yeah.

Q And very often they're the same types of shoulder problems you have with a typical whiplash without nerve injury?
A Can be, although they were more left-sided, you see, from that point on. So yeah, you could discount that and discount the time there and then say: Okay. It could be more likely there. I think, though, if you look at the balance of everything, I don't think I can discount all of that, that left-sided symptoms and everything.

[204] He, like others, spoke of the injury being silent:

Q Okay. I didn't mean to say that the injury is silent only in a wrestling type of situation.
A No. It's silent in a lot of situations. Take this case. It took a year to come to a conclusion about what was wrong with his shoulder, you know.
Q And that's an example of the silence of the injury?
A That's a very typical -- yeah.

[205] Unlike Dr. Elson, Dr. Bozek did not review video tapes of rear-end accidents nor the literature reviewed by Dr. Elson. He would defer to Dr. Elson with respect to his knowledge of the mechanics involved in rear-end collisions:

Q So would you defer to Dr. Elson when it comes to his opinion regarding the connection of the injury to a rear-end collision specifically?
A Well, I don't think he has the clinical expertise as far as dealing with, you know, with patients, with sort of ongoing injuries and things where patients are involved, and I would not defer to him on that basis. I would defer to him on the basis of what he knows of the anatomy, absolutely.
Q Would you defer to him on the basis of what he knows about rear-end collisions?
A The mechanics involved.
Q The mechanics involved.
A Yeah.

Q And the forces exerted on the body by those rear-end collisions?
THE COURT: And what?

MS. GIUSTRA:
The forces exerted on the occupant's body during the rear-end collisions.
A Yes.

[206] Dr. Bozek disagreed with Dr. Taunton who said the pull on the nerve would be greater when the neck was in extension, not in the flex position, saying:

A ... this is where, you see, you're going to get differing opinions from different people, but I believe that it's flexion, and lateral flexion in particular, that is going to put the most stretch on the nerve.

. . .

A ... lateral flexion or some forward flexion, sort of 45 degrees, that sort of thing, is going to put stretch on the nerve.

. . .

Q But you just said that the flexed position you're not going to have a critical tightening?
A Not enough tightening, no. You have to have some degree of lateral flexion too. You've got to realize when you get hit, you don't get hit straight forward or sideways; it's usually combinations with potential even rotation of the head too to fit into all of that. And if you rotate the head, that's going to stretch the nerve even more. So you're dealing with movements in, you know, like three planes that you have to deal with. I am not an expert on this, though. I'm not an expert at, as you say, forces of impact when it occurs. But it's the combination of these things that is going to do it. It's not going to be a single flexion forward movement that's going to put enough critical damage on that nerve.
Q Do you have any evidence at all of rotation of the head in his particular injury?
A Other than the fact that he did have his seatbelt on. So when you have a seatbelt on, you're pinning one side of the body. If you then flex forward, you're going to have some degree of movement around that stationary position.
THE COURT: Movement of the head?
A Of the head.

MS. GIUSTRA:
Q You don't have any evidence of that particularly occurring in this case in terms of Mr. Gibson telling you this is what happened during this accident?
A No, but of course you wouldn't. You would just get a hit and it would be like a shock, you know. That's where you need people with videotapes to sort of tell us what happens.

(Emphasis added).

[207] Dr. Bozek agreed with Dr. Taunton and others that if the plaintiff's head was turned left at impact, the nerve would be more relaxed.

[208] He spoke of the headrest reducing traction forces on the neck and said he would defer to an anatomist:

Q Now, Dr. Taunton also agreed that if there is a headrest in the vehicle, that the extension of the neck is going to be reduced by that headrest.
A That's right.
Q That's a very common-sensical thing, isn't it?
A Yeah.
Q And the less the traction force on the neck due to the headrest, the less chances of a critical stretching of that nerve; would you agree with that?
A The less extension on the neck, that's right.
Q The less extension.
A It wouldn't limit the flexion on the neck.
Q That's correct?
A Yeah.
Q Okay. But I thought we had already discussed that in the flexed position that you don't have a critical tightening of the nerve.
A There I would have to disagree with Dr. Taunton in that I believe that it's actually flexion forward of the neck which will actually create some tightness of the nerve, because the nerve is going down the back and side of the body. So that's my understanding of the anatomy. We would have to defer to someone else who is maybe

an expert in anatomy to tell us one way or the other.

Q And if Dr. Elson was such an expert, then you would defer to him?

A Yeah, if he had given me an anatomy lesson on that, yes.

DR. HERSHLER

[209] Dr. Hershler did not testify in rebuttal. He submitted a letter dated January 7, 1996, writing:

> I have read a further letter of Dr. Barbara Allan, dated September 19th, 1995 (supra), and a medical legal report of Dr. Lawrence M. Elson dated September 19th, 1995. Neither of these letters cause me to change my opinion as expressed in the above correspondence.

[210] It seems Dr. Hershler did not review Dr. Elson's trial evidence.

PART X

FINDINGS OF FACT WITH RESPECT TO CAUSATION

[211] Lance Gibson was in excellent physical condition at the time of the first accident. He had not wrestled since 1988. For a month to 6 weeks before April 5, he had used only light weights) to tone his musculature preparatory to entering bodybuilding competition.

[212] His car was not stopped at the stop line or stop sign on Mundy Road at the time of the first impact; it had travelled onto Cape Horn Road and was moving slowly. The debris noticed on Cape Horn Road came from the Volkswagen taillight which was probably smashed in the first impact. This finding is consistent with the plaintiff's account in his Statement given to Constable Hartle. Moving or stopped, the speed changes were the same.

[213] There were four distinct impacts in the first accident; the vehicles parted after the first and second. Thereafter, the Volkswagen was hit again and pushed against and up the steps of the dwelling house; that was the fourth impact, causing flexion then extension. The first impact was the most forceful) upper end of moderate, not severe. The subsequent impacts were significantly less forceful.

[214] I accept Mr. Bailey's evidence of speed changes and vehicle speeds in the first and second accidents.

[215] At the time of the first impact, the plaintiff was looking directly ahead and his body was facing to the front. The evidence does not suggest that he was leaning forward in either accident, and I find his body was resting against the seat back in both accidents. His head was not against the headrest in the first accident, for the seat was angled slightly. The angle reduced, but did not eliminate, the effectiveness of the headrest, on extension. On the second

impact in the first accident, his head was turned to the left; in that position the nerve was not stretched taut as it would have been had his head been turned to the right.

[216] There was no lateral vehicle impact in either the first or second accidents. There was extension/flexion movement of the head and neck in the four impacts and in the second accident. The plaintiff reported to Dr. Hershler that he was "flung repeatedly in different directions inside the car". I find he was speaking of extension/flexion of the head only, for the seat belt snugly held his body in position.

[217] The retractable seat belts were fully operational. The front seats were customized, being higher than those in the average Volkswagen. The headrest was incorporated into them, the top of the seat reaching his mid-head line.

[218] He suffered soft tissue injury in the upper and lower back, neck and shoulders in the first accident. His headaches are related to that injury. The second and third accidents aggravated the soft tissue injury. The swelling noticed by his parents just before the second accident and continuing thereafter, is not evidence of a long thoracic nerve injury, for the evidence does not suggest that the injury, in isolation, results in swelling. Atrophy of the serratus anterior muscle and hypertrophy developed over time. Given the plaintiff's musculature, likely the muscle held its bulk longer than on average. He felt pain in the C-5 area after the

accident; pain in that area is consistent with soft tissue injury. The plaintiff concedes he did not speak of swelling to Dr. Toews during his visits of April 20, June 22, July 30 and August 31. He did not do so when he saw Dr. Reebye in September and Dr. Reebye did not note swelling.

[219] The swelling noticed after the first accident and continuing after the second was probably acute muscle spasm related to soft tissue injury. Dr. Greenwood took the early signs of asymmetry to be muscle spasm. Dr. Toews' finding of tender paracervical muscles on April 9, 1990, does not establish a nerve palsy, for soft tissue injury will cause muscles to be tender and painful.

[220] Dr. Hershler opined that initial acute pain being indicative of a nerve injury would depend on the locus of it and could be caused, also, by soft tissue injury. The locus of injury to the plaintiff's nerve is not known. The nerve injury does not fall within Dr. Hershler's "definition" of acute pain. Although the pain was considerably greater on the left compared to the right side, people who complain of pain arising from soft tissue injury sometimes speak of it being more one-sided than bilateral. The plaintiff complained of bilateral pain.

[221] The evidence is in conflict with respect to pain arising from a lesion simpliciter to the long thoracic nerve. Dr. Elson opines that being a motor nerve were it pulled to render it functionless, it would not hurt. Dr. Reebye,

agreeing it is a motor nerve, said an injury to it would cause immediate acute pain. Dr. Allan testified that when the nerve is cut, often there is no pain. For me, the issue of whether the nerve lesion would cause immediate acute pain remains unresolved.

[222] The plaintiff's report to Dr. Allan of winging of the left scapula occurring after the first accident must be incorrect, for winging of the scapula does not manifest itself a short time after a nerve injury; the larger the muscle bulk, the longer it takes to develop. Dr. Reebye opined that winging is usually seen within a few weeks; Dr. Allan believes a patient will detect winging within a few days of a nerve injury and it would not be masked by muscle bulk. I prefer the evidence of Drs. Hershler, Bozek and Taunton on the point.

[223] Dr. Reebye did not see winging in September but he did not have the plaintiff perform the movement best designed to find it. He conceded that if hypertrophy was present in October 1990, the plaintiff had suffered a palsy of the long thoracic nerve, several months before. The asymmetry seen by Dr. Toews in October 1990 was hypertrophy.

[224] The nerve was injured before October 1990. The asymmetry was hypertrophy caused by muscles compensating for the palsy of the serratus anterior muscle. I accept Dr. Hershler's opinion that winging may have been present and Dr. Reebye missed it or it had not yet developed. Dr. Taunton did

not find winging when he examined the plaintiff in January 1991. He believes it was there to be seen but the muscle bulk masked it. He and Dr. Bozek described the winging as "mild", making it even more difficult to detect.

[225] On May 9, 1990, Lance Gibson attended Coburn Physiotherapy Clinic and the clinic noted a tingling in his left hand and weakness in his whole left arm. Mr. Gibson was lifting weights at that time. He took further treatment at Coburn in May and in June; there is no reference to hand or arm difficulty in the clinicals beyond that of May 9. In his diary the plaintiff noted "left arm giving out when lifting weights". He did not note hand or arm difficulty until June 26, with this entry "numbness in legs and arms". I conclude that the single entry of hand tingling and arm weakness and numbness in arms and legs (bilaterally) is not proof, on balance, of a nerve injury.

[226] On July 16, 1990, he complained to Dr. Toews of occasional numbness in both arms. On July 17, his diary entry reads "tingling sensation in arms and legs". On August 31, he complained to Dr. Toews of pain in his left arm. I accept Dr. Toews' opinion that the pain was related to the nerve injury causing palsy in the left serratus muscle, and find the nerve was damaged at some time before August 31, 1990.

[227] The damage to the long thoracic nerve and the serratus anterior muscle is permanent.

[228] I have described the nerve and muscle (pgs. 25 - 26 of these Reasons). The nerve can be injured by traction and compression. If it was injured in these accidents, it was probably caused by traction.

[229] While the nerve is long, it will accept, at most, a stretch of approximately one inch. It can be trapped in fibrous tissue and injured in that way. It is unlikely the plaintiff's nerve was entrapped in the scalenus muscle. The nerve becomes tense by downward thrust of the shoulder girdle and in a tilt of the head in the opposite direction to the nerve.

[230] An injury to the long thoracic nerve arises in various ways, including weightlifting and tennis. The more experienced the weightlifter, the less likely it is that the injury will arise from that activity. Sometimes the nerve injury is silent, occurring but not noticed. The cause of the injury is sometimes not known.

[231] A traction injury caused by a seat belt need not give rise to bruising or scraping of the skin. I prefer the evidence of Mr. Bailey and Dr. Taunton to Dr. Allan's, on the point.

[232] Dr. Bozek, when he first testified, spoke of the neck and shoulder:

> ...Whole body being moved forward and back. That would do it... The whole neck and shoulder region being driven forward and back. I don't think the actual position of the neck would be as important in that situation.

However, he testified in rebuttal:

> I believe that it's flexion, not extension, and lateral flexion in particular that is going to put the most stretch on the nerve... The flex position alone will not produce enough tightening to be critical. There must be some degree of lateral flexion also.
>
> . . .
>
> But it's the combination of these things that is going to do it. It's not going to be a single flexion forward movement that is going to put enough critical damage on the nerve.

I find the position of the plaintiff's head and neck is important when considering "cause". Drs. Taunton, Bozek, Elson and Allan considered a lateral flexion to the side away from the nerve as significant, probably critical.

[233] I pass now to address but a few of the many submissions of counsel.

[234] Ms. McGee, counsel for the plaintiff, was critical of Dr. Allan's various theories of causation, saying:

> In 12 years I have never seen an expert change their minds so many times in the course of one case... It goes to the weight to be given to her evidence.

With respect to Ms. McGee who presented and argued her case most ably, I find her criticism is unjustified. Dr. Allan was a fair and very careful witness. She has never understood how the nerve injury could result, given the mechanism of the first collision. She has not seen such an injury arising from a rear-end collision described in the literature; she has not seen it in 30 years of clinical practice. It has troubled her and she considered other possible causes for the injury. She knew the plaintiff was a weightlifter and examined the possibility of the injury arising in that way.

[235] Some time after Dr. Allan testified, she was presented with fresh evidence) of a fight and arrest that occurred in May 1990, and was asked if either could possibly have caused the injury and she opined that either or both could have. I do not see that as grasping for straws to avoid "the inevitable") that the accidents probably caused the injury. None of the doctors is certain that the accidents caused the injury; none is certain they did not. There is a parallel to be drawn between her consideration of causes other than the accident, and Dr. Bozek's suggestion in rebuttal that theoretically the plaintiff's heavy musculature may have increased the stretch on the nerve. He did not say so in his earlier testimony and did not speak of it in his Reports, nor did any other medical person. Dr. Allan, in her second Report, and Dr. Bozek in rebuttal, were both speculating with respect to cause.

[236] Ms. McGee submits Mr. Bailey's estimates of speed change and vehicle speeds were very conservative. He did not say so, indeed he was not asked and I am not prepared to speculate.

[237] Ms. McGee submits the axial motion spoken of by Mr. Bailey relates to the stretching of the neck, saying:

> It is the precise mechanism spoken of by Drs. Hershler, Taunton and Bozek. It is going on simultaneously with extension/flexion.

Mr. Bailey said little about the motion, but it occurs in all rear-end collisions. I expect if it were significant enough to cause or contribute to a long thoracic nerve injury in rear-end impacts, much would have been written of it. Drs. Elson and Hershler were not asked about it; Mr. Bailey does not have an expertise in causation of injury.

[238] Ms. McGee submits that with the seat slightly reclined, the driver's seat is not at the optimum position for reducing movement and she is correct. She asked the Court to prefer Mr. Bailey's opinion with respect to collision forces to that of Dr. Elson, because Elson did not mention it but assumed that the headrest did afford protection. Dr. Elson was not specifically cross-examined on the point but was asked about the position of a headrest, generally. The seat was slightly reclined and in that position the headrest afforded protection, but not maximum protection.

[239] Ms. McGee submits that Dr. Elson's assumptions with respect to speed change, speed at time of impact, and his description of a low velocity impact, all mentioned in his written Report, affect the weight that should be given to his evidence, generally. I do not agree. Dr. Elson conceded that he was not an expert in those matters and after he wrote his Report, submitted his findings of speed and speed change to Dr. Stewart, an accident reconstructionist, who concluded Elson's estimates were low. Dr. Elson accepted Dr. Stewart's calculations. At Trial, he acknowledged he had been incorrect in those matters, saying that did not affect the conclusions in his Report, for those conclusions would remain the same at any speed below 50 k.p.h.

[240] Ms. McGee emphasizes that Dr. Toews on April 9 found pain in the precise area where the nerve exits) in the areas of C-4 to C-7 and in the left trapezius. That is so, but those are the precise areas one could expect to find soft tissue pain and Lance Gibson suffered soft tissue injuries.

[241] Ms. McGee submits that if the nerve was damaged in either accident, it was likely so in the first. I agree. In the second accident, the seat belt lay over his right shoulder and impact forces in that accident were much less than those in the April 5 accident. The nerve was not partially injured in the first accident and "finished off" in the second.

PART XI

CONCLUSIONS WITH RESPECT TO CAUSATION

[242] The Supreme Court of Canada has said proof for legal purposes in a civil action differs from scientific or medical proof: ***Snell v. Farrell*** (1990), 72 D.L.R. (4th) 289. The case was one of medical malpractice. At p. 300, Sopinka J. delivering the judgment of the court, said:

> I am of the opinion that the dissatisfaction with the traditional approach to causation stems to a large extent from its too rigid application by the courts in many cases. Causation need not be determined by scientific precision. It is, as stated by Lord Salmon in *Alphacell Ltd. v. Woodward,* [1972] 2 All E.R. 475 (H.L.), at p. 490, "...essentially a practical question of fact which can best be answered by ordinary common sense rather than abstract metaphysical theory." Furthermore, as I observed earlier, the allocation of the burden of proof is not immutable. Both the burden and the standard of proof are flexible concepts. In *Blatch v. Archer* (1774), 1 Cowp. 63 at p. 65, 98 E.R. 969 at p. 970, Lord Mansfield stated: "It is certainly a maxim that all evidence is to be weighed according to the proof which it was in the power of one side to have produced, and in the power of the other to have contradicted."

And at p. 301:

> The legal or ultimate burden (of proof) remains with the plaintiff, but in the absence of evidence to the contrary adduced by the defendant, an inference of causation may be drawn, although positive or scientific proof of causation has not been adduced. If some evidence to the contrary is adduced by the defendant, the trial judge is entitled to take account of Lord Mansfield's famous precept. This is, I believe, what Lord Bridge had in mind in *Wilsher*

> when he referred to a "robust and pragmatic approach to the ... facts" (p. 569).
>
> It is not, therefore, essential that the medical experts provide a firm opinion supporting the plaintiff's theory of causation. Medical experts ordinarily determine causation in terms of certainties whereas a lesser standard is demanded by the law.

[243] Newbury J. (as she then was) adopted that principle in ***Pausche v. Wood*** (7 January 1994), Vancouver B920511 (B.C.S.C.), an action for damages arising from a motor vehicle accident. At pp. 16 and 17, she said:

> **Snell v. Farrell** has been applied by our Court of Appeal in another medical malpractice case, **Lankenau Estate v. Dutton** (1991) 79 D.L.R. (4th) 705, and by Braidwood, J. of this Court in **Shepard v. Wright** (Vancouver Registry No. B895424, dated November 7, 1991), a personal injury case in which the plaintiff, who was clearly diabetic at the time of the accident, successfully argued that the accident had seriously impaired her blood sugar control, thus accelerating the onset of diabetic retinopathy. The application of this "robust approach", which Mr. Maryn advocates in this case, does not however shift the onus of proof to the defendant in cases involving complex medical evidence. It still remains necessary for a plaintiff to satisfy the court on the evidence that notwithstanding the lack of certainty in medical opinion, it is more probable than not that the defendant's conduct caused the injury or condition complained of: **Snell v. Farrell, *supra,*** at 299; **Oiom v. Brassington** (1990) 52 B.C.L.R. (2d) 240 (B.C.C.A.).

[244] On a balance of probabilities, I find that the plaintiff's long thoracic nerve was not injured in any of the three accidents. My reasons follow.

[245] No medical witness had seen a reference in the literature to a nerve injury caused in a rear-end collision. Dr. Bozek had encountered it once, maybe twice, in his clinical experience, and in the one case it was a partial, not complete injury. He did not describe the mechanics of the collision in that case) speed, speed changes or whether the occupant was wearing a properly functioning seat belt.

[246] All the doctors ventured into the field of causation of the injury, but only Drs. Hershler and Elson were qualified to give opinion evidence in that field. Of the two, I conclude that Dr. Elson has the greater experience and I place greater weight on his opinions. An anatomist, he has spent the last 23 years investigating causation of injury arising from trauma, and he has never encountered a long thoracic nerve injury arising from a motor vehicle collision and seen but one reference to it in the literature. Dr. Taunton suspects that reports of the injury arising from motor vehicle accidents may not "make it" into the literature. That is entirely possible. On the other hand, rear-end collisions are endemic and a frequent cause of injury. Given their frequency and the infrequency of the injury arising from any cause, one might expect to see references in the literature to the nerve injury resulting from an accident of that character, for indeed it would be a novel medical event.

[247] Despite the deliberately brutal character of the first accident and the extensive damage caused to the smaller

vehicle, the first impact was not severe and the other impacts, significantly less forceful. The driver's seat was not damaged, it did not slide forward. I understood Mr. Bailey to say the seat belt would not exert significant downward pressure on the shoulder. The plaintiff's head and neck were not subjected to lateral forces.

[248] The character of the two collisions and the positions of the plaintiff's head, neck and body in each, render it improbable that the nerve was injured in either accident. Clearly, it was not injured in the third accident.

PART XII

OTHER POSSIBLE CAUSES

[249] While I can say with reasonable certainty that the nerve injury did not result from the accidents, I cannot, with any degree of certainty, find the cause of it. Sometimes the cause is not known; sometimes the injury is silent. The defendants say it possibly occurred in the arrest procedure in May 1990 or when the plaintiff was lifting heavy weight some time after the second accident, which he denies doing. I shall relate the evidence touching on these two possible causes.

THE MAY INCIDENT

[250] On May 4, 1990, the plaintiff and Jeff Bell were in a fight in New Westminster. The police attended and arrested the plaintiff. He was charged with assaulting Bell and after a trial in which he testified, he was convicted and sentenced by Judge Clare of the Provincial Court. He appealed his sentence to this court and the appeal came before Lander J. on September 21, 1991, who allowed the appeal and granted an absolute discharge.

[251] In these Reasons (pgs. 64 and 65) I have recited Dr. Allan's Report in which she related some of the plaintiff's evidence with respect to blows exchanged in the fight and the arrest procedure following it. I need not repeat that evidence. I note that her reference:

> He came over with a nightstick, put it around my throat and choked me and slammed my face to the ground and dragged me ... to the police van ....

was not evidence he gave at his criminal trial but what he told Lander J. on his sentence appeal.

[252] The defendants do not advance the fight with Bell as a possible cause of injury but submit that the plaintiff was untruthful at this Trial, for his evidence with respect to the fight was different from his account he gave at the criminal trial. They submit, too, that his evidence at this Trial with

respect to the arrest procedure differed from the account he gave to Judge Lander in his submission.

[253] At this Trial, in chief, he testified that he had been hit only once by Jeff Bell) "a light punch to the lip area". In cross-examination he was asked about his evidence at the earlier trial) that he was being hit by Bell when his jacket was over his head. He replied that the punches did not land; that Bell was hitting his hands extended in front of his face. The court later put to him his earlier trial evidence with respect to the fight related by Dr. Allan in her Report and he said, "That is a correct description." He was asked, too, if his statement given at the appeal with respect to the arrest procedure, was accurate) that his face was slammed to the ground, and he said that description was accurate but "not into the ground" and his face was not marked or bruised. I find his explanation of the fight given to Judge Clare was significantly different from the account he first gave to this court. It was the only time in all his testimony given over many days, that I concluded he was equivocating. The concept of "falsus in uno, falsus in omnibus" does not apply to him. Generally, I found him to be a credible witness.

[254] I accept that the arrest procedure he described to Judge Lander might possibly have caused the nerve injury. I am not prepared to extend my finding to "probable". He did not seek medical attention after the incident and his diary does not suggest his condition was worse after it.

[255] With respect to lifting heavy weights after the first two accidents, the evidence came from Jeff Bell and Christine Dibiasio. Bell is an experienced weightlifter and testified he saw the plaintiff at Canada Games gym a few weeks after the May fight, bench pressing, lifting weight with full arms extended, doing the military press and T-bar row. Bell said the plaintiff was using a 45 pound bar to which were attached 3 to 4 plates each side, each plate weighing 45 pounds. He saw him using 50 - 60 pound dumbbells in each hand. He was lifting weights beyond Bell's capacity which, he said, was about 135 pounds. He observed the plaintiff lifting that kind of weight frequently after the altercation. He had not seen the plaintiff at the pool or anywhere else before the altercation.

[256] The plaintiff says Bell's evidence is false) he was not lifting heavy weights after the accidents for he could not and he had too much respect for his body to risk injuring it further in its weakened condition.

[257] Christine Dibiasio is a head guard at Canada Games Pool and has been there 8 years, starting to work there in 1987. She used the weight room there in her leisure time. She does not know the plaintiff personally but she noticed him, for he was "good looking and had a great body". He was using weights regularly in the summer of 1990. She cannot say the exact weight he was lifting, but it was weight consistent with his size and body development. He was doing bench presses and the squat rack. She is certain it was the summer of 1990, for

she had suffered a foot injury in June 1990 and was rehabilitating herself at the facility, almost daily. She gave a written statement to an investigator for the Insurance Corporation of British Columbia on June 23, 1994, in which she said:

> Every workout exercise that he performed, including bench press, squats, curls, shrugs, etc., he performed with high weights. Lance is quite large and had he lifted light weights in his routine, this would have stuck out in my mind as being strange. He seemed to maintain his good physical appearance and size.

[258] On April 11, 1995, Ms. Dibiasio spoke with Cathleen McClughan, a lawyer employed in the office of Ms. McGee, and told her that she (Dibiasio) thought the plaintiff might be bench pressing but she did not observe him that closely and could not swear to it. She also told Ms. McClughan that she was not sure what exercises he was doing but is certain he was doing squats.

[259] Ms. McClughan testified that in the April 11, 1995, conversation, Ms. Dibiasio told her that she could not specifically say what exercises the plaintiff was performing, she just knew he was lifting weights but could not be specific about the quantity of weight. Ms. McClughan spoke to Ms. Dibiasio again on May 3, 1995, and in that conversation she was vague about the specific exercises but recalls squats and leg presses, but could not give the quantity of weight or the repetitions.

[260] The plaintiff denied Ms. Dibiasio's allegations. He said he went to the Canada Games Pool in June and July of 1990 about 3 times weekly for ½ hour at a time and was not in the weight room, except to use a calf-raising machine and the water fountain. He was rehabilitating his body, working certain muscles each day using light weight. He never did squats before or after the accident, for soccer had strongly developed his legs. He denies using a straight bar or bench press, for his unstable shoulder prevented it. A straight bar causes pain and he did not have stability on his left side. He used dumbbells at the pool; his capacity to lift was not anything like it had once been.

[261] The plaintiff believes that Ms. Dibiasio has mistaken him for his friend Damien Taylor, a football player and weightlifter, for the one is frequently mistaken for the other. Taylor lifted weights at the pool and sometimes they went there together. Taylor did not testify. Under cross-examination, Ms. Dibiasio was not asked if she knew Taylor and if she could have mistaken the plaintiff for him or for someone else.

[262] I find if the plaintiff was lifting heavy weights shortly after the accident, it is possible that the nerve injury arose in that fashion, but he was no novice weightlifter. He had been lifting weights constantly for many years.

[263] The defendants submit that he was lifting heavy weights after April 9, 1990, to preserve his splendid body. There is a note in his diary summarizing his condition during April 1990, which reads:

> Lost a lot of muscle strength, body is out of shape, can't compete in body building.

His summary of his condition at the end of May, reads:

> Lost a lot of muscle size and strength and losing muscle definition quickly.

The defendants point to photographs taken in 1988 which show a heavily muscled upper body, and photographs taken in May 1991, submitting his body strength appears to be unimpaired and he must have been using heavy weights to maintain it. The photographs do suggest his muscle bulk remained much the same, save for winging and hypertrophy, but in the absence of expert evidence with respect to body configuration and muscle development, I cannot be sure.

[264] Was he prepared to suffer pain and take risks to maintain a muscle development that he had worked so hard to attain? I am left not knowing where the truth lies with respect to lifting heavy weights after April 1990. Jeff Bell may be harbouring a grudge, although it was not apparent when he testified. Christine Dibiasio does not know the plaintiff and has no motive for testifying against his interest, but she

may be wrong with respect to the degree of weight he used in his exercises and the exercises themselves, for her statement was given 4 years after the events she described and by her admission half a million people use the Canada Games facility each year; many are weightlifters.

[265] With respect to credibility generally, all witnesses appeared to be reliable and credible, with one exception) Danielle Saklofsky, a former girlfriend of the plaintiff who came from Los Angeles to testify. She went out of her way to damage the plaintiff's case, and I conclude she was vindictive. She gave inconsistent evidence. Much of her evidence was denied by Eric Mallebranche, Dionne Brown and the plaintiff, and where her evidence conflicts with theirs, I prefer their evidence.

PART XIII

LIABILITY

[266] I find the defendants Rickett and Van Herrick's solely liable for the first accident. The defendant Hall has admitted liability for the second.

PART XIV

DAMAGES

[267] This is an assessment of damages for soft tissue injuries accompanied by some emotional overlay. I exclude from my consideration, the long thoracic nerve and serratus anterior muscle injuries and the pain and disabilities associated with them.

[268] It is not disputed the plaintiff suffered soft tissue injury in the first accident which was exacerbated in the second and third accidents. He did not suffer fresh injury in the second accident; he may have suffered a fresh neck injury in the third accident, but there is a paucity of evidence concerning that injury. Dr. Toews characterized his soft tissue injuries as moderately severe and Ms. Guistra in her submission, adopted that characterization. Dr. Hershler spoke of them as substantial.

[269] I find he suffered moderately severe soft tissue injuries in his neck and back accompanied by severe headaches, all of which have improved over time, but not resolved. They are chronic. With the help of a martial arts trainer during the year before Trial he noticed a significant improvement in mobility and some relief of pain.

[270] The plaintiff has been an excellent patient, making every effort to rehabilitate himself. For 6 years he has taken massage, physiotherapy and chiropractic; he has exercised. He purchased an E.M.S. machine to loosen his muscles and continues to use it.

[271] Since 1990, he has experienced sleeplessness resulting in constant fatigue which he believes has contributed to his depression. He has experienced emotional difficulties; for many months after April 5, 1990, he lived in fear of retribution from Rickett. He withdrew from social contact with friends. He was not able to join them in customary athletic activities and became solitary. His social withdrawal continued until he began to date Danielle Saklofsky, in May or June 1991. It has been difficult for him to accept his physical limitations) he does not play tennis, he does not engage in his former athletic activities, he no longer jogs, for it affects his back. He swims using only a breast stroke.

[272] After the third accident, his depression increased. He was treated by two psychologists, but not helped. While he does not acknowledge it, I suspect his breakup with Saklofsky right after the third accident contributed to his increased depression. He spoke of feeling more relieved than sorry that the relationship had ended. Dionne Brown believes the breakup was hard for him because he loved Saklofsky and said the effect of the breakup was not short-lived.

THE MEDICAL EVIDENCE IN RESPECT OF SOFT TISSUE INJURY

Dr. Toews

[273] In his Report of June 15, 1992, Dr. Toews wrote it was his impression the plaintiff had made little or no progress in recovery by the time of the second accident. On November 16, 1992, the plaintiff was continuing to complain of persistent headaches, weak muscles and pain down the arms to the back and in the low back. Those complaints continued unabated through 1993.

[274] In January 1994, Lance Gibson spoke of low back pain being exacerbated by simple tasks. At Trial, Dr. Toews said:

> He will recover emotionally. I think a lot of the muscle spasm and pain he will recover from. The muscle paralysis and nerve quality will not recover.

[275] Despite a contrary opinion in his June 15, 1992, Report, at trial Dr. Toews said:

> It is likely there may be some degenerative condition, but I cannot predict it.

Dr. Greenwood

[276] Dr. Greenwood treated him with chiropractic over the 5 years from the accident to Trial. In his 1994 Report, Dr. Greenwood spoke of a moderate to severe trauma which would

likely contribute to pain or disability over the next 2 - 3 years, with possible degenerative joint changes developing over the next 5 - 10 years.

[277] In a subsequent Report dated January 24, 1995, Dr. Greenwood wrote:

> The subluxation complexes affecting Mr. Gibson as reported in my previous report have improved slowly. He is no longer troubled by the chronic inflexibility and stiffness. Through chiropractic adjustments, modification of his exercise program, and an increase in stretching, Mr. Gibson has been able to rehabilitate his spine to a moderate level. Without persisting diligence to his exercise program and periodic adjustments to his spine, he would most likely relapse to a point of chronic inflexibility and discomfort.
>
> . . .
>
> Overall, Mr. Gibson has made good improvement, but there are still signs of persisting spinal dysfunction, as well as soft tissue fibrosis subsequent to his injuries. He will likely continue to feel the effects of these injuries on a chronic basis to a mild degree for several more months. These type of injuries often provoke a degenerative response in the spinal joints and associated soft tissues and neurologic structures not easily recognized until several years has elapsed. I will continue to encourage Mr. Gibson to monitor his spine through periodic examinations at two to three month intervals for the next 2 years.

Dr. Taunton

[278] In his June 15, 1992, Report, Dr. Taunton spoke of chronic neck pain and spasm and possible degenerative disc changes later in life. When testifying in rebuttal, Dr. Taunton thought it improbable that he would ever make a full

recovery from his soft tissue injuries, given the long period of time the symptoms have persisted.

Dr. Hershler

[279] In his Report of May 12, 1993, Dr. Hershler wrote:

> MANAGEMENT. He had a nerve injury affecting the movement of the left scapula but he also has substantial soft tissue muscle pain which I think can be relieved with time.

Dr. Bozek

[280] In his Report of March 26, 1991, Dr. Bozek referred to the plaintiff's subjective report:

> Plaintiff has noticed definite improvement in headaches in the course of this past year. They are not as frequent, occurring 2 - 3 times a week which will not limit his activities in any way.
>
> His neck has improved to a level 6 out of 10, fluctuating (in intensity). He always has some neck pain.

Dr. Allan

[281] She took a subjective report from the plaintiff. In her Report of December 21, 1992, she gave her conclusions:

> In summary, it is my impression that Mr. Gibson suffered soft tissue injuries to his neck and low back in the motor vehicle accident on April 5, 1990,

> and that depression developed as a result of his injuries. These symptoms were aggravated by the accident on April 19, 1990, although the second accident was apparently much less severe. The symptoms persisted until the third accident August 29, 1992, which appears to have contributed to persisting symptoms of neck and low back pain, and also depression. Depression probably plays a major role in the persistence of the painful symptoms in the neck and low back. Continued use of diazepam will contribute to his depression and it is recommended that this drug be stopped. Appropriate treatment of the depression might include tricyclic antidepressant medication. A gradual increase in activities should be recommended. One would not anticipate any permanent neurologic deficit as a result of these injuries.

The Plaintiff

[282] He graded his pain) 0 is no pain, 10 is the worst pain ever. He was asked to describe his condition (May 1995) and said:

) Headaches) I experience them everyday, and when they are acute my eyes tear and I can scarcely see. In the acute stage they are 10 on the pain scale. They are not always acute.

) Lower back is bad) left side with pain extending up the thick muscle to mid-back and up to my rhomboids.

) My pain is between 8 - 10, 50% of the time.

) On my best days it is 4 - 5 on the pain scale. I cannot remember having a pain-free day.

[283] In summary, I find the plaintiff suffered moderately severe soft tissue injuries 6 years ago from which he continues to suffer pain, but has had some improvement. He probably will never be completely free of pain. He is precluded from engaging in many of the sporting activities in which he excelled. He has suffered depression causing him to withdraw from social contact for a time. His understandable pride in his body has been wounded. He lived in fear of Rickett's retribution for months. The depression and fear constitute the emotional overlay I spoke of earlier.

NON-PECUNIARY DAMAGES AWARD

[284] In ***Cory v. Marsh*** (1993), 77 B.C.L.R. (2d) 248 (C.A.), McEachern C.J.B.C. (Wood J.A. concurring), spoke of a range for non-pecuniary damages in cases of moderate soft tissue injury accompanied by continuing complaints or other difficulties.

At p. 252, he said:

> I have examined a great many decisions decided in our Courts in addition to those cited by counsel. They are largely cases of moderate soft tissue injuries to persons in the age group of these plaintiffs, but with continuing complaints, or other difficulties. In some of them the ongoing problems endured by victims of motor vehicle accidents include depression and other psychological problems. I shall set out a brief sampling of these cases, which are only a few of the many I have considered:

He briefly summarized 11 cases at pp. 253 - 254 of the Reasons, and said:

> These cases suggest a range for the kind of non-pecuniary damages suffered by these Plaintiffs of from $20,000 to $40,000.

[285] In ***Cory***, a jury awarded Mrs. Cory $94,000 and Mr. Cory $71,250 non-pecuniary damages. McEachern C.J.B.C. reduced the awards to $50,000 and $40,000 respectively.

[286] Mr. and Mrs. Cory were 50 and 48 years of age at the time of the accident and the ages of the plaintiffs in the 11 cases considered by McEachern C.J.B.C., varied from the mid-40's to mid-50's save for one, who was 40.

[287] Lance Gibson was 19 years of age when he was first injured and that is a distinguishing feature and a material one, given that he will probably suffer some soft tissue pain for a great many more years than the Corys and those plaintiffs whose cases were reviewed in the Court of Appeal.

[288] Three years have passed since ***Cory*** and it is appropriate to consider the inflation factor over that time) approximately $1,600 calculated on a $40,000 award in 1993.

[289] I have considered the cases submitted to me with respect to non-pecuniary damages. They have been a useful guide.

[290] Arising from the 3 accidents, for non-pecuniary damages I award the plaintiff) $45,000.

LOSS OF CAPITAL ASSET, LOSS OF FUTURE EARNING CAPACITY AND FUTURE WAGE LOSS

[291] Lance Gibson has lost a capital asset and his future earning capacity has been affected, but solely as a result of the nerve injury. These defendants are not liable for those losses. They are not liable, either, for future wage loss or cost of retraining, for that loss and expense do not flow from the soft tissue injuries. With respect to loss of a capital asset, there is no vocational assessment of the plaintiff in evidence. I am not persuaded there is a permanent loss of physical capacity arising from soft tissue injury that justifies an award for loss of a capital asset. He was able to complete two years at Douglas College following the accidents which suggests the capacity to sit for a prolonged period; I do not suggest that he did so without experiencing pain. He drives frequently from Seattle where he has been living, to work in Vancouver. He acts. He does stunt work; his role in "Rumble in the Bronx" was vigorous. He lifts weights, he keeps himself in excellent physical trim.

PAST INCOME LOSS

[292] Before April 5, 1990, Lance Gibson had earned money from part-time work in films. In 1988, his first year, he

earned $688; in 1989, his earnings increased to $3,969.26; in 1990, until his injury on April 5, he earned $3,758.22. In all of 1991, he earned $316.94, and in 1992, $1,092.21.

[293] In 1988, he entered Douglas College and thereafter was a full-time student until June 1992. He worked during the summers and occasionally in the winter months at odd jobs. From this part-time (not film) work he earned $2,328.31 in 1988; in 1989, $3,113.06, and in 1990, $266.14 before April 5.

[294] The parties are far apart on quantum of past wage loss. I shall briefly relate their positions.

[295] Ms. Guistra, counsel for Van Herrick's and the Third Party, submits that his graduation from Douglas College was not delayed because of the accidents. But for them, he would have continued with odd jobs and part-time work in film until graduation. Upon graduation, he would have decided on a career path. Ms. Guistra concedes his soft tissue injuries probably prevented him engaging in part-time work until June 1992 and he should be compensated for that loss. The compensation she proposes is) $5,000 a year until June 1992, from which would be deducted his 1991 and 1992 earnings) $2,000 from all sources. She submits he should be compensated for an earning loss for 6 months after the third accident) $5,000 less $1,400 which he earned in that time period, for a total award of $11,600 for past wage loss. That is on the assumption that he did not suffer a nerve injury in the accidents. Ms. Guistra

quarrels with the past income loss advanced by Ms. McGee, which I shall now relate.

[296] Ms. McGee submitted a past income loss based on the assumption that the accidents caused a long thoracic nerve injury. She conceded that until his graduation, the plaintiff would have worked part-time in film and at casual jobs. However, her claim for past income loss from April 5, 1990 to December 31, 1992, after taking into account his earnings, is $61,000, approximately. This calculation is based on these premises. To arrive at a 1990 income loss, she took his actual 1990 film income, transposed it to a monthly basis and assumed he would have earned the same each month thereafter until the year end. She submitted that he had begun to break into stunt work in 1990 (he had 2 stunts before April 5) and was doing extra film work, and in 3 months in 1990 working only about 7 days, he earned almost as much in film as he had earned in the whole of 1989. She says he was becoming known in the industry, and the industry itself was experiencing phenomenal growth. Ms. McGee assumed his income would have increased to $18,500 in 1991, based on his increased experience and his exposure in the industry. She assumed he would have increased his earnings in 1992 (for the year) to $24,050, based on those factors. She assumed, too, that he would have continued to earn $3,500 from odd jobs in 1990 - 1992. (I calculate he earned $3,113.06 at odd jobs in 1989).

[297] I am persuaded that but for the accidents, in film he would have earned considerably more in 1990 than he did in 1989, and in each of the years 1991 and 1992, given his increased experience making him better known.

[298] I am not persuaded that his 1990 earnings, January 1 - April 5, should be extrapolated for the rest of the year and used to establish income loss in the 2 succeeding years. My reason is this) there are productive and fallow times for an actor/stuntman in Vancouver, the income is anything but steady. For example, in 1990 he earned $893 in January, $625 in February, nothing in March, $1,361 in April; thereafter he was unable to work. His earnings in 1991 are not fairly representative. In 1992, he earned $150 in May, $70.81 in June, $229 in October, $69.27 in November and $446 in December. The same irregular pattern occurred in 1993. In 1994, his best year, he earned $12,838.69.

[299] To arrive at a fair income loss from part-time work in film is crystal ball gazing, indeed. I find he had an income loss from film in 1990 of $10,000; in 1991, $12,500, and in 1992, $15,000. In addition, he suffered an income loss due to his inability to take on part-time jobs in the years 1990 - 1992 of $3,100 in each of those years.

[300] His actual earnings must be deducted from the award for past income loss.

[301] I find he should be compensated for past income loss from all 3 accidents until December 1992.

[302] Taking into account his earnings) for past income loss I award $40,558.

PAST SPECIAL DAMAGES

[303] By agreement, I award the plaintiff $2,840.77.

PART XV

APPORTIONMENT OF DAMAGES

[304] Ms. McGee submitted that apportionment of damages between the first and second accidents should be 70% for the first and 30% for the second. Ms. Guistra agreed. I do not.

[305] The second accident was much less severe than the first and the medical evidence establishes that it did not cause fresh injury, but aggravated the plaintiff's injuries resulting from the first accident. That can be said of the third accident, too, for I am not able to come to any reasonable conclusions about a possible fresh injury to the plaintiff's neck or award damages for it. All parties have agreed that 5% of the damages awarded to the plaintiff in these trials, will be attributable to the third accident.

[306] Mr. Kent-Snowsell, counsel for the defendant Hall, relies on the majority judgment in ***Long v. Thiessen*** (1968), 65 W.W.R. 577 (B.C.C.A.). Robertson J.A. (Nemetz J.A. (as he then was) concurring), said at p. 591:

> Because the injuries inflicted in the second accident were superimposed upon the then residual effects of the injuries inflicted in the first accident, it is a matter of the greatest difficulty to determine what damages should be awarded for each set of injuries. The plaintiff should not receive more in respect of the first accident than he would if the second had not occurred; nor should he receive less because it did occur.
>
> Upon whom should the burden resulting from the difficulty of assessing damages fall? I think that it should fall on the defendant who caused the second accident, Laliberte. When he "found" the plaintiff, the plaintiff had a cause of action against the Thiessens; if Laliberte made the proof of the plaintiff's damages resulting from the first accident more difficult, Laliberte should make good any loss thereby resulting to the plaintiff. At the same time, the plaintiff should not be compensated twice for any injuries that are hard to segregate. I think that the way in which justice can best be done here is: (a) To assess as best one can what the plaintiff would have recovered against the Thiessens had his action against them been tried on April 22, 1966 (the day before the second accident), and to award damages accordingly; (b) To assess global damages as of the date of the trial in respect of both accidents; and (c) To deduct the amount under (a) from the amount under (b) and award damages against Laliberte in the amount of the difference.

[307] Adopting that principle, I find that an award to the plaintiff on the day before the second accident would have been 90% of the global damages awarded in these Reasons, including non-pecuniary, specials and past income loss.

[308] The defendant Hall, therefore, is liable for 10% of the damage awards. Mr. Kent-Snowsell submitted that Hall should be liable for non-pecuniary damages only. I do not agree, for it is not possible to make that distinction, given the evidence.

PART XVI

ISSUES TO BE ADDRESSED

[309] Counsel wish to address the issue of costs and they may, either orally or in writing. I wish them to address the issue of future "special damages" as well.

[310] I express my gratitude to all counsel for their able advocacy and helpful submissions in a long and difficult trial.

"G.R. COULTAS, J."

Vancouver, B.C.