

Noteworthy Decision Summary

Decision: WCAT-2005-06866**Panel:** Marguerite Mousseau**Decision Date:** December 23, 2005***Whole body vibration – Degenerative spinal disease – Occupational disease – Causation – Ergonomic assessment – Policy items #26.50 and #97.10 of the Rehabilitation Services and Claims Manual, Volume I***

The worker claimed his degenerative spinal disease was caused by exposure to whole body vibration while working as a truck driver. The panel denied the worker's appeal. The amplitude and duration of vibration the worker was exposed to were not sufficient to establish a probability that the worker's spinal degeneration was a result of occupational exposure.

The worker was employed as a truck driver for twenty years. In 1988 he sustained a herniated disc at the L4-5 level and received a permanent disability award of 2.0%. In 1999 the worker sought compensation for disc herniation at the L3-4 level. A previous Workers' Compensation Appeal Tribunal (WCAT) panel concluded the worker's L3-4 disc herniation and subsequent surgery were not a compensable consequence of the L4-5 disc herniation. In 2002, the worker claimed he had progressive lower back deterioration caused by whole body vibration. The Workers' Compensation Board (Board) denied his claim. The worker requested a review by the Review Division of the Board, which confirmed the Board decision. The worker appealed to WCAT.

The worker provided a medical opinion by an orthopaedic surgeon. He stated that the worker had mechanical back pain which was probably primarily disc in origin but had elements of facet and soft tissue involvement. The pain was likely primarily related to changes at the L4-5 motion segment. He concluded that the primary risk factor during the onset of the worker's back symptoms was exposure to whole body vibration during his work activities.

The panel noted that the *Workers Compensation Act* provides several mechanisms for recognizing a disease or condition as an occupational disease, depending on the strength of the association between that disease and a particular occupation or process. The panel also noted that policy item #26.50 of the *Rehabilitation Services and Claims Manual, Volume I* (RSCM I) discusses compensation in relation to degenerative processes. Item #26.50 provides that if a worker is suffering from a type of bodily deterioration that affects the population at large, it is not compensable simply because of a possibility that work may be one of the range of variables influencing the pace of that degeneration.

The panel noted that sections 7.10 to 7.15 of the *Occupational Health & Safety Regulation* impose obligations on employers to assess the exposure of workers to vibration by reference to international standards based on the amplitude and duration of the vibration. The panel noted that the typical vibration levels of the type of heavy equipment operated by the worker - a truck driven on paved roads - and the duration of exposure, were not sufficient to establish a probability that the worker's spinal degeneration was due to his occupation. The panel then considered item #97.10 RSCM I, which addresses the evidentiary basis for decision making. The panel concluded there was not enough evidence to conclude the worker's spinal degeneration was due to his exposure to whole body vibration. The panel distinguished *Appeal Division Decision #99-1868* as the worker in that case provided an individualized ergonomic assessment report.

The worker's appeal was denied.

WCAT Decision Number : WCAT-2005-06866
WCAT Decision Date: December 23, 2005
Panel: Marguerite Mousseau, Vice Chair

Introduction

The worker appeals *Review Division Decision #21926*, dated January 31, 2005 in which the review officer confirmed a decision of the Workers' Compensation Board (Board) that the worker's back condition was not due to his exposure to whole body vibration (WBV).

The Workers' Compensation Appeal Tribunal (WCAT) has jurisdiction to consider this appeal under section 239(1) of the *Workers Compensation Act* (Act) as an appeal from a final decision made by a review officer under section 96.2 of the Act.

The worker is represented by legal counsel who has provided a submission on his behalf. There is no employer of record with respect to this claim.

Issue(s)

The issue on this appeal is whether the worker's occupational exposure to WBV had causative significance in his spinal degeneration and L3-4 disc herniation.

Oral Hearing

The worker, through his counsel, requested an oral hearing of this appeal. In a letter dated June 2, 2005 his representative noted that an oral hearing is almost never required to deal with cases involving low back pain due to exposure to occupational WBV. In this case, however, the review officer had denied the review partly on the basis of speculation that non-occupational factors, including a ball throwing incident, two motor vehicle accidents, a crush injury and smoking had caused the worker's condition.

The representative stated that there was no ball throwing incident and no motor vehicle accident. In addition, the crush injury was a compensable injury. Accordingly, the only non-occupational risk factor was smoking. He submitted that the WCAT panel had to hear the worker's testimony on this point. In a July 25, 2005 letter the representative reiterated his submission that there should be an oral hearing to address the review officer's allegations of a ball throwing incident, a 1994 motor vehicle accident and a 1999 motor vehicle accident. The only motor vehicle accident resulting in injuries was a 1980 compensable multiple crushing injury.

Item #8.90 of the *Manual of Rules of Practice and Procedure* provides that WCAT will normally conduct an appeal on a read and review basis where the issues are largely medical, legal, or policy based, and credibility is not an issue. In this case, the review officer merely noted that Dr. Thompson, orthopaedic surgeon, had identified several incidents in the worker's medical history without addressing their significance. The issue that arises from her decision is the medical significance of these events as non-occupational risk factors for spinal degeneration. This is determined by consideration of the medical reports, if any, related to documented incidents. The worker's evidence will not assist in making that determination.

Since the issue is largely medical and policy based and there is no issue of credibility, I am satisfied that the worker's appeal may be fairly adjudicated on a read and review basis.

Background

The worker's date of birth is October 25, 1954. He has been employed primarily as a truck driver since he was approximately 22 years old. In 1988 he was tying down a load of lumber when the bar gave way. He sustained a disc herniation at the L4-5 level and had surgery four months later. As a result of this injury, he received a permanent partial disability award based on an impairment equivalent to 2% of a totally disabled person.

In 1999 the worker sought compensation for a disc herniation at the L3-4 level which he felt was related to the 1988 incident. In *WCAT Decision #2003-01724*, dated July 28, 2003, a WCAT panel concluded that the worker's L3-4 disc herniation and subsequent surgery were not a compensable consequence of his L4-5 disc herniation.

In the meantime, the worker submitted an application for compensation for progressive deterioration of his lower back due to WBV. This application was submitted on January 30, 2002. In a decision letter dated July 2, 2004 a Board officer informed the worker that this claim was not accepted. A review officer confirmed this decision in *Review Division Decision #21926* and that decision forms the basis of this appeal.

The worker has submitted a work history outlining his employment as a truck driver over approximately 20 years. His representative has submitted a medical-legal opinion by Dr. Thompson dated December 3, 2001 and a subsequent report by Dr. Thompson dated November 1, 2005, which he prepared in response to the review officer's decision, as requested by the worker's counsel.

In addition, counsel provided copies of two appellate level decisions (*Appeal Division Decision #99-1868*, dated December 6, 1999, and a Workers' Compensation Review Board decision from which the date has been excised) as well as the following reports relating to WBV and back pain:

- “Back Disorders and Whole-Body Vibration in Equipment Operators and Truck Drivers, Epidemiology, Pathology and Exposure Limits” (1998 report), which was prepared by the worker’s counsel and Ms. Judy Village, ergonomist, in 1998.
- Addendum to: “Back Disorders and Whole Body Vibration in Equipment Operators and Truck Drivers: Epidemiology, Pathology and Exposure Limits” (1999 report).
- “Whole Body Vibration and Back Disorders Among Motor Vehicle Drivers and Heavy Equipment Operators, A Review of Scientific Evidence,” a report prepared by Dr. Teschke et al, dated April 4, 1999 (Teschke report).

The employment history provided by the worker states that he started working on his parent’s farm in 1969, at the age of 15. When he was approximately 22 years old, he obtained his Class 1 License. Over the following 25 years or so, he worked 1 to 2 years with seven different employers, 3 ½ years with an eighth employer and 5 ½ years with a ninth employer. No dates are provided but this record indicates that he spent approximately 20 years driving truck with what he stated were periods in between when he worked as a labourer in construction, due to losing his driving privileges. There is no indication as to when or how often this happened or for how long.

As a truck driver, the worker hauled hay, gravel, lumber, grain, and other freight, primarily on paved roads. Some of this involved local driving and some of it was long haul.

Dr. Thompson in his medical-legal opinion of December 3, 2001 stated that the worker has constant low back pain with periodic radiation into the right buttock and groin. He described a 17-year history of truck driving and he stated that many of the trucks were not equipped with an air ride. He said that the worker has also spent some time working on oil rigs and doing carpentry. He notes that the worker’s work history documented operation of heavy equipment and large trucks for 8 to 14 hours per day and significant amounts of lifting, ranging between 8 and 125 pounds were also recorded. I note that the handwritten document titled “My Work History” which was submitted by the worker to the Board does not refer to hours of work or amounts lifted or to operation of heavy equipment, although he does say that he worked on his parent’s farm. This is the only work history that I have located on either claim file so the source of the additional information referenced by Dr. Thompson is unclear.

Dr. Thompson also reviewed the radiographic investigations of the worker’s lumbar spine, dating back to 1994 as well as a number of medical reports provided by the worker’s counsel dating back to 1988.

Dr. Thompson’s assessment of the worker was that he had mechanical back pain which was “probably primarily disc in origin” but had elements of facet and soft tissue

involvement. The distribution of pain combined with the imaging obtained in 1988 and 1999 indicated that the pain was “probably primarily related to changes at the L4,5 motion segment.”

Dr. Thompson went on to provide the following comments and opinion:

The relevance of whole body vibration and spinal degeneration has been documented. Dr. Myers noted in his letter to the WCB that there was no history of back injury outside of work. The work history provided by [the worker] and the record of work history for heavy equipment operation and manual lifting suggests that work activity was probably the primary causative factor in [the worker's] ongoing back impairment and disability. [The worker] has been exposed to activity that places him at risk for development of disc pathology. No other injury or activity of significance has been documented.

Although other risk factors are present, these are probably less important than the work history. Age is generally regarded as a risk factor for disc herniation. In [the worker's] situation, age simply reflects the cumulative stress that work activity has placed on his back over time. There was no family history of back or disc problems to suggest a significant genetic component. Although he is a smoker, this association has not been clearly established. The above factors may have contributed to his back problems to a certain degree, but are probably less important than his work history.

The primary underlying cause for [the worker's] back problems is probably related to his work activity over the years. Although an acute flare up in back symptoms in 1998 was probably due to the L3,4 disc herniation, his current clinical findings suggest that his original injury at L4,5 is probably the dominant source of his complaints. Both the L4,5 and L3,4 disc lesions probably arose primarily as a result of accumulated stress from work activity.

In Dr. Thompson's follow-up report of November 1, 2005 he clarified that the worker's primary occupation had been that of a commercial truck driver. He noted that the equipment the worker operated in the earlier stages of his career did not have the air ride and air suspension of modern trucks. Given the time involved and equipment operated by the worker, “the primary risk factor during the onset of his back symptoms was related to exposure to whole body vibration.” Dr. Thompson also reviewed the non-occupational risk factors described in his previous report and stated that the worker's prolonged exposure to WBV was probably the primary risk factor for spinal degeneration and disc herniation.

Finally, Dr. Thompson addressed an error made by the review officer in which she equated pathology visible on radiographic imaging with clinical findings. He noted that symptoms associated with spinal degeneration can fluctuate and therefore the clinical findings would also fluctuate but the underlying pathology identified in the investigations remained even when there were no clinical symptoms. Dr. Thompson then summarized his previously stated view that WBV was the most significant risk factor for spinal degeneration to which the worker had been exposed.

Law and Policy

Section 5 of the Act provides that compensation is paid for personal injury arising out of and in the course of employment. Section 6 of the Act provides that compensation is paid for an occupational disease that is due to the nature of the employment.

The Act provides several mechanisms for recognizing a disease or condition as an occupational disease, depending on the strength of the association between that disease and a particular occupation or process.

Osteoarthritis has not been recognized as an occupational disease. Policy item #26.50 of the *Rehabilitation Services and Claims Manual, Volume I* (RSCM I) discusses workers' compensation in relation to degenerative processes. It provides:

It often happens that disability results from the natural aging process. At times the pace of the process and each aspect of it can be influenced by environmental circumstances and activity. Work, leisure activities, genetic factors, air purity, diet, medical care, personal hygiene, personal relations and psychological make-up are all factors that may influence the pace of many kinds of natural degeneration. Where the degeneration is of a kind that affects the population at large, it is difficult for the Board to attempt a measurement of the significance of each occupation on each kind of degeneration. It is also difficult to determine whether a particular occupation had any significant effect in advancing the pace of degeneration compared with other occupations, or compared with a life of leisure. Where a degenerative process or condition is of a kind that affects the population at large, it will not be designated or recognized by the Board as an occupational disease unless employment causation can be established.

If a worker is suffering from a kind of bodily deterioration that affects the population at large, it is not compensable simply because of a possibility that work may be one of the range of variables influencing the pace of that degeneration. For the disability to be compensable, the evidence must establish that the work activity brought about a disability that would

probably not otherwise have occurred, or that the work activity significantly advanced the development of a disability that would otherwise probably not have occurred until later.

For example, osteoarthritis in the spine, rheumatoid arthritis, and degenerative disc disease have not been designated or recognized under #26.01, #26.02, or #26.03 as occupational diseases. (4), (5)

Reasons and Decision

As the authors of the 1998 report noted, the Board recognizes that WBV may be problematic. Section 7.10 to 7.15 of the Occupational Health & Safety Regulation impose obligations on employers to assess the exposure of workers to WBV by reference to standards developed by the International Standards Organization (ISO) and to inform workers of risks where they are exposed to excessive vibration. This regulation was most recently amended in 2004, effective January 2005.

In the 1998 report, the authors describe characteristics of vibration which are used in assessing the degree of exposure to WBV. The amplitude of vibration is a particularly significant measure which is described in terms of root mean square (RMS) acceleration values. The authors define the RMS as “a type of mathematical averaging (involving the square root of the mean squared values of the motion) that is proportional to the energy content of the vibration over time.” Vibration acceleration levels are in units of metres per second² (m/s²).

The authors also note the significance of the duration of exposure, noting that there is a direct relationship between the duration of exposure to a particular vibration amplitude and its effects. Both the amplitude of vibration and its duration are used in establishing international standards for exposure to vibration.

The authors describe three well-recognized standards for exposure limits to WBV: the ISO Guide for the evaluation of human exposure to WBV (various versions from 1974 to 1997); the “European Economic Community Council Directive” (1993); and, the “German Federal Ministry of Labour” limit dose value and total vibration dose (1994). The authors conclude, after comparing the exposure limits described in these standards, that exposures below 0.25 m/s² for eight-hour durations are not likely to cause back disorders. In the range of 0.315 m/s² to 0.63 m/s² for eight-hour durations, back disorders may occur and above 0.63 m/s², and especially above 0.8 m/s², back disorders are likely to occur. The latter is particularly true if the exposure is based on a history of ten years or more.

The authors note, at page 2 of their report, that “there is evidence that vibration amplitudes of 0.8 m/s² and higher for durations of 10 years or more are associated with increased back disorders (Dupuis, 1994).” At page 17 of the 1998 report, the authors

provide a table (Table 1) which summarizes the vibration levels cited in the literature for various types of equipment. This table indicates that the typical vibration level for trucks driven on paved roads is 0.55 m/s^2 .

In the Teschke report, Dr. Teschke et al conducted a literature review respecting WBV and the operation of heavy equipment or driving motor vehicles. They concluded that there was an elevated risk of back disorders due to WBV in a broad range of driving occupations, including truck drivers, earth moving machine operators, bulldozer operators, forklift drivers, crane operators, straddle carrier operators, agricultural workers, tractor drivers, bus drivers, helicopter pilots, subway operators, reindeer herders, and vehicle drivers not otherwise specified.

In this case, I note that the type of heavy equipment operated by the worker, a truck driven on paved roads, is indicated as having typical vibration levels of 0.55 m/s^2 which is within the range where back disorders “may occur” according to the authors of the 1998 report. Assuming that this is correct, it is clearly not sufficient to demonstrate that the worker operated such equipment for 20 years in order to establish a probability that the worker’s spinal degeneration is due to his occupation. Yet, this appears to be the basis for Dr. Thompson’s opinion.

In his medical-legal report, Dr. Thompson acknowledges that age is generally recognized as a risk factor for disc herniation yet he goes on to say that, in the worker’s case, “age simply reflects the cumulative stress that work activity has placed on his back over time.” As I understand this comment, Dr. Thompson appears to be saying that the worker is unaffected by the degenerative processes associated with aging, in and of itself; that, in this particular case, his work is the cause of his spinal degeneration. Dr. Thompson ultimately attributes all of the worker’s spinal problems to WBV, including the disc herniation at the L4-5 level which occurred in 1988, despite all of the evidence on that file being that the L4-5 disc herniation was caused by an incident involving a twisting back motion which was followed by an acute onset of low back pain, radiating down the right leg.

As an aside, I note that the cause of the 1988 disc herniation was adjudicated in 1988 and I have no jurisdiction to address that matter. To the extent that the worker’s current symptoms are attributable to changes at that level, as has been stated by Dr. Thompson, the worker has received a permanent disability award for impairment as a result of the changes at that level.

I find no reasoning in this opinion that assists in establishing a link between the worker’s spinal degeneration, including his L3-4 disc herniation, and his exposure to WBV. It is possible that the worker’s spinal degeneration has been caused or accelerated by his exposure to WBV but I do not find that these reports and the medical opinion evidence establish anything more than a possibility of work causation. In this regard I note item #97.10 of the RSCM I which addresses the evidentiary basis for decision making.

It states, "While an absence of positive data does not necessarily mean that a condition is not related to a person's employment, it may mean that there is a lack of evidence that any such relationship exists." I consider that, in this case, there is a lack of evidence of a causal relationship between the worker's spinal degeneration and his exposure to WBV beyond a possibility of such a relationship.

This is distinguishable from the Appeal Division decision cited by counsel. In that appeal, the panel considered the above-noted reports as well as an ergonomic assessment report prepared by Ms. Village specifically with respect to the worker, appellant. That worker had spent 35 years operating trucks, caterpillars, loaders and bulldozers which, according to Table 1 would involve vibration levels between 0.55 m/s² and 1.45 m/s². For at least 15 of these years he had operated a loader and a dozer for eight or nine hours a day, both of which involve vibration levels of 1.4 m/s². In that case, the Appeal Division concluded that the worker's lumbar spine degeneration had been significantly aggravated by his employment as a heavy equipment operator.

In this case, there is no adequate evidentiary basis for concluding that the worker's spinal degeneration was due to his exposure to WBV.

Conclusion

I confirm *Review Division Decision #21926*, dated January 31, 2005. I find insufficient evidence to establish that the worker's occupational exposure to WBV was of causative significance in his spinal degeneration and L3-4 disc herniation.

The worker's representative seeks reimbursement of the expenses associated with obtaining Dr. Thompson's report of November 1, 2005. Under section 7 of the *Workers Compensation Act Appeal Regulation*, I direct the Board to reimburse the worker for expenses related to obtaining this report, according to the Board's schedule of fees.

Marguerite Mousseau
Vice Chair

MM/cdh