

NOVA SCOTIA WORKERS' COMPENSATION APPEALS TRIBUNAL

Appellant: ******* (Worker)**

Participants entitled to respond to this appeal: **Cumberland Health Authority (Employer) and
The Workers' Compensation Board of Nova Scotia (Board)**

APPEAL DECISION

Representatives: **Kenny LeBlanc, Chief Worker Adviser, for the Worker**

Form of Appeal: **Oral hearing on April 11, 2008 in Amherst, NS**

WCB Claim No.(s): *********

Date of Decision: **November 20, 2008**

Decision: **The appeal of the December 10, 2007 Board Hearing Officer decision is denied, according to the reasons of Chief Appeal Commissioner Louanne Labelle.**

CLAIM HISTORY AND APPEAL PROCEEDINGS:

The Worker was employed as an x-ray technologist. In 1997, she filed a claim for compensation with the Board alleging that exposures to chemicals in her workplace had caused symptoms of pain, memory loss, fatigue and slurred speech. Her claim was initially denied. However, on appeal, this Tribunal found that the Worker's symptoms had been caused by exposure to glutaraldehyde [*Decision 2000-69-AD* (August 31, 2000, NSWCAT)]. The Worker was subsequently awarded permanent benefits based on the 5% permanent medical impairment and a full extended benefit.

In a subsequent decision, *Decision 2004-254-AD* (March 7, 2005, NSWCAT), the Tribunal found that the Worker was exposed to other chemicals including hydroquinone, potassium carbonate, potassium sulfite and diethylene glycol. The Tribunal also determined that the glutaraldehyde and hydroquinone exposures had not increased the Worker's risk of developing cancer. The Tribunal, however, awarded the Worker additional medical aid assistance for vitamin therapy, physiotherapy and massage therapy. The Tribunal also found that there was insufficient evidence to determine whether the Worker's multiple sclerosis condition was related to her workplace exposures and referred the matter back to the Board. The Board was also directed to determine if the additional exposure to hydroquinone had caused an injury beyond that already recognized.

In a November 15, 2006 Case Manager decision, which was not appealed, the Board found that the Worker had not suffered additional injury as a result of her exposure to hydroquinone beyond that already recognized by the Board in relation to her glutaraldehyde exposure. The Case Manager also found that there was insufficient evidence to link the Worker's multiple sclerosis to her workplace exposures. At that time, the Worker's treating specialist, neurologist, Dr. V. Bhan, had indicated that he did not feel that the Worker's exposures had any role in the development of her multiple sclerosis [January 5, 2006 report].

Dr. Bahn changed his opinion in a letter dated January 8, 2007 addressed to Dr. Zitner, a Board Medical Advisor. In light of this evidence, the Worker requested that the Board reconsider the final decision regarding the link between multiple sclerosis and the Worker's exposures. On appeal to this Tribunal, this Tribunal found that Dr. Bhan's letter met the criteria of new evidence under Board Policy 8.1.7R1 and, therefore, the Board was ordered to reconsider the previous decision under s. 185(2) of the *Workers' Compensation Act*, S.N.S. 1994-95, c.10, as amended [the "Act"].

This appeal results from decisions of the Case Manager dated August 21, 2007 and of a Hearing Officer dated December 10, 2007 that found that Dr. Bhan's report did not warrant

a change to the previous final decision of the Board finding that multiple sclerosis was not causally related to the Worker's occupational exposure.

The Worker's appeal before the Tribunal proceeded by way of oral hearing on April 11, 2008. The Worker appeared and gave oral testimony in support of her appeal. The Workers' Adviser made oral submissions on her behalf. At the hearing, the Worker submitted additional documents, primarily material from the internet, to be considered on the appeal. These were marked as follows:

Exhibit "1"-The etiology of multiple sclerosis: temporal-spatial clustering indicating two environmental exposures before onset.

Exhibit "2"- Prognosis of multiple sclerosis: environmental factors.

Exhibit "3"-Wood-Preserving Chemicals, Multiple Sclerosis, And Neuropsychological Function.

Exhibit "4"- Medical Update Memo from the MS Society of Canada, entitled Canadian study finds MS increasing among women.

Exhibit "5"- Case-Control Study of Environmental Exposures and Genetic Susceptibility in Individuals with Multiple Sclerosis in Three Geographic Areas.

Following the hearing, the Tribunal requested that Board Counsel have the Board Health Consultants prepare a summary of evidence-based research relating to the relationship between multiple sclerosis and environmental exposures.

Board Legal Counsel on July 16, 2008 forwarded to the Tribunal a research paper prepared by WCB Health Services Consultant, Janis Noseworthy, dated July 2008 entitled Causes of Multiple Sclerosis: Summary of Evidence-Based Research.

All participants were provided the opportunity to make further submissions following receipt of the Noseworthy paper. The Workers' Adviser provided additional submissions on August 11, 2008. No further submissions were received from the Board or the Employer.

I have also considered under s. 246 of the *Act* the contents of the Worker's Board file and the decision under appeal and, as requested, the previous testimony of the Worker on July 18, 2007 in the context of a previous appeal.

ISSUE AND OUTCOME:

Is there a causal relationship between the development of the Worker's multiple sclerosis and her occupational exposures thereby entitling the Worker to recognition that she suffered an injury arising out of and in the course of her employment under s. 10(1) of the *Act*.

No. There is insufficient evidence upon which to make a reasonable inference of causation between the development of the Worker's multiple sclerosis and her occupational exposures.

ANALYSIS:

The Worker seeks a reconsideration under s. 185(2) of the *Act* of the November 15, 2006 decision of the Board finding that there was no causal relationship between her multiple sclerosis and her occupational exposures. As indicated, a previous decision of this Tribunal found that Dr. Bhan's January 8, 2007 opinion constituted new evidence under Board Policy 8.1.7R1. Therefore, since the information met the criteria of new evidence, Board decision makers were directed to proceed to the second stage of the reconsideration process under the Policy and reconsider the Board's final decision. Upon reconsideration, the previous decision may be confirmed, varied or reversed. In this case, the decision was confirmed.

When reconsidering the final decision not only will the new evidence be examined but the totality of the evidence including any evidence produced subsequent to Dr. Bhan's report will be considered in order to answer the question at issue, that is, is there a causal relationship between the Worker's multiple sclerosis and her occupational exposures?

In conducting the reconsideration, I have considered all the evidence in the Worker's claim file as well as any evidence subsequently submitted. However, I will mention primarily the more relevant evidence.

Causation and burden of proof

The Worker's claim as a result of her exposures in the workplace has been recognized. Previous decisions have found that the Worker was exposed primarily to glutaraldehyde and hydroquinone in her workplace. Symptoms associated with the exposure to glutaraldehyde have been recognized as a compensable injury. Glutaraldehyde is a moderate to strong irritant to the skin, eyes and respiratory system. It is a known sensitizer and can cause individuals to react to other chemicals.

The Board's decision that exposure to hydroquinone did not produce additional injury beyond what had already been recognized was not challenged by the Worker at the previous hearing before the Tribunal on July 18, 2007.

The Worker testified in July 2007 that she began experiencing different symptoms such as numbness in her face and lips and tingling sensations up her face in the fall of 2004. She was referred to Dr. MacDougall who arranged an MRI and spinal tap leading to the possible diagnosis of multiple sclerosis. She was subsequently referred to Dr. Bahn. She

described the progression of her symptoms since that time, particularly in her testimony before me in April, 2008. Her attacks have included prolonged periods of disability affecting at times her vision and at times her mobility. She takes daily injections of copaxone. Dr. Bahn has confirmed the diagnosis of multiple sclerosis. He stated that it is a “relapsing and remitting type of multiple sclerosis” and that she has frequent relapses [January 8, 2007 opinion].

The Worker now seeks recognition that her multiple sclerosis constitutes an injury arising from her exposures at work. She must therefore show a causal relationship between her injury and her employment.

The Worker is entitled to the benefit of s.187 of the Act and need only show on the whole of the evidence that a reasonable inference of causation can be drawn, which is at least evenly balanced with any other inference. If there is doubt on an issue and the disputed possibilities are evenly balanced, the issue is resolved in the worker’s favour.

Causation need not be determined with scientific certainty, and it is appropriate to use common sense to infer causation: *Farrell v. Snell* [1990] 2 S.C.R. 311 and *Athey v. Leonati* (1996), 3 SCR 458. Whether or not any particular inference is reasonable is a question of fact that depends on the circumstances of each case: *Workers’ Compensation Board (N.S.) V. Johnstone et al.*, 1999 NSCA 164.

It is also not necessary that the Worker's disablement be solely due to work. The Worker need only show that her disablement was caused in part by her employment. The necessary causal link is established where it is shown that “but for” factors arising from work, a worker would not have suffered an injury. Alternatively, the test is met where work is a material contributing factor; i.e., more than an insignificant or trifling amount [*Ferneyhough v. Workers’ Compensation Appeals Tribunal (N.S.) et al* (2000), 189 N.S.R.(2d) 76 (C.A.)].

Causation in environmental exposure cases presents challenges for workers and for decision makers. The Tribunal has adjudicated many such cases and has emphasized that the work-relatedness of a condition in a given case depends on the facts of each case. Every case is judged on its own merits under ordinary rules of causation, just as any other claim for an injury arising out of the workplace [see for example *Decision 2000-562-AD* (NSWCAT, April 7, 2003)].

In reviewing the whole of the evidence I have also considered the type of exposure that occurred, the condition sought to be recognized and the temporal relationship between the exposure and the symptoms.

Documentary evidence

Dr. Bhan, in his January 8, 2007 letter, noted that since his previous reports the Worker had two fairly typical attacks of partial sensory myelopathy (partial spinal cord dysfunction). Both times she required IV steroids with resolution of the symptoms. He opined that there was no question about the diagnosis of multiple sclerosis with the appearance of these particular attacks.

With regards to the possible relationship between the Worker's multiple sclerosis and her environmental exposures, Dr. Bhan stated as follows:

The exact cause of multiple sclerosis is not known and that is why we do not have a cure for the disease at the present time. In general, most authorities believe that multiple sclerosis develops from a combination of genetic and environmental influences. As far as genetics are concerned, it is likely a polygenic disease i.e. multiple genes are probably involved. At the present time, we do not know which genes are affected and as to how they medicate this disease. Environmental factors are clearly important. Thus far, no single environmental exposure has been consistently identified as a causal factor in multiple sclerosis. However, absence of evidence does not necessarily mean absence of causality, as far as environmental factors are concerned. Furthermore, even though no particular environmental agent has been consistently known to cause multiple sclerosis in general, one cannot rule out a possible association or causality in a particular or individual patient. Therefore, in response to your second question, it is "certainly possible that [the Worker's] exposure to environmental toxins in the past could be related to the development of multiple sclerosis". Previously, I overlooked the fact that you were looking for a "possible association".

The Worker's Representative also referred to other articles submitted in evidence dealing with the possible connection between environmental factors and the disease.

One such article by Dr. Ruth Ann Marrie is entitled Environmental Risks Factors and Multiple Sclerosis Aetiology. Dr. Marrie noted that no single environmental exposure has been consistently identified as a causal factor in multiple sclerosis but sufficient data has accumulated that causal pathways should be postulated and tested. Her review focussed on the environmental epidemiology of multiple sclerosis.

Dr. Marrie noted that multiple sclerosis has been conceptualized as a complex disease in which several environmental factors act together in a genetically susceptible individual to cause disease. She added that multiple sclerosis is thought to be a cell-mediated autoimmune disease of the CNS.

Under the title “environmental risk factors”, Dr. Marrie identified the potential risk factors that are commonly studied including infection, vaccinations, stress, occupation, climate, and diet. She went on to discuss the studies relating to these risk factors except for the roles of diet and sex hormones. She noted that several studies had assessed the association between occupational exposures and multiple sclerosis with most focussing on exposures to organic solvents. Dr. Marrie identified inconsistent and methodological issues with the studies and concluded that the association between organic solvent exposure and multiple sclerosis could not be excluded.

The Worker also submitted other articles mostly from the internet. They discuss a possible link between environmental exposures and multiple sclerosis. These factors again include infectious diseases, toxins, immunizations etc.. One article suggested a link between a neurotoxic chemical exposure and a patient’s MS-like condition. The October 31, 2006 Canadian study found that multiple sclerosis in women had tripled over the past 60 years and that the female to male sex ratio now exceeded three women with multiple sclerosis for every one man.

The July 2008 Causes of Multiple Sclerosis Summary of Evidence-Based Research paper reviewed information from a search of the Cochrane Library, EBSCO and MEDLINE. In addition the Board consultant considered the practices and policies in other jurisdictions and contacted Dr. Jock Murray, Director of the Dalhousie Multiple Sclerosis research Unit. Dr. Murray indicated that he had set up a data base in Nova Scotia in 1979 and it was now one of the longest databases on the disease in the world.

Dr. Murray stated that multiple sclerosis has no known cause. He added that:

As with all chronic diseases with an uncertain cause, people have postulated an environmental toxin as a possible cause, but that has never been proven and in the case of MS there are no serious suspects. The idea of a toxin is not regarded as likely in the MS research community.

Based on the available reviews, the Board consultant concluded that multiple sclerosis is a complex disease that may be determined by environmental factors, genetic susceptibility or a combination of both.

From all of the available evidence, I make the following findings of fact:

- the Worker was exposed to toxins in her workplace including gluteraldehyde and hydroquinone;
- the Worker left her workplace in 1996;
- the Worker began experiencing symptoms later diagnosed as multiple sclerosis in 2004,

approximately 8 years after her removal from the workplace;

- multiple sclerosis has no known cause;
- genetic susceptibility and environmental factors may play a role in the development of the disease;
- amongst the possible environmental factors studied and considered include infection, occupational exposures, diet and climate;
- no specific toxin has been linked to the disease; and
- in Canada, there is a higher incidence of the disease amongst women.

After considering the totality of the evidence, I cannot make a reasonable inference of causation based on the evidence presently on file. The Worker has not shown that it is just as likely as not that her occupational exposures have made a material contribution to the development of her disease.

I acknowledge that the Worker does not have to prove causation to scientific certainty. I recognize that, when Dr. Murray suggested that a relationship to toxins has not been proven, he was referring to a higher standard of proof. However, in view of Dr. Murray's experience, I give serious consideration to Dr. Murray's statement that toxins as a possible cause are not regarded as likely by the research community. Nor has the evidence-based research paper demonstrated a likely link between occupational exposures and the disease. There has been no particular association between the Worker's exposures and the disease nor is there a strong temporal connection. The possibility of an association as indicated by Dr. Bahn is in the realm of speculation.

Although the Worker need only show on the whole of the evidence that a reasonable inference of causation can be drawn, which is at least evenly balanced with any other inference, I find that she has not met her burden simply by showing that environmental factors including but certainly not limited to occupational exposures have been suggested as possible factors in the development of the disease. Many other factors may be at play although no particular factor has been identified in her case. The disputed possibilities are not evenly balanced, the issue cannot be resolved in the Worker's favour. Simply because one cannot rule out an association does not mean that there is one which is as likely as any other.

CONCLUSION:

The appeal is denied. There is insufficient evidence upon which to make a reasonable

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inference of causation between the development of the Worker's multiple sclerosis and her occupational exposures.

DATED AT HALIFAX, NOVA SCOTIA, THIS 20th day of November, 2008.

Louanne Labelle
Chief Appeal Commissioner