



2004-954

Representative: Aidan Sheridan, BPA
Decision No: 100000697954
Decision Type: Entitlement Appeal
Location of Hearing: Charlottetown, Prince Edward Island
Date of Decision: 9 February 2004

As a result of the Appellant's Entitlement Appeal hearing held 9 February 2004, this Board rules as follows:

RULING

CORONARY ARTERY DISEASE

Did not arise out of nor was it directly connected with service in peace time in the Regular Force.
Subsection 21(2), *Pension Act*.

Original signed by:

_____ Presiding Member
E.A. McNally

Original signed by:

_____ Member
Roger A. Younker

_____ Member
G.F. McCauley

ISSUES

An Entitlement Appeal hearing was held in Charlottetown, Prince Edward Island, on 9 February 2004 as the Appellant was dissatisfied with an Entitlement Review decision of 10 January 2002, which denied pension entitlement for the claimed condition of Coronary Artery Disease. The Appellant was represented at the hearing by Mr. Aidan Sheridan, Bureau of Pensions Advocates.

EVIDENCE

The Advocate submitted the following exhibits as evidence:

- EA-M1: a letter from the Appellant dated 25 September 2003;
- EA-M2: a letter from Dr. S. Wayne Lee dated 26 September 2003; and
- EA-M3: a letter from Dr. Alan J. Leach dated 25 January 2004, with an attachment.

Coronary Artery Disease

FACTS AND ARGUMENT

The Advocate contends on the Appellant's behalf that pension entitlement is warranted pursuant to the provisions of subsection 21(2) of the *Pension Act* in that stress associated with service contributed to the development of the claimed condition of coronary artery disease, so that partial pension entitlement on an aggravation basis can be justified.

The Appellant served in the Canadian Forces from 1 October 1961 to 1 March 1963 and from 15 July 1976 to 19 May 2000. He held various positions as a social worker completing his career in the capacity of Director Casualty Support and Administration.

A review of the medical service documentation reveals an incident of chest pain in May 1977 and heart palpitations in June 1977 that was found to be related to a high level of stress, and excessive coffee and cigarette consumption. The Appellant explained he was preparing for his Master's thesis at the time.

There is no further record of problems with the Appellant's heart or related illness until a Discharge Summary dated 20 December 1998, that reads:

. . . The Appellant is a 54 year old gentleman working in the army, and previously healthy. On December 3rd, while in Virginia for his duties, he experienced sudden onset of retrosternal chest pain while walking. This eventually went away on its own but he had several episodes over the following days. On December 15th, the day of admission, he had such bad retrosternal chest pain that he finally decided to go to hospital. He was referred to Cardiology.

A Consultant's Report dated 7 January 1999 from Dr. A.J. Leach, outlines the history noted above and provides the following insight:

His past medical history includes hypertension and dyslipidemia. He was a cigarette smoker of 1-2 cigarettes per day up until his infarction, quitting since. There is a family history of coronary artery disease with his father dying of a infarction and his mother having coronary bypass surgery. His younger brother has some sort of congenital heart problem which required surgery as an infant.

The evidence reveals that the Appellant was placed on restricted category following the myocardial infarction.

REASONS AND CONCLUSION

In arriving at this decision, this Board has carefully reviewed all the evidence, medical records and the submissions presented by the Representative, and has complied fully with the statutory obligation to resolve any doubt in the weighing of evidence in favour of the Applicant or Appellant as contained in sections 3 and 39 of the *Veterans Review and Appeal Board Act*.

In this appeal, the Appellant seeks a permanent pension for the claimed disability of coronary artery disease under subsection 21(2) of the *Pension Act*. After reviewing the arguments made in this appeal, and the medical evidence concerning the nature of coronary artery disease, the Panel concludes that there are two distinct legal claims involved in this appeal:

1. The first aspect of the Appellant's claim is based on subsection 21(3)(f) of the *Pension Act*. It is argued that the circumstances in which the Appellant suffered a myocardial infarction in December of 1998, come within the meaning of paragraph 21(3)(f) of the *Pension Act*, and that the claimed condition of coronary artery disease is pensionable as a result.
2. In the alternative, it is argued that the Appellant's coronary artery disease was aggravated or caused in part under subsection 21(2) and (2.1) of the *Pension Act* by his military occupation as a social worker, which carried with it high levels of psychological stress. In this claim, it is submitted that cumulative stress resulting from years of dealing with emotionally demanding, and stressful situations as a high-ranking military social worker has contributed to the development of coronary artery disease. It is argued that there is evidence to support the position that emotional or psychological stressors may be a contributing cause of coronary artery disease.

Medical Evidence On Coronary Artery Disease and Myocardial Infarction

In determining this appeal, the Panel reviewed a great deal of medical evidence including medical articles, texts, opinions and other information concerning causation of coronary artery disease, myocardial infarction. This included the medical article relied on by the Appellant entitled *Impact of Psychological Factors and the Pathogenesis of Cardiovascular Disease and Implications for Therapy* (1999)¹. The purpose of the study was

to determine whether personality and psychological factors had an impact on coronary artery disease. This was provided on behalf of the Appellant in support of his argument that chronic stress from the Appellant's career may have aggravated or been partially responsible for causing his coronary artery disease. In addition to the medical article, the Board was also given a medico-legal opinion from cardiologist Dr. Alan Leach (MD, FRCPC) and an opinion from Dr. Lee (Ph.D., Director of Human performance and Health Promotion for the Canadian Forces).

In addition to medical literature on file concerning the possible role of personality factors, personal stress, and workplace stress in the development of myocardial infarction and coronary artery disease, the Board also reviewed the *Veterans Affairs Canada Table of Disabilities Medical Guidelines* dealing with "Arteriosclerosis." The Panel notes that the Federal Court has confirmed in numerous decisions that it is appropriate for the VRAB to follow and take guidance from the provisions of the *Medical Guidelines* contained therein by virtue of subsection 35(2) of the *Pension Act*: *Kripps vs. Attorney General Canada* (2002); *King vs. Attorney General of Canada* (11 February 2000); *Gavin vs. Attorney General of Canada* (1999); and *Bleakney vs. Her Majesty the Queen* (1994). In order to verify that the information concerning the role of psychological and mental stresses on arteriosclerosis in the *Veterans Affairs Medical Guidelines* reflected contemporary medical knowledge, the Board also referred to a more recent study published in the *New England Journal of Medicine* in November of 2000², concerning the relationship of chronic stress to coronary artery disease.

The Board has also referred to Chapter 201 of the *Merck Manual of Diagnosis and Therapy* (Seventeenth Edition), which deals with Cardiovascular Disorders (the "*Merck Manual*"). The *Merck Manual* is an accepted medical reference tool which is customarily relied on by adjudicators, Advocates, and other persons working in the Veterans Affairs pension adjudication system as a medical reference. Finally, the panel has also referred to decisions of other disability tribunals concerning issues around compensation for coronary artery disease, and myocardial infarction and claims based on chronic occupational stress.

The *Veterans Affairs Canada Table of Disabilities Medical Guidelines* contains a section on "Arteriosclerosis", which covers Arteriosclerotic Heart Disease, as well as other diseases which involve degenerative changes that occur in the arteries involving the accumulation of fatty deposits in the artery wall. The information in the *Table of Disabilities Medical Guidelines* indicates that coronary artery disease is the specific term which describes the process by which fatty deposits or plaque accumulate in the cells lining the wall of a coronary artery and obstruct the blood flow³.

The *Medical Guidelines* on "Arteriosclerosis", indicate that there are a number of recognized and medically accepted risk factors for coronary artery disease. The section on Arteriosclerosis states that hypertension or high blood pressure increases the chances of Arteriosclerosis/ Coronary Artery Disease. It states that the general conclusion is that increased levels of blood lipids is not the primary cause of atherosclerosis, but is an important factor in the development of the disease. It is also indicated that medical authorities are in agreement that a genetic factor operates to determine rate of progress and severity of artery disease. Sex hormones are another risk factor, in that persons of male gender have an increased likelihood for developing the disease. With respect to cigarette smoking, the medical guidelines state:

Experimental studies have shown that smoking affects the heart rate, cardiac output, blood pressure, coronary blood flow, blood coagulation and the level of blood lipids. This accounts for the association between cigarette smoking and the morbidity and mortality of Atherosclerotic heart disease are showing in extensive population studies.

With respect to mental stress, as well as physical stress and exercise, the *Guidelines* state that:

Numerous and Extensive studies of Atheromatous Coronary Disease have failed to reach a consensus that any specific physical, mental, social or economic stressors affect the development or rate of advance of Atheroma. . . .

Careful studies of the effects varied conditions such as fatigue, change of climate, respiratory disease, or psychiatric illness indicates such conditions have no influence on the course Atherosclerosis⁴.

Section 16 of the *Merck Manual* deals with cardiovascular disease. It indicates that arteriosclerosis is a generic term for several diseases whereby the arterial wall becomes thickened and loses elasticity. Coronary artery disease is the more specific term which describes the gradual process of fatty deposits or plaque

accumulating in or on the cellular wall of a coronary artery, thereby narrowing it or blocking it. The two most common features of coronary artery disease are *angina pectoris* (pain caused by insufficient blood supply to the heart muscle) and *acute myocardial infarction* (heart attack). Coronary artery disease is a gradual and progressive disease. It eventually leads to "myocardial ischemia", which causes either angina (chest pain caused by an insufficient supply of blood to the heart), cardiac arrhythmia, or a "myocardial infarction" or heart attack, and even potentially result in sudden death.

Myocardial infarction is therefore, an acute manifestation of coronary artery disease. Myocardial Infarction involves "myocardial necrosis, usually resulting from abrupt reduction in blood flow to a segment of myocardium. Review of all of the medical information to which the Panel has referred also indicates that it is recognized that acute emotional stress can precipitate a myocardial infarction. The way that this occurs is that an acute⁵ - meaning sudden and severe and short-term - bout of anxiety may lead to a sudden increase in the heart rate, and an increased demand by the heart muscles for blood⁶. This in turn can then lead to a "myocardial ischemia" (insufficient blood supply to the heart muscle), which causes either angina (chest pain caused by an insufficient supply of blood to the heart), cardiac arrhythmia, and could even potentially result in sudden death. If the acute emotional stress is prolonged enough, part of the heart muscle could die. When the heart muscle dies, this is known as a myocardial infarction.

Under "Risk factors" for atherosclerosis, the Merck Manual states that the major nonreversible risk factors for developing arteriosclerosis, and coronary artery disease include increasing age, male sex, and family history. Physical inactivity is also considered to be related to coronary artery disease. Abnormal serum lipid levels (high cholesterol) predispose persons to eventual development of coronary artery disease. Hypertension is a risk factor for myocardial infarction, and for cardiac failure. Cigarette smoking also increases the risk of coronary artery disease.

The Board has also referred to the evidence provided in the article relating to a medical study entitled the *Impact of Psychological Factors and the Pathogenesis of Cardiovascular Disease and Implications for Therapy*. The Board notes that the article essentially confirms the information contained in other evidence reviewed by the Board. It states that myocardial infarction is a cardiac event which is caused by acute stress; that myocardial infarction is a manifestation of the underlying progressive disease process involved in coronary artery disease, and it confirms that it is coronary artery disease, which is ultimately the long-term or disabling condition.

The Board notes also that the study into the *Impact of Psychological Factors and the Pathogenesis of Cardiovascular Disease and the Implications for Therapy* focussed on whether personality and psychological factors may play a role in the development of coronary artery disease. It concluded that the risk for coronary artery disease is increased in the presence of certain psycho-social factors, which include: (1) depression; (2) anxiety; (3) personality factors and character traits, (4) social isolation; and (5) chronic life stress. It indicates that these five factors, establish "psycho-social conditions [which] contribute to a higher frequency of adverse health behaviours, such as poor diet and smoking, and direct Patho-physiological mechanisms. . ." , The study indicated that these 5 psycho-social factors may influence the extent to which individuals engage in high-risk behaviour which in turn increases the risk of coronary artery disease. These psycho-social factors were found to be related to increased incidences of smoking, poor diet, and excessive alcohol consumption, all of which contribute to incidence of coronary artery disease.

The article referred to animal studies, namely experiments performed on the Cynomolgus monkey. The article stated that these studies could suggest that chronic psycho-social stress may lead, via a complex set of factors (involving either excessive sympathetic nervous system activation, or other physiological effects such as endothelial dysfunction), to exacerbation of coronary artery atherosclerosis in monkeys. The authors of *Impact of Psychological Factors and the Pathogenesis of Cardiovascular Disease and Implications for Therapy* also reviewed studies of the role of character or personality and possible correlation between type A behaviours and coronary artery disease risk, as well as "chronic life stress."

Summary of Facts and Evidence on Coronary Artery Disease and Myocardial Infarction:

The evidence placed before the Board by, and on behalf of the Appellant and all of the other evidence and information concerning the nature of coronary artery disease is in agreement on the nature of coronary artery disease. There appears to be no dispute that coronary artery disease is a gradual and progressive disease which may lead to a myocardial incident, also known as "myocardial infarction" or heart attack. The

evidence also shows that coronary artery disease and myocardial infarction are related in the sense that myocardial infarction is an acute manifestation of coronary artery disease.

A review and consideration of all of the medical information to which the Panel has referred also indicates that it has long been recognized that acute emotional stress can precipitate a myocardial infarction. This occurs because an acute⁷ - meaning sudden, short-term, and severe - bout of mental or physical stress may lead to a sudden increase in the heart rate, and an increase demand by the heart muscles for blood⁸. This in turn can then lead to a "myocardial ischemia" (insufficient blood supply to the heart muscle), which causes either angina (chest pain caused by an insufficient supply of blood to the heart), cardiac arrhythmia, and could even potentially result in sudden death. If the acute emotional stress is prolonged enough, part of the heart muscle could die. When the heart muscle dies, this is known as a myocardial infarction.

Thus the medical information available to the Board establishes as a fact that acute stress may cause a myocardial ischemia leading to myocardial infarction. However, a myocardial infarction is an event, it is not a permanent disease or disability. It is manifestation or symptom of the underlying disease of disability of coronary artery disease.

Furthermore, the Board notes that its understanding of the distinction between myocardial infarction and coronary artery disease, and the corresponding implications this would have in terms of determining causation of coronary artery disease is consistent with the positions demonstrated by a review of decisions and policies, and medical research papers of Canadian provincial workers compensation boards.

Worker's Compensation Cases on Coronary Artery Disease and myocardial infarction indicate that Canadian workers compensation boards accept the medical proposition that acute stress may cause myocardial infarction. However, the boards distinguish between myocardial infarction and coronary artery disease. Based on the medical consensus concerning coronary artery disease, workers compensation board's may accept legal responsibility for a myocardial infarction, they do not generally accept legal responsibility for coronary artery disease. Accordingly, legal responsibility for a disability (short-term disability lay-off from work) caused by myocardial infarction may be accepted where the infarction occurs in the *actual course of employment, and if* there is evidence that the worker was in a state of *acute* emotional distress, or *unusual* physical exertion at the very time the myocardial infarction occurred. However, the underlying cause of the myocardial infarction - the coronary artery disease - is not considered compensable under workers' compensation schemes, on the basis that the disease of coronary artery disease itself, is a degenerative process, and is caused by non work-related factors of an organic, genetic and behavioural nature (such as smoking, obesity and diet, hyperlipidimia and family history of heart disease).

To date, the position of Canadian workers' compensation boards is that coronary artery disease is not caused by chronic occupational stress⁹. Based on this reasoning, boards will extend temporary disability benefits for temporary earning loss for time lost from work due to a myocardial infarction, but this would not extend to a granting a permanent pension for coronary artery disease.

With these background facts concerning the nature of, and the distinction between coronary artery disease, and myocardial infarction, in mind, the Panel will now fully consider the medical evidence and the legal issues in the Appellant's case concerning the relationship between chronic workplace stress and coronary artery disease. In weighing the evidence and resolving the issues, the Board is cognizant of its obligation under section 39 of the *Veterans Review and Appeal Board Act* (the "*VRAB Act*") to draw any favourable inferences which may reasonably and credibly be drawn from the evidence, facts, and circumstances of the case, in favour of the Appellant. The Board also notes its obligation under the *Pension Act* and the *VRAB Act* to construe the words of the applicable legislative provisions in a liberal manner.

Issue No.1:

Is the Appellant's Coronary Artery Disease pensionable under paragraph 21(3)(f) of the Pension Act ?

The first issue to be dealt with is whether the presumption in paragraph 21(3)(f) of the *Pension Act* may apply to the facts of this case. In this part of the claim, the Advocate argued that the circumstances in which the Appellant experienced his myocardial infarction come within the meaning of paragraph 21(3)(f) of the *Pension Act*, and that the claimed condition of coronary artery disease is pensionable as a result. Although this was not the main basis of the Advocate's argument, the Board will consider this issue first, due to the

fact that if paragraph 21(3)(f) of the *Pension Act* applies here, it establishes a rebuttable presumption that a disability has arisen out of, or was directly connected to service, under subsection 21(2) of the *Pension Act*.

The presumption in favour of a service relationship will arise only where the injury which caused the claimed permanent disability was incurred in the actual course of one of the specific activities which are described in paragraph 21(3)(f) of the *Pension Act*.

Paragraph 21(3)(f) of the *Pension Act* reads:

. . . . For the purpose of subsection (2), an injury or disease, or the aggravation of an injury of disease, shall be presumed, in the absence of evidence to the contrary, to have arisen out of or to have been directly connected with military service of the kind described in that subsection if the injury or disease or aggravation thereof was incurred in the course of. . . .

(f) any military operation, training or administration, either as a result of a specific order or established military custom or practice, whether or not failure to perform the act that resulted in the disease or injury or aggravation thereof would have resulted in disciplinary action against the member. . . .

Regardless of whether a claim is made under paragraph 21(3)(f) of the *Pension Act*, the requirement that there be a casual connection between the claimed disability and military service, under subsection 21(2) of the *Act*, still applies. Paragraph 21(3)(f) is beneficial in that it may be *presumed* that the direct causal relationship between the claimed disability and service has been satisfied where the specific conditions of paragraph 21(3)(f) are met. It is important to appreciate that paragraph 21(3)(f) of the *Act* does not displace subsection 21(2) of the *Act*. It merely provides a way for applicants to prove the existence of the causal relationship required under subsection 21(2) where their disability arises as a result of an injury incurred in the course of the circumstances or activities described in paragraph 21(3)(f) of the *Act*.

The Advocate argues that there should be no question that the provisions of subsection 21(3)(f) apply in this case because the Appellant was on a military training course when he suffered a myocardial infarction on 3 December 1998. Thus, the Panel notes that the argument being made is that since the Appellant was on a training course in Virginia when he suffered a myocardial infarction, and that since the course was pursued in furtherance of his career as a social worker in DND, the Appellant is entitled to a pension under subsection 21(2) of the *Pension Act*, in relation to his coronary artery disease.

The words in paragraph 21(3)(f) "incurred in the course of. . . any military operation, training or administration..." are quite specific, and would appear to refer to a situation where the injury itself arose in the midst of the actual performance of activities immediately connected with actual military training. The words "incurred in the course of" appear to be clearly intended to refer to a situation where injury was incurred *while the member was carrying out activities directly related to, or at least reasonably incidental to military training itself*. Any subsequent disability caused by or arising out of the injury incurred during a military operation, training or administration, would be compensable.

It is important to note that the words of paragraph (f) do not refer to a training course, or course work or to a conference in the academic or professional sense of course-work. However, even if it did cover conferences or courses of an academic nature, the Appellant in this case was not actually "in the course of" that activity when the myocardial incident occurred. The evidence before the Board indicates that the first incident of retrosternal pain was reported on 3 December 1998 while the Appellant was walking to a bus stop. When it arose, he was in the course of walking to the bus stop for the purpose of being transported to the location where he was to attend his course. However, the chest pain did not occur while the Appellant was in the course or midst of his actual course-work. These are not facts from which it may be reasonably inferred that the injury - in this case either the retrosternal chest pain or the myocardial infarction - was incurred in the course of one of the specific activities enumerated in paragraph 21(3)(f) of the *Pension Act*.

Another difficulty that the Panel has with this argument is that it fails to deal with the medical distinction between chest pain or angina and an actual myocardial infarction. The facts in the medical reports do not show that the Appellant actually experienced a myocardial infarction on 3 December 1998. They show that he experienced a myocardial infarction in Ottawa on 15 December 1998. The Appellant did not seek medical attention for his complaints on 3 December, nor was he diagnosed with a myocardial infarction until 12 days later, after he returned to Ottawa and suffered new incidents of retrosternal pain in Canada on 15 December

1998, and on 16 December 1998. The medical evidence does not state that the incident of retrosternal pain on 3 December 1998 while the Appellant was attending the course in Virginia involved an infarction. In fact the evidence states that he had several incidents of chest pain between 3 December 1998, and 15 December 1998. The medical reports also state that the Appellant had reported chest pain prior to December 1998.

Thus, while it is clear that the Appellant experienced retrosternal chest pain on 3 December 1998, it is not clear from the medical evidence that the injury - the myocardial infarction - did in fact arise while the Appellant was in the course of any military operation, training or administration, within the meaning of paragraph 21(3)(f). Therefore, the Board is unable to reasonably infer that the presumption under paragraph 21(3)(f) of the *Act* arises in this case.

The other issue which arises in terms of the myocardial infarction is the distinction between myocardial infarction and coronary artery disease. The Advocate states in his submissions that myocardial infarction is a manifestation of coronary artery disease. This is consistent with all of the other information, and the Panel accepts this as an established medical fact. However, the evidence also shows that a myocardial infarction is a distinct medical event which is indicative of the underlying disease of coronary artery disease.

The issue which arises is that the Panel cannot simply conclude that the claimed disability of coronary artery disease is directly related to service by virtue of the fact that a symptom of the disability - the myocardial infarction - arose while an appellant was a member of the Forces. To accept this would be akin to applying the insurance principle - which is applicable only to claims arising under subsection 21(1) of the *Pension Act* - to Regular Force claims which are to be determined under subsection 21(2) of the *Act*. This is clearly not the intent of the legislation. It would also be contrary to numerous decisions of the Federal Court interpreting subsection 21(2) of the *Pension Act*.

The causal connection or nexus between a disability and the performance of military service required by subsection 21(2) of the *Pension Act* was discussed by Mr. Justice Evans (as he then was), in his judgment in *Ronald William McTague and the Attorney General of Canada (1999) (F.C. T.D.)*. In the *McTague* decision, Mr. Justice Evans commented that subsection 21(2) of the *Pension Act* was not intended to provide a pension to members of the Armed Forces simply by virtue of the fact that they were injured or became disabled *while* they were members of the Regular Force, or even simply because they were "on duty" when injured. He observed that subsection 21(2) of the *Pension Act* requires that there be a *causal relationship* between a disability and military service, in order to render the disability pensionable. At paragraphs 66 and 67 of the judgment, Mr. Justice Evans went to state that there was a distinction between military service being the "contributing cause" of the disability, and service being the mere "setting" or background against which the disability manifests. He concluded that the requisite causal nexus between service and the claimed disability is not established simply by virtue of the fact that an applicant was on any type of duty (temporary or otherwise) when the injury occurs.

Applying the observation of the Federal Court, to the Appellant's claim, the Panel must also observe that another issue arises out of the medical fact that a myocardial infarction is a symptom of coronary artery disease. Section 21(3) establishes a presumption of service-relatedness where there was an injury incurred during the specific activities described therein, which *caused* a permanent disability. Here the myocardial infarction did not cause the coronary artery disease. In fact, the opposite would be true: the coronary artery disease resulted in the myocardial infarction. This would rebut the presumption in paragraph 21(3)(f). Therefore, the Board must note that even if it had evidence before it to suggest that the myocardial infarction was incurred in the course of one of the service-related activities described in paragraph 21(3)(f), the medical evidence concerning the underlying disease or disability of coronary artery disease would appear capable of rebutting the presumption that there was a causal connection between service and the claimed permanent disability of coronary artery disease. It would then be necessary for the Appellant to adduce sufficient evidence to establish a causal connection under subsection 21(2) of the *Pension Act*.

Issue No 2:

Was the claimed disability of coronary artery disease caused, in whole or in part by psychological stresses arising out of the Appellant's career as a Social Worker and an Officer within the Senior Ranks of DND?

It is clear from the evidence that the Appellant suffers coronary artery disease. It was submitted by the Advocate in his written arguments that:

It is the Appellant's contention that the coronary artery disease suffered by the appellant, which became manifest as a result of a myocardial infarction in 1998, can be found to have been contributed to by work-related stresses associated with various positions held by the Appellant within the senior officer ranks of the Canadian Forces, and accordingly pension entitlement can be granted on this basis.

The broad issue before the Panel in this case is whether stress arising out of the Appellant's military occupation as a social worker was the direct cause of whole, or part of the Appellant's coronary artery disease under either subsections 21(2) or 21(2.1) of the *Pension Act*. For purposes of this issue, it must be kept in mind that acute stress and chronic stress are separate entities. As the panel has previously noted, there appears to be no question from the medical evidence that an acute - meaning short-term, and severe - period of emotional or physical stress may precipitate a myocardial infarction.

The main argument in this case is that chronic - meaning long-term - stress aggravated the underlying disease of coronary artery disease, not that acute stress precipitated the myocardial infarction. However, in light of medical evidence which indicates that myocardial infarction may be precipitated by acute stress, the Panel has also considered whether there may be evidence that the Appellant's myocardial infarction may have been caused by acute stress arising out of his service. However, neither the medical reports of Dr. Turek, nor Dr. Leach, nor the other evidence on file indicate that this was the case. There is nothing in the evidence to suggest that the myocardial infarction which occurred on 15 December 1998 - the day the Appellant was admitted to the hospital - was precipitated by an acutely stressful event at, or arising out of his work. After reviewing the medical evidence concerning the Applicant's medical complaints and findings on the 3rd, when he experienced the first incident of retrosternal chest pain, and the reports relating to the 15th and 16th of December 1998, when he was diagnosed with a myocardial infarction, the Board cannot reasonably infer that the Appellant's myocardial infarction was precipitated by an episode of acute emotional stress arising out of service.

The Panel turns now to the main argument in this case, which is that chronic - meaning long-term - stress aggravated the underlying disease of coronary artery disease. The Panel notes that it was not argued in this case that chronic mental stress was the sole or primary cause of the Appellant's disability. The Panel therefore notes that the main question to be resolved in this appeal is whether there is support for the proposition that psychological stress may cause, or be one of the contributing causes of the disability of coronary artery disease.

Issue 2(a): Full Pension Entitlement under subsection 21(2) of the *Pension Act*

A full disability pension under subsection 21(2) of the *Pension Act*, cannot be awarded without evidence that the Appellant's military service was the primary cause of the condition. In reaching this conclusion, the Board refers to the comments of Mr. Justice Nadon (while he was still sitting as a Justice of the Trial Division), in *MacNeill v. Canada*, (1998), where he noted that in order to award a pension for a disability under subsection 21(2) of the *Pension Act*, *there must be some evidence to show that service was the primary cause of the claimed disability*. If not, then in the alternative, the *Pension Act* also allows for a fractional pension under subsection 21(2.1) of the *Act*, where a part or a portion of the underlying permanent disability was *aggravated* in some way by the applicant's military service.

The evidence before this panel does not suggest that stress from military service *was* the primary cause of coronary artery disease. The Panel also notes that the medical evidence in the Appellant's file clearly indicates the presence of several significant, medically-recognized causal and risk factors for the development of coronary artery disease, all of which are not service-related. The medically recognized risk factors for the development of coronary artery disease which the evidence indicates to be present in the Appellant's medical history include: cigarette smoking; increasing age, family history of heart disease; dyslipidemia¹⁰; hypertension; age; and male gender. The facts of this case show that at the time of the myocardial infarction in 1998, the Appellant was 54 years of age. He had worked for over 22 years as a social worker with DND military, when his myocardial infarction occurred. However, the evidence on file indicates that his complaints of chest pain in 1998 were not his first.

There is no question that the risk factors present in the Appellant's medical history are not service-related factors. The fact that medical consensus recognizes the factors present in the Appellant's file are as some of the more significant risk factors for the development of coronary artery disease is confirmed in the medical

information contained in the *Veterans Affairs Table of Disabilities Medical Guidelines* on "Arteriosclerosis", and in the other evidence contained in the medical articles placed before the Board and the Merck Manual. Given the foregoing facts, the Panel cannot reasonably infer that psychological stress arising out of the Appellant's military service as a social worker could be the primary cause of the Appellant's coronary artery disease. Thus the Panel cannot conclude that the Appellant is entitled to a full pension for his coronary artery disease under subsection 21(2) of the *Pension Act*.

Issue 2(b): Partial Pension Entitlement Based on "Aggravation of Disability" under subsection 21(2.1) of the *Pension Act*:

The Panel now turns to the basis of the claim as argued by the Advocate. The Advocate submitted that the Board could award a partial-or fractional pension for aggravation under subsection 21(2.1) of the *Pension Act*, on the basis that even though the entire disability was not service-related, it was possible to infer that stress from the Appellant's service as a social worker contributed to, and aggravated his claimed disability of coronary artery disease.

The words of subsection (2.1) direct that where a pension is awarded on the basis of aggravation of an injury or disease, then it is "...only that fraction of the total disability....that represents the extent to which the injury of disease was aggravated," is pensionable. Subsection 21(2.1) of the *Pension Act* is intended to provide partial compensation in cases where there is only a partial causal nexus between a disability and military service. It clearly indicates that the aggravation pension is to be proportionate to the degree of cause which may reasonably be attributed directly to military service. The overriding legal requirement that there be evidence of causal connection applies to claims made under subsection (2.1). Although subsection 21(2.1) does not require that military be service the sole and primary cause of the disability, it nevertheless requires credible evidence of partial causation.

The comments of Mr. Justice Evans in *Ronald William McTague* are applicable to claims for an aggravation pension under subsection 21(2.1) of the *Act* given that it is not the intent of subsections 21(2) or (2.1) of the *Pension Act* to provide a pension to members of the Armed Forces simply by virtue of the fact that they were injured or became disabled *while* they were members of the Regular Force, or even simply because they were "on duty" when injured. Thus, an applicant would be entitled to a fractional or partial pension only where the evidence shows that a particular portion of the *permanent disability* was caused directly by the applicant's military service. The fact that a disability became apparent or symptomatic while the appellant *was in the Force*, does not automatically or necessarily lead to the conclusion that the disability *was caused* by factors arising out of military service. In order to establish the partial causal nexus, the evidence should reasonably support the inference military service was a direct cause of *an identifiable part or portion of the disability*, or that it had some discernible impact on the degree of permanent disability.

The Panel recognizes that causation of some diseases or disabilities may be multi-factorial, in the sense that some disabilities may have more than one cause, and may potentially even have several contributing causes. However, in claims where it is argued that military service was *but one of several causes* which may have contributed to the disability, there must be sufficient evidence to suggest that a service-related factor did in fact, make a direct, significant and medically discernible contribution to the permanent worsening of the underlying disability. In other words, in order to establish entitlement to a proportionate pension for aggravation under subsection 21(2.1) of the *Act*, there should be sufficient evidence placed before the Board by the appellant to raise the inference that some factor arising out of service was a significant contributing cause of some portion of the disability.

With respect to a claim for an aggravation award under subsection 21(2.1) of the *Act*, the following questions are applicable: Does the evidence raise the inference that factors arising out of military service affected the rate of progression of the disability? Does the evidence suggest that factors arising out of military service had permanently impacted or worsened the underlying severity of the disability? Or, does the evidence suggest the disability would have followed the same course, and been of the same severity, even if the appellant had not been in military service?

In light of the foregoing, the panel notes that the remaining issue to be resolved in light of subsection 21(2.1) of the *Pension Act*, is whether the Board may infer that chronic psychological stresses arising out of the Appellant's career as a Social Worker and an Officer within the Senior Ranks of DND, may have played a significant contributing role in the progression or permanent worsening of the Appellant's coronary artery disease?

Claims Based on Chronic Psychological Stressors The Legal Test

Given that this case is based on the assertion that excessive psychological stressors arising out of the Appellant's occupational responsibilities as a social worker were a primary or significant factor in the development of his is coronary artery disease, the Panel must review and objectively consider every physical or physiological, and psychological factor which may potentially have contributed to the development of the claimed disability of coronary artery disease. As with any claim based on an allegation that psychological stress caused a disability, the Appellant's subjective beliefs concerning excessive occupational stressors are not the sole or conclusive factor in determining the issue of causation under subsection 21(2) of the *Pension Act*. While an appellant must be taken "as they are", and with whatever unique vulnerabilities and personal characteristics they possess, it is also imperative that the relative gravity or severity of the service-related stressor be objectively assessed¹¹.

The VRAB follows the principles developed by Canadian Courts and other tribunals in determining claims involving chronic psychological or mental stresses. The Courts have confirmed that the correct analysis involved in determining causation of the claimed disability will involve an objective assessment of the Appellant's subjective perceptions of occupational stressors. The relative severity, and gravity of reported occupational incidents and stresses must be considered, and weighed objectively against the appellant's reactions and perception of the events. The Board must consider whether the stressors reported by the Appellant originated directly out of the Appellant's work as a social worker, or from other causes such as inherent personality characteristics and personal reactions to situations at work. The Board notes that this approach to the legal issue of causation is applicable to any case where *chronic occupational stress is the basis of the claim*, regardless of whether the claimed disability is a psychiatric disability such as depression, or a physiological disability, such as coronary artery disease.

Objective Analysis - The role of Occupational Stressors in Causing Coronary artery disease

The Board has reviewed the Appellant's evidence concerning the stresses reported and encountered by the Appellant during his career as a social worker. It has considered whether the stressors originated directly out of the Appellant's work as a social worker, or were a product of the Appellant's personality, and personal perceptions, to external events. The Panel has also assessed the Appellant's subjective perceptions against the evidence concerning other medical factors present in the Appellant's health profile which are known to contribute to the development of coronary artery disease.

The Board accepts that the Appellant's employment in the Canadian Forces was demanding and also accepts that it is now his subjective belief that his stress reactions to work contributed to his disability. The Panel does not doubt that the Appellant was called upon to perform emotionally challenging work. It is also very clear from the evidence that he approached his work with a significant degree of dedication and commitment. However, the Panel must observe that work-related incidents and situations described in the Appellant's evidence would appear to be in the nature of that which a career in social work would entail. There is no evidence before this panel which indicates that the Appellant's work as a social worker placed him in situations which he was not trained to deal with, or would not expect to encounter as a social worker. There is no evidence that he was subjected to levels of stress which were in excess of what a social worker would be expected to manage and deal with as part of their occupation. Ultimately, the evidence does not indicate that the specific situations encountered by the Appellant were disproportionately stressful or unusual in terms of what a social worker would be expected to encounter in their work.

It is also clear from the Appellant's evidence that he attributes many of his stressful experiences in DND, to a long-standing issue with the DND hierarchy, in which the Appellant observed that there was a lack of appreciation and respect for the role and work of social workers as a group within the DND organization. He described this situation in his letter of 25 September 2003, as "a simmering and continuous battle with the CFMS hierarchy in a battle for the very survival of the Social Work Classification in the CF." It is clear from one statement in his letter of September 2003, that the dispute figured prominently in his difficulties with DND. While this situation was undoubtedly unpleasant and distressing to the Appellant, the evidence does

not indicate that the dispute was outside the realm of the unfortunate, but not entirely unexpected disputes, "turf wars" and disagreements which sometimes tend to arise in organizations.

The Board must also note that the medical service documentation placed before it is devoid of any reference to stress, or difficulties with stress, other than the one incident when he was preparing for his Masters thesis. In fact, it is clear from the documentation on file that the Appellant performed his work very well, and was recognized by DND for his high level of commitment and excellent performance. The evidence indicates that his significant achievements were reflected in his work performance evaluations and in the numerous special awards he received throughout his career.

Against, this background, it is notable that there is no evidence that the Appellant reported undue levels of stress, or raised concerns with superiors, associates, or others concerning the nature of his work, or his workload. There is also no evidence that the Appellant registered any complaint or sought any assistance in dealing with his duties as a social worker or raised concerns about his own ability to deal with any of the additional duties he accepted or was required to perform. There is also no objective evidence the Appellant had a severe stress reaction to any of his required duties as a social worker. Objectively, the Panel must conclude that the evidence does not suggest that the Appellant's experiences in military service were unusual or outside the realm of the usual difficulties and challenges which would tend to be experienced by persons within the Senior Officer ranks of DND, or at the higher levels of any large organization, particularly in this chosen profession.

Assessment of the Opinion Evidence and Medical Information on Causation of Coronary Artery Disease

The Panel has reviewed the medical opinion from Dr. A.J. Leach (M.D., FRCSC), cardiologist and Director of the Cardiopulmonary Unit, CF Support Unit (Health Care), and Dr. S. Wayne Lee, (Ph.D., Director of Human performance and Health Promotion for the Canadian Forces), (EA-M2 and EA-M3). These opinions were provided in support of the assertion that stressors relating to the Appellant's service as a social worker in DND, aggravated his coronary artery disease. The Board has reviewed both opinions in order to determine whether they contained evidence which would raise the inference that chronic work-related stress caused, or made a significant contribution to the Appellant's coronary artery disease.

The obvious premise underlying both opinions is that chronic stress arising out of occupational responsibilities will play some role in coronary artery disease. However, this is inconsistent with the conclusions reached in studies on chronic stress and coronary artery disease, and in the information contained in the Veteran Affairs Medical Guidelines on Arteriosclerosis, and in the medical literature and articles reviewed by the Board on causation of coronary artery disease. The inconsistency goes to the heart of the issue before the Board in this case. Thus the Board has reviewed these opinions very thoroughly in terms of their content, and the medical authority on which they were supported. The Panel notes, at the onset the opinion evidence failed to make any reference to a scientific study or data in support of their conclusions, and in several respects, the opinions fail to address the medical issue concerning the role of chronic stress in causing coronary artery disease, in a direct fashion.

For example, Dr. Leach's opinion of 25 January 2004, deals with acute stress in causing a myocardial infarction, in the presence of coronary artery disease. The statements made at page two of his opinion are not in contradiction to the other medical information on file in this regard. However, the opinion *does not actually address the primary issue of how coronary artery disease is itself, caused by chronic stress.* Dr. Leach's statement at page one that occupational stress was a factor in the Appellant's coronary artery disease and in the development of his heart damage is unexplained and unsupported. It is not entirely clear from his opinion, whether Dr. Leach may have been under the impression that the Appellant had suffered some acutely stressful emotional incident at work, which triggered a myocardial infarction. If so, this impression would not be supported on the facts of the case. The Panel notes also that Dr. Leach stated in his medico-legal opinion that the Appellant's symptoms of insufficient blood supply started when the Appellant was in Virginia. This statement seems to be a contradiction to the facts when they were outlined by Dr. Leach in an earlier medical report dated 7 January 1999, wherein he stated that the Appellant's "history of chest pain discomfort actually dates back several years."

The Board must also note in light of the clear medical evidence on file indicating a history of smoking and high blood pressure, dyslipidemia¹² and positive family history for heart problems, it would be reasonable to expect that Dr. Leach's opinion would address the impact of all of the causal factors which are present, in the development of the Appellant's coronary artery disease, as part of explaining the role or factor which he felt that occupational stress played in the development of the Appellant's coronary artery disease. At the very least, an acknowledgement of all of the risk factors, and an explanation of the degree to which all physiological causal factors which existed in this case would reasonably have played in the development of progression of coronary artery disease would be required in order to credibly address the issue of causation and in order to reasonably raise the inference that an aggravation pension could be awarded under subsection 21(2.1) of the *Pension Act*. As well, the identification of some specific medical authority, study and reasoning to support the assertion that stress from the Appellant's occupation may have caused coronary artery disease, would have provided the Board with a more credible and reliable opinion on which it could then place greater weight.

The proper role of a medical witness in this case, and in every case heard before the Board, is the provision of medical evidence to shed light on any medical issue relevant to the question of the disability for which pension entitlement is claimed. The Board refers to the lengthy and detailed opinion of Dr. S. Wayne Lee (Ph.D.), dated 26 September 2003, and notes that Dr. Lee is a Ph.D., and Director of Human performance and Health Promotion for the Canadian Forces. It is clear from the opinion and other evidence of file, that Dr. Lee, was explicitly asked to advocate on behalf of the Appellant by providing an opinion to support the theory that it was primarily stress which caused the Appellant's medical condition. He is not a medical doctor. In his opinion, he made references to the numerous risk factors which increase incidence to coronary artery disease including sex, smoking, heredity high blood pressure, high cholesterol, and other behavioural, and also environmental risk factors. However, he did not go on to analyse or give an opinion on the role of the actual risk factors which were present in the Appellant's medical history in terms of causing the Appellant's coronary artery disease.

Dr Lee observed that persons under stress tend to use coping mechanisms such as smoking, prescription and non-prescription drug use and alcohol use, which place them at increased risk. On the issue of causation of heart disease, Dr. Lee described the fight or flight response and how stress activates sympathetic nervous system responses. He then maintained, "Prolonged exposure to stressors can cause structural changes to blood delivery system..and in some cases changes to heart morphology resulting in disease one of which is CAD and potentially heart attack or death." He also discussed issues related to prevention of heart disease Dr. Lee referred to the principle that acute stress may cause a myocardial infarction or death. However, Dr. Lee spoke of prolonged stress, without making a clear distinction between the acute stress and chronic stress and the role that acute stress may cause in precipitating a myocardial infarction.

In his letter, Dr. Lee also spoke of his high regard for the work and the contributions of the Appellant. Dr. Lee referred to the dedication of the Appellant to his work and his significant and valuable contributions to the Canadian Forces. Dr. Lee described the Appellant as an individual who made positive lifestyle choices and writes:

. . . . I can personally attest to the fact that the Appellant did take positive steps to manage his personal stress levels. This is also demonstrated in his PER file in which numerous supervisors commented on his positive lifestyle choices including his demonstrated personal spirituality and maintenance of his personal physical fitness and family life.

While many of Dr. Lee's statements are credible and consistent with medical literature which the Board has reviewed, he provides no information which deals directly with the issue on which the Board must focus, in that it does not establish a direct link between the Appellant's coronary artery disease and his military occupation as a social worker. Ultimately, Dr. Lee did not refer to any study or medical authority which could lend support to the theory that there is a direct link between the changes in the arteries associated with coronary artery disease and chronic stress, or that chronic stress arising out of the occupational context had been proven to be a direct or significant contributing cause in the degenerative process involved in coronary artery disease. The fact that the Appellant was dedicated to his work and that he was obviously held in high regard by his colleague, does not establish the necessary element of causal connection or nexus which is required in order to allow the Board to reach the conclusion that the Appellant is entitled to a pension award for coronary artery disease.

The Panel also notes that the opinions of Dr. Leach and Dr. Lee explicitly emphasized the role of stress, namely occupational stress, in the development of the Appellant's coronary artery disease, while minimizing all of the other medically recognised risk factors for coronary artery disease which are part of the Appellant's profile. Given that the evidence on file indicates numerous non-service-related factors which placed the Appellant at a high-risk for the development of coronary artery disease, and that the opinions from Dr. Lee and Dr. Leach do not address the role of these significant risk factors, the Panel has concerns about the reliability and credibility of both opinions. Neither opinion directly addressed the issue of whether there is a sound medical basis for the theory that chronic stress could play a direct role in the development of coronary artery disease.

The Board has reviewed the study into the *Impact of Psychological Factors and the Pathogenesis of Cardiovascular Disease and Implications for Therapy* and notes that while the article indicates that personality and psychological factors may play a role in the development of coronary artery disease, the role is not direct. First, the article indicates that the risk for coronary artery disease is increased in the presence of certain psycho-social factors. The psycho-social factors studied include: (1) depression; (2) anxiety; (3) personality factors and character traits, (4) social isolation; and (5) chronic life stress. It indicates that these five factors, establish "psycho-social conditions [which] contribute to a higher frequency of adverse health behaviours, such as poor diet and smoking, and direct Patho-physiological mechanisms. . ."

After reviewing the article, the Board must note that the "psychological factors" which were specifically studied were not in the nature of occupational stressors. Even with respect to the five psycho-social factors studied, there was no direct cause and effect relationship between any of the five (depression; anxiety; personality factors and character traits; social isolation; and chronic life stress), and coronary artery disease. The researchers did conclude that these factors influence the extent to which individuals engage in high-risk behaviour which in turn increases the risk of coronary artery disease. More to the point, these psycho-social factors were found to be related to increased incidences of smoking, poor diet, and excessive alcohol consumption, all of which contribute to incidence of coronary artery disease.

With respect to the issue of chronic psycho-social stress on coronary artery disease, the article referred to animal studies, namely experiments performed on the Cynomolgus monkey. The article stated that studies on animals, especially these monkeys "reveals that chronic psycho-social stress can lead, probably via a mechanism involving excessive sympathetic nervous system activation, to exacerbation of coronary artery atherosclerosis, as well as endothelial dysfunction and even necrosis." The authors asserted that due to physiological and social similarities between these monkeys, and humans, that the studies on monkeys may lend support to the thesis that chronic psycho-social stress can lead in some way to exacerbation of coronary artery disease in humans. It would be a very significant leap of logic to conclude that the studies on monkeys and other animals concerning the effects of chronic psycho-social stress, translate into evidence of a direct or significant causal relationship between coronary artery disease in humans and workplace stress.

It is notable that the authors of the *Impact of Psychological Factors and the Pathogenesis of Cardiovascular Disease and Implications for Therapy* acknowledged that in the past it has been speculated that certain types of personalities (Type A) and certain character traits (competitive, hostile, exaggerated commitment to work) may dispose individuals to coronary artery disease. However the article concluded that although there have been many studies of the role of character or personality, there have been no consistent findings to positively suggest a relationship between coronary artery disease and personality type or character traits. The authors explicitly stated that "a series of studies have reported no correlation between type A behaviours and CAD risk."

The article also focussed on chronic and subacute life stress, stating that work-related stress was the most widely studied "chronic life stress" in studies dealing with coronary artery disease. It is important to note that the researchers did not themselves perform an independent study designed to measure the effect that work-related stress may play, relative to life-stresses, in coronary artery disease. While the article discusses the role of "Chronic and Subacute Life Stress", it did so only by reviewing other studies that had been performed in the past. It mentioned work stress in the context of discussing life-stresses from various sources, but did not attempt to measure or specifically identify or isolate the relative contribution of stress from work, in terms of the overall set of life stresses. The article contained no new data or evidence which could suggest that chronic stress at work is a significant factor in the development of coronary artery disease, when considered relative to the other known organic physiological causes and stressors. Thus, this study does not actually support the conclusion that workplace stress is a direct cause or even a significant contributing cause in the development of Atherosclerosis.

Conclusions

The Board has considered and weighed all of the foregoing evidence in light of its statutory obligation under section 39 of the *Veterans Review and Appeal Board Act*, which requires that the Board draw every inference in favour of the Appellant, which could be reasonably drawn from the evidence. The Board has examined the evidence, facts and circumstances of the case, in light of its obligation to accept uncontradicted evidence which it considers credible and to resolve in the Appellant's favour any doubt in weighing the evidence and determining whether the Appellant has established a case. The Board notes also that section 39 of the *Act* does not mean that whatever submission is made by an Appellant, that submission must automatically be accepted by the Panel. It does not relieve the Appellant of the burden of providing sufficient evidence to reasonably support the claim.

In this case it is clear that the evidence adduced by the Appellant does not support the conclusion that workplace stress has been identified as a direct cause or even a significant contributing cause in the development of Atherosclerosis, or coronary artery disease. Thus the Board must conclude that the information concerning arteriosclerosis in the *Veterans Affairs Medical Guidelines* has not been rebutted or contradicted by the evidence on file, nor by recent medical studies. The information before the Board indicates that the Appellant's medical history - which included a history of smoking, hypertension, presence of male sex hormones and abnormal lipid ratios, and a positive family history of heart disease and increasing age- show that he possessed six medically accepted and significant causal factors which contribute to the incidence of coronary artery disease. On the other hand, the evidence before the Board as to the role of chronic stress, does not indicate that there is a plausible or reliable basis on which it may reasonably infer that chronic stress and psychological factors are also medically significant causal factors in the development of coronary artery disease.

The Board must also point-out that even if the medical evidence or studies reviewed by the Board, had concluded that psycho-social factors and personality play a direct role in the development of coronary artery disease, this is not evidence which could establish a direct causal connection between coronary artery disease and service. The fact that an individual experienced an adverse stress reaction to events encountered in their occupation, does not establish that stress arose directly out of their work, as opposed to being a factor of their individual personality or natural pre-disposition. It is simplistic to state that chronic stress is a direct product of one's occupation, when it is actually a more complex issue: being a product of personality factors and personal reactions to external events, many of which do not arise out of service. In any event, given the medical studies and evidence concerning the roles of psychological stress, and personality in the development of coronary artery disease, the Panel has not found evidence of a direct link between psychological stressors and the development of coronary artery disease.

The Board notes also that the conclusion that there is no evidence of a correlation between psychological factors and coronary artery disease has been most recently confirmed by other studies including a more recent study published in the *New England Journal of Medicine* in November of 2000¹³. Accordingly, the Board does not find that the proposition that chronic stress is a primary or direct cause, or even a significant contributing factor in causing coronary artery disease, to be supported in recent medical studies. At best, a review of all of the evidence currently available indicates that while the link between stress (namely chronic lifestyle stress), and coronary artery disease has been the subject of many years of medical studies, there is no evidence of a direct link. There is no evidence that chronic stress is a reliable predictor of coronary artery disease.

In the Federal Court of Appeal judgment in *Daniel William Elliot and Attorney General for Canada (For Veterans Review and Appeal Board)*, (2003) FCA 298, Nadon J.A. commented that the obligation to draw a favourable inference under section 39 of the *Veterans Review and Appeal Board Act* arises *once* there is sufficient evidence to enable the Board to conclude that a link between military service and the claimed condition is more than a mere possibility. At paragraph 46 of the Elliot decision Nadon J.A. stated:

If the direction to draw every reasonable inference is to have meaning, it must apply in cases where an inference would not be drawn on a balance of probabilities. A reasonable inference is therefore one that is not necessarily probable but must nonetheless be more than a mere possibility. In all the circumstances, I find that the evidence establishes no more than a possibility that the appellant's diarrhea caused his IBS so that the Board could not reasonably infer that it did.

A consideration of all of the facts, circumstances, and evidence in this case, does not plausibly suggest, *even as a mere possibility*, that chronic stress arising out of the Appellant's military occupation as a social worker, was a significant contributing cause of his coronary artery disease. While, it is clear that the Appellant suffers from coronary artery disease, and that he was a member of the Regular Force when the claimed disability manifested, the evidence does not raise the inference that there is a causal link between stress from his military occupation as a social worker, and the development of the claimed disability. There is no doubt that military service provided the venue or background against which the Appellant's coronary artery disease manifested. However, in terms of actual causation of coronary artery disease, the medical evidence in this appeal indicates the presence of several non-service related, and significant causal factors for the development of coronary artery disease. As previously noted in this decision, the pre-disposing, contributing factors included: history of cigarette smoking up to the date of the myocardial infarction in 1998; increasing age, family history of heart disease; dyslipidemia; hypertension; and male gender.

On the other hand, a review of all of the medical studies and evidence on the issue of the possibility of a relationship between chronic stress, and coronary artery disease reveals that, to date, there is no evidence that chronic stress is a reliable predictor of coronary artery disease. Thus there is no factual or circumstantial evidence to reasonably support the inference that there is some correlation between chronic psychological stress and coronary artery disease. The medical evidence in this case fails to reasonably or plausibly indicate that service-related occupational stress may make a direct, significant and medically discernible contribution to the progression or permanent worsening of the underlying disability of coronary artery disease.

Based upon a review of all of this evidence, the Panel must conclude that the evidence fails to reasonably support an inference under section 39 of the *VRAB Act* that the Appellant's stress reactions to his military service were a direct cause of the progression of the claimed condition. As well, the evidence does not raise the inference that military service has created a permanent worsening of the underlying condition of coronary artery disease which would not have occurred, had the Appellant not been a social worker with DND.

As a result, even after considering all of the evidence in light of section 39 of the *VRAB Act*, the Board concludes that this claim does not satisfy the requirements of subsections 21(2) and 21(2.1) of the *Pension Act*, as outlined by the Federal Court in the *MacNeill* or *McTague* cases. Given that the evidence fails to support the inference that occupational, service-related stress caused or played a significant role in the development of the Appellant's coronary artery disease, a partial or proportionate pension for coronary artery disease cannot be awarded under subsection 21(2.1) of the *Pension Act*. Nor can full pension entitlement be awarded under subsection 21(2) of the *Pension Act*.

The Board therefore rules to affirm the Entitlement Review Panel decision of 10 January 2002.

RELEVANT LEGISLATION

Paragraph 21(2)(a) of the *Pension Act* states that in respect of military service rendered in the non-permanent active militia or in the reserve army during World War II and in respect of military service in peace time, where a member of the forces suffers disability resulting from an injury or disease or an aggravation thereof that arose out of or was directly connected with such military service, a pension shall, on application, be awarded to or in respect of the member in accordance with the rates for basic and additional pension set out in Schedule I.

Paragraph 21(3)(f) of the *Pension Act* provides the following:

For the purposes of subsection (2), an injury or disease, or the aggravation of an injury or disease, shall be presumed, in the absence of evidence to the contrary to have arisen out of or to have been directly connected with military service of the kind described in that subsection if the injury or disease or the aggravation thereof was incurred in the course of

(f) any military operation, training, or administration, either as a result of a specific order or established military custom or practice, whether or not failure to perform the act that resulted in the disease or injury or aggravation thereof would have resulted in disciplinary action against the member.

Subsection 29(1) of the *Veterans Review and Appeal Board Act* states that an appeal panel may

- (a) affirm, vary or reverse the decision being appealed;
- (b) refer any matter back to the person or review panel that made the decision being appealed for reconsideration, re-hearing or further investigation; or
- (c) refer any matter not dealt with in the decision back to that person or review panel for a decision.

Section 25 of the *Veterans Review and Appeal Board Act* states that an applicant who is dissatisfied with a decision made under section 21 or 23 may appeal the decision to the Board.

Section 26 of the *Veterans Review and Appeal Board Act* states that the Board has full and exclusive jurisdiction to hear, determine and deal with all appeals that may be made to the Board under section 25 or under the *War Veterans Allowance Act* or any other Act of Parliament, and all matters related to those appeals.

Section 3 of the *Veterans Review and Appeal Board Act* states that the provisions of this Act and of any other Act of Parliament or of any regulations made under this or any other Act of Parliament conferring or imposing jurisdiction, powers, duties or functions on the Board shall be liberally construed and interpreted to the end that the recognized obligation of the people and the Government of Canada to those who have served their country so well and to their dependants may be fulfilled.

Section 39 of the *Veterans Review and Appeal Board Act* states that in all proceedings under this act, the Board shall draw from all the circumstances of the case and all the evidence presented to it every reasonable inference in favour of the applicant or appellant; accept any uncontradicted evidence presented to it by the applicant or appellant that it considers to be credible in the circumstances; and resolve in favour of the applicant or appellant any doubt, in the weighing of evidence, as to whether the applicant or appellant has established a case.

DECISION BEING APPEALED

CORONARY ARTERY DISEASE

THE BOARD AFFIRMS THE MINISTER'S DECISION

Did not arise out of nor was it directly connected with service in peace time in the Regular Force.

Subsection 21(2), *Pension Act*

VRAB Entitlement Review, 10 January 2002

The Appellant first applied for pension entitlement for coronary artery disease more than three years ago.

¹Rozanski, Blumenthal, Kaplan: this article outlined the results of a study performed at the Columbia University College of Physicians and Surgeons, Division of Cardiology.

²Entitled *Lack of Correlation between Psychological Factors and Subclinical Coronary Artery Disease*.

³See *Veterans Affairs Table of disability Medical Guidelines - Arteriosclerosis*. See Merck Manual of Medical Information (Home Edition), chapters 26 and 27.

⁴See *Veterans Affairs Table of Disability Medical Guidelines - Arteriosclerosis "Other Factors"*

⁵See definition of "acute: having severe symptoms and a short course" *Dorlands Medical Dictionary*, 26th edition (2001), page 13.

⁶Merck Manual (*supra*);, see Selwyn, and Braunwald, "Ischemic Heart Disease" section 244, page 1365 of *Harrisons Principles of Internal Medicine* 14thed; Wyngaarden and Smith, section 49.2 on "Acute Myocardial Infarction" page 288 *Cecil Textbook of Medicine* 17thed.; Rozanski, Blumenthal, Kaplan, *Impact of Psychological Factors and the Pathogenesis of Cardiovascular Disease and Implications for Therapy*, (1999).

⁷See definition on "acute" *Dorlands Medical Dictionary*, 26th edition (2001), page 13.

⁸Rozanski, Blumenthal, Kaplan, *Impact of Psychological Factors and the Pathogenesis of Cardiovascular Disease and Implications for Therapy*: (1999); Medical authority also indicates that myocardial infraction is known to be triggered by strenuous physical activity.

⁹The general approach of Canadian workers compensation boards' is best illustrated in recent WSIAT Decisions No. 1974/00 [2004] O.W.S.I..A.T.D. No.424; 708/02 (2003) 63 W.S.I.A.T.R. 199, 1436/03; and 1514/02 66 W.S.I.A.T. Reporter, page 97. See also Tribunal Discussion Paper *Heart Disease -Heart Attack* (1992), by Dr. D.L Watt.

¹⁰Defined as abnormal amounts of lipids or lipo proteins in the blood in *Dorlands Medical Dictionary*, 26th edition (2001), page 273.

¹¹Ontario Workplace Safety and Insurance Appeals Tribunal ("WSIAT") Decisions No: 1514/02 66 W.S.I.A.T.R.; 715/02; 633/01; 2184/01; Ontario Workers' Compensation Appeals Tribunal (now the "WSIAT") decisions "334/89 and 441/91", "717/88(August 19, 1992), "520/90" 19W.C.A.T.R. 147; and *Yoshikawa v. Yu* (BC.CA) (1996) 73 B.C.A.C. 253 *Poan v. (Nova Scotia) Workers' Compensation Board* [1994] N.S.J. No 134, all of which state that in cases concerning whether a disease or disability arose out of workplace stress, the "entire picture", including the role of personal stressors in contributing to the disability must be assessed, along with other causal factors.

¹²Defined as abnormal amounts of lipids or lipo proteins in the blood in *Dorlands Medical Dictionary*, 26th edition (2001), page 273.

¹³O'Malley, Jones, Feuerstein & Taylor, "Lack of Correlation between Psychological Factors and Subclinical Coronary Artery Disease" (2000) *New England Journal of Medicine*.

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