

WHEN ARE HEART ATTACKS COMPENSABLE INJURIES UNDER IOWA WORKERS' COMPENSATION LAW?

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I. INTRODUCTION

Cases in which heart attacks are alleged to have arisen from employment remain complex and controversial. Determining whether heart injuries are compensable under Iowa Workers' Compensation law has proven to be an ongoing challenge for the Iowa Workers' Compensation Commissioner¹ and deputy staff, the courts, employers and insurance carriers, and especially practitioners seeking to resolve these disputes for their clients.

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1. The Iowa Workers' Compensation Commissioner was formerly called the Iowa Industrial Commissioner.

II. OVERVIEW OF IOWA WORKERS' COMPENSATION LAW

Workers' compensation is a statutorily constructed system created to provide a remedy for employees who suffer injuries that arise out of and in the course of their employment.² The doctrine of workers' compensation has been universally embraced as a drastic improvement over the prior common law, which forced the employee to sue his employer in tort in order to be compensated for work-related injuries.³ Under the common law, although employers bore a duty to provide a reasonably safe working environment, employees faced huge barriers to recovery.⁴ Experts estimate that prior to the national advent of workers' compensation law, more than 80% of employees who had been injured while working recovered nothing.⁵ Designed to permit more consistent and equitable recovery for injured employees, workers' compensation law has been termed the oldest of the American social insurance programs.⁶ The workers' compensation system provides what amounts to "no-fault" compensation for work-related injuries.⁷

In interpreting the Iowa workers' compensation statutes, the Commissioner and the courts have traditionally taken a liberal approach, in favor of injured employees.⁸ However, there are limits to this liberal approach; the policy reasons behind workers' compensation law in Iowa are humanitarian, but not charitable.⁹

In order to establish entitlement to compensation benefits, the employee-claimant must establish a causal connection between the employment and the injury.¹⁰ The causation requirement is divided into two separate parts—medical (factual) causation and legal causation—both of which must be proven by the claimant.¹¹ Medical causation presents an issue of fact, and is normally within the

2. See IOWA CODE § 85.3 (2001).

3. See, e.g., 1 ARTHUR LARSON & LEX K. LARSON, LARSON'S WORKERS' COMPENSATION LAW § 2.05, at 2-7 (2000) (rejecting common-law notion that employer liability only extended to the negligence or fault of the employer).

4. See, e.g., *id.* § 1.02, at 1-4 (noting the difficulty of defining an employee for compensation purposes).

5. *Id.* § 2.03, at 2-5.

6. *Id.* § 1.04, at 1-13.

7. See *id.* § 1.03, at 1-5.

8. See, e.g., *Sondag v. Ferris Hardware*, 220 N.W.2d 903, 905 (Iowa 1974) (stating the claimant is "aided by our liberal rule permitting compensation for personal injury even though it does not arise out of an 'accident' or 'special incident' or 'unusual occurrence'").

9. See *id.* (limiting the employee's recovery for a personal disease unless employment contributes something substantial to increase the risk).

10. See *Dunlavey v. Econ. Fire & Cas. Co.*, 526 N.W.2d 845, 853 (Iowa 1995).

11. See *City of Cedar Rapids v. Bd. of Trs. of the Mun. Fire & Police Ret. Sys.*, 572 N.W.2d 919, 922-23 (Iowa 1998).

domain of expert medical testimony.¹² Legal causation presents a policy question of how far the law will extend the employer's responsibility to the claimant for the injury.¹³

It must be clearly understood that under Iowa workers' compensation law, injuries that result from the aggravation of a pre-existing condition are fully compensable.¹⁴ "An employer takes an employee subject to any active or dormant health impairments, and a work connected injury which more than slightly aggravates the condition is considered to be a personal injury."¹⁵ While an employee is not entitled to recover for the mere results of a pre-existing injury or disease, he may recover for an aggravation or exacerbation thereof.¹⁶ To be compensable, such aggravation must be "material"—slight aggravation does not call for compensation.¹⁷

III. PHYSIOLOGY OF THE WORK-RELATED HEART ATTACK

The legal practitioner representing either the claimant or the defendants in a heart attack workers' compensation case should be familiar with the physiological processes of coronary artery disease and myocardial infarction. The heart is a muscular pump that moves blood through the body's cardiovascular system.¹⁸ The primary function of the cardiovascular system is to deliver oxygen and nutrients to the body's cells and to remove waste from the cells.¹⁹ The cells of the heart, like any other body tissue, require an adequate supply of oxygen-rich blood in order to remain healthy and functional.²⁰ This fresh blood is delivered via the coronary arteries—"the heart's private blood supply system, operated by the heart and for the heart."²¹

Persons who suffer from a disease called atherosclerosis, which manifests itself by a fatty thickening of the walls of the blood vessels,²² are vulnerable to heart attacks, which are also called myocardial infarction or coronary thrombosis.²³ Although atherosclerosis may affect any of the body's arteries, the consequences are most serious in the coronary vessels, which are often not much bigger in diameter

12. See *id.* at 922; see also *Bradshaw v. Iowa Methodist Hosp.*, 101 N.W.2d 167, 171-72 (Iowa 1960).

13. *Dunlavey v. Econ. Fire & Cas. Co.*, 526 N.W.2d at 853.

14. See *Yeager v. Firestone Tire & Rubber Co.*, 112 N.W.2d 299, 302 (Iowa 1961).

15. *Neil v. John Deere Component Works*, No. 756209 (Iowa Indus. Comm'r Aug. 30, 1990) (citing *Ziegler v. United States Gypsum Co.*, 106 N.W.2d 591 (Iowa 1960)).

16. *Olson v. Goodyear Serv. Stores*, 125 N.W.2d 251, 255 (Iowa 1963).

17. *Yeager v. Firestone Tire & Rubber Co.*, 112 N.W.2d at 302.

18. MICHAEL DEBAKEY & ANTONIO GOTTO, *THE LIVING HEART* 15-16 (1977).

19. *Id.* at 15.

20. TERENCE KAVANAGH, *HEART ATTACK? COUNTER-ATTACK!* 22 (1976).

21. *Id.*

22. DEBAKEY & DEGOTTO, *supra* note 18, at 112-14.

23. *Id.* at 124.

than a drinking straw.²⁴ Indeed, "[a]lmost all myocardial infarctions result from atherosclerosis of the coronary arteries."²⁵ The genesis of atherosclerosis is a complex and controversial issue in medicine, and a number of risk factors have been associated with its development in the body.²⁶ Regardless of its cause, the end result of atherosclerosis is plaque formation along the interior wall of the coronary vessels causing "luminal narrowing of the coronary arterial tree and thus reduc[ing] the blood supply to the myocardium [the heart muscle]."²⁷ The resulting reduction in blood supply can produce myocardial ischemia—lack of oxygen to the heart muscle.²⁸ In a severe case of ischemia, resulting from a sudden or acute occlusion of a coronary artery, heart cells deprived of oxygen for a long enough period of time can die.²⁹

The narrow bore of the coronary artery may be plugged by the fatty substance which is accumulating in the walls; or a piece of the fatty substance may break off and be carried downstream by the blood flow until it reaches a portion of the artery which is too narrow to penetrate. Sometimes the cause of the blockage may be a piece of blood clot (a thrombus) which has previously formed on the surface of the fatty patch (referred to medically as a 'plaque') and then breaks loose.

Sometimes no blockage can be demonstrated at post-mortem examination, and we then must assume that a sudden increase in the workload of the heart has created a situation where the blood supply simply could not keep pace with the demand. Whatever the mechanism, the end result is the same.³⁰

The end result is myocardial infarction—death of the heart muscle—which is commonly called a heart attack.³¹

Approximately 15% to 25% of patients who suffer a myocardial infarction die as a result.³² The causes of death are various and include: cardiac arrhythmia—irregular heart rhythm or fibrillation—in which the heart beats so ineffectively that it cannot supply the body with enough oxygenated blood; heart failure—in which the amount of dead myocardial tissue is so great that the heart can no longer pump blood

24. KAVANAGH, *supra* note 20, at 22-23.

25. Joseph S. Alpert & Eugene Braunwald, *Acute Myocardial Infarction: Pathological, Pathophysiological, and Clinical Manifestations*, in 2 HEART DISEASE: A TEXTBOOK OF CARDIOVASCULAR MEDICINE 1262 (Eugene Braunwald ed., W.B. Saunders Company 1984).

26. *See id.*

27. *Id.*

28. DEBAKEY & DEGOTTO, *supra* note 18, at 124.

29. *Id.*

30. KAVANAGH, *supra* note 20, at 24.

31. DEBAKEY & DEGOTTO, *supra* note 18, at 124.

32. *Id.*

to the tissues; and rupture of the myocardium—in which blood rapidly fills the chamber around the heart (called cardiac tamponade) and prevents the heart from filling.³³ In addition to these drastic results, heart attacks can cause numerous other medical complications, ranging from mitral valve insufficiency to formation of aneurysms to persistent angina.³⁴

The factor that often makes heart cases so difficult to evaluate is that most heart attacks are the result of physiological changes occurring over many years.³⁵ In the overwhelming majority of allegedly work-related heart attack claims, the victim suffered from pre-existing heart disease that would have caused the heart attack at some point, regardless of the presence or absence of the work activities or stresses.³⁶

Further complicating the issue is the fact that medical experts are not in complete agreement as to what, if any, outside factors may precipitate a heart attack. There is, of course, the usual laundry list of risk factors, including family history of heart disease, diabetes, smoking, obesity, elevated cholesterol and triglycerides, and hypertension—high blood pressure.³⁷ Experts agree physical exertion, especially severe physical exertion, can lead to heart attacks in persons already suffering from coronary artery disease.³⁸ Studies have indicated that exertion performed when the subject was unduly fatigued or emotionally stressed is more likely to precipitate a heart attack.³⁹

Medical experts are also generally willing to state that acute incidents of emotional stress can cause heart attacks.⁴⁰ An example frequently mentioned is the person who suffers a heart attack shortly after walking into a room and discovering the body of a family member who has committed suicide.⁴¹ There is less unanimity regarding the question of whether chronic emotional stress—the type often claimed to

33. *Id.* at 124-26.

34. *Id.* at 126.

35. See Mark A. Hlatky, et al., *Job Strain and the Prevalence and Outcome of Coronary Artery Disease*, 92 CIRCULATION 327, 327 (1995) (evaluating the effect of physiological stress in the workplace).

36. John M. Bickel, *Heart Attacks and Suicides: Are They Compensable?*, 36TH ANN. IOWA WORKERS' COMP. SYMP. 51, 58 (June 11-12, 1998) (on file with the author).

37. DEBAKEY & DEGOTTO, *supra* note 18, at 219-31; KAVANAGH, *supra* note 20, at 28-35.

38. Alpert & Braunwald, *supra* note 25, at 1277.

39. *Id.*

40. See, e.g., KAVANAGH, *supra* note 20, at 34 ("The stress of external factors . . . seems to be a greater hazard than the possession of a coronary-type personality . . ."); Steve Jayne, *Specific Compensability Issues: Identifying the Compensable Heart Attack*, SEMINAR 1, 8 (Mar. 31, 2000) (on file with the author).

41. See KAVANAGH, *supra* note 20, at 34.

have caused an employment-related heart attack in a workers' compensation claim—actually precipitates heart attacks:

Of all the factors considered to be associated with the increased incidence of heart disease, emotional stress is the hardest to evaluate. Workers such as Buell and Russek in the United States have found a correlation between stressful work habits and coronary artery disease. The mechanism is not explained, although it may be due to the excessive release of stress hormones (adrenaline and noradrenaline) into the blood stream, with a consequent rise in blood pressure. Prolonged stress is also said to raise blood fat levels.

Against these findings is the study of Hinkle, who followed 270,000 employees of Bell Telephone Company over five years, and found a lower incidence of heart disease in senior executives with heavy responsibility.⁴²

Some medical studies seem to indicate a clear relationship between mental stress and myocardial infarction.⁴³ One study demonstrated that "mental stress can elicit ischemia in 50% to 70% of patients" who already have stable coronary artery disease, and this "mental stress-induced ischemia is associated with significantly higher rates of subsequent . . . cardiac events," including myocardial infarction.⁴⁴ But another study found that "job strain"—defined as high psychological demands coupled with low decision-making latitude—is not significantly correlated with the presence of coronary disease, angina, or cardiac events.⁴⁵ Again, the apparent inconsistency between these two scientifically-conducted medical studies points out the divergence of opinion in the medical community regarding the relationship between emotional stress and heart problems.

In any case, it will not be difficult for claimant's counsel to locate medical experts who are willing to identify a causal link between chronic work stress and heart attacks. These experts will usually be countered, however, by the defense's expert physicians who will state that no scientific studies have conclusively proven such a link exists. Ultimately, the battle of the experts often becomes a contest more of personal credibility than of medical certainty.

42. *Id.* at 34-35.

43. *See, e.g.,* Wei Jiang, et al., *Mental Stress-Induced Myocardial Ischemia and Cardiac Events*, 275 J. AM. MED. ASS'N 1651, 1651 (1996) ("[M]ental stress-induced ischemia is associated with significantly higher rates of . . . cardiac events.").

44. *Id.*

45. Hlatky, *supra* note 35, at 327.

IV. WHEN ARE HEART ATTACKS COMPENSABLE? PRE-EXISTING CONDITION

As with any other kind of injury, before a heart attack that is superimposed upon a pre-existing circulatory or heart condition can be considered to have "arisen out of" employment, the claimant must satisfy both tests: legal causation and medical causation.⁴⁶

A. Establishing Legal Causation

"Legal causation presents an issue of law."⁴⁷ The fundamental question is "whether the policy of law will extend responsibility to [the employer for the] consequences which have in fact been produced by the event."⁴⁸ In Iowa, there are three categories of situations that will satisfy the legal causation requirement in a heart attack case: (1) a pattern of work exertion greater than that of normal nonemployment life; (2) a specific instance of unusually strenuous exertion on the job; and (3) when the employee continues working after the onset of heart attack symptoms and thereby aggravates the injury.⁴⁹

1. *Pattern of Work Exertion Greater than that of Normal Nonemployment Life*

Claimants attempting to establish legal causation in this category are "aided by our liberal rule permitting compensation for personal injury even though it does not arise out of an 'accident' or 'special incident' or 'unusual occurrence,'" which has been long-standing Iowa workers' compensation doctrine.⁵⁰ When it is proven the employment caused the employee to make "heavy exertions which, superimposed on an already-defective heart," aggravated or accelerated the condition, the worker has suffered a compensable injury.⁵¹ These exertions may be either physical or mental.⁵²

In making a determination as to causation, the employee's exertions at work are compared "with the exertions of normal nonemployment life of this or any other person."⁵³ This standard is different than the "similarly-situated worker" standard

46. *Jackson v. Britwill Co.*, No. 976793 (Iowa Indus. Comm'r Aug. 29, 1995).

47. *Schreckengast v. Hammermills, Inc.*, 369 N.W.2d 809, 810 n.3 (Iowa 1985) (citing *State v. Marti*, 290 N.W.2d 570, 584-85 (Iowa 1980)).

48. *Id.* (citing *State v. Marti*, 290 N.W.2d at 584-85).

49. *Riley v. Oscar Mayer Foods Corp.*, 532 N.W.2d 489, 492 (Iowa Ct. App. 1995).

50. *Barton v. Nevada Poultry Co.*, 110 N.W.2d 660, 662 (Iowa 1961) (citing *Sondag v. Ferris Hardware*, 220 N.W.2d 903, 905 (Iowa 1974)).

51. *Id.*; see also *Littell v. Lagomarcino Grupe Co.*, 17 N.W.2d 120, 123-24 (Iowa 1945) (finding work performed by employee aggravated a pre-existing heart condition and was compensable).

52. *Swalwell v. William Knudson & Son, Inc.*, No. 2 (Iowa Indus. Comm'r Jan. 8, 1982).

53. 2 LARSON & LARSON, *supra* note 3, § 46.03(2), at 46-7.

adopted by the Iowa Supreme Court for psychological injuries caused by workplace stress in *Dunlavey v. Economy Fire & Casualty Co.*⁵⁴ In claims involving so-called "mental/mental" injuries, the work stress experienced by the claimant is compared to the "day-to-day mental stresses experienced by other workers employed in the same or similar jobs, regardless of their employer."⁵⁵

There has been some question about whether the legal test for heart attack cases in Iowa has changed since *Dunlavey*.⁵⁶ So far, the Agency has specifically declined to apply the *Dunlavey* test in heart attack cases and continues to apply the test first established in *Sondag v. Ferris Hardware*—comparison of workplace stress and exertion to that of normal nonemployment life of this or any other person.⁵⁷

It should be noted that some agency decisions have displayed what is arguably a misapplication of the "normal nonemployment life of this or any other person" standard.⁵⁸ In one recent decision, the Deputy Commissioner denied benefits partially because "[t]he facts [did] not establish that any of the alleged work stress that allegedly caused claimant's heart attack was greater than the stress in *claimant's non-employment life*" without making any comparison to the normal nonemployment exertions of the average person.⁵⁹ It is difficult to imagine that either Professor Larson's model⁶⁰ or the Iowa courts contemplated the hearing deputy should be free to choose whether to compare the claimant's work stress to the nonemployment life of the claimant, or the nonemployment life of any other person. Most commentators and practitioners accept the presumption that the comparison should be made to the normal nonemployment life of the "average person."⁶¹

54. *Dunlavey v. Econ. Fire & Cas. Co.*, 526 N.W.2d 845, 858 (Iowa 1995).

55. *Id.*

56. *Shepherd v. IES Utils., Inc.*, No. 1097159 (Iowa Indus. Comm'r Feb. 28, 1997).

57. *See Sondag v. Ferris Hardware*, 220 N.W.2d 903, 905 (Iowa 1974); *see also* *Jackson v. Britwill Co.*, No. 976793 (Iowa Indus. Comm'r Aug. 29, 1995) (stating the "industrial commissioner declines to extend the *Dunlavey* holding to heart attack cases"); *see generally* Marvin E. Duckworth & Tina M. Eick, *Recent Developments in Mental/Mental Cases Under the Iowa Workers' Compensation Law*, 45 DRAKE L. REV. 809, 830-33 (1997) (discussing application of the *Dunlavey* decision to heart attack cases).

58. *Wilson v. Good Will Publishers*, No. 1156041 (Iowa Workers' Comp. Comm'r May 26, 1999).

59. *Id.* (emphasis added).

60. *See* 2 LARSON & LARSON, *supra* note 3, § 46.03, at 46-7[2] (proposing a test in which the "employment contribution must take the form of an exertion greater than that of nonemployment life" of the claimant or "any other person").

61. *Jayne*, *supra* note 40, at 8; *see also* *Weinzweig v. Weinzweig Food Prods., Inc.*, No. 785837 (Iowa Indus. Comm'r Oct. 29, 1991) (applying the average person standard).

Of course, exactly what constitutes "the exertions of normal nonemployment life" of the average person is an issue that has been hotly contested.⁶² In various decisions, the Agency has discussed this problem at some length:

The standard for comparison is not particularly definite. There are those individuals who, in their nonemployment life, run in marathons, rebuild their homes, mow lawns, shovel snow, play tennis and engage in a number of forms of quite substantial exertion. On the other hand, there are those who live in apartments or condominiums and do nothing more strenuous than walk on what is essentially level ground between the front door of their home and their vehicle, never carrying more than a few pounds of weight at any time.⁶³

With regard to emotional stress there are some individuals who live a very complacent life. They get along amiably with their spouse and neighbors. They are financially secure and even have a good relationship with their in-laws. Other individuals live in a state of constant turmoil with ongoing altercations with the neighbors, bill collectors and a great deal of domestic animosity.⁶⁴

In *Heinrichs v. De Vries Electric, Inc.*,⁶⁵ the Deputy Commissioner noted one characteristic of nonemployment life is that activities can normally be conducted at a comfortable pace.⁶⁶ Conversely, "[e]mployment activities are often performed with an eye toward increasing levels of productivity, increasing units of production and increasing the level of competitiveness and profits," rather than at a pace that would be naturally comfortable to the individual.⁶⁷ Obviously, the result is increased stress in the workplace.

Some of the factors to be considered in determining the level of work-related emotional stress faced by an employee include: (a) whether the employment activities regularly involve deadlines; (b) whether the failure to meet such deadlines can create substantial detriment to the employee; (c) whether the employee can set his or her own deadlines and schedules; and (d) whether the employee is held accountable despite not having control over all factors affecting the situation.⁶⁸

62. See, e.g., *Tatzer v. Cooper Tire & Rubber Co.*, No. 790730 (Iowa Indus. Comm'r Jan. 4, 1990) (noting no definite standard exists concerning the exertions of normal non-employment life).

63. *Id.*

64. *Heinrichs v. De Vries Elec., Inc.*, No. 1020279 (Iowa Indus. Comm'r Sept. 19, 1994).

65. *Heinrichs v. De Vries Elec., Inc.*, No. 1020279 (Iowa Indus. Comm'r Sept. 19, 1994).

66. *Id.*

67. *Id.*

68. *Id.*

At the same time, some degree of pressure and stress is presumed to be a normal part of employment life.⁶⁹ "Every employee is expected to fulfill certain goals, quotas, or expectations. Obstacles or frustrations in meeting those objectives are a normal part of working life and not, in and of themselves, unusual workplace stress."⁷⁰ Furthermore, "[n]ormal employment typically involves supervisor[s] who are often less than kind and nurturing . . . [and] being required to do acts which an individual might find objectionable or disagreeable."⁷¹ Usual workplace stress does not give rise to compensability under Iowa law.⁷²

In *Swalwell v. William Knudson & Son, Inc.*,⁷³ the deceased employee had been working as a building supervisor overseeing the construction of a clothing store.⁷⁴ The decedent was consistently described in the record as an extremely conscientious and loyal worker who was "almost obsessed with doing a good job."⁷⁵ The project was running behind, and the store representative was pressuring the decedent to finish construction so the store could be opened before the Easter deadline.⁷⁶ The Commissioner determined the "decedent was under an unusual amount of stress with respect to the completion of construction and the dissatisfaction of [the store representative] regarding the quality of construction. This stress, imposed upon decedent's preexisting heart condition, resulted in a heart injury."⁷⁷

Among the most difficult cases to prove is the situation in which the claimant maintains chronic employment stress—rather than one discrete incident of heavy emotional trauma—that exacerbates his or her pre-existing heart disease and causes the heart attack to occur.⁷⁸ An example of one such case that was successfully litigated by the claimant is *Tatzer v. Cooper Tire & Rubber Co.*,⁷⁹ which resulted in a 1990 arbitration decision.⁸⁰ The claimant was a fifty-nine-year-old sales representative covering a seven state territory who experienced a stressful decline in sales, at least partially due to business decisions by his employer over which he had

69. *Brooks v. Helena Chem. Co.*, Nos. 1055602 & 1055601 (Iowa Indus. Comm'r June 23, 1997).

70. *Id.*

71. *Friederich v. Ben Franklin*, Nos. 967391 & 988003 (Iowa Indus. Comm'r Feb. 26, 1993).

72. *Dunlavey v. Econ. Fire & Cas. Co.*, 526 N.W.2d 845, 858 (Iowa 1995).

73. *Swalwell v. William Knudson & Son, Inc.*, No. 2 (Iowa Indus. Comm'r Jan. 8, 1982).

74. *Id.*

75. *Id.*

76. *Id.*

77. *Id.*

78. *See Tatzer v. Cooper Tire & Rubber Co.*, No. 790730 (Iowa Indus. Comm'r Jan. 4, 1990) ("Those who work in occupations which present a high risk of physical injury are not denied compensation for those injuries due to the fact that 'it goes with the territory.'").

79. *Tatzer v. Cooper Tire & Rubber Co.*, No. 790730 (Iowa Indus. Comm'r Jan. 4, 1990).

80. *Id.*

no control.⁸¹ After checking into a motel while traveling on a sales trip, the claimant suffered a severe heart attack and eventually underwent triple coronary bypass surgery.⁸² The Deputy Commissioner noted the medical opinions expressed in the record were "quite illustrative of the divergence of opinion in the medical community regarding the cause of heart attacks."⁸³ As the Deputy further acknowledged:

The fact remains, however, that claimant did work in a high stress occupation. . . . Those who work in occupations which present a high risk of physical injury are not denied compensation for those injuries due to the fact that "it goes with the territory." There is likewise no reason to deny workers' compensation for stress-induced injuries where the individual has worked in an occupation which is inherently stressful.⁸⁴

The claimant was ultimately awarded permanent total disability benefits.⁸⁵

Other claimants alleging heart attacks caused by chronic workplace stress have been unsuccessful in convincing the Agency to award benefits.⁸⁶ One case involved a truck driver who alleged his employer created a highly stressful interpersonal environment for his workers.⁸⁷ The Deputy noted:

Although no violent behavior was exhibited by Mr. Rippentrop during the hearing, the testimony describing him as a person who frequently raised his voice, used profanity, talked about others behind their back [sic] and slammed doors is convincing. Testimony from several other witnesses describing Mr. Rippentrop physically removing a driver and his possessions from a truck is believable.⁸⁸

Despite accepting this evidence as persuasive, the Deputy ruled that "[t]o assert that a person such as the decedent was so affected by the disputes between other employees and Mr. Rippentrop that his heart stopped is not supported by the evidence and must be considered speculation at best."⁸⁹

81. *Id.*

82. *Id.*

83. *Id.*

84. *Id.*

85. *Id.* But Cf. *Wilson v. Good Will Publishers*, No. 1156041 (Iowa Workers' Comp. Comm'r May 26, 1999) (denying benefits to claimant salesman under strikingly similar circumstances).

86. See, e.g., *Ehler v. C.H. Wilson Transp., Inc.*, No. 1143681 (Iowa Workers' Comp. Comm'r May 14, 1999) (denying benefits to truck driver whose employer was frequently violent and profane).

87. See *id.*

88. *Id.*

89. *Id.* Once again, in this case the Deputy appears to have only compared the workplace stress with that of the *decedent's* nonemployment life, rather than with the normal nonemployment life of the "average" person as Professor Larson and many Iowa cases would seem to require. *Id.*

Another case, *Brandow v. Airtel, Inc.*,⁹⁰ involved a restaurant manager who suffered a heart attack following a dispute with his employer.⁹¹ The dispute allegedly created so much emotional turmoil the claimant could not sleep due to persistent thoughts of killing the employer.⁹² Despite presenting substantial expert medical evidence that persistent workplace-derived mental stress probably exacerbated his underlying cardiovascular condition, the Deputy determined the claimant had not sufficiently established legal causation.⁹³ The claimant failed to establish that the mental stress of employment life was greater than nonemployment life.⁹⁴ Noting that disagreements and disappointments are not uncommon occurrences in day-to-day life, the Deputy denied benefits.⁹⁵

2. *Specific Instance of Unusually Strenuous Employment Exertion*

"[W]hen the medical testimony shows an instance of unusually strenuous employment exertion, imposed upon a pre-existing diseased condition, results in a heart injury," compensation is allowed.⁹⁶ This situation is well illustrated by *Briar Cliff College v. Campolo*,⁹⁷ a workers' compensation case appealed all the way to the Iowa Supreme Court.⁹⁸ The claimant's deceased husband, an assistant professor at Briar Cliff College, collapsed during an intramural basketball game in which he was participating after having been encouraged by his employer to interact with students outside of class.⁹⁹ He died shortly thereafter.¹⁰⁰ The court upheld the Commissioner's finding that playing basketball was an unusually stressful exertion for a college professor, and the exertion arose out of his employment with the college.¹⁰¹ The court also upheld the Commissioner's award of benefits to the surviving spouse, concluding that "sufficient evidence supports the Commissioner's

Compare id. (acknowledging the average person standard but only discussing the normal non-employment life exertions of the decedent), with *LARSON & LARSON, supra* note 3, § 46.03, at 46-6 (expressing the standard as being the non-employment life exertion of the claimant or any other person).

90. *Brandow v. Airtel, Inc.*, No. 1133637 (Iowa Workers' Comp. Comm'r Sept. 30, 1999).

91. *See id.*

92. *Id.*

93. *Id.*

94. *Id.*

95. *Id.*

96. *Sondag v. Ferris Hardware*, 220 N.W.2d 903, 905 (Iowa 1974); *see also* *Guyon v. Swift & Co.*, 295 N.W. 185, 187-89 (Iowa 1940) (holding decedent could recover workers' compensation benefits for fatal heart attack despite heart disease when death was hastened by the injury).

97. *Briar Cliff Coll. v. Campolo*, 360 N.W.2d 91 (Iowa 1984).

98. *Id.* at 93.

99. *Id.* at 94.

100. *Id.* at 95.

101. *Id.* at 94-95.

finding that there is a probability strenuous exertion aggravated decedent's heart disease, causing a compensable personal injury."¹⁰²

Another example of a heart attack determined to be caused by an instance of heavy work exertion appears in *Department of Transportation v. Van Cannon*.¹⁰³ The claimant suffered a heart attack while chopping frozen dirt and ice from a truck bed in zero-degree temperatures after working seventeen hours straight through a snowstorm.¹⁰⁴ The Commissioner accepted the testimony of the claimant's medical expert, who stated the work itself did not cause the coronary arteries to become partially blocked.¹⁰⁵ "The work, however, did aggravate the symptoms, meaning that cold temperatures and increased workload required a greater oxygen demand on the heart for which the narrowed coronary arteries were not able to supply blood to the heart muscle."¹⁰⁶ The court upheld the Commissioner's finding that the heart attack was related to employment, and the debilitating stroke suffered by the claimant while undergoing the subsequent quintuple bypass surgery was fully compensable.¹⁰⁷

When the claimed instance of exertion or stress is determined to be within the range of stresses experienced in normal nonemployment life, the heart attack remains noncompensable, even if it was, in fact, caused by that event.¹⁰⁸ In one case, a laboratory technician suffered a heart attack after being startled by a co-worker tapping on a nearby window.¹⁰⁹ The Deputy Commissioner found that while the startling noise did bring on the heart attack, "it cannot be found that the noise was of such magnitude as to generate stress greater than what all persons may experience in nonemployment life," and thus denied benefits.¹¹⁰

On the other side of the spectrum are those cases in which the instance of unusual work exertion or stress goes well beyond that expected in normal nonemployment life.¹¹¹ Heart attacks caused by these instances are compensable.¹¹²

102. *Id.* at 95.

103. *Dep't. of Transp. v. Van Cannon*, 459 N.W.2d 900 (Iowa Ct. App. 1990).

104. *Id.* at 902.

105. *Id.* at 903.

106. *Id.*

107. *Id.* at 903-04. A similar case involved a decedent who collapsed while shoveling snow during cold weather. *Frahm v. Serv. Master Mgmt. Servs.*, No. 1180699 (Iowa Workers' Comp. Comm'r Aug. 3, 1999). However, in *Frahm*, the decedent had made only one or two passes with a wheeled snow scoop which required relatively minimal exertion. *Id.* Consequently, benefits were denied. *Id.*

108. *See Shepherd v. IES Utils. Inc.*, No. 1097159 (Iowa Workers' Comp. Comm'r Feb. 28, 1997).

109. *Id.*

110. *Id.*

111. *See Greene v. Gannon Ctr. for Mental Health*, No. 1134571 (Iowa Workers' Comp. Comm'r Jan. 12, 2000).

112. *See id.*

A vivid example appeared recently in a case involving a health care worker who endured a violent beating from a psychotic patient.¹¹³ The worker was immediately taken to the hospital for examination and subsequently diagnosed with an acute myocardial infarction and fractured finger bone.¹¹⁴ Unquestionably, this claimant's heart attack arose out of her employment.¹¹⁵

3. *Continued Exertion After Onset of Heart Attack Symptoms*

"It has long been legally recognized that damage caused by continued exertions required by the employment after the onset of a heart attack is compensable."¹¹⁶ The fact that complete rest and immobilization are normally medically prescribed for persons undergoing a heart attack is common knowledge and has been judicially noticed in at least one jurisdiction.¹¹⁷ As Professor Larson recognized:

The most obvious relevance of this element [continuing exertion after symptoms] is in showing causal connection between the obligations of the employment and the final injury; for if the workman, for some reason, feels impelled to continue with his duties when, but for these duties, he could and would have gone somewhere to lie down at once, the causal contribution of the employment to the aggravation of the condition is clear.¹¹⁸

The claimant need not prove the heart attack was employment-related in and of itself—just proving that "continuing to work after the coronary onslaught would have aggravated the effect of the obstruction in the heart artery" is sufficient to make the infarction a compensable event.¹¹⁹ The continuation of work refers to short-term postponement of medical attention, not to situations where the claimant continues to go to work untreated for days or weeks following the initial heart attack symptoms.¹²⁰ For the heart attack to be compensable, some aspect of the claimant's job must be proven as the reason why the claimant delayed necessary medical treatment.¹²¹

113. *Id.*

114. *Id.*

115. *Id.* In fact, the defendants did not dispute that the claimant had sustained a work-related heart attack. *See id.* The dispute involved her claim of permanent mental disability as a result of the assault. *Id.*

116. *Sondag v. Ferris Hardware*, 220 N.W.2d 903, 906 (Iowa 1974).

117. *See Johnson v. Aetna Cas. & Sur. Co.*, 174 F. Supp. 308, 308-09 (E.D. Tenn. 1959) ("It is common knowledge that [bed rest] is the usual treatment of heart patients in the condition which Mr. Johnson was in on the date he died, and the knowledge is so common that the court can very well take judicial knowledge of it.").

118. 2 LARSON & LARSON, *supra* note 3, § 44.04, at 44-43.

119. *Sondag v. Ferris Hardware*, 220 N.W.2d at 906.

120. *See Brooks v. Helena Chem. Co.*, Nos. 1055602 & 1055601 (Iowa Indus. Comm'r June 23, 1997) (denying relief for a claimant who had a history of symptoms and continued to work).

121. *Sondag v. Ferris Hardware*, 220 N.W.2d at 906.

The classic "impelled to continue working" case is *Varied Enterprises, Inc. v. Sumner*.¹²² The claimant was an over-the-road truck driver who began to experience chest pain while driving.¹²³ Believing the pain was only indigestion, he continued driving for two and a half hours before finally pulling into a truck stop.¹²⁴ The Deputy Commissioner found "that he felt impelled to continue driving," even though he did not feel well, "because of the rather shaky nature of his probationary status with his employer."¹²⁵ When the pain continued to increase he finally asked for medical assistance.¹²⁶ The claimant was diagnosed as having suffered an acute myocardial infarction, which resulted in a permanent and total industrial disability.¹²⁷ The claimant's medical experts testified, "the continued driving did materially aggravate the impact of the infarction and increased the resulting disability."¹²⁸ The Commissioner, the district court, and the Iowa Supreme Court all found those views persuasive, and affirmed the Deputy's ruling.¹²⁹

Some agency decisions seem to demonstrate a misapplication of the *Sumner* rule, requiring compensation when the employee *feels impelled* to continue working after the initial onset of heart attack symptoms, thereby causing greater injury to the heart. Recently, several deputies appear to have applied a heightened standard requiring proof that the claimant was *actually* compelled or required by the employer to continue working in the face of heart attack symptoms.¹³⁰ Under present Iowa law, it is clear that this is not to be an objective determination, but rather requires an

122. *Varied Enters., Inc. v. Sumner*, 353 N.W.2d 407 (Iowa 1984).

123. *Id.* at 408.

124. *Id.*

125. *Id.* at 409; *see also* *Pross v. Pross*, No. 1133096 (Iowa Workers' Comp. Comm'r Jan. 1, 1999). In *Pross*, it was found the claimant's decedent, also a truck driver, felt impelled to continue working for financial reasons after the onset of symptoms. *Id.*

126. *Varied Enters., Inc. v. Sumner*, 353 N.W.2d at 408.

127. *Id.*

128. *Id.*

129. *Id.* at 411.

130. *See Hart v. Allied Sys., Ltd.* (Iowa Workers' Comp. Comm'r Sept. 9, 1998). In *Hart*, the Commissioner noted:

[T]estimony was offered by the terminal manager that he did inform decedent that if decedent wished to see the doctor he should do so or he could drive to his home in Harlan. Therefore, the evidence in this case does not establish that decedent was impelled to keep working after the onset of the heart attack symptoms.

Id.; *see also* *Wilson v. Good Will Publishers, Inc.*, No. 1156041 (Iowa Workers' Comp. Comm'r May 26, 1999). In *Wilson*:

The evidence [did] not support a conclusion that the claimant was required to keep working. There [was] no doubt that the claimant [was] a conscientious worker who wanted to do the best by defendant employer. However, that in and of itself [did] not establish that the employer demanded or expected claimant to continue working when experiencing a medical condition. . . .

Id.

examination into the subjective mindset of the employee.¹³¹ However, in all fairness, it may be reasonably argued that Professor Larson's choice of the words "if the workman, for some reason, feels impelled . . .," quoted favorably by the *Sumner* court, suggests that an *objective* inquiry should be made into whether the claimant had "some reason" for continuing work, and did not do so merely arbitrarily, or from some desire to willfully worsen the injury.¹³²

Interestingly, the claimant in *Varied Enterprises, Inc.* was not even aware he had suffered a heart attack.¹³³ The court determined there was no "requirement that a claimant be motivated to continue working in the face of a known health deprivation in order to produce a compensable situation."¹³⁴

In another case, a driver with a history of cardiac problems was found dead in his truck.¹³⁵ Subsequent investigation confirmed he had suffered a heart attack while driving, lost control of the vehicle, and drove off the highway.¹³⁶ Struggling to keep the truck upright, the driver steered across rough terrain, and finally managed to stop the truck on a parallel service road without overturning.¹³⁷ The decedent's widow, along with her medical experts, convinced the Commissioner the continued exertion of driving the truck after the onset of the infarction probably worsened the effect of the injury, making the event compensable as a matter of law.¹³⁸ The defendants appealed to an Iowa district court, but the parties reached a settlement before the case came to trial.¹³⁹

In a more recent decision, *McCrae v. Wal-Mart, Inc.*,¹⁴⁰ the claimant's decedent was also a truck driver who suffered a fatal heart attack while at the wheel.¹⁴¹ One medical expert testified that had the claimant been at home or in an office, his infarction would have less likely proceeded to death: "Trying to get the truck to come to a stop without injury to others or to the truck would [undoubtedly] be a tremendous stress to someone who was experiencing an acute myocardial infarction."¹⁴² Nevertheless, the Deputy denied benefits.¹⁴³ Perhaps the salient

131. See *Varied Enters., Inc. v. Sumner*, 353 N.W.2d at 409 (examining an employee's subjective mindset in determining his reasons for continuing to work).

132. 2 LARSON & LARSON, *supra* note 3, § 44.04, at 44-43 (emphasis added); *Varied Enters., Inc. v. Sumner*, 353 N.W.2d at 409.

133. *Varied Enters., Inc. v. Sumner*, 353 N.W.2d at 408.

134. *Id.* at 409.

135. *Bellnap v. Robert J. Elliott, Inc.*, No. 623035 (Iowa Indus. Comm'r Jan. 27, 1983).

136. *Id.*

137. *Id.*

138. *Id.*

139. *Id.*

140. *McCrae v. Wal-Mart*, No. 1176328 (Iowa Workers' Comp. Comm'r Apr. 7, 1999).

141. See *id.*

142. *Id.*

143. *Id.*

difference between the facts of these two truck driver cases is that the first driver managed to stop his truck safely, and the second crashed into a guardrail, indicating he was simply unconscious following the infarction rather than valiantly wrestling the steering wheel to stop the rig.

B. *Establishing Medical Causation*

The second prong of proving causation in a heart attack case "requires medical evidence that the exertion or work in fact caused the heart attack."¹⁴⁴ The employee who continues working after the onset of initial heart attack symptoms must prove the delay in receiving treatment caused additional heart damage that otherwise would not have occurred if immediate medical treatment had been sought.¹⁴⁵

Establishing medical causation normally requires expert testimony.¹⁴⁶ However, expert medical opinion need not stand alone—it is supposed to be considered along with all other evidence presented at the hearing that bears on the causal connection between the work exertion and the heart injury.¹⁴⁷ The weight to be given to expert testimony is for the Agency, in its capacity as fact-finder, to determine.¹⁴⁸ Even if it remains uncontroverted, expert opinion testimony may be accepted by the trier of fact, or may be rejected in whole or in part, as the situation merits.¹⁴⁹ However, such testimony should not be rejected arbitrarily.¹⁵⁰ Furthermore, the Iowa Supreme Court has noted that "greater deference is ordinarily accorded such testimony where the opinion necessarily rests on medical expertise."¹⁵¹

The factual weight given to various medical experts is, in practice, somewhat hierarchical. The testimony of the claimant's treating physicians is usually deemed to deserve greater weight than a physician who examines the claimant in anticipation of litigation.¹⁵² This is logical enough, in light of the nature and extent of those physicians' involvement with the claimant.¹⁵³ However, in *Rockwell Graphic Systems, Inc. v. Prince*,¹⁵⁴ the court specifically declined to adopt any hard-and-fast rule, declaring it "unwise that a treating physician's testimony should be [as a matter of law] given greater weight than that of a later physician who examines the patient

144. *Riley v. Oscar Mayer Foods Corp.*, 532 N.W.2d 489, 492 (Iowa Ct. App. 1995) (citing ARTHUR LARSON, *WORKMEN'S COMPENSATION LAW* § 38.83 (6th ed. 1994)).

145. *See id.*

146. *Bradshaw v. Iowa Methodist Hosp.*, 101 N.W.2d 167, 171-72 (Iowa 1960).

147. *Burt v. John Deere Waterloo Tractor Works*, 73 N.W.2d 732, 738 (Iowa 1955).

148. *Frye v. Smith-Doyle Contractors*, 569 N.W.2d 154, 156 (Iowa 1997).

149. *Id.*

150. *See Eickelberg v. Deere & Co.*, 276 N.W.2d 442, 447 (Iowa 1979).

151. *Sondag v. Ferris Hardware*, 220 N.W.2d 903, 907 (Iowa 1974).

152. *Rockwell Graphic Sys., Inc. v. Prince*, 366 N.W.2d 187 (Iowa 1985).

153. *See id.*

154. *Rockwell Graphic Sys., Inc. v. Prince*, 366 N.W.2d 187, 192 (Iowa 1985).

in anticipation of litigation."¹⁵⁵ Nevertheless, the decision clearly indicates that under normal circumstances, because of the more intimate involvement between the patient and the treating physician, greater weight will be afforded the treating physician's opinion.¹⁵⁶

Somewhat lower on the hierarchy is expert testimony offered by a physician who, while not a treating physician, has at least personally examined the claimant.¹⁵⁷ The testimony of physicians who have never examined the claimant, but provide testimony based on a review of the medical records, or of those doctors hired merely to provide general medical input, is generally assigned less weight by the Agency.¹⁵⁸ Again, the testimony of treating physicians is not to be given more weight *per se*—the determination of the weight given to medical testimony should be made by the fact-finder within the specific circumstances of each case.¹⁵⁹

Quite often, medical testimony offered by the parties in a workers' compensation case will directly conflict.¹⁶⁰ In determining which of the conflicting opinions are entitled to greater weight, it is appropriate to consider factors such as the physician's education, experience, training, and practice.¹⁶¹ This is aptly illustrated in the Commissioner's appeal decision of *Jackson v. Britwill Co.*¹⁶² In that case, the claimant widow offered the expert testimony of Liberato Iannone, M.D., to establish that the deceased employee suffered a heart attack and died as a result of work stress.¹⁶³ The defendants offered the expert testimony of Donald Brown, M.D., and Michael Taylor, M.D., who both opined the employee's heart attack was not caused by workplace stress.¹⁶⁴

In resolving the conflict between the experts' opinions, the Commissioner noted that while Dr. Brown had been a cardiac specialist for many years, his background was "primarily in the academic environment."¹⁶⁵ Furthermore, the opinion on causation given by Dr. Taylor, a psychiatrist, was "given little weight as cardiac medicine is an area outside his expertise."¹⁶⁶

155. *Id.*

156. *Id.*

157. *See id.*

158. *See* *Frye v. Smith-Doyle Contractors*, 569 N.W.2d 154, 156 (Iowa Ct. App. 1997).

159. *See* *Rockwell Graphic Sys., Inc. v. Prince*, 366 N.W.2d at 191-92.

160. *See, e.g., id.* (discussing the testimony of a treating physician, who found no permanent disability, and a physician consulted for litigation, who found 25% permanent partial disability).

161. *See id.*

162. *Jackson v. Britwill Co.*, No. 976793 (Iowa Indus. Comm'r Aug. 29, 1995).

163. *Id.*

164. *Id.*

165. *Id.*

166. *Id.*

The Commissioner then noted the relevant qualifications of the claimant's medical expert:

Dr. Iannone is a cardiology specialist with many years of practical experience in treating heart cases. His curriculum vitae, exhibit 8, indicates that he is the author of over eighty articles on myocardial infarction and related matters. He has performed over 30,000 coronary angiograms, over 6,000 coronary [sic] angioplasty, and over 1,200 peripheral angioplasty procedures since 1969. He is board certified in both cardiology and internal medicine.¹⁶⁷

Not surprisingly, the Commissioner determined "Dr. Iannone's experience in the actual diagnosis and treatment of cardiac problems, combined with his extensive experience as a specialist in the field, entitles his view to greater weight."¹⁶⁸ Ultimately, the Commissioner found the claimant widow had successfully carried her burden of proof in establishing the employee's fatal heart attack was caused by his work-related stress, and that she had satisfied the medical prong of the test for compensability.¹⁶⁹

In cases in which the claimant's medical experts are only willing to state it was "possible"—rather than "probable"—that the employment and the heart attack are causally related, the claimant will generally be viewed as having failed to carry his or her burden of proving medical causation.¹⁷⁰

Although establishing medical causation is essentially within the province of medical experts, lay witness testimony may be presented as well. "It is a fundamental requirement that the Commissioner consider all evidence, both medical and non-medical. Lay witness testimony is both relevant and material upon the cause and extent of injury."¹⁷¹ Supportive lay witness testimony may be presented to buttress expert testimony.¹⁷²

V. WHEN ARE HEART ATTACKS COMPENSABLE? NO PRE-EXISTING CONDITION

Although almost all heart attack cases involve claimants who already had pre-existing heart disease and were therefore at increased risk of suffering heart attacks, the case may occasionally arise in which the medical experts indicate no underlying

167. *Id.*

168. *Id.*

169. *Id.*

170. *See, e.g., Robinson v. Concord Refrigerated, Inc.*, No. 1059037 (Iowa Indus. Comm'r Apr. 20, 1998) ("[A] preponderance of the evidence exists when the causal connection is probable rather than merely possible.").

171. *Miller v. Lauridsen Foods*, 525 N.W.2d 417, 421 (Iowa 1994).

172. *Bickel*, *supra* note 36, at 53 (citing *Miller v. Lauridsen Foods*, 525 N.W.2d at 421).

pre-existing heart condition was apparent.¹⁷³ In these claims, the *Sondag* line of cases may not be directly applicable.¹⁷⁴

Professor Larson asserts that in cases where the claimant brings no "personal risk" to the employment—when the claimant did not suffer from any underlying condition—any exertion (presumably either physical or mental) connected with the employment and causally related to the heart attack, as a matter of medical fact, is adequate to satisfy the legal causation test.¹⁷⁵ In these unusual cases, medical testimony establishing that the employment caused the heart attack may satisfy the medical causation standard as well as the legal causation test.¹⁷⁶ At this point, the lack of precedent in Iowa case law appears to make this alternative method of proving compensability in a heart attack case more theoretical than practical.

VI. CONCLUSION

Employers, insurance adjustors, and attorneys should strive to be conscious of the "human element" when handling workers' compensation heart attack claims. Attorneys representing claimants who have suffered heart attacks must realize that while representatives of the defendant-employers and their insurance carriers may feel personal sympathy for claimants, they often have difficulty understanding why claimants deserve to be compensated. From the defendants' perspective, these heart attacks often seem to be the result of factors outside the scope of employment—factors that may include years of unhealthy eating habits, obesity, and smoking. Life is stressful for everyone, defendants reason, so why should this claimant be afforded "special treatment"?

At the same time, defendants and their attorneys should bear in mind that whatever the sources of the circulatory disease or the heart attack, the claimant has suffered grievous—and certainly permanent—injury. Unlike a variety of other types of claims, heart attacks cannot be successfully faked. And while the etiology of a particular heart attack is often difficult or impossible to discern with absolute certainty, it is hard to dispute that working in a physically taxing or emotionally stressful environment does not benefit one's health—cardiac and otherwise.

When are heart attacks compensable injuries under Iowa workers' compensation law? Frankly, the Agency decisions are sometimes unclear and contradictory. Until the Iowa appellate courts clarify these issues more thoroughly, identifying the compensable heart attack will remain a challenge for practitioners on both sides of the hearing room.

173. *Id.*

174. *Gordon v. Hills Bank & Trust Co.*, No. 846902 (Iowa Indus. Comm'r Sept. 16, 1992).

175. *See* 2 LARSON & LARSON, *supra* note 3, § 46.03(2), at 46-48.

176. Bickel, *supra* note 36, at 58.