

2007

# Linda Lee Hymas v. Labor Commission, SOS Stagging, Hyclone ,and Insurance Co,. of the State of Pennsylvania : Brief of Appellant

Utah Court of Appeals

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LINDA LEE HYMAS,	)	
	)	<b>BRIEF ON APPEAL</b>
	)	
Petitioner/Appellee,	)	Labor Commission
	)	Case No. 06-0370
vs.	)	
	)	Honorable Deidra Marlowe
LABOR COMMISSION, SOS	)	
STAFFING, HYCLONE, and	)	20070875
INSURANCE CO. OF THE STATE	)	Appellate Court Case Number
OF PENNSYLVANIA,	)	
	)	
Respondents/Appellants,	)	

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FILED  
UTAH APPELLATE COURTS

## **LIST OF ALL PARTIES TO THE PROCEEDING**

The parties involved in this proceeding are:

1.     PETITIONER: Linda Lee Hymas (hereafter “widow”) as surviving wife of William Hymas, who died while working for Hyclone.
2.     RESPONDENTS: Labor Commission, SOS Staffing, Hyclone, and Insurance Co. of the State of Pennsylvania.

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**IN THE UTAH COURT OF APPEALS**

---

LINDA LEE HYMAS,

Petitioner/Appellee,

vs.

LABOR COMMISSION, SOS  
STAFFING, HYCLONE, and  
INSURANCE CO. OF THE STATE  
OF PENNSYLVANIA,

Respondents/Appellants,

**BRIEF ON APPEAL**

Labor Commission  
Case No. 06-0370

Honorable Deidra Marlowe

20070875

Appellate Court Case Number

---

**APPEAL FROM THE ORDER OF THE**

**LABOR COMMISSION OF UTAH**

**THE HONORABLE DEIDRE MARLOW, JUDGE, PRESIDING**

---

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## **STATEMENT OF JURISDICTION**

The Supreme Court or Appellate Court has jurisdiction to hear this appeal under Utah Code Ann. § 78-2-2(3) and (6) and U.C.A. § 63-46b-16.

## **STATEMENT OF ISSUES PRESENTED FOR REVIEW**

### **ISSUE I**

DID THE ALJ ABUSE HER DISCRETION WHEN SHE FAILED TO REFER THE MEDICAL CAUSATION EVIDENCE TO A MEDICAL PANEL, WHERE THE ISSUE WAS CONTESTED AND THE MEDICAL EVIDENCE TECHNICAL AND COMPLICATED.

**Standard of Review:** The Appellate Court reviews Administrative agency rulings, on interpretation of its statutorily granted powers and authority as a question of law, with no difference to the agency's view of the law. The correction-of-error standard will be applied and the agency's ruling upheld only if it was not erroneous. *Bevans v. Industrial Commission*, 790 P.2d 573 (Ut. Ct. App 1990); U.C.A. 63-46b-16(4) - Factual findings are reviewed on the standards of reasonableness and rationality under U.C.A. § 63-46b-16(4) as required.

### **ISSUE II**

DID THE ALJ ABUSE HER DISCRETION WHEN SHE FAILED TO CONTINUE THE CASE, ORDER THE APPOINTMENT OF IMPARTIAL MEDICAL EVALUATION, OR ALLOW PETITIONER HERSELF TO OBTAIN A MEDICAL REPORT FROM A CARDIOLOGIST WHEN JUST CAUSE WAS PRESENT TO DO SO.

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### **ISSUE III**

DID THE ALJ ABUSE HER DISCRETION WHEN SHE RULED SUA SPONTE, SIMILAR TO A DEFAULT JUDGMENT, WITHOUT HOLDING A HEARING OR ALLOWING WITNESSES TO TESTIFY REGARDING THE PHYSICAL EXERTIONS AT WORK WHICH CAUSED STRESS ON BILL HYMAS.

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**CONSTITUTIONAL PROVISIONS, STATUTES, ORDINANCES,  
RULES AND REGULATIONS**

The full texts of the following determinative statutes and rules are reproduced at  
Addendum A.

- A. Utah Code Ann. § 34A-2-401
- B. Utah Code Ann. § 34A-2-601
- C. Utah Code Annotated § 63-46b-16
- D. Administrative Rule 602-2-1
- E. Administrative Rule 602-2-2

**STATEMENT OF THE CASE**

**A. Statement of and Nature of the Case.**

This case involves a widow's due process right to seek workers compensation benefits from the Worker's Compensation Fund or Employer's Independent Insurance for the death of her husband which happened at work. (See Claim for Dependents Benefits R001). The Employer and Insurance Company filed an answer denying any liability. (Legal and medical causation were also denied) (R023 to R026). A hearing was scheduled for October 25, 2006 before Administrative Law Judge Deidra Marlowe (hereafter "ALJ"). In preparation for the hearing, a pretrial disclosure form was filed by Respondent's denying legal or medical causation. (R028 to R029). A medical exhibit was submitted to the ALJ, but said medical exhibit left out the primary treating physician, Dr. Strong, records entirely. (R035, R106). Dr. Strong was Bill's treating doctor prior to Bill's death. The only medical

evidence relied on was an autopsy report done the day after Bill's death, without the benefit of a cardiologist present or any facts of physical exertion or idiopathic fall precipitating the heart attack. (R106-002 to R106-003A). The ALJ, without taking any evidence from the employees, employer, the widow, Linda Hymas, or statements made by her husband prior to death, or referring the case to a medical panel, issued sua sponte a decision from the bench denying the application for benefits claiming there was no medical link or causation shown, and issued Findings of Fact and Conclusions of Law on the same day. (R036 to R039).

A Motion for Review was filed by Linda Hymas on November 22, 2006. (R040 to R059). The employer filed a Response to the Motion for Review on December 12, 2006. (R060 to R066). No hearing was held on these motions or additional evidence received and the Labor Commission issued an Order affirming the ALJ's decision on July 31, 2007. (R068 to R071). The Commission adopted the very same Findings of Fact as the ALJ. (R068). Mrs. Hymas filed another Motion to Reconsider on August 14, 2007. (R072 to R073). The employer/Respondent did not file any response. Linda filed supplemental evidence. (R077 to R081) An Order was entered denying said Motion on September 26, 2007. (R101-R103).

A Writ of Review or Notice of Appeal was filed on October 26, 2007, together with an Affidavit of Impecuniosity by Linda Hymas. (R104 to R105). Mediation occurred at the Appellate level, but was unsuccessful.

**B. Statement of Facts.**

1. William E. Hymas (“Bill”) was married to Linda Hymas for several years and worked primarily as a bus driver. (R044).

2. Bill was required to pass a doctor’s physical examination in order to maintain his commercial driver’s license for transporting the public. (R044). Dr. Strong was Bill’s primary physician. Bill’s physical exam revealed no concerns regarding high blood pressure, hypertension, or other heart disease, and he was appropriately managing a type II diabetic condition with non-insulin treatment. (R053-059, R079).

3. A DOT physical was performed at IHC Clinic on July 26, 2004. Section 5,6 and 8 of the physical exam was marked “no” about heart murmurs, extra sounds, and enlarged heart or pacemaker.” (R057). The medical examiner certificate said Bill was good to drive for the next two years between July 26, 2004 until July 26, 2006. (R058). Bill had been driving for Cache County Schools during that period of time. (R044).

4. Bill was a non-smoker and age 65. (R011, 015).

5. Bill sought additional work through SOS staffing and was assigned to work in freight and shipping at Hyclone in Logan, Utah on or about January 23, 2006. (R017).

6. The work at Hyclone required the employee to lift heavy freight eight hours a day. (R043, R077). Most of the other employees were much younger than Bill. (R044, R079). The week prior to Bill’s fatal heart attack, Bill had lifted and moved tons of freight, and was exhausted each night. (R043 to R 044). A co-employee at Hyclone told Bill’s

supervisor that this type of work was too much for Bill and to find other work more suitable for Bill. (R077).

7. On January 31, 2006, the day before Bill's death, during his eight hour shift at Hyclone, Bill lifted about 250 containers of product onto pallets. (R078). Each container weighted 100 to 250 pounds. Four of the employees would load the containers onto the pallet, and apparently during that day they moved close to 40,000 pounds of freight onto these pallets or 20 tons. (Unusual and extraordinary exertion). (R043 to R044).

8. When Bill came home from work on January 31, 2006, he came in the house, sat down in his rocking chair with his head between legs, huffing, puffing, and was short of breath. (R044, R078). He told his wife, Linda, that this job was too much for him and was the hardest job he had ever worked. (R077, R078). He said it was fast paced and he tried to keep up with the younger college-aged students with whom he worked, but was not having success. (R080). He said he was on his initial two week probationary period and intended to ask his supervisor to transfer him to another department more suitable as soon as the two weeks were up, which would have been after February 1, 2006. (R044, R077).

9. On February 1, 2006, Bill went to work and arrived at 8:55 a.m. (R043). He was asked to break down four or five large cardboard boxes and take them to the dumpster. (R014). The weight of these cardboard boxes was about ten pounds each. (R043). Apparently, Bill broke these cardboard boxes down, put them on a pallet jack to take them to the dumpster and then brought the pallet jack back to the warehouse. (R043).

10. Bill was working by himself, and apparently upon returning to the warehouse, he either suffered an idiopathic fall, (R001, R004, R014, R042, R046, R052, R079, R106-04), or an unexpected heart attack and fell to the floor, hitting his head (leaving a cut and large goose egg), with his glasses and hat being tossed several feet away. (R014, R079).

11. Bill was found by co-employees lying on the warehouse floor at about 9:15 a.m. and attempts to resuscitate him failed. (R014) He was pronounced dead at approximately 10:00 a.m. (R014).

12. The medical examiner, Dr. Leis, examined Bill on February 2, 2006 and determined that the cause of death was occlusive coronary artery disease involving at least one main artery that had ninety percent (90%) or greater occlusion, causing lack of blood flow to the heart, thus the heart attack. (R106-002). However, because the medical examiner was not informed about the extreme exertions Bill performed at work, he merely stated in a letter dated October 11, 2006:

“The effects of work-related stress may be a factor in an additional workload being placed upon the heart, depending upon a person’s adaptation to that stress. Signs of anxiety may be displayed. Psychologic manifestations may include high blood pressure or an increased heart rate. These latter events may increase the workload on the heart compounding the underlying atherosclerotic disease risk to the heart. Additional physical requirements in the workplace may also place additional demands of the heart.” (R106-3A).

The letter made it clear that the medical examiner had no information regarding Bill’s degree of stress at work or workloads, but obviously stated that heavy work exertions increase the risk of Bill having a heart attack. (R106-3A).

13. The emergency room note of February 1, 2006 stated:

“We did note that the patient had a small laceration on the back of his head. I was not sure if he fell and struck his head and became unresponsive at that point, or if he had sudden death and fell.”

Dr. Doug Plowman, M.D., Emergency Room Doctor. (R004).

The medical examiner did not review the head injury as a potential cause of death.

14. SOS and Hyclone both failed to produce any evidence that Bill did not die of an idiopathic fall or heart attack triggered by work exertion. (Absent in Record).

15. Dr. Jeff S. Strong, M.D. stated on September 19, 2005 in his medical examination notes:

“63-year-old male presenting today on follow up. He comes without any major new complaints. We planned to see him last fall, but that fell through. He has type II diabetes. No numbness in his feet or toes. He has not had any problems with any chest pain...He denies any difficulty with hypertension or chest pains... No problems with dizziness or falls.” (R053).

This report was not part of the first medical exhibit but added in the Motion to Reconsider. (R053).

16. Dr. Edward Leis, the medical examiner, clarified his autopsy report on January 7, 2008 by stating:

“I would agree that given the underlying disease process of vessel blockage in the heart, your husband would be more susceptible to having cardiac or heart related problems during the increased physical demands of the job he was working. I say this because with physical activity, such as repeated lifting of heavy boxes and freight, the heart rate goes up. This increases the demands of the heart muscle for blood flow and oxygen delivery to the tissues. In the

presence of blood vessel blockage, this increase in blood and oxygen will not be sufficient, resulting in an abnormal heart rhythm (or arrhythmia) or a heart attack and possible death. An arrhythmia will not be seen at autopsy because it is primarily an electrical event of the heart. The heart attack would require survival of a few hours following the event before early signs of injury could be seen in the heart muscle at autopsy.”

“The fact that your husband had ... abrasions and laceration to the back of his head supports a sudden cardiac event. This type of injury is frequently seen in our office in people that expire under similar circumstances. Unconsciousness is immediate and the individual falls, collapses without being able to protect themselves while going down.” (See Exhibit A attached).

This letter clarifies that physical exertion at work can trigger or precipitate a heart attack and Bill’s physical exertion is, more probable than not, the medical cause of Bill’s heart attack and the resulting death. However, the ALJ refused to examine any of the facts regarding Bill’s stress or workload or to submit this evidence to a medical panel, although asked to do so. (R045).

17. Two medical journals on the subject of “triggering of acute myocardial infarction by heavy physical exertion” are attached as a matter of public record. The article in the New England Journal of Medicine dated December 2, 1993 specifically held that about 80% of the cases involving a heart attack that occurred within one hour after an episode of physical exertion were triggered by it. The article specifically states:

“These conclusions and a limitation of increased risk to the hour after exertion may be useful in considering workers compensation and liability cases in which physical exertion preceded the onset of myocardial infarction.” (See Exhibit B attached).

Also, in an article through the American Medical Association dated in 1999, it was

concluded that in men who already have preexisting coronary disease, sudden death related to physical exertion was associated with acute plaque rupture in at least 68% of the cases. The study concluded that in men with severe coronary artery disease who die suddenly, acute exertion appears to be a main risk factor for plaque rupture, presumably by disruption of vulnerable plaque already existing in the artery, which plaque then flows to a blockage or narrow area and plugs the artery, causing the heart attack. (See Exhibit C attached). The American Heart Association has also published that heart attacks normally occur within 24 hours after physical exertion and often in the morning, with most victims clutching their chest and falling face forward (rather than on their back).

18. Had the ALJ heard the facts and transferred the case to a medical panel with the legal causation facts and physical exertions of Bill's work outlined, the medical causation factors could have been determined pursuant to Rule 602-2-2.

### **SUMMARY OF ARGUMENT**

The Appellate Court has the authority to grant relief from an agency's order if it determines that a person seeking judicial review has been substantially prejudiced by any agency action, particularly when the agency has not decided all of the issues requiring resolution; the agency has erroneously interpreted or applied the law; the agency has failed to follow prescribed procedure; or the agency action was an abuse of discretion delegated to the agency by statute, contrary to a rule of the agency, contrary to the agency's prior practice,

or otherwise arbitrary or capricious. See UCA § 63-46b-16(4). In this case, the Appellate Court should grant Plaintiff relief because of the following abuses in discretion by the Administrative Law Judge (hereafter “ALJ”).

A. The medical causation issue should have been submitted to the medical panel.

This case involves Linda’s claim for worker’s compensation benefits arising out of Bill’s employment for SOS and Hyclone wherein he suffered death by accident and his employer has denied liability. Rule 602-2-2 of the Administrative rules adopts mandatory guidelines for when the ALJ must utilize a medical panel. Subparagraph (a) states:

“A panel **will** be utilized by the administrative law judge where one or more **significant medical issues** may be involved. Significant medical issues are involved when there are:

1. **Conflicting medical opinions related to causation** of the injury or disease.”

This Court has ruled on several occasions that “where the evidence of a casual connection between the work-related event and the injury is **uncertain** or **highly technical**, (such as with the cause of an internal failure) failure to refer the case to a medical panel may be an **abuse of discretion**.” *Willardson vs. Ind. Comm. of Ut.*, 940 P.2d 671; 275 Utah Adv. Rep. 3; 1995 Utah Lexis 60 (Supreme Court of Utah Oct. 6, 1995); *Champion Homebuilders vs. Industrial Com.*, 703 P.2d 306, 308 (Utah 1985); *accord Hone vs. J.F. Shea Co.*, 46 Utah Adv. Rep. 18, 728 P.2d 1008, 1012 (Utah 1986).

There was evidence that Petitioner’s husband died at work unexpectedly without any forewarning from either an idiopathic fall or a heart attack that was caused or triggered by

exertion due to the unusual and extraordinary lifting of freight or moving freight. The only medical opinion submitted was an autopsy which suggested that exertions from work can trigger a heart attack in a victim, such as Bill, who had 60% and 90% blockage in two of his three main arteries. The employer never submitted any medical evidence to the contrary, but denied causation. The ALJ refused to take any testimony regarding accident, pre-existing condition, legal causation or the amount of physical exertion or stress or any facts that would have shown this case qualified as extraordinary exertion. The ALJ refused to transfer that evidence to a medical panel to determine medical causation of the fall or heart attack. Where the evidence of a causal connection between the work-related event and the injury is uncertain or highly technical, and is disputed, the ALJ's failure to refer the case to a medical panel is an abuse of discretion which substantially prejudiced Linda Hymas.

**B. The ALJ failed to continue the case or order an impartial medical evaluation.**

Again, the ALJ abused her discretion when she refused, in a sensitive death case with complicated issues, to continue the case for employment of a medical director or medical consultant to evaluate the medical evidence. See UCA § 34A-2-601(d). Section 601 provides adequate procedures to protect both parties' due process rights. In fact, the employer normally asks for an independent medical examination on the victim. Because there was an autopsy in this case, with no cardiac physician accompanying the autopsy when it was conducted, there should have been an independent specialist who was qualified to determine what contributed to the heart attack. Mrs. Hymas tried to get Dr. Strong to do so,

but he refused. (R052). Dr. Leis, who performed the autopsy, had no physical exertion facts. (R106-3A). The ALJ did not hire a medical evaluation herself nor utilize a medical expert or seek the expertise of a medical panel and violated her own rules, which substantially prejudiced Linda Hymas. Thus, the decision must be overturned and the case remanded to the Industrial Commission for further proceedings.

C. Linda Hymas was entitled to due process and a full evidentiary hearing.

Rule 602-2-1(c)(4) of the Administrative Rules involving the Labor Commission requires the employer to file medical evidence supporting a denial of medical causation:

“When liability is denied based upon medical issues, copies of all available medical reports sufficient to support the denial of liability shall be filed with the answer.”

In this case, the employer, SOS and Hyclone, denied the medical issues regarding medical causation, but they did not file any medical reports rebutting causation.

Rule 602-2-1(I)(2) requires a hearing and specifically states a hearing can only be avoided in two instances, by default or waiver:

“Judgment may be entered without a hearing **after default** is entered or upon stipulation and **waiver of a hearing** by the parties.”

In this case, Linda Hymas was not in default, nor did she stipulate to waive the hearing. She was entitled as a matter of law to prove a work related accident, legal causation and medical causation with the witnesses present. Rule 602-2-1(I)(7) indicates that,

“Requests for continuance may be granted or denied at the discretion of the administrative law judge for good cause shown.” Good cause was shown since the medical exhibit lacked Dr. Strong’s records, there was a lack of Logan Regional Hospital records, as well as additional expert medical evidence to support the autopsy report that exertions at work could have triggered or contributed to the heart attack. In addition, when Linda filed a Motion for Review under Rule 602-2-1(M)(1), it states the ALJ **shall**: “Reopen the case and enter a Supplemental Order after holding such further hearing and receiving such further evidence as may be deemed necessary.” (emphasis added) Certainly, a new hearing and receiving additional medical evidence regarding medical causation was necessary in this case and should have been allowed. Instead, the Motion for Review was basically denied without reopening the case or receiving any further evidence.

Lastly, Rule 602-2-2(C) gives the ALJ authority to authorize an injured worker to be examined by another physician for the purpose of obtaining a further medical examination or evaluation pertaining to the medical issues involved, particularly where:

- “1. The treating physician has failed or refused to give an impairment rating, (See R052), and/or
2. A substantial injustice may occur without such further evaluation.”

In this case where the treating physician, Dr. Strong, refused to cooperate with Linda Hymas, refused to give any indication as to whether medical causation existed between the work exertions and the heart attack, and where his records were not even in the medical

exhibit, it was an abuse of discretion by the ALJ to refuse to allow Mrs. Hymas to obtain a report from another physician, which created a substantial injustice.

Basically, the ALJ deprived Linda Hymas of the opportunity for a fair hearing, to present evidence, to prove legal causation as well as medical causation. The ALJ abused her discretion in not ordering or allowing a cardiologist to review the case or to do an independent medical exam, or allowing a medical consultant hired by the ALJ to review the case, or submitting all of the evidence to a medical panel as mandatorily required in Rule 602-2-2.

## **ARGUMENT**

### **POINT 1. APPELLATE REVIEW STANDARD**

The entire purposes of the Worker's Compensation Act is not only to secure compensation to an injured employee, or those dependent upon one killed by accident, but to relieve society of the care and support of the victims of industrial accidents. *Reteuna vs. Industrial Commission*, 55 Utah 258, 185 P.535 (Utah 1919). The purpose of the Act was to eliminate litigation and place on business the burden of caring for injured employees, or, when killed, their dependents. *Park Utah Consol. Mines Co. vs. Industrial Commission*, 84 Utah 481, 36 P.2d 979 (Utah 1934). This new and wider remedy for victims of industrial accidents in a new tribunal for administration of such a remedy is considered a beneficent law passed to protect employees and their dependents, and the act should be liberally

construed to effectuate its purposes. See *Ogden Iron Works vs. Industrial Commission*, 102 Utah 492, 132 P.2d 376 (Utah 1942). Linda Hymas has no retirement benefits or life insurance on Bill's life. She suffers with cancer. She needs the worker's compensation funds to stay off poverty. There is nothing in the Administrative Rules or Worker's Compensation Act which requires the ALJ to rush to a decision, and cut the Petitioner off without allowing her an opportunity to at least prove her case.

Appellate review of an ALJ order is governed by Utah Code Ann. § 63-46b-16(4) which states:

"The Appellate Court should grant relief, only if, on the basis of the agencies record, it determines that a person seeking judicial review has been substantially prejudiced by any of the following:

...

- (c) The agency has not decided all of the issues requiring resolution;
- (d) The agency has erroneously interpreted or applied the law;
- (e) The agency has engaged in an unlawful procedure or decision making process, or has failed to follow prescribed procedure;

...

- (g) The agency action is based upon a determination of fact made or implied by the agency, that is not supported by substantial evidence when viewed in light of the whole record before the court;

- (h) The agency action is:

- (i) an abuse of the discretion delegated to the agency by statute;
  - (ii) contrary to a rule of the agency;
  - (iii) contrary to the agency's prior practice, unless the agency justifies the inconsistency by giving facts and reasons that demonstrate a fair and rational basis for the inconsistency; or
  - (iv) otherwise arbitrary or capricious."

The next points in this Appellate Brief will prove that the ALJ failed to follow her own procedures, never ruled on several issues, never followed the

applicable statutes and abused her discretion or acted arbitrary and capricious to Linda Hymas' substantial prejudice.

**POINT 2. THE ALJ JUDGE COMMITTED AN ABUSE OF DISCRETION WHEN SHE FAILED TO RULE ON SEVERAL ISSUES, THEN FAILED TO SUBMIT TO A MEDICAL PANEL THE MEDICAL CAUSATION ISSUE, THUS SUBSTANTIALLY PREJUDICING LINDA HYMAS' CASE.**

Rule 602-2-2, of the Administrative Rules on utilizing a medical panel, mandatorily required the ALJ to submit significant medical issues, particularly regarding medical causation of Bill's heart attack to the medical panel. The relevant rule states:

**"A panel will be utilized by the Administrative Law Judge where one or more significant medical issues may be involved. Significant medical issues are involved when there are: 1) Conflicting medical opinions related to causation of injury or disease..."**

Medical causation of an internal failure, such as a heart attack, has always been a significant medical issue requiring transmittal to the medical panel as a matter of law. See *Willardson v. Industrial Commission*, 904 P.2d 671; 275 Ut. Adv. Rep. 3; 1995Utah Lexis 60 discussed more fully on page 23 and 24 in this Brief.

There are several cases in Utah which hold that failure to submit medical causation to the medical panel is an abuse of discretion. In *Price River Coal Co. v. Industrial Commission of Utah*, 731 P.2d, 1079; 49 Utah Adv. Rep. 27; 1986 Utah Lexis 937 (Supreme Court of Utah, December 31, 1986) (involving a husband who died on the job as a result of a

heart attack) the Court held in footnote 1, head note 6, page 1082, as follows:

“As a practical matter, when the *Allen* standard is being applied to cases which may involve pre-existing conditions, before evidence is taken on the issue of legal cause, the commission would be well advised to first make a determination of whether or not the pre-existing condition does in fact exist. If a pre-existing condition exists, then the parties and the hearing office will know that the ‘extraordinary exertion’ test will be applied to the facts as they are developed, and the evidence can be appropriately prepared and marshaled for presentation to the fact finder. If a pre-existing condition does not exist, the hearing may be expedited because there will be no need to show how hard the employee was or was not working, only that the employment activity lead to the injury. **Of course, even if a pre-existing condition is involved, if the commission finds that legal cause does exist, then it is still appropriate to refer the matter to a medical panel to determine whether the facts, as determined at the legal cause hearing, are sufficient to establish medical causation.**”

The ALJ in the Hymas case should have first determined if Bill’s heart attack constitutes an accident, then she should have examined pre-existing conditions, if any, then legal causation, and finally whether conflicting or inadequate evidence existed on medical causation, thus requiring a panel. The ALJ failed in every step to follow proper procedure.

a. Issue of the Accident was Overlooked:

The ALJ totally ignored any evidence regarding “accident” and made no findings or conclusions of law whether the idiopathic fall or the heart attack occurred by accident. The definition of what constitutes an accident is found in *Purity Bisquitco v. Industrial Commission*, 115 Utah 1, 201 P.2d. 961 (1949) which definition was adopted in *Allen v. Industrial Commission*, 729 P.2d. 15 (Utah 1986), at page 22, by holding that the accident requirement is met if,

“the result of an exertion was different from what would normally be expected to occur, the occurrence was unplanned, unforeseen, unintended and therefore, by accident. The critical factor in determining whether an incident is by accident is unexpectedness.” (emphasis added).

In the instant case, Bill Hymas was in good health, passed a physical for his commercial driver’s license and had no indication of internal heart disease whatsoever. He had no signs of dizziness or falls. The weakened heart could have caused Bill to pass out and fall triggering the heart attack. The heart attack may have been so sudden and unexpected that Bill collapsed and fell to his death, hitting his head, causing a goose egg on the back of his skull. Either way, both are compensable. The idiopathic fall doctrine is compensable under *Kennecott Corp. v. Industrial Commission*, 675 P.2d 1187, 1991-1992 (Ut. 1983) where an employee had a heart attack then fell in a pond and drowned. The Court held:

A different rule applies, however, where because of some non-occupational internal weakness (such as a **heart attack**, epileptic fit, or fainting spell), an employee falls and [\*1192] sustains an injury from the fall. Professor Larson states:

The basic rule, on which there is now general agreement, is that the effects of such a fall are compensable if the employment places the employee in a position increasing the dangerous effects of such a [\*\*11] fall, such as on a height, near **machinery** or sharp corners, or in a moving vehicle.

1 A. Larson, *The Law of Workmen's Compensation* § 12.11 at 3-254, 3-256 (1982).

This "idiopathic fall" rule was first recognized in Utah in *Tavey v. Industrial Commission*, 106 Utah 489, 150 P.2d 379 (1944), in which this Court upheld recovery of a bookstore employee who, while at work, fainted and struck her head on a low bookshelf, causing a concussion and a temporary absence from

work. The Court held that to be an "accident" within the definition of the statute, the weakness that precipitated the fall need not be work-related:

We hold that there was an "injury caused by accident", and that **the plaintiff is entitled to compensation, regardless of the fact that the cause of the fall may have been physical weakness or illness unrelated to the duties or conditions of the employment. Compensation in Utah can not be denied merely because the remote cause of the injury was an idiopathic condition not due to the employment . . . .** If the immediate cause of the injury was an accident, as here, it is immaterial under our statute that the cause of the fall was a fainting spell or that the [**\*\*12**] accident would not have happened but for the illness of the claimant. **"An accident is not the less an accident because the remote cause was the idiopathic condition of the employee."**

There is no question that Bill had a weakened heart and the exertion may have caused him to faint near machinery, with his hat and glasses flying several feet away, falling causing an injury to his head with death thereafter. Perhaps the heart attack occurred first, so sudden and unexpected that it caused unconsciousness and then death. Either way, Bill's death was by accident, but the ALJ made no findings on this critical subject.

b. The issue of pre-existing condition was wrongfully presumed.

The ALJ next should have examined the facts on pre-existing condition. Bill came to the SOS job without any internal medical evidence that he had heart disease. The facts indicate Bill's pre-existing condition was unknown. The ALJ cannot just presume pre-existing condition. *Nyrehn v. Industrial Commission*, 800 P.2d 330 (Utah 1990). Dormant or latent pre-existing conditions are fully compensable. The employer took Bill as is, and the work lead to Bill's death. See *Ocean Acc. & Guar. Corp. v. Industrial Commission*, 245 P.

343, 345 (Ut. 1926) which ruled:

“Where a dormant disease was revived or accelerated by an accidental injury and disability resulted, the injured workman was entitled to compensation for the entire period of his disability, though prolonged because of the disease.”

...

Compensation may be awarded, although there was pre-existing heart disease, if disease was aggravated or accelerated by accidental injury.”

Perhaps Bill’s work, over the years, given his age and the stresses involved, created cumulative heart disease itself. Again, the ALJ took no evidence on pre-existing factors and made a wrongful presumption regarding Bill’s pre-existing condition (stating it was non-work related).

c. The issue of legal causation was ignored.

The next step requires the ALJ to analyze the causal connection between the heart attack and the working conditions. See *Lancaster v. Gilbert Development*, 736 P.2d 237; 56 Utah Advance Adv. Rep. 3; 1987 Utah Lexis 695(Utah 1987) (a heart attack case), which follows the two-step causation analysis in *Allen v. Industrial Commission* at 25. In order to meet the causation requirement, there must be sufficient evidence of legal cause and medical cause. Under the legal cause test, “a claimant with a pre-existing condition must show that the employment contributed something substantial to increase the risk he already faced in everyday life because of his condition.” 729 P.2d at 25. When a claimant has no pre-existing risk factors, any exertion connected with the employment and casually connected with the injury as a matter of medical fact will satisfy the legal causation test. 729 P.2d at 26. In this case, the ALJ failed to determine if Bill, who is 65, fainted and fell to his death or if unusual

or extraordinary work exertions or stress factors contributed to a sudden heart attack. She totally ignored making a finding on legal causation.

Instead, the ALJ skipped over any findings regarding an accident, pre-existing condition, or legal causation and went straight to medical causation. This was error because most, if not all of the evidence supporting pre-existing condition or legal causation is necessary to determine medical causation. As stated in *Price River and Allen*, as a practical matter, if there is legal causation in a pre-existing case, it usually follows that the physical exertion increased the risk of heart attack as a precipitating factor. (See argument below page 31 to 33 of this Brief). See also *Hilte v. Industrial Commission*, 766 P.2d 1089 (Ut. Ct. App. 1988), where lay opinion or other evidence of risks in the workplace supported both medical and legal causation. After the ALJ makes these findings, she is duty bound to submit the issue to a medical panel for medical causation. See Rule 602-2-2 of Administrative Rules on medical panel review.

d. Medical causation should have been submitted to the medical panel.

The law in Utah regarding the ALJ's duty to submit a medical causation issue to the medical panel, is adequately covered in *Willardson v. Industrial Commission*, 904 P.2d 671; 275 Ut. Adv. Rep. 3; 1995 Utah Lexis 60 (Utah 1995) (internal failure to back). *Willardson* involved a significant medical issue, namely medical causation of the back injury and conflicting medical reports. The Court held:

“However, medical causation would seem to be a ‘significant medical issue,’ and when the medical reports conflict on that issue, **the need for submission**

**to a medical panel would be as necessary** as in those instances specifically mentioned in subsections a, b, and c. Therefore, we conclude that the three examples were not meant to be exclusive or exhausted, but only illustrative as to when a panel should be appointed. The rationale for the holding, was stated: **“Allowing the ALJ, who has no medical training and possesses no medical degrees, to determine medical causation as a threshold question and dismiss both medical reports as lacking credibility effectively eviscerates the beneficence of subsection a.”** *Id.*, 674.

In *Willardson*, as in this case, the respondents did not provide any medical information to rebut the Petitioner’s doctor’s conclusion, but Respondents denied liability. There were just two doctor reports for Petitioner, both without the needed detail, just as the Hymas autopsy is missing detail. The Court went on to state,

“Willardson cannot be deprived of the benefit of that rule (submittal to medical panel) by the ALJ’s taking it upon herself to disregard two of the reports because their authors did not provide supporting information that they were not requested to provide. **It is the medical panel’s report that is intended to be detailed and well supported and to contain the ‘analysis and background’ insisted upon by respondents.**”

The *Willardson* Court concluded,

“We have heretofore recognized, independent of any rule of the commission, that **‘where the evidence of a causal connection between the work-related event and the injury is uncertain or highly technical, failure to refer the case to a medical panel may be an abuse of discretion,’** *Champion Homebuilders v. Industrial Commission*, 703 P.2d, 306, 308 (Utah 1985); accord, *Hone v. J.F. Shay Company Co.*, 46 Utah Adv. Report 18, 728 P.2d. 1008, 1012 (Utah 1986). **We find an abuse of discretion here, we conclude that the Industrial Commission violated its own rule and abused its discretion and that its violation substantially prejudiced Willardson.** Therefore, under Section 63-46b-16(4)(h)(ii) of the Utah Administrative Procedures Act, we overturn the Commission’s decisions and reverse the Court of Appeals decision. The case is remanded to the Industrial Commission for further proceedings consistent with this opinion. *Id.* at 675.”

Other cases likewise support Linda Hymas' clear right to have her case referred to the medical panel when liability is denied by the employer. *Schmidt v. Industrial Commission*, 617 P.2d 693 (Ut. 1980); *Lipman v. Industrial Commission*, 592 P.2d 616 (Utah 1979); *Sabo's Electronics Service v. Sabo* 642 P.2d 722 (Utah 1982), all of which held the prior statute or rule mandatorily required that a medical panel, "shall" be convened "upon the filing of claim for compensation for the injury by accident or for death arising out of or in the course of employment, **"when the employer or insurance carrier denies liability."**

Likewise, Linda Hymas was denied her procedural rights as well as her substantive rights when the ALJ took it upon herself to determine causation without referring the medical causation issue along with the legal causation facts to the medical panel. The ALJ ignored the technical complexity of the idiopathic fall. The autopsy indicated there was a possibility or probability that Bill's work exertion could trigger the heart attack. The Respondent had no medical evidence to rebut this. The autopsy was performed without a cardiologist present and no other facts were presented on heavy exertion to Dr. Leis. The issue should have been transferred to the medical panel for a detailed review of the underlying exertion facts. The ALJ's failure to do this, particularly where the employer continued to deny liability, was an abuse of discretion.

A medical panel is important in difficult or doubtful cases, because findings of a medical panel may assist in determining whether the death was caused by work-related stress. In the Hymas case, it is known that death was caused by significant occlusion of the main

artery, but the ultimate question is whether or not it can be said that the blockage was precipitated by circumstances occurring on the job, such as the idiopathic fall, or physical work exertions that loosened the plaque and clogged the artery, or by extra strain on the heart without sufficient oxygen reaching the heart. Utah law sanctions use of a panel in such cases because they fill an important role in assisting the Commission to determine whether job-caused stress or exertion induced injury or death in such a manner as to be compensable. Petitioner in this case should not be deprived of such an important procedural provision in the Workers Compensation Act.

**POINT 3. THE ALJ ABUSED HER DISCRETION WHEN SHE FAILED TO ALLOW PETITIONER TO SUBMIT MEDICAL REPORTS FROM A CARDIOLOGIST, WHEN SHE FAILED TO APPOINT AN IMPARTIAL MEDICAL EVALUATION, WHEN JUST CAUSE WAS PRESENT TO DO SO.**

The Worker's Compensation Act § 34A-2-601(1)(d) provides:

“(d) As an alternative method of obtaining an impartial medical evaluation of the medical aspects of a controverted case, the division may employ a medical director or one or more medical consultants:

- (i) on a full-time or part-time basis; and
- (ii) for the purpose of:
  - (A) evaluating the medical evidence; and
  - (B) advising an administrative law judge with respect to the administrative law judge's ultimate fact-finding responsibility.”

Utah Code Ann. § 34A-2-603, regarding autopsies, also states that the autopsy may be ordered by the Commission and in subparagraph 2 states that any person interested may designate a duly licensed physician to attend the autopsy ordered. The Dr. Leis autopsy

report was made the day after the death without a cardiologist present. The report only covered findings regarding artery blockage and not work-related stress, idiopathic fall, or causation of death. The autopsy evaluation made this limitation clear. Petitioner therefore had a right to have her separate physician review the autopsy, but Dr. Strong refused. Inasmuch as there was no cardiologist who examined the legal causation factors and linked them to a precipitating event, the ALJ should have authorized the hiring of a medical consultant, medical director, or evaluation to perform this service. Without such a report, substantial injustice would occur.

Rule 602-2-2(C) states:

“C. The Administrative Law Judge may authorize an injured worker to be examined by another physician for the purpose of obtaining a further medical examination or evaluation pertaining to the medical issues involved, and to obtain a report addressing these medical issues in all cases where:

1. The **treating physician has failed or refused to give an impairment** rating, and/or
2. A **substantial injustice may occur without such further evaluation.**”

In this case, the treating physician, Dr. Strong, refused to do a medical opinion on the work-related stress and the cause of the heart attack. Not only did he refuse to prepare a report for Linda Hymas, but apparently he refused to send his medical records when subpoenaed by the Respondent. The medical exhibit did not contain any of Dr. Strong's medical records. The employer never hired an independent medical examination or review. The autopsy never contained enough details. Even though parties are expected to be

prepared to present their evidence on the date of the hearing scheduled, request for continuances may be granted for good cause shown. Inasmuch as there was no cardiologist accompanying the autopsy report, there had been no independent evaluation of the case, and Dr. Strong, the treating physician refused to cooperate, good cause was shown to continue the hearing so a substantial injustice would not occur.

**POINT 4. LINDA HYMAS WAS DENIED DUE PROCESS OF LAW WHEN THE ALJ REFUSED TO HEAR ANY TESTIMONY, EXCLUDED ALL CO-EMPLOYEE TESTIMONY OR STATEMENTS OF THE DECEASED, AND ENTERED A RULING SUA SPONTE SIMILAR TO A DEFAULT JUDGMENT.**

Not only did the ALJ commit an abuse of discretion by failing to rule upon several issues such as accident, pre-existing condition, legal cause, and submittal of a medical causation to a medical panel, but she also violated the Petitioner's due process rights to have a hearing and present evidence. The hearing on October 25, 2006, if you can call it a hearing, violated the basic notions of fair play, due process, and justice.

Under Rule 602-2-1(I)(2) it specifically states:

“2. Judgment may be entered without a hearing after **default** is entered or upon **stipulation and waiver** of a hearing by the parties.”

Mrs. Hymas did not default in this case and she did not stipulate to a waiver of the hearing. Judgment therefore could not enter. Mrs. Hymas appeared at the hearing prepared to present evidence of no pre-existing heart disease, that an accident did occur on the job

(either by idiopathic fall or heart attack), with sufficient legal causation and medical causation to obtain compensation. The Respondent (Employer) had no medical evidence to rebut causation. As stated in *Spencer vs. Industrial Commission*, 733 P.2d 158, 161 (Utah 1987):

“The Commission represents the employer and insurance carrier **equally** with the Petitioner, and its members are charged with the duty of protecting the substantial rights of all the parties and **not merely one of them**. It is, of course, the duty of the commissioner in charge of a hearing to **see that all the evidence available and necessary is brought into the record** to the end that an intelligent and just conclusion be reached.” (emphasis added)

The Petitioner is entitled to a full hearing conducted fairly and every opportunity should be afforded her to fully present her case. As stated in *Color Country vs. Labor Commission*, 2001 Ut. App. 370; 38 P.3d 969; 436 Utah Adv. Rep. 4 2001 Utah App. Lexis 97, the Commission is not bound by the usual rules of evidence or any formal rules of procedure, however, it did state that proceedings for worker’s compensation claims “**still must satisfy basic notions of fairness.**” In that case, the Court allowed both parties to submit additional medical evidence after the hearing. See also, *Vali Convalescent and Care Inst. vs. Industrial Commission*, 649 P.2d 33, 36 (Utah 1982) (stating that due process does not always require **additional hearings** at different points in the proceeding **so long as a hearing is held prior to a final order becoming effective**). There was no hearing in the Hymas case before the final order became effective, and a continuance or subsequent medical reports should have been allowed.

The employer failed to submit any evidence with their answer sufficient to support the denial of liability. At the hearing, the employer produced no additional medical reports in support of their denial. The only medical report relied upon by the ALJ was the autopsy, which specifically states:

“I have no information regarding the idiology or degree of stress, if any, that the deceased was subjected to during the course of his employment.” (R106-3A)

The ALJ was required as a matter of law to allow Mrs. Hymas to provide said evidence regarding the work-related stress and exertions. Even in motions for summary judgment parties are given the right to present rebuttal affidavits. The duties at work and the heavy physical exertions were paramount to a decision regarding legal causation and medical causation. The ALJ admitted in her conclusions of law that Dr. Leis, the medical examiner, at least indicated that “work-related stress may be a factor in increasing demands on a person’s heart.” (R037) Mrs. Hymas should have been allowed to prove what those stresses at work were, especially when her 65 year old husband was required to work with young college age workers. Shipping and receiving is the most difficult physical job at Hyclone. Linda was not permitted to submit any testimony, from herself, from statements made by her husband, from other employees, and there was no allowance made for a continuance, although one was requested, and no mandatory referral to the medical panel, though requested, all of which violates the basic notions of fairness and justice. Hearsay evidence is admissible at a Workers Compensation hearing, including statements of the deceased

regarding his state of mind and health. See Rule 803, 804(a)(4) and 804(b)(2) of Utah Rules of Evidence.

When Mrs. Hymas filed a Motion for Review, the Administrative Rules state in Rule 602-2-1(M) after the motion and response is filed that:

“Thereafter the Administrative Law Judge shall:

a. Reopen the case and enter a Supplemental Order after holding such **further hearing** and **receiving such further evidence** as may be deemed necessary.”

Instead, the Commission took over the Motion for Review, denied any request for a further hearing and received no additional evidence and reaffirmed the ALJ’s findings. Again, this violates of the Commission’s own rules.

The Commission also mistakenly held that Mrs. Hymas could only prove medical causation with medical evidence (i.e. a doctor’s report), and went on to say that because her witnesses were not doctors, there was no error in rejecting and not allowing other testimony. This was clear error of law.

In *Allen vs. Industrial Commission*, at page 22, the Court specifically stated:

“Ordinarily, causation is proved by the production and interpretation of medical evidence either alone **or together with other evidence.**”

Accordingly, other evidence could have been used along with the autopsy report to prove medical causation. *Allen* made it clear that “causation . . . must be resolved on the facts of each case.” *Allen* further indicated:

“that is exactly why a medical panel is important and the need for a medical panel is manifest. **It is through the expertise of the medical panel that the Commission should be able to make the determination of whether the injury sustained by a claimant is caused, casually connected or contributed to by the claimant’s employment.**”

Note, the Court in *Allen*, held that medical causation evidence did not need to come solely from a medical report:

**“Even under the medical cause test, the claimant must show by evidence, opinion, or otherwise that the stress, strain or exertion required by his or her occupation lead to the resulting injury or disability.” *Id.* 27 (emphasis added)**

The *Allen* test does not require proof solely by a medical doctor. Footnote 8 of the *Allen* opinion specifically states:

“Evidence of the ordinariness or usualness of the employee’s exertions may be relevant to the medical conclusion of casual connection where the injury results from latent symptoms with an illness such as heart disease.”

After all, the medical doctors must rely on the legal causation evidence, which covers unusual and extraordinary exertions, to reach a conclusion on medical causation. Without this evidence, the medical panel could not even reach a decision.

The need for a medical panel was evident in the case of *Allen* since the order was vacated and remanded back to the ALJ for submission to a medical panel. In the case of *Hilte v. Industrial Commission*, 766 P.2d 1089 (Utah Ct. App. 1988), there was no medical evidence submitted by a doctor linking the causation to the workplace, but other evidence did and the ALJ submitted the evidence to a medical panel, which panel found medical causation.

The Commission in this case erroneously relied upon the case of *Griffith vs. Industrial Commission*, 399 P.2d 204 (Utah 1965) for the position that only a medical doctor can prove internal failures. First of all, nowhere does the Griffith's case stand for that position and secondly, the Commission ignored the ultimate holding of Griffith's which states:

“The plaintiff in this case **should be given the opportunity to introduce medical testimony** in an effort to prove that the plywood incident was the proximate cause of her present ailments.” *Id.* at 205.

Likewise, Linda Hymas should be given the opportunity to produce medical testimony that either the fall or the heavy physical work exertions of her husband triggered, were causally connected to or contributed to his heart attack either through a medical panel or an independent medical evaluation.

### **CONCLUSION AND SPECIFIC RELIEF REQUESTED**

In summary, the ALJ has a mandatory responsibility to submit complicated, technical medical questions regarding medical causation to a medical panel, especially where the

autopsy indicated that work-related stress or heavy exertions are part of the risk factors in persons who have pre-existing blockages in their arteries. There are more ways to prove medical causation than just through medical reports. Linda Hymas had a due process right to present all of the evidence regarding her husband's duties at work, the extreme stress from that work, and the heavy and unusual nature of those physical exertions. This evidence was relevant to the medical conclusion and causal connection of the heart attack, especially where Bill's symptoms were unknown and the employer had no rebuttal evidence, but denied liability.

The ALJ committed an abuse of discretion in not making any findings of fact or conclusions of law regarding Bill's fall or heart attack's sudden and unexpected occurrence, making it a compensable accident, either because of the idiopathic fall doctrine or because of unusual exertion. The ALJ failed to make any findings regarding whether the conditions Bill had were pre-existing. She failed to consider any evidence regarding Bill's work duties and extreme heavy physical labor, which contributed to, triggered, or precipitated the fall or heart attack. Her ultimate error was in not submitting the matter to a medical panel to decide the central medical causation question, which involved highly technical and complicated medical knowledge regarding Bill's idiopathic fall and unknown internal heart failure.

The ALJ unfairly favored the employer, who submitted absolutely no proof or medical evidence to rebut Petitioner's evidence that the heart attack was caused by the work place. Although the burden is on Linda Hymas to advance the initial proof, the autopsy report was

conducted the day after Bill's death without the benefit of a cardiologist present and Dr. Strong refused to help Linda Hymas or offer an opinion upon the work-related stresses. His records were not even made part of the medical exhibit. When Linda explained she had other legal causation evidence that the exertions were extraordinary and unusual, and could be combined with the autopsy statement and a medical panel review, the ALJ should have listened to the evidence and then submitted the matter to a medical panel due to the complexity of the issue. This is the very reason medical panels were instituted in the first place.

### **LINDA HYMAS REQUESTS THE FOLLOWING RELIEF**

1. The Order of the ALJ and Commission should be vacated and remanded for further hearings to decide all of the issues, i.e. whether an on the job accident occurred, whether pre-existing illness was present, whether an idiopathic fall existed, the legal causation evidence involving unusual or the extraordinary work exertions of Bill Hymas, and medical causation regarding whether those heavy exertions contributed to the heart attack. The medical panel could be employed at that time, or Mrs. Hymas could be allowed to submit her own cardiologist report proving medical causation. In a death case where Mrs. Hymas will be on public welfare and state assistance without adequate compensation, the basic notions of fairness and justice require remand to insure the purposes of the Worker's Compensation Act are followed.

2. Mrs. Hymas requests the employer pay all of her costs and attorney fees necessitated to bring this appeal to correct this injustice.

DATED this 30 day of April, 2008.

OLSON & HOGGAN, P.C.

  
Marlin J. Grant

**CERTIFICATE OF MAILING**

I hereby certify that on the 1 day of ~~April~~ May 2008, I mailed a true and correct copy of the foregoing **BRIEF ON APPEAL**, postage prepaid, to the following:

Mark D. Dean  
Kristy L. Bertelsen  
BLACKBURN & STOLL  
257 East 200 South, Suite 800  
Salt Lake City, Utah 84111-2048

  
\_\_\_\_\_

## **ADDENDUM “A”**

### **The following Statutes and Rules are as of 2006.**

#### **A. Utah Code Ann. § 34-2-602(1).**

(1) The division or an administrative law judge may require an employee claiming the right to receive compensation under this chapter to submit to a medical examination at any time, and from time to time, at a place reasonably convenient for the employee, and as may be provided by the rules of the commission.

#### **B. Utah Code Ann. § 34-2-602(2).**

(2) If an employee refuses to submit to an examination under Subsection (1), or obstructs the examination, the employee's right to have the employee's claim for compensation considered, if the employee's claim is pending before an administrative law judge, commissioner, or Appeals Board, or to receive any payments for compensation theretofore granted by a final order of the commission, shall be suspended during the period of the refusal or obstruction.

#### **C. Utah Code Ann. 34A-2-601(1)(a). Medical panel, director, or consultant -- Findings and reports -- Objections to report -- Hearing -- Expenses.**

(1) (a) The Division of Adjudication may refer the medical aspects of a case described in this Subsection (1)(a) to a medical panel appointed by an administrative law judge:

(i) upon the filing of a claim for compensation arising out of and in the course of employment for:

(A) disability by accident; or

(B) death by accident; and

(ii) if the employer or the employer's insurance carrier denies liability.

#### **D. Utah Code Ann. § 34A-2-601(1)(d).**

(d) As an alternative method of obtaining an impartial medical evaluation of the medical aspects of a controverted case, the division may employ a medical director or one or more medical consultants:

(i) on a full-time or part-time basis; and

(ii) for the purpose of:

- (A) evaluating the medical evidence; and
- (B) advising an administrative law judge with respect to the administrative law judge's ultimate fact-finding responsibility.

**E. Utah Code Ann. § 34A-2-603. Autopsy in death cases -- Certified pathologist -- Attending physicians -- Penalty for refusal to permit -- Liability.**

(1) (a) On the filing of a claim for compensation for death under this chapter or Chapter 3, Utah Occupational Disease Act, when, in the opinion of the commissioner or the commissioner's designee it is necessary to accurately and scientifically ascertain the cause of death, an autopsy may be ordered by the commissioner or the commissioner's designee.

(b) The commissioner or the commissioner's designee shall:

(i) designate the certified pathologist to make the autopsy; and

(ii) determine who shall pay the charge of the certified pathologist making the autopsy.

(2) Any person interested may designate a duly licensed physician to attend the autopsy ordered under Subsection (1).

(3) The findings of the certified pathologist performing the autopsy shall be filed with the commission.

(4) All proceedings for compensation shall be suspended upon refusal of a claimant or claimants to permit such autopsy when ordered under Subsection (1).

(5) When an autopsy has been performed pursuant to an order of the commissioner or the commissioner's designee no cause of action shall lie against any person, firm, or corporation for participating in or requesting the autopsy.

**F. Utah Code Ann. § 63-46b-16. Judicial review -- Formal adjudicative proceedings.**

(1) As provided by statute, the Supreme Court or the Court of Appeals has jurisdiction to review all final agency action resulting from formal adjudicative proceedings.

(2) (a) To seek judicial review of final agency action resulting from formal adjudicative proceedings, the petitioner shall file a petition for review of agency action with the appropriate appellate court in the form required by the appellate rules of the appropriate appellate court.

(b) The appellate rules of the appropriate appellate court shall govern all additional filings and proceedings in the appellate court.

(3) The contents, transmittal, and filing of the agency's record for judicial review of formal adjudicative proceedings are governed by the Utah Rules of Appellate Procedure, except that:

(a) all parties to the review proceedings may stipulate to shorten, summarize, or

organize the record;

(b) the appellate court may tax the cost of preparing transcripts and copies for the record:

(i) against a party who unreasonably refuses to stipulate to shorten, summarize, or organize the record; or

(ii) according to any other provision of law.

(4) The appellate court shall grant relief only if, on the basis of the agency's record, it determines that a person seeking judicial review has been substantially prejudiced by any of the following:

(a) the agency action, or the statute or rule on which the agency action is based, is unconstitutional on its face or as applied;

(b) the agency has acted beyond the jurisdiction conferred by any statute;

(c) the agency has not decided all of the issues requiring resolution;

(d) the agency has erroneously interpreted or applied the law;

(e) the agency has engaged in an unlawful procedure or decision-making process, or has failed to follow prescribed procedure;

(f) the persons taking the agency action were illegally constituted as a decision-making body or were subject to disqualification;

(g) the agency action is based upon a determination of fact, made or implied by the agency, that is not supported by substantial evidence when viewed in light of the whole record before the court;

(h) the agency action is:

(i) an abuse of the discretion delegated to the agency by statute;

(ii) contrary to a rule of the agency;

(iii) contrary to the agency's prior practice, unless the agency justifies the inconsistency by giving facts and reasons that demonstrate a fair and rational basis for the inconsistency; or

(iv) otherwise arbitrary or capricious.

#### **G. Utah Admin. Rule 602-2-1. Pleadings and Discovery.**

##### **A. Definitions.**

1. "Commission" means the Labor Commission.

2. "Division" means the Division of Adjudication within the Labor Commission.

3. "Application for Hearing" means the request for agency action regarding a workers' compensation claim.

4. "Supporting medical documentation" means a Summary of Medical Record or other medical report or treatment note completed by a physician that indicates the presence or absence of a medical causal connection between benefits sought and the alleged industrial injury.

5. "Authorization to Release Medical Records" is a form authorizing the injured workers' medical providers to provide medical records and other medical information to the commission or a party.

6. "Supporting documents" means supporting medical documentation, list of medical providers, Authorization to Release Medical Records and, when applicable, an Appointment of Counsel Form.

7. "Petitioner" means the person or entity who has filed an Application for Hearing.

8. "Respondent" means the person or entity against whom the Application for Hearing was filed.

9. "Discovery motion" includes a motion to compel or a motion for protective order.

B. Application for Hearing.

1. Whenever a claim for compensation benefits is denied by an employer or insurance carrier, the burden rests with the injured worker, or medical provider, to initiate agency action by filing an Application for Hearing with the Division. Applications for hearing shall include an original, notarized Authorization to Release Medical Records.

2. An employer, insurance carrier, or any other party with standing under the Workers' Compensation Act may obtain a hearing before the Adjudication Division by filing a request for agency action with the Division.

3. All Applications for Hearing shall include any available supporting medical documentation of the claim where there is a dispute over medical issues. Applications for Hearing without supporting documentation and a properly completed Authorization to Release Medical Records may not be mailed to the employer or insurance carrier for answer until the appropriate documents have been provided. In addition to respondent's answer, a respondent may file a motion to dismiss the Application for Hearing where there is no supporting medical documentation filed to demonstrate medical causation when such is at issue between the parties.

4. When an Application for Hearing with appropriate supporting documentation is filed with the Division, the Division shall forthwith mail to the respondents a copy of the Application for Hearing, supporting documents and Notice of Formal Adjudication and Order for Answer.

5. In cases where the injured worker is represented by an attorney, a completed and signed Appointment of Counsel form shall be filed with the Application for Hearing or upon retention of the attorney.

C. Answer.

1. The respondent(s) shall have 30 days from the date of mailing of the Order for Answer, to file a written answer to the Application for Hearing.

2. The answer shall admit or deny liability for the claim and shall state the reasons liability is denied. The answer shall state all affirmative defenses with sufficient accuracy and detail that the petitioner and the Division may be fully informed of the nature and substance of the defenses asserted.

3. All answers shall include a summary of benefits which have been paid to date on the claim, designating such payments by category, i.e. medical expenses, temporary total disability, permanent partial disability, etc.

4. When liability is denied based upon medical issues, copies of all available medical reports sufficient to support the denial of liability shall be filed with the answer.

5. If the answer filed by the respondents fails to sufficiently explain the basis of the denial, fails to include available medical reports or records to support the denial, or contains affirmative defenses without sufficient factual detail to support the affirmative defense, the Division may strike the answer filed and order the respondent to file within 20 days, a new answer which conforms with the requirements of this rule.

6. All answers must state whether the respondent is willing to mediate the claim.

7. Petitioners are allowed to timely amend the Application for Hearing, and respondents are allowed to timely amend the answer, as newly discovered information becomes available that would warrant the amendment. The parties shall not amend their pleadings later than 45 days prior to the scheduled hearing without leave of the Administrative Law Judge.

8. Responses and answers to amended pleadings shall be filed within ten days of service of the amended pleading without further order of the Labor Commission.

#### D. Default.

1. If a respondent fails to file an answer as provided in Subsection C above, the Division may enter a default against the respondent.

2. If default is entered against a respondent, the Division may conduct any further proceedings necessary to take evidence and determine the issues raised by the Application for Hearing without the participation of the party in default pursuant to Section 63-46b-11(4), Utah Code.

3. A default of a respondent shall not be construed to deprive the Employer's Reinsurance Fund or Uninsured Employers' Fund of any appropriate defenses.

4. The defaulted party may file a motion to set aside the default under the procedures set forth in Section 63-46b-11(3), Utah Code. The Adjudication Division shall set aside defaults upon written and signed stipulation of all parties to the action.

#### E. Waiver of Hearing.

1. The parties may, with the approval of the administrative law judge, waive their right to a hearing and enter into a stipulated set of facts, which may be submitted to the administrative law judge. The administrative law judge may use the stipulated facts, medical records and evidence in the record to make a final determination of liability or refer the matter to a Medical Panel for consideration of the medical issues pursuant to R602-2-2.

2. Stipulated facts shall include sufficient facts to address all the issues raised in the Application for Hearing and answer.

3. In cases where Medical Panel review is required, the administrative law judge may forward the evidence in the record, including but not limited to, medical records, fact stipulations, radiographs and deposition transcripts, to a medical panel for assistance in

resolving the medical issues.

F. Discovery.

1. Upon filing the answer, the respondent and the petitioner may commence discovery. Discovery allowed under this rule may include interrogatories, requests for production of documents, depositions, and medical examinations. Discovery shall not include requests for admissions. Appropriate discovery under this rule shall focus on matters relevant to the claims and defenses at issue in the case. All discovery requests are deemed continuing and shall be promptly supplemented by the responding party as information comes available.

2. Without leave of the administrative law judge, or written stipulation, any party may serve upon any other party written interrogatories, not exceeding 25 in number, including all discrete subparts, to be answered by the party served. The frequency or extent of use of interrogatories, requests for production of documents, medical examinations and/or depositions shall be limited by the administrative law judge if it is determined that:

a. The discovery sought is unreasonably cumulative or duplicative, or is obtainable from another source that is more convenient, less burdensome, or less expensive;

b. The party seeking discovery has had ample opportunity by discovery in the action to obtain the discovery sought; or

c. The discovery is unduly burdensome or expensive, taking into account the needs of the case, the amount in controversy, limitations on the parties' resources, and the importance of the issues at stake in the adjudication.

3. Upon reasonable notice, the respondent may require the petitioner to submit to a medical examination by a physician of the respondent's choice.

4. All parties may conduct depositions pursuant to the Utah Rules of Civil Procedure and Section 34A-1-308, Utah Code.

5. Requests for production of documents are allowed, but limited to matters relevant to the claims and defenses at issue in the case, and shall not include requests for documents provided with the petitioner's Application for Hearing, nor the respondents' answer.

6. Parties shall diligently pursue discovery so as not to delay the adjudication of the claim. If a hearing has been scheduled, discovery motions shall be filed no later than 45 days prior to the hearing unless leave of the administrative law judge is obtained.

7. Discovery motions shall contain copies of all relevant documents pertaining to the discovery at issue, such as mailing certificates and follow up requests for discovery. The responding party shall have 10 days from the date the discovery motion is mailed to file a response to the discovery motion.

8. Parties conducting discovery under this rule shall maintain mailing certificates and follow up letters regarding discovery to submit in the event Division intervention is necessary to complete discovery. Discovery documents shall not be filed with the Division at the time they are forwarded to opposing parties.

9. Any party who fails to obey an administrative law judge's discovery order shall be subject to the sanctions available under Rule 37, Utah Rules of Civil Procedure.

#### G. Subpoenas.

1. Commission subpoena forms shall be used in all discovery proceedings to compel the attendance of witnesses. All subpoenas shall be signed by the administrative law judge assigned to the case, or the duty judge where the assigned judge is not available. Subpoenas to compel the attendance of witnesses shall be served at least 14 days prior to the hearing consistent with Utah Rule of Civil Procedure 45. Witness fees and mileage shall be paid by the party which subpoenas the witness.

2. A subpoena to produce records shall be served on the holder of the record at least 14 days prior to the date specified in the subpoena as provided in Utah Rule of Civil Procedure 45. All fees associated with the production of documents shall be paid by the party which subpoenas the record.

#### H. Medical Records Exhibit.

1. The parties are expected to exchange medical records during the discovery period.

2. Petitioner shall submit all relevant medical records contained in his/her possession to the respondent for the preparation of a joint medical records exhibit at least twenty (20) working days prior to the scheduled hearing.

3. The respondent shall prepare a joint medical record exhibit containing all relevant medical records. The medical record exhibit shall include all relevant treatment records that tend to prove or disprove a fact in issue. Hospital nurses' notes, duplicate materials, and other non-relevant materials need not be included in the medical record exhibit.

4. The medical records shall be indexed, paginated, arranged by medical care provider in chronological order and bound.

5. The medical record exhibit prepared by the respondent shall be delivered to the Division and the petitioner or petitioner's counsel at least ten (10) working days prior to the hearing. Late-filed medical records may or may not be admitted at the discretion of the administrative law judge by stipulation or for good cause shown.

6. The administrative law judge may require the respondent to submit an additional copy of the joint medical record exhibit in cases referred to a medical panel.

7. The petitioner is responsible to obtain radiographs and diagnostic films for review by the medical panel. The administrative law judge shall issue subpoenas where necessary to obtain radiology films.

#### I. Hearing.

1. Notices of hearing shall be mailed to the addresses of record of the parties. The parties shall provide current addresses to the Division for receipt of notices or risk the entry of default and loss of the opportunity to participate at the hearing.

2. Judgment may be entered without a hearing after default is entered or upon stipulation and waiver of a hearing by the parties.

3. No later than 45 days prior to the scheduled hearing, all parties shall file a signed pretrial disclosure form that identifies: (1) fact witnesses the parties actually intend to call at the hearing; (2) expert witnesses the parties actually intend to call at the hearing; (3) language

translator the parties intend to use at the hearing; (4) exhibits, including reports, the parties intend to offer in evidence at the hearing; (5) the specific benefits or relief claimed by the petitioner; (6) the specific defenses that the respondent actually intends to litigate; (7) whether, or not, a party anticipates that the case will take more than four hours of hearing time; (8) the job categories or titles the respondents claim the petitioner is capable of performing if the claim is for permanent total disability, and; (9) any other issues that the parties intend to ask the administrative law judge to adjudicate. The administrative law judge may exclude witnesses, exhibits, evidence, claims, or defenses as appropriate of any party who fails to timely file a signed pre-trial disclosure form as set forth above. The parties shall supplement the pre-trial disclosure form with information that newly becomes available after filing the original form. The pre-trial disclosure form does not replace other discovery allowed under these rules.

4. If the petitioner requires the services of language translation during the hearing, the petitioner has the obligation of providing a person who can translate between the petitioner's native language and English during the hearing. If the respondents are dissatisfied with the proposed translator identified by the petitioner, the respondents may provide a qualified translator for the hearing at the respondent's expense.

5. The petitioner shall appear at the hearing prepared to outline the benefits sought, such as the periods for which compensation and medical benefits are sought, the amounts of unpaid medical bills, and a permanent partial disability rating, if applicable. If mileage reimbursement for travel to receive medical care is sought, the petitioner shall bring documentation of mileage, including the dates, the medical provider seen and the total mileage.

6. The respondent shall appear at the hearing prepared to address the merits of the petitioner's claim and provide evidence to support any defenses timely raised.

7. Parties are expected to be prepared to present their evidence on the date the hearing is scheduled. Requests for continuances may be granted or denied at the discretion of the administrative law judge for good cause shown. Lack of diligence in preparing for the hearing shall not constitute good cause for a continuance.

8. Subject to the continuing jurisdiction of the Labor Commission, the evidentiary record shall be deemed closed at the conclusion of the hearing, and no additional evidence will be accepted without leave of the administrative law judge.

#### J. Motions-Time to Respond.

Responses to all motions other than discovery motions shall be filed within ten (10) days from the date the motion was filed with the Division. Reply memoranda shall be filed within seven (7) days from the date a response was filed with the Division.

#### K. Notices.

1. Orders and notices mailed by the Division to the last address of record provided by a party are deemed served on that party.

2. Where an attorney appears on behalf of a party, notice of an action by the Division served on the attorney is considered notice to the party represented by the attorney.

#### L. Form of Decisions.

Decisions of the presiding officer in any adjudicative proceeding shall be issued in accordance with the provisions of Section 63-46b-5 or 63-46b-10, Utah Code.

M. Motions for Review.

1. Any party to an adjudicative proceeding may obtain review of an Order issued by an Administrative Law Judge by filing a written request for review with the Adjudication Division in accordance with the provisions of Section 63-46b-12 and Section 34A-1-303, Utah Code. Unless a request for review is properly filed, the Administrative Law Judge's Order is the final order of the Commission. If a request for review is filed, other parties to the adjudicative proceeding may file a response within 20 calendar days of the date the request for review was filed. If such a response is filed, the party filing the original request for review may reply within 10 calendar days of the date the response was filed. Thereafter the Administrative Law Judge shall:

- a. Reopen the case and enter a Supplemental Order after holding such further hearing and receiving such further evidence as may be deemed necessary;
- b. Amend or modify the prior Order by a Supplemental Order; or
- c. Refer the entire case for review under Section 34A-2-801, Utah Code.

2. If the Administrative Law Judge enters a Supplemental Order, as provided in this subsection, it shall be final unless a request for review of the same is filed.

N. Procedural Rules.

In formal adjudicative proceedings, the Division shall generally follow the Utah Rules of Civil Procedure regarding discovery and the issuance of subpoenas, except as the Utah Rules of Civil Procedure are modified by the express provisions of Section 34A-2-802, Utah Code or as may be otherwise modified by these rules.

O. Requests for Reconsideration and Petitions for Judicial Review.

A request for reconsideration of an Order on Motion for Review may be allowed and shall be governed by the provisions of Section 63-46b-13, Utah Code. Any petition for judicial review of final agency action shall be governed by the provisions of Section 63-46b-14, Utah Code.

H. **Utah Admin. Rule 602-2-2. Guidelines for Utilization of Medical Panel.**

Pursuant to Section 34A-2-601, the Commission adopts the following guidelines in determining the necessity of submitting a case to a medical panel:

A. A panel will be utilized by the Administrative Law Judge where one or more significant medical issues may be involved. Generally a significant medical issue must be shown by conflicting medical reports. Significant medical issues are involved when there are:

1. Conflicting medical opinions related to causation of the injury or disease;
2. Conflicting medical reports of permanent physical impairment which vary more than 5% of the whole person,
3. Conflicting medical opinions as to the temporary total cutoff date which vary more

than 90 days;

4. Conflicting medical opinions related to a claim of permanent total disability, and/or

5. Medical expenses in controversy amounting to more than \$10,000.

B. A hearing on objections to the panel report may be scheduled if there is a proffer of conflicting medical testimony showing a need to clarify the medical panel report. Where there is a proffer of new written conflicting medical evidence, the Administrative Law Judge may, in lieu of a hearing, re-submit the new evidence to the panel for consideration and clarification.

C. The Administrative Law Judge may authorize an injured worker to be examined by another physician for the purpose of obtaining a further medical examination or evaluation pertaining to the medical issues involved, and to obtain a report addressing these medical issues in all cases where:

1. The treating physician has failed or refused to give an impairment rating, and/or

2. A substantial injustice may occur without such further evaluation.

D. Any expenses of the study and report of a medical panel or medical consultant and of their appearance at a hearing, as well as any expenses for further medical examination or evaluation, as directed by the Administrative Law Judge, shall be paid from the Uninsured Employers' Fund, as directed by Section 34A-2-601.

**I. Utah Rules of Evidence Rule 803. Hearsay exceptions; availability of declarant immaterial.**

The following are not excluded by the hearsay rule, even though the declarant is available as a witness:

(1) Present sense impression. A statement describing or explaining an event or condition made while the declarant was perceiving the event or condition or immediately thereafter.

(2) Excited utterance. A statement relating to a startling event or condition made while the declarant was under the stress of excitement caused by the event or condition.

(3) Then existing mental, emotional, or physical condition. A statement of the declarant's then existing state of mind, emotion, sensation, or physical condition (such as intent, plan, motive, design, mental feeling, pain, and bodily health), but not including a statement of memory or belief to prove the fact remembered or believed unless it relates to the execution, revocation, identification, or terms of declarant's will.

(4) Statements for purposes of medical diagnosis or treatment. Statements made for purposes of medical diagnosis or treatment and describing medical history, or past or present symptoms, pain, or sensations, or the inception or general character of the cause or external source thereof insofar as reasonably pertinent to diagnosis or treatment.

(5) Recorded recollection. A memorandum or record concerning a matter about which a witness once had knowledge but now has insufficient recollection to enable the witness to testify fully and accurately, shown to have been made or adopted by the witness when the matter was fresh in the witness' memory and to reflect that knowledge correctly. If admitted, the memorandum or record may be read into evidence but may not itself be received as an exhibit unless offered by an adverse party.

(6) Records of regularly conducted activity. A memorandum, report, record, or data compilation, in any form, of acts, events, conditions, opinions or diagnoses, made at or near the time by, or from information transmitted by, a person with knowledge, if kept in the course of a regularly conducted business activity, and if it was the regular practice of that business activity to make the memorandum, report, record, or data compilation, all as shown by the testimony of the custodian or other qualified witness, or by certification that complies with Rule 902(11), Rule 902(12), or a statute permitting certification, unless the source of information or the method or circumstances of preparation indicate lack of trustworthiness. The term "business" as used in this paragraph includes business, institution, association, profession, occupation, and calling of every kind, whether or not conducted for profit.

(7) Absence of entry in records kept in accordance with the provisions of paragraph (6). Evidence that a matter is not included in the memoranda, reports, records, or data compilations, in any form, kept in accordance with the provisions of Paragraph (6), to prove the nonoccurrence or nonexistence of the matter, if the matter was of a kind of which a memorandum, report, record, or data compilation was regularly made and preserved, unless the sources of information or other circumstances indicate lack of trustworthiness.

(8) Public records and reports. Records, reports, statements, or data compilations, in any form, of public offices or agencies, setting forth (A) the activities of the office or agency, or (B) matters observed pursuant to duty imposed by law as to which matters there was a duty to report, excluding, however, in criminal cases matters observed by police officers and other law enforcement personnel, or (C) in civil actions and proceedings and against the Government in criminal cases, factual findings resulting from an investigation made pursuant to authority granted by law, unless the sources of information or other circumstances indicate lack of trustworthiness.

(9) Records of vital statistics. Records or data compilations, in any form, of births, fetal deaths, deaths, or marriages, if the report thereof was made to a public office pursuant to requirements of law.

(10) Absence of public record or entry. To prove the absence of a record, report, statement, or data compilation, in any form, or the nonoccurrence or nonexistence of a matter of which a record, report, statement, or data compilation in any form, was regularly made and preserved by a public office or agency, evidence in the form of a certification in accordance with Rule 902, or testimony, that diligent search failed to disclose the record, report, statement, or data compilation, or entry.

(11) Records of religious organization. Statements of births, marriages, divorces, deaths, legitimacy, ancestry, relationship by blood or marriage, or other similar facts of personal or family history, contained in a regularly kept record of a religious organization.

(12) Marriage, baptismal, and similar certificates. Statements of fact contained in a certificate that the maker performed a marriage or other ceremony or administered a sacrament, made by a clergyman, public official, or other person authorized by the rules or practices of a religious organization or by law to perform the act certified, and purporting to have been issued at the time of the act or within a reasonable time thereafter.

(13) Family records. Statements of fact concerning personal or family history contained in family Bibles, genealogies, charts, engravings on rings, inscriptions on family portraits, engravings on urns, crypts, or tombstones, or the like.

(14) Records of documents affecting an interest in property. The record of a document purporting to establish or affect an interest in property, as proof of the content of the original recorded document and its execution and delivery by each person by whom it purports to have been executed, if the record is a record of a public office and an applicable statute authorizes the recording of documents of that kind in that office.

(15) Statements in documents affecting an interest in property. A statement contained in a document purporting to establish or affect an interest in property if the matter stated was relevant to the purpose of the document, unless dealings with the property since the document was made have been inconsistent with the truth of the statement or the purport of the document.

(16) Statements in ancient documents. Statements in a document in existence twenty years or more the authenticity of which is established.

(17) Market reports, commercial publications. Market quotations, tabulations, lists, directories, or other published compilations, generally used and relied upon by the public or by persons in particular occupations.

(18) Learned treatises. To the extent called to the attention of an expert witness upon cross-examination or relied upon by the expert witness in direct examination, statements contained in published treatises, periodicals, or pamphlets on a subject of history, medicine, or other science or art, established as a reliable authority by the testimony or admission of the witness or by other expert testimony or by judicial notice. If admitted, the statements may be read into evidence but may not be received as exhibits.

(19) Reputation concerning personal or family history. Reputation among members of a person's family by blood, adoption, or marriage, or among a person's associates, or in the community, concerning a person's birth, adoption, marriage, divorce, death, legitimacy, relationship by blood, adoption, or marriage, ancestry, or other similar fact of personal or family history.

(20) Reputation concerning boundaries or general history. Reputation in a community arising before the controversy, as to boundaries of or customs affecting lands in the community, and reputation as to events of general history important to the community or State or nation in which located.

(21) Reputation as to character. Reputation of a person's character among associates or in the community.

(22) Judgment of previous conviction. Evidence of a final judgment, entered after a trial or upon a plea of guilty (but not upon a plea of nolo contendere), adjudging a person guilty of a crime punishable by death or imprisonment in excess of one year, to prove any fact essential to sustain the judgment, but not including, when offered by the prosecution in a criminal prosecution for purposes other than impeachment, judgments against persons other than the accused. The pendency of an appeal may be shown but does not affect admissibility.

(23) Judgment as to personal, family or general history, or boundaries. Judgments as proof of matters of personal, family or general history, or boundaries, essential to the judgment, if the same would be provable by evidence of reputation.

Advisory Committee Note. This rule is the federal rule verbatim. The 2001 amendment adopts changes made to Federal Rule of Evidence 803(6) effective December 1, 2000.

**J. Utah Rule of Evidence Rule 804. Hearsay exceptions; declarant unavailable.**

(a) Definition of unavailability. "Unavailability as a witness" includes situations in which the declarant:

(a)(1) is exempted by ruling of the court on the ground of privilege from testifying concerning the subject matter of the declarant's statement; or

(a)(2) persists in refusing to testify concerning the subject matter of the declarant's statement despite an order of the court to do so; or

(a)(3) testifies to a lack of memory of the subject matter of the declarant's statement; or

(a)(4) is unable to be present or to testify at the hearing because of death or then existing physical or mental illness or infirmity; or

(a)(5) is absent from the hearing and the proponent of the declarant's statement has been unable to procure the declarant's attendance by process or other reasonable means.

A declarant is not unavailable as a witness if the exemption, refusal, claim of lack of memory, inability, or absence is due to the procurement or wrongdoing of the proponent of the declarant's statement for the purpose of preventing the witness from attending or testifying.

(b) Hearsay exceptions. The following are not excluded by the hearsay rule if the declarant is unavailable as a witness:

(b)(1) Former testimony. Testimony given as a witness at another hearing of the same or a different proceeding, or in a deposition taken in compliance with law in the course of the same or another proceeding, if the party against whom the testimony is now offered, or, in a civil action or proceeding, a predecessor in interest, had an opportunity and similar motive to develop the testimony by direct, cross, or redirect examination.

(b)(2) Statement under belief of impending death. In a civil or criminal action or proceeding, a statement made by a declarant while believing that the declarant's death was imminent, if the judge finds it was made in good faith.

## Exhibit A

State of Utah, Department of Health

48 N. Medical Dr.  
Salt Lake City, UT 84113  
(801) 584-8410  
Fax (801) 584-8435

## Office of the Medical Examiner

Todd C. Grey, M.D.  
Chief Medical Examiner  
Edward A. Leis, M.D.  
Deputy Chief Medical Examiner  
Maureen J. Frikkle, M.D.  
Robert L. Detera, M.D.  
Assistant Medical Examiners  
Thomas W. Anderson  
Chief Investigator

January 7, 2008

Linda Hymas  
330 E. 1200 N.  
Logan, UT 84321

Mrs. Hymas:

I am writing this letter at your request to clarify some of the items from my letter dated October 11, 2006, and also to review some of the items we discussed when we met January 3, 2008. Your husband William died at work on February 1, 2006, and was examined at the Office of the Medical Examiner (OME Case Number 200600166) on February 2<sup>nd</sup>. After my examination, I certified the cause of death as "Coronary artery disease" and the manner of death was certified as "Natural."

The heart has three main blood vessels responsible for the delivery of blood and oxygen to the heart muscle. During my examination I found that atherosclerotic disease (blockage of the blood vessels supplying blood to the heart) involved the right coronary artery producing blockage of 60 % of the opening of this vessel. The origin of this vessel was also narrowed by the same disease process. The left anterior descending artery had obstruction of up to 90% of its opening by atherosclerosis. The third vessel had minimal involvement.

As we discussed, there are certain risk factors or variables that affect the rate at which this blockage will develop. Male gender, age, family history, high blood pressure, diet, exercise, diabetes and smoking are some of the main factors. William was reported to be a non-insulin dependent diabetic.

As atherosclerosis progresses in each one of us, there may or may not be symptoms of chest pain, shortness of breath, or fatigue to name a few. A routine physical examination will not pick up on this process just by having a physician listening to the heart. An EKG may or may not be helpful. An early diagnosis would require a patient to relate some of the symptoms listed above during the history portion of the doctor's exam. Unfortunately, sudden death may be the first symptom an individual experiences. Confirmation of significant vessel disease would require a treadmill stress test or angiography (a catheter dye injection into the vessels).

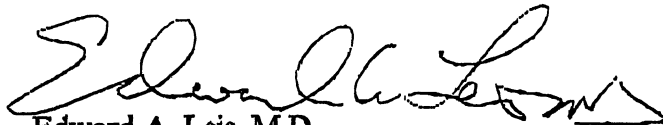
Whether your husband had been experiencing any symptoms prior to his death, I can only speculate. You did mention that he was extremely tired after working at this location and being involved in a lot of lifting of cargo. As I mentioned to you, fatigue was the only complaint of one of our employees at this office that led to his diagnosis and treatment.

I would agree that given the underlying disease process of vessel blockage in the heart, your husband would be more susceptible to having cardiac or heart related problems during the increased physical demands of the job he was working. I say this because with physical activity, such as repeated lifting of heavy boxes and freight, the heart rate goes up. This increases the demands of the heart muscle for blood flow and oxygen delivery to the tissues. In the presence of blood vessel blockage, this increase in blood and oxygen will not be sufficient, resulting in an abnormal heart rhythm (arrhythmia) or a heart attack and possibly death. An arrhythmia will not be seen at autopsy because it is primarily an 'electrical' event of the heart. A heart attack would require survival of a few hours following the event before early signs of injury could be seen in the heart muscle at autopsy.

The fact that your husband had an abrasion and laceration to the back of his head supports a sudden cardiac event. This type of injury is frequently seen in our office in people that expire under similar circumstances. Unconsciousness is immediate and the individual falls/collapses without being able to protect themselves while going down.

I hope this provides a better clarification of the association of your husband's activities prior to death and the physical findings from the autopsy. If I can be of any further assistance in this matter, do not hesitate to inquire.

Sincerely,

A handwritten signature in black ink, appearing to read "Edward A. Leis". The signature is fluid and cursive, with a long horizontal stroke at the end.

Edward A. Leis, M.D.  
Deputy Chief Medical Examiner  
State of Utah

## Exhibit B



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## ORIGINAL ARTICLE

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## Triggering of Acute Myocardial Infarction by Heavy Physical Exertion -- Protection against Triggering by Regular Exertion

*Murray A. Mittleman, Malcolm Maclure, Geoffrey H. Tofler, Jane B. Sherwood, Robert J. Goldberg, James E. Muller, for The Determinants of Myocardial Infarction Onset Study Investigators*

### ABSTRACT

**Background** Despite anecdotal evidence suggesting that heavy physical exertion can trigger the onset of acute myocardial infarction, there have been no controlled studies of the risk of myocardial infarction during and after heavy exertion, the length of time between heavy exertion and the onset of symptoms (induction time), and whether the risk can be modified by regular physical exertion. To address these questions, we collected data from patients with confirmed myocardial infarction on their activities one hour before the onset of myocardial infarction and during control periods.

**Methods** Interviews with 1228 patients conducted an average of four days after myocardial infarction provided data on their usual annual frequency of physical activity and the time, type, and intensity of physical exertion in the 26 hours before the onset of myocardial infarction. We compared the observed frequency of heavy exertion (6 or more metabolic equivalents) with the expected values using two types of self-matched analyses based on a new case-crossover study design. The low frequency of heavy exertion during the control periods was validated by data from a population-based control group of 218 subjects.

**Results** Of the patients, 4.4 percent reported heavy exertion within one hour before the onset

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of myocardial infarction. The estimated relative risk of myocardial infarction in the hour after heavy physical exertion, as compared with less strenuous physical exertion or none, was 5.9 (95 percent confidence interval, 4.6 to 7.7). Among people who usually exercised less than one, one to two, three to four, or five or more times per week, the respective relative risks were 107 (95 percent confidence interval, 67 to 171), 19.4 (9.9 to 38.1), 8.6 (3.6 to 20.5), and 2.4 (1.5 to 3.7). Thus, increasing levels of habitual physical activity were associated with progressively lower relative risks. The induction time from heavy exertion to the onset of myocardial infarction was less than one hour, and symptoms usually began during the activity.

*Conclusions* Heavy physical exertion can trigger the onset of acute myocardial infarction, particularly in people who are habitually sedentary. Improved understanding of the mechanisms by which heavy physical exertion triggers the onset of myocardial infarction and the manner in which regular exertion protects against it would facilitate the design of new preventive approaches.

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It is well recognized that heavy physical exertion sometimes immediately precedes, and indeed appears to trigger, the onset of acute myocardial infarction<sup>1,2,3</sup>. Descriptive studies have established that in approximately 5 percent of patients with myocardial infarction, such exertion immediately precedes the onset of symptoms<sup>1,3</sup>. Since these studies lack control data, however, it has not been possible to quantify the association between heavy physical exertion and the onset of acute myocardial infarction or to examine factors that might alter the risk of triggering such an event.

Clarification of the role of physical exertion in triggering myocardial infarction is important for several reasons. First, it is estimated that more than 1.5 million myocardial infarctions occur annually in the United States,<sup>4</sup> and at least 75,000 of these infarcts -- which lead to 25,000 deaths -- may occur soon after exertion<sup>1,3</sup>. Second, since approximately two thirds of these deaths are sudden, knowledge leading to the prevention of the triggering of myocardial infarction is required to eliminate them. Third, a sedentary lifestyle has consistently been shown to increase the risk of coronary artery disease. The American Heart Association has recently recommended increased physical activity as an important method to reduce the risk of heart attack<sup>5</sup>. Heavy physical exertion therefore appears to be a two-edged sword, both triggering and preventing myocardial infarction. Finally, a better understanding of the triggering effect of physical exertion could lead to approaches to sever the link between potentially triggering activities and the transient physiologic risk states that induce myocardial infarction.

The Determinants of Myocardial Infarction Onset Study was a multicenter, interview-based study of patients with acute myocardial infarction. In this study, we used a new case-crossover design to quantify the relative risk of myocardial infarction after heavy physical exertion as compared with periods of lighter exertion or no exertion, its timing, and its potential modification by habitual physical activity in 1228 patients with confirmed acute myocardial infarction.

## Methods

A new epidemiologic technique, the case-crossover design, was developed for this study<sup>11</sup>. This approach was developed to assess the change in the risk of an acute event during a brief "hazard period" after exposure to a transient risk factor. With this method, each patient's previous exertion levels serve as his or her control information<sup>11</sup>.

A one-to-two-hour hazard period immediately before the onset of myocardial infarction was compared with two types of control data obtained from the patients: their usual frequency of heavy physical exertion over the past year, and their actual level of exertion in the comparable one-to-two-hour control period at the same time on the day before the onset of myocardial infarction. The use of this design explains why we collected detailed data about physical exertion during the 26 hours before the onset of infarction. To help maintain comparability of reporting of exertion levels for the hazard and control periods, the 26-hour period before the onset of myocardial infarction was treated as one long hazard period in the interview.

Matched neighborhood controls were also studied to obtain a third type of control data. Controls were matched to the case patients according to age ( $\pm 2$  years), sex, and area of residence. Each control was contacted for a preliminary telephone interview and then requested to carry a telephone-activated beeper. The beeper alarm was activated at the same time of day and day of the week as the matched patient's myocardial infarction began. Of 308 eligible controls, 218 (71 percent) participated.

### **Statistical Analysis**

The analysis of case-crossover data is a new application of standard methods for stratified data analysis<sup>11,12,13</sup>. In this type of analysis, the stratifying variable is the individual patient, as in a crossover experiment.

The ratio of the observed frequency of physical exertion during the hazard period to the expected frequency (from the information on the control period or the neighborhood controls) was used to calculate estimates of the relative risk<sup>11</sup>. Expected frequencies were estimated in three ways: (1) according to the patient's usual annual frequency of heavy exertion, (2) according to the frequency of heavy exertion in the control period on the day before the onset of symptoms, and (3) according to the frequency of heavy exertion in neighborhood controls. Estimation on the basis of the usual annual frequency of exertion was the primary analytic method used. The amount of person-time spent in heavy exertion (exposure) was estimated by multiplying the reported usual annual frequency of physical exertion by its reported usual duration. Unexposed person-time (i.e., person-time not spent in heavy exertion) was then calculated by subtracting the exposed person-time in hours from the number of hours in a year. Hazard periods of varying lengths were analyzed with use of methods for cohort studies with sparse data in each stratum<sup>11,14</sup>. The calculated relative risk refers to the risk of having a myocardial infarction during a period of heavy exertion, as compared with the risk during periods of lighter exertion or no exertion.

Using the second method, based on the frequency of heavy exertion during the control period on the day before the onset of symptoms, we computed relative risks by standard methods for matched-pair case-

## Study Population

The study was conducted in 22 community hospitals and 23 tertiary care centers. A total of 1271 patients were interviewed a median of 4 days (range, 0 to 30) after myocardial infarction. Of these, 43 were unable to complete the interview and were excluded from this analysis. The remaining 1228 (836 men and 392 women; age range, 22 to 92 years) were interviewed between August 1989 and October 1992.

Interviewers identified eligible patients by reviewing the admission logs of coronary care units and patients' charts. For inclusion, patients were required to meet the following criteria: an elevated creatine kinase level, with MB isoenzymes; an identifiable onset of pain or other symptoms typical of infarction; and the ability to complete a structured interview. The protocol was approved by the institutional review board of each center, and informed consent was obtained from each patient.

## Interview

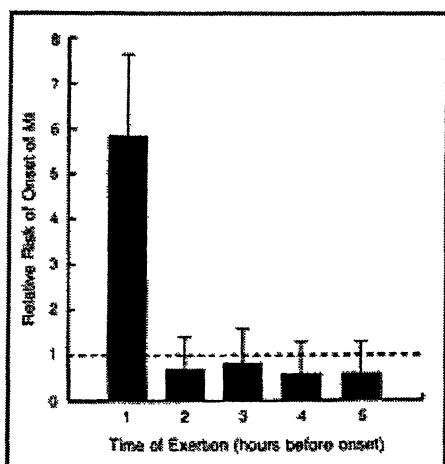
The interviewers were trained by means of personal instruction, a training manual, and an instructional videocassette, and they received ongoing feedback from the study coordinator. Approximately one third of the interviews were audiotaped for randomly selected quality-control checks by the study coordinator to ensure the accuracy of coding. To minimize bias in ascertainment, the interviewers were not informed of the duration of the hypothesized hazard period before myocardial infarction.

In the interview, data were obtained on the time and place of the myocardial infarction, the type of pain experienced, other symptoms, the estimated usual frequency of physical exertion during the previous year, and the intensity and timing of heavy physical exertion and other potentially triggering factors during the 26 hours before the onset of myocardial infarction. Our findings regarding triggering factors other than physical exertion will be reported later.

The degree of physical exertion was quantified on a scale from 1 to 8 metabolic equivalents (MET) according to generally accepted values ([Table 1](#))<sup>6,7,8,9,10</sup>; 1 MET is defined as the energy expended per minute by a subject sitting quietly and is equivalent to 3.5 ml of oxygen uptake per kilogram of body weight per minute by a 70-kg adult. Patients were asked to estimate how often they engaged in exertion at each level during the previous year (usual annual frequency) and to state the timing, type, and level of exertion during each of the 26 hours before the onset of myocardial infarction. Patients were considered to have been engaged in heavy exertion (exposed) if they reported a peak exertion level estimated to be 6 MET or more during the period of interest.

**View this table:** [Table 1. Physical-Activity Rating Scale Used to Estimate the Level of Physical Exertion by Patients in the Determinants of Myocardial Infarction Onset Study.](#)  
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## Study Design



Each of the five hours before the onset of myocardial infarction was assessed as an independent hazard period, and exertion during each hour was compared with that during the control period. Only exertion during the hour immediately before the onset of myocardial infarction was associated with an increase in the relative risk, suggesting that the induction time for myocardial infarction is less than one hour. The T bars indicate the 95 percent confidence limits. The dotted line indicates the base-line risk.

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### Frequency of Heavy Exertion during the Control Period on the Day before Onset as the Reference Value

In the standard matched-pair analysis, there were 50 patients who reported heavy exertion only during the one-hour hazard period, as compared with 9 who reported heavy exertion only during the control period (the same one-hour period on the previous day). Four subjects reported heavy exertion at both times. This analysis yielded a relative risk of myocardial infarction of 5.6 (95 percent confidence interval, 2.7 to 12.8) for those who engaged in heavy exertion during the hazard period.

### Frequency of Heavy Exertion in Neighborhood Controls as the Reference Value

Whereas among the matched cases there were 10 patients who reported heavy exertion, none of the 218 controls reported heavy physical exertion in the hour before the activation of the beeper alarm. Although the point estimate of the relative risk was infinite, the lower bound of the 95 percent confidence interval was 2.2. This finding confirms the validity of the low frequency of expected exposure to heavy exertion reported by the patients with myocardial infarction for both types of self-matched control data.

### Modification of the Relative Risk by the Usual Frequency of Heavy Exertion

Patients who rarely exerted themselves (less than once a week) had a relative risk of myocardial infarction in the hour after heavy exertion of 107 (95 percent confidence interval, 67 to 171), as compared with a relative risk of 2.4 (95 percent confidence interval, 1.5 to 3.7) among those who reported physical exertion at a level of 6 MET or more at least five times per week ([Figure 2](#)).

**Figure 2.** Relative Risk of Myocardial Infarction (MI) According to the Usual Frequency of Heavy Exertion.

Heavy exertion was defined as physical activity at a level of 6

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## Study Design

immediately before the onset of symptoms -- a percentage similar to that reported in previous uncontrolled studies of the onset of myocardial infarction<sup>1,2,3</sup>. Our calculated relative risks are in agreement with those reported for a population-based case-control study in Germany, in which a relative risk of 2.1 was found for heavy physical exertion<sup>16</sup>. The relative risk observed in the German study was also lower for those who exercised regularly.

Although there has previously been only limited information on the association between heavy physical exertion and nonfatal myocardial infarction, several studies<sup>17,18,19,20</sup> have estimated the relative risk of sudden death from cardiac causes to be between 5 and 100 during periods of heavy physical exertion. Siscovick et al.<sup>17</sup> also found that the relative risk of sudden death from cardiac causes was lower among people who exercised regularly. The effects of the usual frequency of physical exertion on the relative risks of sudden death from cardiac causes and nonfatal acute myocardial infarction are remarkably similar, providing support for the possibility that many cases of sudden death due to cardiac causes that are triggered by exertion have a pathophysiology similar to that of nonfatal acute myocardial infarction<sup>21</sup>.

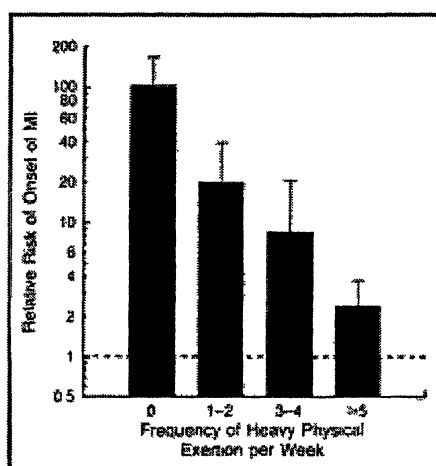
Since the case-crossover design uses self-matching, there is no variability in traditional risk factors for myocardial infarction within each stratum. Thus, there can be no confounding by these risk factors<sup>11,13</sup>. Confounding by factors limited to individual patients can occur if another transient risk factor often coincides with the exposure of interest. Although it is possible that there was some confounding by other transient exposures that coincided with exertion, it is unlikely to account for the strong association we observed.

A factor potentially limiting our study is recall bias. The case-crossover design helped to minimize this bias during the collection of data by treating the entire 26-hour period before the onset of myocardial infarction as one long hazard period. The observed modification of the relative risk by habitual physical exertion also argues against the effects of recall bias. Furthermore, heavy physical exertion is a relatively rare event and is easy to remember and assess. The consistency of the relative risks calculated with three types of control data also confirms the validity of the findings. Finally, even if some recall bias was present, it is unlikely to account for the strong associations we observed.

It is likely that there was some random error in measurement (nondifferential misclassification) of the degree of reported exertion and the actual energy expended during any given time period. The effect of this type of misclassification is to bias the relative risk toward a finding of no association.

There is also possible bias due to the differential survival of patients in whom myocardial infarction was triggered by different mechanisms. For example, if patients whose infarctions were triggered by physical exertion were more likely to survive than those whose infarctions were unrelated to exertion, then the apparent relative risk might be overestimated. This possibility seems unlikely in view of the association of heavy physical exertion and sudden death due to cardiac causes.

With regard to the frequency with which myocardial infarction is triggered by exertion, it is important to distinguish absolute risk from relative risk. On the basis of data from the Framingham Heart Study, the



MET or more. The relative risk is shown on a logarithmic scale. Habitually sedentary persons had an extreme relative risk (107), whereas those who reported heavy exertion five or more times per week had a risk only 2.4 times higher than the base-line risk ( $P < 0.001$ ). The T bars indicate the 95 percent confidence limits. The dotted line indicates the base-line risk.

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We also examined other potential modifiers of the relative risk of myocardial infarction ([Table 3](#)). Patients with diabetes had a significantly higher relative risk of myocardial infarction after heavy physical exertion than nondiabetic patients ( $P = 0.01$ ); this difference was not fully accounted for by lack of regular exertion. There was a nonsignificant trend ( $P = 0.11$ ) toward an increased relative risk of myocardial infarction among patients over 70 years of age, in part because they had a lower prevalence of regular exercise. The relative risk of myocardial infarction in the hour after heavy physical exertion did not vary according to sex or the presence of obesity (body-mass index [weight in kilograms divided by the square of the height in meters] above 29), a history of hypertension, angina, or a previous myocardial infarction.

**View this table:** [Table 3. Relative Risk of Onset of Myocardial Infarction \(MI\) within One Hour after Heavy Physical Exertion, According to Patients' Characteristics.](#)

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## Discussion

For the total population in our study, an episode of heavy physical exertion was associated with a transient risk of myocardial infarction in the subsequent hour that was 5.9 times higher than the risk during periods of lighter exertion or no exertion. The relative risk varied greatly depending on the usual frequency of heavy exertion by the patient; it was 2.4 among those reporting regular physical exertion, but 107 among those who were habitually sedentary. These findings are unlikely to be accounted for by recall bias or confounding, since the patients were unaware of the hypothesis that the hazard period was one hour long and because the case-crossover design employed in this study eliminated the effect of confounding by factors that differed among patients.

Approximately 4 percent of the patients we studied reported heavy physical exertion in the hour

particular time, when an unfavorable combination of potentially reversible plaque vulnerability, vasoconstriction, and tendency to thrombosis was present. These conclusions and the limitation of the increased risk to the hour after exertion may be useful in considering workers' compensation and liability cases in which physical exertion preceded the onset of myocardial infarction.

Although heavy physical exertion could be identified as a trigger of myocardial infarction in only 3.8 percent of cases, it is possible that unidentified triggering by moderate exertion also occurs. Furthermore, other potential triggers, such as psychological stress or anger, which produce similar physiologic responses,<sup>38,39,40,41</sup> are more common than heavy exertion before myocardial infarction<sup>1,3</sup> and may be more frequent triggers. Further study of the triggering of acute vascular events may lead to new insights into the mechanisms involved, clarify some of the uncertainties regarding the beneficial effects of physical exertion,<sup>42</sup> and lead to new forms of preventive therapy.

Supported by a grant (HL41016) from the National Heart, Lung, and Blood Institute and by a Bourse de Formation en Recherche from the Fonds de la Recherche en Sante du Quebec (to Dr. Mittleman).

We are indebted to the study interviewers for their dedication; to Richard P. Mulry, B.A., and Lucy Perriello, M.A., for their help in the conduct of the study and for feedback on the development of the questionnaire; and to Rosa Maria Hernandez de Sierra, R.N., for excellent technical assistance.

## Source Information

From the Institute for Prevention of Cardiovascular Disease, Cardiovascular Division, Deaconess Hospital, and Harvard Medical School, Boston (M.A.M., M.M., G.H.T., J.B.S., J.E.M.); the Department of Epidemiology, Harvard School of Public Health, Boston (M.A.M., M.M.); and the Department of Medicine, University of Massachusetts Medical School, Worcester (R.J.G.). Presented in part at the 64th Annual Scientific Sessions of the American Heart Association, Anaheim, Calif., November 11-14, 1991. The participants in the study are listed in the Appendix.

Address reprint requests to Dr. Mittleman at the Institute for Prevention of Cardiovascular Disease, Cardiovascular Division, Deaconess Hospital, 1 Autumn St., 5th Fl., Boston, MA 02215.

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absolute risk that a 50-year-old nonsmoking, nondiabetic man will have a myocardial infarction during a given one-hour period is approximately 1 in 1 million<sup>22,23</sup>. If this man was habitually sedentary but engaged in heavy physical exertion during that hour, his risk would increase 100 times over the base-line value, but his absolute risk during that hour would still be only 1 in 10,000.

Although this study demonstrated that discrete episodes of physical exertion can increase the short-term risk of myocardial infarction, numerous studies<sup>5,24,25,26,27,28,29,30,31</sup> have found that regular exercise is associated with a reduction in the long-term risk of coronary events. People who exercise regularly not only have a lower base-line risk of myocardial infarction, but as demonstrated by this study, they also have a lower relative risk that an infarction will be triggered by heavy physical exertion.

From the public health perspective, our findings, which demonstrate protection against triggering of myocardial infarction with regular exertion, provide further evidence for encouraging regular physical activity, as recommended by the American Heart Association<sup>5</sup>. Such a physical-activity program is likely to lower the overall risk of myocardial infarction, since it may lower the base-line risk, and also decrease the relative risk that an episode of heavy physical exertion will trigger a myocardial infarction. Recommendations for patients with a history of myocardial infarction or angina are more complex. Patients in our study who had known coronary artery disease did not have a higher relative risk after heavy exertion than those without such a history. However, because of their elevated and variable base-line risk, the risks and benefits of heavy physical exertion for such patients must be assessed by their individual physicians and recommendations must be based on the guidelines for exercise<sup>5</sup>.

A proposed mechanism for the triggering of myocardial infarction is the disruption of a vulnerable, but not necessarily stenotic, atherosclerotic plaque in response to hemodynamic stresses; thereafter, hemostatic and vasoconstrictive forces determine whether the resultant thrombus becomes occlusive<sup>32</sup>. The rarity with which a potential trigger becomes an actual trigger is probably a result of the infrequency of atherosclerotic plaques vulnerable to disruption and other conditions required for acute occlusive thrombosis.

It remains unclear whether beta-blockers or aspirin decreases the relative risk of myocardial infarction triggered by exertion. It is also unknown whether the risk that a myocardial infarction will be triggered by exertion varies at different times of the day. Murray et al.<sup>33</sup> found no significant increase in cardiac events in morning as compared with afternoon cardiac-rehabilitation classes, but the study had insufficient power to exclude a relative risk of 6 or less and many patients were taking beta-blockers, which might decrease a morning peak in onset<sup>34,35,36</sup>.

In our study population, given the relative risk of 5.9 and the exposure to heavy exertion of 4.4 percent of our population in the hour before the onset of myocardial infarction, heavy exertion may be considered to be the final component cause<sup>12</sup> in 3.8 percent of cases. Viewed from another perspective, approximately 80 percent of cases that occurred within one hour after an episode of exertion were triggered by it. The data available do not permit us to differentiate an earlier case from an excess case<sup>37</sup> - that is, we cannot distinguish an infarction that would have occurred several hours later even without heavy exertion from one that would never have occurred if the patient had avoided heavy exertion at that

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## Appendix

The following hospitals or medical centers and investigators participated in the Determinants of Myocardial Infarction Onset Study: South Shore Hospital, South Weymouth, Mass. -- C. Gaughan; Deaconess Hospital, Boston -- S. Zarich; Carney Hospital, Boston -- R. Rimmer; St. Vincent Hospital, Worcester, Mass. -- R. Bishop; Carle Heart Center, Urbana, Ill. -- B. Handler; Burbank Hospital, Fitchburg, Mass. -- P. Block; Hahneman Hospital-Medical Center of Central Massachusetts, Worcester -- J.A. Ferrullo and D. Miller; Beth Israel Hospital, Boston -- R. Pasternak and A. Ware; Brigham and Women's Hospital, Boston -- E. Antman; Newton-Wellesley Hospital, Newton, Mass. -- J. Sidd; St. Luke's-Roosevelt Hospital Center, New York -- J. Hochman; Memorial Hospital-Medical Center of Central Massachusetts, Worcester -- J. Greenberg; Norwood Hospital, Norwood, Mass. -- G. Bero and B. Heller; Faulkner Hospital, Jamaica Plain, Mass. -- A. Ramirez; Washington Hospital Center, Washington, D.C. -- L. Van Voorhees; New England Medical Center, Boston -- S. Naimi; Massachusetts General Hospital, Boston -- P. O'Gara; University of Massachusetts Medical Center, Worcester -- J. Gore; Leominster Hospital, Leominster, Mass. -- N. Mercadante; Overlook Hospital, Summit, N.J. -- J. Gregory; Tampa General Hospital and James A. Haley Veterans Hospital, Tampa, Fla. -- R. Zoble; Boston University Medical Center, University Hospital, Boston -- M. Klein; Rush-Presbyterian-St. Luke's Medical Center, Chicago -- P.R. Liebson; Stonybrook Health Sciences Center, Stonybrook, N.Y. -- P. Cohn and R. Friedman; Memorial Hospital of Rhode Island, Pawtucket -- A.

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## Exhibit C

# Plaque Rupture and Sudden Death Related to Exertion in Men With Coronary Artery Disease

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**T**HE HEALTH BENEFITS OF REGULAR exercise are well known, and an association between exercise and reduced risk of coronary heart disease has been demonstrated.<sup>1-4</sup> Proposed beneficial effects of physical activity in reducing cardiac mortality include metabolic influences on risk factors, hematologic variables, direct effects on the myocardium, and indirect effects on mortality risk.<sup>5,6</sup>

Despite the benefits of exercise, acute exertion may trigger acute cardiac events,<sup>7</sup> and emotional and physical stress may trigger acute myocardial infarction.<sup>8</sup> It has been theorized, but not demonstrated pathologically, that acute exertion may predispose to sudden coronary events by precipitating rupture of a vulnerable coronary artery plaque. The purpose of this study was to examine the association between acute plaque rupture and exertion-related sudden coronary death in a series of carefully studied autopsy hearts.

## METHODS

Hearts from men who died of sudden coronary death were studied in a prospective fashion. These hearts were seen in consultation with the medical examiner in the state of Maryland between January 1994 and May 1997. Coronary artery fixation, cardiac dissection, and tissue sampling were performed as previously described.<sup>9</sup> Coronary deaths were

**Context** Exertion has been reported to acutely increase the risk of sudden coronary death, but the underlying mechanisms are unclear.

**Objective** To determine the frequency of plaque rupture in sudden deaths related to exertion compared with sudden deaths not related to exertion.

**Design** Autopsy survey. Coronary arteries were perfusion fixed and segments with more than 50% luminal narrowing were examined histologically. Ruptured plaques were defined as intraplaque hemorrhage with disruption of the fibrous cap and luminal thrombus. Exertion before death was determined by the investigator of the death.

**Setting** Medical examiner's office.

**Patients** A total of 141 men with severe coronary artery disease who died suddenly, including 116 whose deaths occurred at rest (mean [SD] age, 51 [11] years) and 25 who died during strenuous activity or emotional stress (age, 49 [9] years).

**Main Outcome Measures** The frequency and morphology of plaque rupture were compared in men dying at rest vs those dying during exertion. Independent association of risk factors (total cholesterol, high-density lipoprotein cholesterol, glycosylated hemoglobin, cigarette smoking) in addition to acute exertion with plaque rupture were determined.

**Results** The mean (SD) number of vulnerable plaques in the coronary arteries of men in the exertional-death group was 1.6 (1.5) and in the at-rest group was 0.9 (1.2) ( $P = .03$ ). The culprit plaque in men dying during exertion was plaque rupture in 17 (68%) of 25 vs 27 (23%) of 116 men dying at rest ( $P < .001$ ). Hemorrhage into the plaque occurred in 18 (72%) of 25 men in the exertional-death group and 47 (41%) of 116 men in the rest group ( $P = .007$ ). Histological evidence of acute myocardial infarction was present in 0 of 25 in the exertion group and in 15 (13%) of 116 in the rest group. Men dying during exertion had a significantly higher mean (SD) total cholesterol-high-density lipoprotein cholesterol ratio (8.2 [3.0]) than those dying at rest (6.2 [2.7],  $P = .002$ ), and the majority (21/25) were not conditioned. In multivariate analysis, both exertion ( $P = .002$ ) and total cholesterol-high-density lipoprotein cholesterol ratio ( $P = .002$ ) were associated with acute plaque rupture independent of age and other cardiac risk factors.

**Conclusion** In men with severe coronary artery disease, sudden death related to exertion was associated with acute plaque rupture.

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defined as natural deaths that occurred without evidence of extracardiac cause of death and in which at least 1 epicardial coronary artery had more than 75% cross-sectional lumen narrowing by atherosclerotic plaque or plaque with superimposed thrombus. Sudden death was defined as symptoms commencing within 6 hours of death (witnessed arrest) or death occurring within 24 hours after the victim was last seen alive in his

normal state of health. Coronary deaths with acute thrombus were further categorized as plaque rupture and plaque

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erosion as previously defined.<sup>10</sup> Healing plaque ruptures were defined as an interruption of the fibrous cap with disorganizing thrombus, generally with proteoglycan and smooth muscle cell-rich intimal proliferation surrounding the area of interruption.<sup>11</sup> Vulnerable plaques were defined as a fibrous cap thinner than 65  $\mu$ m that was infiltrated by macrophages overlying a necrotic core as previously defined.<sup>9</sup> The maximum and minimum thickness of the fibrous cap overlying the necrotic core at sites of plaque rupture was measured by ocular micrometer to the nearest micrometer. The number of vasa vasorum was quantitated manually with the aid of computerized morphometry on sections stained immunohistochemically for endothelial cells with antibodies against factor VIII-related antigen.

Postmortem evaluation of levels of total cholesterol (TC), high-density lipoprotein cholesterol (HDL-C), glycosylated hemoglobin, and thiocyanate as a marker for cigarette smoking and evaluation for hypertension was performed as previously described.<sup>9</sup> In every case, available history was used to corroborate autopsy determination of risk factors. In exertion-related deaths, information from the scene and next of kin was obtained to estimate if the individual performed exercise routinely as part of a regimen (several times per week) or was sedentary. Cases were excluded if there was gross hemolysis or if evaluation of total protein and

serum albumin levels indicated hemolysis or hemodilution. The body mass index was estimated as weight in kilograms divided by the square of height in meters.

Investigators at the scene of death recorded the circumstances of death, including the decedent's activity, in each case. In deaths that were not witnessed, the location of the body and clothing were recorded, and an assessment to the probable activity prior to the terminal event was made in each case. The exertional status was defined as rest (patient found in bed, in a reclining position, or apparently ambulating in the performance of day-to-day activities), physical exertion, or emotional stress. Physical exertion was defined as the performance of a sport during or within 1 hour of the cardiac arrest, heavy lifting, strenuous digging or shoveling, or sexual activity. Emotional stress was defined as a witnessed verbal altercation with physical involvement (eg, chasing, hitting, or posturing) occurring within 2 hours of the cardiac event, public speaking, or involvement in another fear-inducing activity (eg, fire fighting).

For univariate analysis, unpaired *t* tests were used to compare continuous variables of risk factors and other parameters in the exertion group vs the rest group. When these parameters were analyzed for the different groups of exertion, an analysis of variance (ANOVA) means table with Fisher ad hoc test was used. For categorical variables, a 2  $\times$  2

contingency table (Fisher exact test) was used. Multiple logistic regression was performed with risk factors (independent variables, including exertional status) and presence of plaque rupture (dependent variable) for multivariate analysis. For multivariate analysis examining the association of risk factors with numbers of vulnerable plaques, for both exertion and traditional risk factors, ANOVA was performed.

## RESULTS

A total of 141 hearts were studied. One hundred thirteen cases, comprising the earliest two thirds of the current cases, have been published previously but without data regarding activity at death or medication use.<sup>9</sup> The mean (SD) age of all men was 51 (11) years. There were 106 whites, 34 blacks, and 1 Asian. The deaths were witnessed in 90 cases and not witnessed in 51 cases. The deaths were categorized into 2 groups: exertion (*n* = 25) and rest (*n* = 116) (TABLE 1).

### Exertion-Related Deaths

Fourteen of the 25 deaths related to exertion occurred in previously sedentary men who were engaged in sudden strenuous activity: carrying heavy objects (unloading a truck [2], moving heavy furniture [2], pushing a car [1]), lawn mowing (2), having sexual intercourse (2), ditch digging (1), playing basketball (2), bicycling (1), and shoveling snow (1). In 4 men, death occurred during physical

**Table 1.** Activity at Death, Risk Factors, and Incidence of Plaque Rupture\*

Risk Factors	Exertion			Rest			P Value
	Physical (n = 18)	Emotional (n = 7)	Total (n = 25)	Awake (n = 96)	Asleep (n = 20)	Total (n = 116)	
Age, y	48 (8)	53 (11)	49 (9)	51 (10)	54 (13)	51 (11)	.47
BMI, kg/m <sup>2</sup>	29 (5)	31 (6)	29 (5)	28 (6)	27 (6)	28 (6)	.39
TC							
mmol/L	6.67 (1.60)	6.41 (1.03)	6.59 (1.45)	5.97 (1.62)	6.02 (1.60)	5.97 (1.60)	.07
mg/dL	258 (62)	248 (40)	255 (56)	231 (63)	233 (62)	231 (62)	
HDL-C							
mmol/L	0.93 (0.38)	0.85 (0.25)	0.95 (0.38)	1.06 (0.52)	1.14 (0.52)	1.08 (0.52)	.24
mg/dL	36 (15)	33 (10)	37 (15)	41 (20)	44 (20)	42 (20)	
TC/HDL-C ratio	8.3 (3.2)	8.2 (3.1)	8.2 (3.0)	6.3 (2.9)	5.9 (2.2)	6.2 (2.7)	.002
Mean glycosylated hemoglobin, %	7.5	6.9	7.1	7.3	8.3	7.5	.43
Smokers, %	56	43	52	58	68	59	.50
Plaque rupture, No. (%)	13 (72)	4 (24)	17 (68)	25 (26)	2 (11)	27 (23)	<.001

\*BMI indicates body mass index; TC, total cholesterol; and HDL-C, high-density lipoprotein cholesterol. Data are presented as mean (SD) unless indicated otherwise.

activity that had been performed on a regular basis: swimming (1), exercising on a stationary cross-country ski machine (1), and running (2). Seven of the 25 exertion deaths occurred during emotional exertion: verbal presentations before an audience (2), verbal and physical altercation (3), court appearance (1), and fire fighting (1).

### Nonexertional Deaths

Of the 116 nonexertional deaths, 62 occurred at home, 13 while driving, 4 in hotel rooms, 26 at work, and 11 outdoors. Of the 62 men who died at home, 20 died apparently while sleeping, 5 died while in the bedroom watching television, 3 died in the kitchen, 26 died in the living room or family room, and 8 died in a workshop or the basement. The 13 automobile drivers who died suddenly were involved in automobile crashes. However, there were no cases of significant trauma at the time of the cardiac arrest, and all but 1 police report excluded any possibility of near collision with another automobile or possible "road rage" or other inciting event. In most of these cases, witnesses or passengers indicated that the driver had an apparent "heart attack." In 1 driving case, the driver lost control of the vehicle after slumping at the wheel and sideswiped another car before landing in a ditch. The 4 men who died in hotel rooms were found alone and apparently had been involved in sedentary activities. The 26 men who died while at work were involved in nonstrenuous activities or activities that were repetitive in nature and did not involve lifting heavy objects. The 11 men who died while outdoors were performing various activities not related to exercise, heavy labor, or lifting but were walking in the yard or toward a car or a bus, eating, leaving a meeting place or entertainment area, or walking by the roadside.

### Risk Factors

The characteristics of the study subjects are shown in Table 1. There were no significant differences between men whose deaths occurred during exertion vs those at rest in age, body mass index, or levels of TC or HDL-C. The mean (SD) TC/HDL-S ratio was 8.2 (3.0) in the exer-

tion group vs 6.2 (2.7) in the rest group ( $P = .002$ ). There were no significant differences in other risk factors between men with sudden death occurring during exertion vs rest. The number of presumed cigarette smokers was 69 (59%) of 116 men in the rest group and 13 (52%) of 25 men in the exertion group ( $P = .50$ ). There were 31 men with hypertension in the rest group and 7 with hypertension in the exertion group ( $P > .99$ ). The mean (SD) glycosylated hemoglobin reading was 7.5% (2.6%) in the rest group and 7.1% (1.5%) in the exertion group ( $P = .43$ ).

### Medication Use

Five (20%) of 25 men who died during exertion and 40 (34%) of 116 men who died at rest were taking 1 or more prescription medications. These included antibiotics (6 at rest, 2 exertion), allopurinol (2 at rest), angiotensin-converting enzyme inhibitors (11 at rest, 2 exertion), benzodiazepines (5 at rest),  $\beta$ -blockers (9 at rest), calcium channel blockers (6 at rest, 1 exertion), psychotropic drugs (10 at rest, 1 exertion), digitalis (2 at rest), diuretics (11 at rest, 2 exertion), oral hypoglycemics (10 at rest, 3 exertion), nitroglycerin (2 at rest), and simvastatin (3 at rest). Three (12%) of 25 men who died during exertion and 22 (19%) of 116 men who died at rest were taking over-the-counter medications, including aspirin (6 at rest, 2 exertion), bronchodilating inhalants (3 at rest), nonsteroidal anti-inflammatory (9 at rest, 3 exertion), acetaminophen (9 at rest, 2 exertion), and antihistamines (9 at rest).

### Cardiac Findings

The mean (SD) heart weight in the exertion group was 518 (122) g and 496 (114) g in the rest group ( $P = .42$ ). Histologically manifest acute infarcts were present in 15 (13%) of 116 hearts in the rest group and 0 of 25 hearts in the exertion group ( $P = .07$ ). The culprit plaque in the 25 hearts in the exertion group was acute plaque rupture in 17, healing plaque rupture in 0, stable plaque in 6, and plaque erosion in 2. In the 116 hearts in the rest group, the culprit plaque was acute plaque rupture in 27, healing plaque rupture in

5, stable plaque in 60, and plaque erosion in 24. The proportion of acute plaque ruptures in the rest group (23%) compared with the exertion group (68%) was significantly different ( $P < .001$ , Fisher exact test). The proportion of abnormal cholesterol values was highest in the plaque rupture exertion group, followed by men dying at rest with plaque rupture, at exertion with stable plaque or healing plaque ruptures, and at rest with stable plaque (Table 2).

In multivariate analysis, using plaque rupture as a dependent variable and including all men who died suddenly, plaque rupture was associated with exertion ( $z = 3.1$ ,  $P = .002$ ) and the TC/HDL-C ratio ( $z = 3.1$ ,  $P = .002$ ). Other risk factors, including smoking, glycosylated hemoglobin level, and hypertension, were not associated with plaque rupture in this multivariate analysis ( $P > .10$ ).

The mean (SD) number of vulnerable plaques in the coronary arteries of each heart in the exertion group was 1.6 (1.5) and in the rest group was 0.9 (1.2) ( $P = .03$ ). By ANOVA, the mean number of vulnerable plaques in each heart was associated with the TC/HDL-C ratio ( $P = .006$ ), independent of age, body mass index, smoking, glycosylated hemoglobin level, and hypertension ( $P > .10$ ). When exertion was included in the analysis, both exertion ( $P = .02$ ) and the TC/HDL-C ratio ( $P = .04$ ) were associated with vulnerable plaques.

In the 44 hearts with acute plaque rupture, the site of rupture (shoulder region, mid cap, circumferential) could be determined in 36 cases, and in 8 cases the destruction was too great to determine the exact site of plaque rupture. The 36 cases included 20 men who died while at rest and 16 men who died during exertion. Of these 20 rest cases, the site of plaque rupture was the shoulder region in 13 (Figure 1), mid cap in 6, and circumferential in 1. Of these 16 exertion cases, the site of plaque rupture was the shoulder region in 4 and mid cap in 12 (Figure 2). Excluding the plaque ruptures with circumferential or destroyed rupture sites, the proportion of shoulder ruptures was greater in rest cases

**Table 2.** Cholesterol Values and Culprit Plaques Stratified by Exertion\*

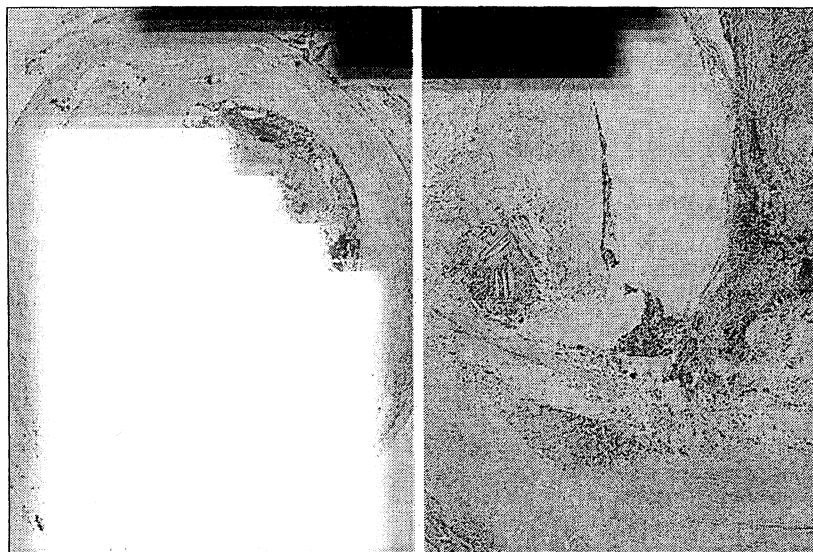
	Exertion (n = 25)			Rest (n = 116)		
	Plaque Rupture (n = 17)	Plaque Erosion (n = 2)	Stable Plaque (n = 6)	Plaque Rupture (n = 27)	Plaque Erosion (n = 24)	Stable Plaque and Healing Ruptures (n = 65)
TC, mean (SD) mmol/L	6.80 (1.03)	4.94 (1.73)	6.62 (2.02)	6.52 (1.45)	5.79 (1.45)	5.82 (1.76)
mg/dL	263 (40)	191 (67)	256 (78)	252 (56)	224 (56)	225 (68)
TC/HDL-C ratio, mean (SD)	8.8 (2.8)†	4.5 (1.1)	8.1 (3.4)	7.9 (3.3)†	5.5 (2.1)	5.8 (2.4)
Elevated TC, %‡	93	50	86	75	46	60
Elevated TC/HDL-C ratio, %§	100	50	71	89	50	65
Elevated TC level or TC/HDL-C ratio, %	100	50	86	96	67	85

\*TC indicates total cholesterol; HDL-C, high-density lipoprotein cholesterol.

†Both exertion and elevated TC/HDL-C ratio were independently associated with plaque rupture by multivariate analysis (see "Results" section).

‡Men with a TC level exceeding 5.43 mmol/L (210 mg/dL).

§Men with a TC/HDL-C ratio exceeding 5.0.

**Figure 1.** Plaque Rupture at the Shoulder Region of the Fibrous Cap

A 60-year-old man was found dead in bed. Left, The site of rupture is present at the junction of the fibrous cap with the mildly thickened intima of the relatively normal arterial wall (shoulder region) (arrows) (Movat pentachrome, original magnification  $\times 15$ ). Right, A higher magnification of the shoulder area showing rupture site and overlying thrombus (Movat pentachrome, original magnification  $\times 30$ ).

(13/20 [65%]) vs exertion cases (4/16 [25%]) ( $P = .02$ ). The mean (SD) percentage of luminal narrowing at the site of plaque rupture was 69% (11%) in the rest group and 70% (13%) in the exertion group ( $P = .75$ ) (FIGURE 3). The mean (SD) minimum thickness of the fibrous cap in plaque ruptures associated with exertion was 5.6 (3.8)  $\mu\text{m}$ , vs 9.9 (6.7)  $\mu\text{m}$  in cases of plaque ruptures associated with deaths not related to exertion ( $P = .05$ ). There was no differ-

ence in the maximal thickness of the fibrous cap (mean [SD], 27.9 [21.7]  $\mu\text{m}$ , exertion, vs 30.8 [11.2]  $\mu\text{m}$ , rest;  $P = .65$ ). The mean (SD) number of intraplaque vasa vasorum at the site of plaque rupture was 40 (20) in the exertion group and 25 (17) in the rest group ( $P = .03$ ). Hemorrhages into plaque (including those at a rupture site) occurred in 18 (72%) of 25 hearts from men who died during exertion and 47 (41%) of 116 hearts from men who died while at rest ( $P = .007$ ).

## COMMENT

Circadian variation in sympathetic activity, vascular reactivity, and platelet aggregability, as well as physical and emotional stress, may precipitate acute coronary events.<sup>12,13</sup> The vulnerability of the underlying plaque probably affects the likelihood of such triggers to cause acute coronary events.<sup>14</sup> The current study demonstrates that the mechanism of sudden death in the majority of men who experienced sudden death during physical or emotional exertion is plaque rupture, compared with a minority of sudden deaths in resting men. The number of vulnerable plaques in the men whose deaths were associated with physical or emotional stress is greater than in men dying at rest from coronary disease, corroborating the view that plaque vulnerability is important in exertion-related sudden death.

The mechanism of plaque disruption likely involves both apoptotic and necrotic mechanisms of cell death.<sup>15-17</sup> Biomechanical factors affecting plaque rupture include circumferential stress,<sup>18</sup> which has been calculated to be greatest at the junction of the cap with the normal wall (shoulder region).<sup>19</sup> The thinness of the fibrous cap is the physical measurement that appears to promote the greatest vulnerability to rupture.<sup>20,21</sup> At the cellular level, the amount of free cholesterol and the degree of macrophage infiltration are associated with cap weakness and rupture,<sup>22</sup> which may be related

to elaboration of matrix metalloproteases degrading collagen.<sup>23-25</sup>

We have previously demonstrated that the numbers of vulnerable plaques in men dying suddenly with severe coronary disease are increased in men who are hypercholesterolemic and that plaque rupture occurs more frequently in men who are dyslipidemic.<sup>9</sup> The current study indicates that acute exertion is an additional independent risk factor for plaque rupture in men, presumably by disruption of a vulnerable plaque. Therefore, we suggest that acute exertion should be added as a potential risk factor for plaque rupture, along with elevated serum cholesterol level. The mechanism of plaque rupture, as triggered by exertion, was not investigated fully in the current study. However, the finding that the fibrous cap is thinner at sites of rupture in exertion-related deaths suggests that biomechanical forces play a role. Contrary to what may be expected given mechanical calculations showing that plaque weakness is greatest at the shoulder region because it is the point of greatest stress,<sup>18,19,26</sup> our data indicate that exertion-related plaque rupture is more frequent in the center of the plaque. This finding agrees with data showing that thinness is a more important determinant of plaque instability than the circumferential site along the plaque's cap,<sup>20</sup> suggesting that circulating catecholamines and vasomotor fluctuates may trigger some cases of plaque rupture.

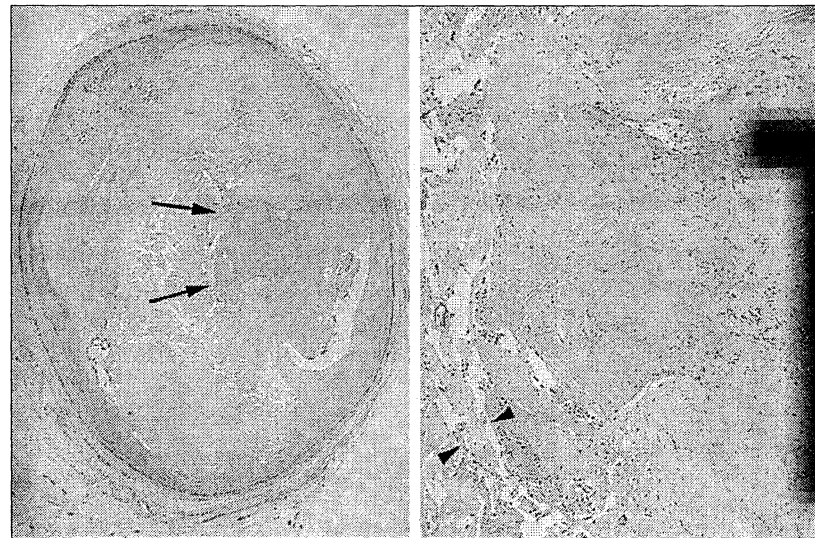
Microfill injections of coronary arteries demonstrate a positive correlation between plaque size and neocapillaries in and around the plaque.<sup>27,28</sup> The presence of increased numbers of vasa vasorum in plaques that rupture during exertion also points to a possible pathway of plaque rupture. Rupture of vasa vasorum may increase intraplaque mass and pressure, weakening the fibrous cap and leading to rupture and luminal thrombus.<sup>28</sup> Alternatively, increased vascularity within the plaque may reflect elaboration of growth factors or angiogenic factors that may be expressed in parallel with metalloproteases. Data on increased plaque hemorrhages in the exertion-related deaths in this study support

a direct role of vasa vasorum rupture in the pathogenesis of plaque rupture.

The current study has several limitations. The study population was limited to autopsy cases of sudden coronary death, and the precise state of physical conditioning was not known in all cases. However, the association between acute exertion and plaque rup-

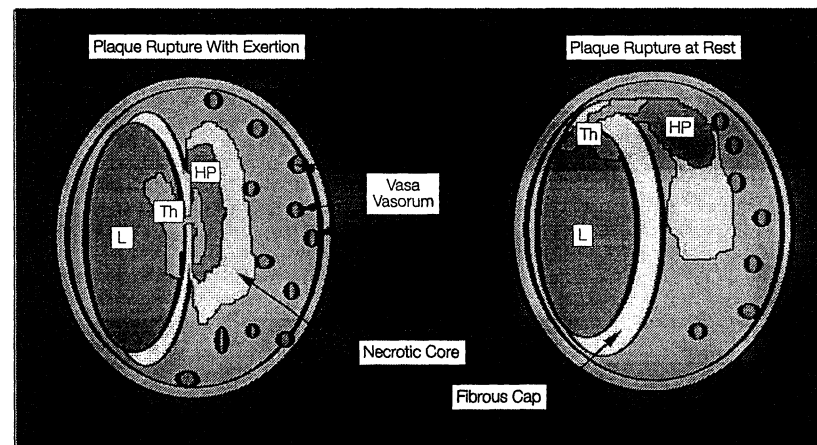
ture suggests that a proportion of sudden deaths in middle-aged men may be decreased if the potential danger of acute exertion in hypercholesterolemic men is avoided. To this end, it would seem prudent to incorporate serum cholesterol reduction as an integral component of an exercise program in those men with elevated serum cholesterol.

**Figure 2.** Plaque Rupture at the Center of the Fibrous Cap



A 38-year-old man collapsed suddenly during an altercation. Left, The rupture site is toward the center of the fibrous cap (arrows) (Movat pentachrome, original magnification  $\times 15$ ). Right, A higher magnification demonstrating rupture site with acute thrombus. Note areas of thinning of fibrous cap (arrowheads) (Movat pentachrome, original magnification  $\times 45$ ).

**Figure 3.** Effect of Exertion on Plaque Morphology



Plaque rupture with exertion (left) is characterized by a relatively thin fibrous cap, relatively numerous vasa vasorum, and rupture in the mid cap. In comparison, a plaque rupture at rest is depicted (right). Th indicates thrombus; HP, hemorrhage into plaque; and L, lumen.

In conclusion, in men with severe coronary artery disease who die suddenly, acute exertion appears to be an in-

dependent risk factor for plaque rupture, presumably by disruption of a vulnerable plaque

**Disclaimer:** The opinions or assertions contained herein are the private views of the authors and are not to be construed as official or reflecting the views of the Department of the Army, the Department of the Air Force, or the Department of Defense

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If the hand be held between the discharge-tube and the [fluorescent] screen, the darker shadow of the bones is seen within the slightly dark shadow-image of the hand itself. For brevity's sake I shall use the expression "rays" and to distinguish them from others of this name, I shall call them "x-rays"

—Wilhelm Conrad Roentgen (1845-1923)

STATE OF UTAH  
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December 2, 2008

Ms. Lisa Collins  
Clerk of the Court of Appeals  
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450 South State Street, Fifth Floor  
P.O. Box 140230  
Salt Lake City, Utah 84114-0210

Re: *State v. Dennis Rosa-Re*, Case No. 20060432-CA  
Rule 24(j) Supplemental Authority Letter

Dear Ms. Collins:

On November 24, 2008, oral argument in the above case occurred before Judges Bench, Davis, and McHugh.

During argument, I represented that a deferential clear error standard applies in reviewing a trial court's ruling (step three) on a *Batson* objection. *See also Brief of Appellee* at 1-2 & 32-35. In rebuttal, defense counsel stated that the Supreme Court refused to apply a deferential standard in *Snyder v. Louisiana*, 128 S. Ct. 1203 (2008). That statement does not fairly characterize *Snyder*.

In *Snyder*, the Court applied a "clearly erroneous" standard of review to the trial court's ruling. *Id.* at 1206. The Court explained:

On appeal, a trial court's ruling on the issue of discriminatory intent must be sustained unless it is clearly erroneous. The trial court has a pivotal role in evaluating *Batson* claims. Step three of the *Batson* inquiry involves an evaluation of the prosecutor's credibility, and the best evidence of discriminatory intent often will be the demeanor of the attorney who exercises the challenge. In addition, race-neutral reasons for peremptory challenges often invoke a juror's demeanor (e.g., nervousness, inattention), making the trial court's first-hand observations of even greater importance. In this

situation, the trial court must evaluate not only whether the prosecutor's demeanor belies a discriminatory intent, but also whether the juror's demeanor can credibly be said to have exhibited the basis for the strike attributed to the juror by the prosecutor.

*Id.* at 1207-08 (citations and internal marks omitted).

The Court recognized that only under "exceptional circumstances" should a trial court's assessment be rejected. *Id.* at 1208. The Court then found such circumstances where (1) an extensive colloquy with the stricken juror belied one of the prosecutor's two explanations for the strike, (2) the *Batson* objection was summarily rejected without explanation or indication as to which of the prosecutor's two explanations the trial court credited, and (3) the prosecutor otherwise injected race into the capital murder trial. *Snyder*, 128 S. Ct. at 1208-09. *See also* State's Supplemental Letter, dated September 9, 2008 (with *Snyder* opinion attached).

Thank you for your prompt distribution of this letter to the panel judges.

Sincerely,

A handwritten signature in black ink, appearing to read "C. F. Soltis", written in a cursive style.

CHRISTINE F. SOLTIS  
Assistant Attorney General

cc: Linda M. Jones

*Word Perfect Word Count: 350*