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EVANA DINUZZO *v.* DAN PERKINS CHEVROLET
GEO, INC., ET AL.
(SC 17869)

Norcott, Katz, Palmer, Vertefeuille and Zarella, Js.

Argued February 8, 2008—officially released November 10, 2009

Geraldine Ficarra, with whom was *Robert J. Nicola*,
for the appellant (plaintiff).

G. Randall Avery, for the appellee (defendants).

Opinion

PALMER, J. The sole issue raised by this certified appeal is whether the Appellate Court properly reversed the decision of the compensation review board (board) upholding the decision of the workers' compensation commissioner for the third district (commissioner), who awarded the plaintiff, Evana DiNuzzo, survivor's benefits under General Statutes § 31-306 (a).¹ The Appellate Court concluded that there were insufficient subordinate facts in the record to support the commissioner's finding that the death of the plaintiff's husband, James DiNuzzo (decedent), was causally related to a compensable injury and, therefore, that the plaintiff was not entitled to survivor's benefits. *DiNuzzo v. Dan Perkins Chevrolet Geo, Inc.*, 99 Conn. App. 336, 337, 913 A.2d 483 (2007). We agree and, accordingly, affirm the judgment of the Appellate Court.

The opinion of the Appellate Court sets forth the following relevant facts and procedural history. "Following the decedent's death, the plaintiff . . . submitted a claim for dependent widow's benefits pursuant to . . . § 31-306. . . . The decedent was employed by the [named] defendant [Dan Perkins Chevrolet Geo, Inc.]² and sustained a compensable injury to his cervical spine when he was involved in a motor vehicle accident on June 26, 1997. As a result of the injury, the decedent experienced radiculopathy into his left side and [left arm]. He underwent [surgery, after which he] continued to experience [pain in his neck and the left side of his body, as well as numbness and tingling in] his left arm.

"Prior to his death on January 12, 2002, the decedent had suffered from injuries and illnesses that were unrelated to his compensable injury. He had chronic bilateral shoulder and low back pain that [was] the result of a bicycle accident [that] he had in 1974. Since before 1982, the decedent had been treated for a chronic hepatitis C infection, a result of his intravenous drug use. The decedent was diagnosed with adult onset diabetes in 1995. In 1994 or 1995, he was diagnosed with hypertension and high cholesterol. The decedent's diabetes, hypertension and high cholesterol [all of which are risk factors for atherosclerotic heart disease] were controlled by medication. On December 1, 2001, the decedent was hospitalized with complaints of dizziness, [excessive perspiration] and pain. The symptoms were caused by the effect [that] Interferon, a medicine he took [for his] hepatitis C infection, had on his blood sugar level.

"On the evening of January 11, 2002, the plaintiff observed that the decedent was mumbling and incoherent. [The decedent] complained that he had severe lower back pain, [that] his stomach was bothering him, and [that] he was constipated. At midnight [on January 12, 2002], the decedent struggled successfully to have

a bowel movement, after which he said that he felt better. The plaintiff last saw the decedent [alive] at 2 a.m. on January 12, 2002. Because the plaintiff and the decedent slept in separate rooms, the plaintiff was unaware of the decedent's activities between 2 and 8 a.m. when she discovered his body. Members of the Milford police department responded to the plaintiff's call for assistance. . . . [T]he decedent was declared dead at 8:50 a.m. on January 12, 2002, and . . . [his] body was not examined by the medical examiner.

“Cosmo Filiberto, a board certified family practitioner and expert in preventive medicine and care, prepared the decedent's death certificate. Filiberto stated that the cause of death was heart disease, secondary to atherosclerotic heart disease. Filiberto had treated the decedent for twenty years and had seen him days before his death but did not examine his body postmortem. No autopsy was performed on the decedent's body. The record is silent as to why no postmortem examination or autopsy was done. Filiberto opined at the hearing before the commissioner that the decedent's death was brought about by the curtailment of his physical activities. His weight sometimes exceeded 300 pounds. [In Filiberto's view, the decedent's] weight gain and resulting inactivity, along with the heavy doses of narcotics [that] he was required to take to control his pain, made it ‘medically probable and certain that the stress’ of [his] compensable injury and its treatment substantially contributed to his death . . . because they severely limited his ability to maintain his physical fitness and aerobic conditioning. Prior to [sustaining] the . . . compensable injury, [the decedent] was able to control his pain [from] prior accidents with over-the-counter medication and muscle relaxants. Relief from the pain of the decedent's 1997 accident, however, required high doses of narcotics, eventually reaching 3200 milligrams [each] day.

“Jonathan Alexander, a cardiologist at Danbury Hospital and clinical faculty member of Yale University School of Medicine, testified for the defendant. Alexander based his opinion and report on a review of the decedent's medical records, including Filiberto's records. Alexander found no evidence of atherosclerotic heart disease in the decedent's medical records. Alexander concluded, therefore, that neither the treatment the decedent received as a result of his cervical injury nor his inactivity nor his weight gain [was a factor] in his death.

“The commissioner was not persuaded by Alexander's opinions. [The commissioner] found, on the basis of Filiberto's twenty year[s] [of] treatment of the decedent and familiarity with [the decedent's] ongoing medical condition[s], that there was a relationship between the compensable injury and the decedent's death. He concluded that the plaintiff was entitled to benefits

pursuant to § 31-306. The defendant thereafter filed a motion to correct the findings and award, which the commissioner denied The defendant [thereafter] appealed to the board.” Id., 338–40. “The board concluded that the commissioner’s award was not contrary to law, without evidence or based on unreasonable or impermissible inferences. The board, therefore, affirmed the commissioner’s award. The defendant appealed.” Id., 341.

On appeal to the Appellate Court, the defendant claimed, *inter alia*, that the board improperly had affirmed the commissioner’s findings for two interrelated reasons, namely, that those “findings were predicated on expert medical testimony grounded in conjecture, speculation or surmise,” and that “the expert medical testimony was not supported by the subordinate facts” Id., 338. The Appellate Court agreed with both of the defendant’s contentions. Id. In doing so, the Appellate Court first observed that the commissioner, in concluding that the plaintiff was entitled to survivor’s benefits, had credited the testimony of Filiberto, the decedent’s personal physician. Id., 343. The Appellate Court stated: “We accept the commissioner’s credibility determination for purposes of our analysis, but the testimony of even the most persuasive expert witness cannot be credited if it is not based on facts. The determinative question, therefore, is not whether Filiberto was credible but whether there are sufficient subordinate facts in the record to support his opinion that the decedent’s death was causally related to his compensable injury.” Id., 343–44. The Appellate Court then concluded that the record was devoid of such facts, explaining: “Filiberto testified before the commissioner on May 5, 2004, and a copy of his deposition testimony was placed into evidence. Our review of the transcripts reveals that the decedent was morbidly obese in 1982 and that he gained twenty to thirty pounds after the 1997 accident and thirty to thirty-five more pounds after his [surgery]. Due to the decedent’s weight and the drugs [that the decedent] took to control his pain, Filiberto opined that the decedent was unable to exercise and that he would have lived longer had he exercised. According to Filiberto, the decedent died of a heart attack caused by atherosclerotic disease, although he never ordered tests to determine whether the decedent, in fact, had atherosclerotic heart disease.³ Filiberto also opined that Oxycontin, which the decedent was taking for pain, can cause constipation. According to Filiberto, straining to have a bowel movement can cause changes in the body’s system that can produce cardiac arrest. [Filiberto testified, however, that he could not state to a reasonable medical probability that the decedent’s constipation was connected to his work-related injury or to his death.]

“Filiberto also testified that he did not examine the decedent’s body [postmortem] . . . and that no

autopsy had been performed. Filiberto did not know whether the decedent had a congenital heart defect that could have caused a heart attack and acknowledged that a ruptured aneurysm, pulmonary embolism, stroke or sudden arrhythmia can cause sudden death.⁴ He conceded that, without an autopsy, there [was] no way [of] know[ing] the exact cause of the decedent's death.

“On cross-examination before the commissioner, the defendant's counsel presented Filiberto with a copy of the . . . records [from the decedent's admission to Milford Hospital on December 1, 2001], which he previously had not seen.⁵ [Those records indicated that a] gastroenterologist [had been] treating the decedent's chronic hepatitis C infection, and Filiberto [testified that he] was unaware that the decedent had [started] taking Interferon [before his admission to the hospital]. Filiberto conceded that the symptoms [that] the decedent complained of on January 11, 2002, [the evening before his death] could have resulted from taking Interferon. . . . The reality is that it was not possible to determine with any reasonable degree of probability the cause of the decedent's death given the factual gaps in the record. [The Appellate Court concluded] [o]n the basis of [its] examination of Filiberto's testimony and opinion . . . that there were insufficient subordinate facts to support his opinion that the decedent's death was causally related to the compensable injury or to remove the cause of death from the realm of conjecture.”⁶ (Citation omitted.) *Id.*, 344–46.

We granted the plaintiff's petition for certification to appeal, limited to the following issue: “Did the Appellate Court properly reverse the decision of the . . . board, upholding the . . . commissioner's finding and award of survivor's benefits, under . . . § 31-306?” *DiNuzzo v. Dan Perkins Chevrolet Geo, Inc.*, 281 Conn. 929, 918 A.2d 277 (2007). We answer the certified question in the affirmative.

“As a threshold matter, we set forth the standard of review applicable to workers' compensation appeals. The principles that govern our standard of review in workers' compensation appeals are well established. The conclusions drawn by [the commissioner] from the facts found must stand unless they result from an incorrect application of the law to the subordinate facts or from an inference illegally or unreasonably drawn from them. . . . Neither the . . . board nor this court has the power to retry facts.” (Citation omitted; internal quotation marks omitted.) *Tracy v. Scherwitzky Gutter Co.*, 279 Conn. 265, 272, 901 A.2d 1176 (2006).

To recover under the Workers' Compensation Act (act), an employee must meet the two part test embodied in General Statutes § 31-275,⁷ namely, that the injury claimed arose out of the employee's employment and occurred in the course of the employment. E.g., *Blakeslee v. Platt Bros. & Co.*, 279 Conn. 239, 243–44,

902 A.2d 620 (2006). “[I]n Connecticut traditional concepts of proximate cause constitute the rule for determining . . . causation [in workers’ compensation cases].” *McDonough v. Connecticut Bank & Trust Co.*, 204 Conn. 104, 118, 527 A.2d 664 (1987); accord *Solonick v. Electric Boat Corp.*, 111 Conn. App. 793, 799, 961 A.2d 470 (2008) (same), cert. denied, 290 Conn. 916, 965 A.2d 555 (2009). “[T]he test of proximate cause is whether the defendant’s conduct is a substantial factor in bringing about the plaintiff’s injuries. . . . Further, it is the plaintiff who bears the burden to prove an unbroken sequence of events that tied his injuries to the [defendant’s conduct]. . . . The existence of the proximate cause of an injury is determined by looking from the injury to the negligent act complained of for the necessary causal connection. . . . This causal connection must be based [on] more than conjecture and surmise. . . . An actual cause that is a substantial factor in the resulting harm is a proximate cause of that harm. . . . The finding of actual cause is thus a requisite for any finding of proximate cause.” (Citation omitted; internal quotation marks omitted.) *Winn v. Posades*, 281 Conn. 50, 56–57, 913 A.2d 407 (2007).

When, as in the present case, it is unclear whether an employee’s death is causally related to a compensable injury, it is necessary to rely on expert medical opinion. See, e.g., *Murchison v. Skinner Precision Industries, Inc.*, 162 Conn. 142, 152, 291 A.2d 743 (1972). “Unless the medical testimony by itself establishes a causal relation, or unless it establishes a causal relation when it is considered along with other evidence,” the commissioner cannot reasonably conclude that the death is causally related to the employee’s employment. (Internal quotation marks omitted.) *Id.* “Expert opinions must be based [on] reasonable probabilities rather than mere speculation or conjecture if they are to be admissible in establishing causation. . . . To be reasonably probable, a conclusion must be more likely than not. . . . Whether an expert’s testimony is expressed in terms of a reasonable probability that an event has occurred does not depend [on] the semantics of the expert or his use of any particular term or phrase, but rather, is determined by looking at the entire substance of the expert’s testimony.” (Citations omitted.) *Struckman v. Burns*, 205 Conn. 542, 554–55, 534 A.2d 888 (1987).

Finally, although “an award must stand unless it results from an incorrect application of the law to the subordinate facts or from an inference illegally or unreasonably drawn from them . . . there must be subordinate facts from which the conclusion that there is a causal connection between the employment and the injury can be drawn. . . . [Thus] [t]he right of a claimant to compensation must be based [on] more than speculation and conjecture.” (Citations omitted.) *D’Angelo v. Connecticut Light & Power Co.*, 146 Conn. 505, 508, 152 A.2d 636 (1959); see also *Nash v. Hunt*,

166 Conn. 418, 426, 352 A.2d 773 (1974) (“the jury must reject the opinion of an expert to the extent that it is based on subordinate facts which [the jury does] not find proven” [internal quotation marks omitted]); *Furman v. National Dairy Products Corp.*, 123 Conn. 327, 329, 195 A. 182 (1937) (“the finding of the commissioner cannot be sustained unless supported by the subordinate facts”).

On appeal, the plaintiff claims that the Appellate Court improperly concluded that there were insufficient subordinate facts in the record to support the commissioner’s finding, predicated on Filiberto’s expert testimony, that the decedent’s death was causally related to his back injury because the back injury severely limited his ability to exercise, which, in turn, caused him to suffer a fatal heart attack. The plaintiff contends that, although the decedent never had been formally diagnosed with atherosclerotic heart disease, Filiberto’s opinion that he died from the disease was adequately supported by circumstantial evidence, namely, that the decedent suffered from many of the risk factors for the disease, including hypertension, diabetes and morbid obesity. The plaintiff maintains, therefore, that, contrary to the determination of the Appellate Court, it is of no moment that the decedent never was formally diagnosed with atherosclerotic heart disease, that no one witnessed his death and that no autopsy was performed. According to the plaintiff, the fact that the decedent exhibited certain risk factors for atherosclerotic heart disease was sufficient to establish, to a reasonable degree of medical certainty, that the decedent had died of a cardiac event triggered by the disease, and that, if the decedent had been able to improve his physical fitness, which he could not do because of his compensable injury, “he would have been less of a candidate for a cardiac event.”

There are several problems with the plaintiff’s claim, not the least of which is that, apart from the fact that the decedent had suffered from certain risk factors associated with atherosclerotic heart disease—factors that, according to the record, were all fully under control at the time of the decedent’s death⁸—the plaintiff produced no evidence linking the decedent’s death to a heart attack. We agree with the Appellate Court that, without such evidence, either in the form of an autopsy report, an eyewitness account of what appeared to be a heart attack; see *Stier v. Derby*, 119 Conn. 44, 48–51, 174 A. 332 (1934) (affirming commissioner’s finding that decedent had suffered heart attack in course of his employment based, in part, on witness’ testimony that decedent was pale, sweating and complaining of chest pain shortly before his death); or an actual diagnosis of atherosclerotic heart disease, the evidence simply was insufficient to support Filiberto’s testimony as to the cause of the decedent’s death.⁹

The inadequacy of Filiberto's testimony is compounded by the fact that, as the Appellate Court noted; see *DiNuzzo v. Dan Perkins Chevrolet Geo, Inc.*, supra, 99 Conn. App. 345–46; Filiberto acknowledged at the hearing before the commissioner that when he gave his opinion on direct examination, he was not aware that the decedent had been hospitalized approximately one month before his death for certain side effects of Interferon. See footnote 5 of this opinion. After reading the hospital record, Filiberto further acknowledged that the symptoms that the decedent had exhibited on the night of his death could have been the result of his use of Interferon.¹⁰ When asked, however, whether the symptoms also were consistent with a heart attack, Filiberto could only speculate as to how they “conceivably” might be connected. In the end, Filiberto was forced to concede that he did not “actually know whether there was a heart attack that precipitated the [decedent's] death, as opposed to some other event, such as a stroke or brain embolism, or an aortic burst or something like that” He also acknowledged in his deposition testimony that, even if it could be established conclusively that the decedent had died of a heart attack, without an autopsy, it would be impossible to know whether the heart attack could have been prevented if the decedent had been able to exercise more because some heart attacks are caused by congenital heart defects that are not amenable to improvement through exercise. Specifically, Filiberto testified in relevant part at his deposition:

“[The Defendant's Counsel]: Now, as matter of fact, you don't know whether, if [the decedent] had been in perfect shape, he might [not] have dropped dead of a heart attack, because you don't know what the heart defect was that killed him; isn't that true?

“[Filiberto]: That's true.

“[The Defendant's Counsel]: So you cannot say, because you do not know, what his heart defect was specifically; no autopsy having been performed, you cannot say that, had he maintained himself in better physical condition . . . he would certainly have lived longer?

“[Filiberto]: Well, it certainly means more likely than not than—yeah, I can say that. . . .

“[The Defendant's Counsel]: Because you don't know what his heart defect was, you can't say whether physical conditioning had anything to do with the heart defect that killed him; isn't that true?

“[Filiberto]: Since we don't know exactly what that defect was, that's true.”¹¹

Despite these evidentiary deficiencies, the plaintiff proffers several arguments in support of her claim that the judgment of the Appellate Court must be reversed.

The plaintiff argues, first, that the decedent's medical condition "should not be lost in cardio-semantics" and that it is unfair to penalize her because the decedent's medical records "do not contain the magic words 'atherosclerotic heart disease'" We disagree that the evidentiary deficiencies in the plaintiff's case are merely semantical. To the contrary, as we have explained, the plaintiff's claim to survivor's benefits was predicated on a series of inferences, some of them quite attenuated, that the commissioner was required to draw from the fact that the decedent had suffered a compensable injury in 1997. These inferences included: (1) the decedent's 1997 injury severely limited the decedent in his ability to exercise and therefore to maintain his physical fitness; (2) the decedent's lack of exercise worsened an undiagnosed case of atherosclerotic heart disease or caused him to develop that disease in the first place; and (3) the decedent suffered a fatal heart attack as a result of the first two factors. Putting aside the lack of an evidentiary foundation to support the first inference; see footnote 11 of this opinion; we agree with the Appellate Court that, without some evidence establishing that the decedent in fact suffered a fatal heart attack or actually suffered from atherosclerotic heart disease, the causal link between his compensable injury and his alleged manner of death simply becomes too attenuated to support a reasonable inference that the two events were connected.¹²

The plaintiff also contends that *Reynolds v. Rider Dairy Co.*, 125 Conn. 380, 5 A.2d 855 (1939), *Russo v. Metropolitan Life Ins. Co.*, 125 Conn. 132, 3 A.2d 844 (1939), and *Hennessy v. Metropolitan Life Ins. Co.*, 74 Conn. 699, 52 A. 490 (1902), support the proposition that when there is conflicting medical testimony as to the cause of death in a workers' compensation action, and the employee's death certificate is entered into evidence, the commissioner may rely on the death certificate as evidence of the facts asserted therein. Although we agree with the plaintiff that, as a general matter, a death certificate is evidence of the facts contained therein, the foregoing cases are all distinguishable: in those cases, in contrast to the present case, the physician who prepared the death certificate did not testify, as Filiberto testified in the present case, that he did not actually know what had caused the decedent's death, that he had not conducted a postmortem examination of the decedent's body and that an autopsy had not been performed. In light of Filiberto's testimony, the evidentiary presumption that ordinarily would attach to a death certificate is unwarranted.

Finally, the plaintiff contends that, in keeping with the humanitarian and remedial purposes of the act, she should not be penalized for failing to request an autopsy of her husband's body at a time when she was overcome with grief and attending to the details of his funeral. The plaintiff asserts that, if the judgment of the Appel-

late Court is affirmed, it will place future widows in the unfortunate position of having to take steps to secure their survivor's benefits before attending to the needs of loved ones.

It is well established that, in resolving issues of statutory construction under the act, "we are mindful that the act indisputably is a remedial statute that should be construed generously to accomplish its purpose. . . . The humanitarian and remedial purposes of the act counsel against an overly narrow construction that unduly limits eligibility for workers' compensation. . . . Accordingly, [i]n construing workers' compensation law, we must resolve statutory ambiguities or lacunae in a manner that will further the remedial purpose of the act. . . . [T]he purposes of the act itself are best served by allowing the remedial legislation a reasonable sphere of operation considering those purposes." (Citations omitted; internal quotation marks omitted.) *Pizzuto v. Commissioner of Mental Retardation*, 283 Conn. 257, 265, 927 A.2d 811 (2007). The plaintiff has cited no authority, however, and we are aware of none, that would permit us to apply these general principles of interpretation to relieve her of the burden of establishing all of the elements of her claim by competent evidence. See, e.g., *Murchison v. Skinner Precision Industries, Inc.*, supra, 162 Conn. 151 (injured employee in workers' compensation case bears burden of proof and "[s]uch proof must be established by competent evidence"). "[Although a court] may be sympathetic to the plight of injured workers who find it cost prohibitive to attempt to establish complicated theories of causation, whether medical or otherwise, the humanitarian spirit of [the act] does not entitle the [court] to suspend the injured worker's burden of proof, [or] to change the rules of our legal system so that the onus of disproving causation is thrust upon the [employer or the insurer]." 1 A. Sevarino, *Connecticut Workers' Compensation After Reforms* (3d Ed. 2008) § 10.19, p. 1545.

The judgment of the Appellate Court is affirmed.

In this opinion the other justices concurred.

¹ General Statutes § 31-306 (a) provides in relevant part: "Compensation shall be paid to dependents on account of death resulting from an accident arising out of and in the course of employment"

² Utica Mutual Insurance Company, which was the workers' compensation insurance carrier for Dan Perkins Chevrolet Geo, Inc., at all relevant times, also was named as a defendant. For convenience, we refer to Dan Perkins Chevrolet Geo, Inc., as the defendant throughout this opinion.

³ "A thorough review of the record disclosed no evidence, other than Filiberto's opinion testimony, that the decedent had atherosclerotic heart disease." *DiNuzzo v. Dan Perkins Chevrolet Geo, Inc.*, supra, 99 Conn. App. 344 n.3.

⁴ Filiberto testified on cross-examination during the hearing before the commissioner as follows:

"[The Defendant's Counsel]: Doctor, just so your testimony is clear, whenever there is reference, in any record or [in] anything that you have said, to a heart attack, you don't actually know whether there was a heart attack that precipitated the death as opposed to some other event such as a stroke or brain embolism, or an aortic burst or something like that?"

* * *

“[Filiberto]: That’s true.”

⁵ Filiberto testified on cross-examination as follows:

“[The Defendant’s Counsel]: Doctor, the questions asked by the commissioner bring me to ask you questions about [the] treatment at Milford Hospital of your patient, [the decedent], on . . . December 1, 2001. Are you familiar with that care?”

“[Filiberto]: No.

“[The Defendant’s Counsel]: Have you seen the records with regard to the care?”

“[Filiberto]: No.

* * *

“[The Defendant’s Counsel]: Now that [the hospital record] has been marked as a full exhibit, I just want you to reiterate a couple of things. First, prior to giving your opinions in this case, you did not know that [the decedent] had been a patient at Milford Hospital on December 1, 2001?”

“[Filiberto]: No.

“[The Defendant’s Counsel]: Now, you see there’s reference to a word ataxia. Can you tell us what ataxia means?”

“[Filiberto]: Unsteady when you are walking, wobbly walking.

“[The Defendant’s Counsel]: In fact, they performed, apparently at the hospital at this time, a [CT] scan of the brain, is that correct?”

“[Filiberto]: Correct.

“[The Defendant’s Counsel]: And they said they were doing so for what symptom complaints?”

“[Filiberto]: For ataxia, disorientation.

“[The Defendant’s Counsel]: Now, were you able to make out some of what is written [in this hospital record] . . . ?

* * *

“[Filiberto]: Sure. I’ll read that whole paragraph. ‘I discussed the case with [a gastroenterologist] He states side effects of hypotension, sweating and dizziness expected for five days after Interferon.’ . . .

“[The Defendant’s Counsel]: In fact, you don’t have records showing when your patient was administered Interferon, do you?”

“[Filiberto]: No.

* * *

“[The Defendant’s Counsel]: Now that you have seen [the hospital records], is it also a possibility that some of the symptom complaints that [the plaintiff] testified about on that night could have been as a result of some side effect of his Interferon treatment?”

“[Filiberto]: If he had gotten it close to that time frame. The doctor there said four days.

“[The Defendant’s Counsel]: You don’t know when he last might have had any Interferon treatment prior to his death?”

“[Filiberto]: That’s right.”

⁶ The Appellate Court disagreed with the plaintiff’s argument “that the testimony of the defendant’s medical expert, Alexander, provided the necessary evidence to establish a causal connection between the decedent’s compensable injury and his death.” *DiNuzzo v. Dan Perkins Chevrolet Geo, Inc.*, supra, 99 Conn. App. 346 n.6. The Appellate Court relied on the following deposition testimony by Alexander:

“[The Defendant’s Counsel]: Well, let me ask you. In your opinion, if someone dies suddenly, would you presume that that was a cardiac event?”

“[Alexander]: Yes.

“[The Defendant’s Counsel]: Why is that?”

“[Alexander]: Sudden death is not slow death, and there are several organ systems that can fail, that can cause one to die suddenly within a matter of minutes, seconds or minutes. And one of those organic systems is the heart. Again, without a witnessed death . . . nobody saw [the decedent] die; they found him dead. And, without an autopsy, you can’t come to a conclusion as to the cause of this man’s death. It’s certainly *possible* it’s cardiac, but, as we stated earlier, there are other things that could have caused him to die.” (Emphasis added.)

The Appellate Court observed that Alexander testified that the decedent *could have* died as a result of a cardiac event. *DiNuzzo v. Dan Perkins Chevrolet Geo, Inc.*, supra, 99 Conn. App. 346–47 n.6. The Appellate Court then noted that “[p]ossibilities do not provide a sufficient basis for establishing a causal relationship. [E]xpert opinions must be based [on] reasonable probabilities rather than mere speculation or conjecture To be reasonably probable, a conclusion must be more likely than not.’ . . . *Card*

v. *State*, 57 Conn. App. 134, 138–39, 747 A.2d 32 (2000).” *DiNuzzo v. Dan Perkins Chevrolet Geo, Inc.*, supra, 346–47 n.6.

⁷ General Statutes § 31-275 provides in relevant part: “As used in this chapter, unless the context otherwise provides:

“(1) ‘Arising out of and in the course of his employment’ means an accidental injury happening to an employee or an occupational disease of an employee originating while the employee has been engaged in the line of the employee’s duty in the business or affairs of the employer upon the employer’s premises, or while engaged elsewhere upon the employer’s business or affairs by the direction, express or implied, of the employer, provided:

* * *

“(B) A personal injury shall not be deemed to arise out of the employment unless causally traceable to the employment other than through weakened resistance or lowered vitality;

* * *

“(E) A personal injury shall not be deemed to arise out of the employment if the injury is sustained: (i) At the employee’s place of abode, and (ii) while the employee is engaged in a preliminary act or acts in preparation for work unless such act or acts are undertaken at the express direction or request of the employer”

⁸ Filiberto testified at his deposition that the decedent’s heart attack came as a “surprise” to him and that, at the time of his death, the decedent’s “diabetes was in perfect control” and that his hypertension was a “nonissue” and had “always” been in “good control.” Indeed, there was no evidence that the decedent’s diabetes and hypertension, conditions that predated the decedent’s compensable injury, materially worsened after he sustained that injury.

⁹ We reject the plaintiff’s contention that the Appellate Court improperly deviated from the principle that a reviewing court is not permitted to “disregard the commissioner’s findings regarding the cause of death and substitute testimony it prefer[s].” *O’Reilly v. General Dynamics Corp.*, 52 Conn. App. 813, 819, 728 A.2d 527 (1999). The plaintiff asserts that the Appellate Court improperly relied on the testimony of Alexander, the defendant’s expert, and disregarded the testimony of Filiberto, because it found Alexander to be more credible. It is clear from the opinion of the Appellate Court, however, that that court did not do so. The Appellate Court reversed the decision of the board on the basis of its conclusion that there were insufficient subordinate facts in the record to support the commissioner’s findings, not because it found Alexander to be more credible than Filiberto. Indeed, the Appellate Court expressly disavowed that it had rejected Filiberto’s testimony as lacking in credibility, explaining, rather, that its resolution of the issue presented was predicated on the absence of subordinate facts sufficient to support Filiberto’s conclusions. See *DiNuzzo v. Dan Perkins Chevrolet Geo, Inc.*, supra, 99 Conn. App. 343–44.

¹⁰ There is no evidence in the record as to whether the decedent took Interferon in the days preceding his death.

¹¹ We note that the defendant also maintained in the Appellate Court that, in addition to there having been no subordinate facts in the record to support the commissioner’s finding regarding the cause of the decedent’s death, there were no subordinate facts in the record to support any of the commissioner’s other findings. The defendant argued, inter alia, that “[t]he central findings of the . . . commissioner [were] based [on] the conjecture, surmise, and speculations of the plaintiff’s expert witness [Filiberto]. They [were] also based [on] conclusions that ha[d] no definite basis in the facts, lack[ed] supporting foundation in the underlying facts, and [were] otherwise incompetent to prove the facts found.” The defendant further maintained that “the testimony of . . . Filiberto in several key areas [was] either given no support by subordinate facts, or [was] directly contradictory to the subordinate facts.” Although, in this court, the defendant focuses primarily on the lack of support for the commissioner’s finding that the decedent died of a heart attack, we note that the evidence also directly contradicts the commissioner’s finding that the decedent’s death was proximately caused by his compensable work injury because that injury prevented him from exercising. Filiberto testified at his deposition that the decedent started to see him as a patient in 1982 and that, from that time until his death in 2002, the decedent was morbidly obese and that his exercise was limited to walking due to serious injuries that he had sustained in a 1974 bicycle accident. Filiberto further testified that, shortly before the decedent’s death, the decedent informed him during a routine office visit that he was “continuing to walk” for exercise. When the plaintiff’s counsel asked Filiberto

whether he knew “if it was to the same degree and to the same extent and for the same distances that it was prior to the [1997 work-related] accident,” Filiberto responded, “I don’t know.”

Thus, to the extent that the decedent was limited in his ability to maintain his physical fitness, the evidence in the record indicates that that limitation was the result of injuries that he had sustained in 1974, not 1997. We have identified nothing in the record establishing that the 1997 work-related injury placed any *additional* limitation on the decedent; in fact, Filiberto conceded that he did not know whether the decedent walked less as a result of the 1997 injury. As we previously have explained, the claimant in a workers’ compensation case bears the burden of proving that the employee’s employment proximately caused the claimed injury. See *Fair v. People’s Savings Bank*, 207 Conn. 535, 546, 542 A.2d 1118 (1988) (“[t]he rational mind must be able to trace resultant personal injury to a proximate cause set in motion by the employment and not by some other agency, or there can be no recovery” [internal quotation marks omitted]). Although it appears that this factual lacunae would constitute a second, independent basis for affirming the judgment of the Appellate Court, we need not rely on it because, for the reasons set forth in this opinion, we fully agree with that court’s determination that there were no subordinate facts in the record to support the commissioner’s finding as to the cause of the decedent’s death.

¹² We disagree with the plaintiff that *Blados v. Blados*, 151 Conn. 391, 198 A.2d 213 (1964), a negligence action, compels a different conclusion because, in *Blados*, the cause of the decedent’s unwitnessed death was determined, without an autopsy, on the basis of reasonable inferences drawn from circumstantial evidence. See *id.*, 393–96. In *Blados*, the circumstantial evidence adduced at trial overwhelmingly supported the medical examiner’s finding that the decedent in that case had died of a fractured skull that was caused by a fall from a defective stairwell. See *id.*, 394–96. In the present case, the inferences that the commissioner would have been required to draw with respect to the decedent’s cause of death are not reasonable because they are not supported by competent evidence.

The plaintiff also relies on *Stier v. Derby*, *supra*, 119 Conn. 44, and *MacFarquhar v. Columbia Graphophone Co.*, 107 Conn. 73, 139 A. 684 (1927), for the principle that an autopsy is not required to determine the cause of death. Of course, we take no issue with the general proposition that an autopsy generally is not required to ascertain a person’s cause of death. In *Stier*, however, as in *Blados*, there was ample circumstantial evidence from which the trier of fact reasonably could have inferred the decedent’s cause of death. See *Stier v. Derby*, *supra*, 49–52. In *MacFarquhar*, we were not required to determine whether there were sufficient subordinate facts in the record to support the commissioner’s finding as to the cause of death. See generally *MacFarquhar v. Columbia Graphophone Co.*, *supra*, 74–76. The issue in that case, rather, was whether the trial court properly had granted a motion to correct the finding of the commissioner that, although the decedent in that case had died of a heart attack, his death was unrelated to burn injuries that he had sustained in a work-related accident. See *id.*, 74. The trial court had granted the motion to correct by striking that portion of the finding in which the commissioner stated that the death of the decedent was unrelated to burns that he had sustained on the job, and by adding a paragraph that stated that the death was related. *Id.* We affirmed the judgment of the trial court on the ground that “[t]he holding of the commissioner that the heart disease did not result from the burns did not accord with the view of the experts on either side, and apparently judging by the evidence was not in accordance with the position taken [even] by [the] defendant’s counsel.” *Id.*, 75–76. Thus, neither *Stier* nor *MacFarquhar* supports the plaintiff’s claim.
