Filed 9/28/15 Haskins v. Kern County Employees' Retirement Assn. – Bd. of Retirement CA5



IN THE COURT OF APPEAL OF THE STATE OF CALIFORNIA

FIFTH APPELLATE DISTRICT

JAMES KENT HASKINS,

Appellant,

v.

KERN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION – BOARD OF RETIREMENT,

Respondent.

F070088

(Super. Ct. No. S-1500-CV-281408)

**OPINION**

APPEAL from a judgment of the Superior Court of Kern County. J. Eric Bradshaw, Judge.

Elder and Berg and Richard E. Elder, Jr. for Appellant.

Theresa A. Goldner, County Counsel, and Judith M. Denny, Deputy County Counsel, for Respondent.

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James Haskins appeals from a judgment entered after the trial court denied his petition for writ of administrative mandamus. By his petition, Haskins sought an order compelling the Board of Retirement (Board) of the Kern County Employees' Retirement Association (KCERA) to reverse its decision denying his application for service-

connected disability retirement. Haskins, who had worked as a firefighter for over 30 years, applied for the service-connected disability retirement after he was diagnosed with prostate cancer and, following treatment, took an industrial leave of absence. The Board granted him a non-service-connected disability retirement.

It is undisputed that Haskins established his prostate cancer is presumed to have arisen out of and in the course of his employment within the meaning of the cancer presumption set forth in Government Code section 31720.6, subdivision (a),[1] and that he was exposed to known carcinogens as a result of the performance of his duties as a firefighter within the meaning of subdivision (b) of section 31720.6. The trial court, however, found the Board rebutted the cancer presumption by making the showing outlined in subdivision (c) of section 31720.6, by demonstrating that the carcinogens to which Haskins was exposed were not reasonably linked to his prostate cancer. We find substantial evidence supports the trial court's decision denying Haskins's petition, and therefore affirm.

## FACTUAL AND PROCEDURAL BACKGROUND

Haskins began working as a full time firefighter for the Kern County Fire Department (County) in 1978. During his employment, he worked as a firefighter, engineer and captain. Based on log books, Haskins estimated he responded to over 3,000 calls during his 33-year tenure with the County, which consisted of approximately 1,411 false alarms, 842 calls for medical aid, and 981 fires involving vehicles, refuse, structures and wild land.[2]

Haskins claimed that while responding to the 981 fires, he was exposed to the following substances: diesel truck fumes (including methylene chloride), pesticides and

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[1] Undesignated statutory references are to the Government Code.

[2] According to Haskins, this was a very conservative estimate and he believed he responded to 10 percent more calls.

herbicides, soot, hydrogen sulfide, products of combustion (including polycyclic aromatic hydrocarbons (PAHs)), creosote, polychlorinated biphenyl (PCB), polyvinyl chloride (PVC), cadmium, and burning plastic, tar, rubber, tires and car batteries. Haskins also recalled being exposed to asbestos from the floor tiles in his first station house and from burning attic insulation in some house fires. Beyond the exposures in the field, Haskins said he was constantly exposed to exhaust fumes from the engine trucks traveling to and from calls, and the fumes that could be smelled in the sleeping areas of the station house prior to the addition of separate bedrooms in the late 1990's. In addition, Haskins, who was a non-smoker, said he was exposed to secondhand smoke in the station house before such smoking was banned in the late 1980's.

Haskins was diagnosed with prostate cancer in October 2007, when he was 51 years old. In September 2010, he went on industrial leave and applied for a service-connected disability retirement in March 2011. Haskins retired from the County on June 4, 2011.

***The Opinion of KCERA's Expert, Dr. Allems***

KCERA asked Thomas S. Allems, M.D., M.P.H., to review Haskins's medical records and documents, and evaluate whether his prostate cancer was related to his work in the firefighting profession.[3] On September 20, 2011, Dr. Allems issued a report in which he opined that Haskins's prostate cancer was not caused by his employment as a firefighter on a medical basis, as described in the report, and there was "no reasonable expectation that he was exposed to any toxin such as cadmium or diesel fuel or others

[3] Dr. Allems is a diplomate with both the American Board of Internal Medicine and American Board of Preventive Medicine in Occupational Medicine; an assistant clinical professor in the Department of Medicine, Division of Occupational and Environmental Medicine at the University of California San Francisco; and a Qualified Medical Evaluator for the State of California, Department of Industrial Relations in internal medicine, occupational medicine and toxicology.

that are linked to prostate cancer – no such reasonable linkages exist in the toxicologic literature."

Dr. Allems explained that prostate cancer is an increasingly common diagnosis in the middle-aged to older American male population, and the most common cancer diagnosis in American males. Dr. Allems discussed the possible risk factors for prostate cancer and stated that in most cases, no specific biological risk factor is identified and the cancer is considered to be multi-factorial in etiology. According to Dr. Allems, prostate cancer generally is not considered to be caused by external environmental or occupational carcinogens; while farmers and rubber workers have been variably reported to have increased rates of prostate cancer, the reasons for this are unclear as no specific carcinogens have been identified.

Citing to the 2006 edition of Cancer Epidemiology and Prevention by Schottenfeld (Schottenfeld), which Dr. Allems described as an authoritative text on the epidemiology of cancers, Dr. Allems stated there are no established human carcinogens recognized to be a cause of prostate cancer. Dr. Allems explained that Schottenfeld does not include the prostrate gland in the list of known target organs for any carcinogens, and does not cite any International Agency for Research on Cancer (IARC) group 1 (known human carcinogen) or group 2A (probable human carcinogen) as a cause of prostate cancer. Moreover, no occupation or industry evaluated by IARC and no occupational carcinogens or circumstances are cited as being associated with prostate cancer. Dr. Allems quoted from Schottenfeld that "'evidence for an association between occupational exposure to cadmium and prostate cancer is weak . . . results for low-level environmental cadmium exposure in relation to prostate cancer risk are not consistent.'" Dr. Allems also explained that in occupational epidemiologic studies, while there had been specific interest in the role of cadmium because it is concentrated in the prostate, no clear association had been found between occupational cadmium exposure and prostate cancer.

Dr. Allems noted that there have been a number of epidemiologic studies regarding occupational associations and prostate cancer, and listed 10 of them, explaining their results. One found an elevated relative risk of statistical significance for farmers and mechanics, sheet metal workers and separating machine operators, and workers in the crop farming and paint/varnish manufacturing industries, while another found a statistically elevated odds ratio in teachers only, but not in farmers, metal workers or mechanics. A large study of prostate cancer along occupational lines, involving about 200 different occupations and industry categories, found statistically significant increased rates of prostate cancer in multiple white collar jobs, as well as increased rates in police officers, farmers, and metal and wood workers, but multiple jobs that involved exposure to various toxins, including solvents and the products of combustion, did not exhibit increased rates.

In a study of 981 prostate cancer cases, which analyzed data for "'ever having worked' in various occupations," the authors found marginal statistically significant elevated risk of prostate cancer in white males in administrative and managerial jobs, as well as service occupations; 14 job categories, which were mostly white collar jobs, had increased prostate cancer rates. The authors concluded that while some clues about potential occupational associations were found, the overall results showed that occupation is not a major determinant of prostate cancer risk. According to Dr. Allems, while firefighter risk was increased in this study, it was based on a very small number of cases. A larger mortality study of 60,878 prostate cancer cases in 24 states found statistically significant increased mortality odds ratio for 64 occupational categories, although most were of marginal statistical significance and involved white collar professions which would not entail undue exposure to carcinogens over and above background population rates. In this study, firefighters had a marginally increased risk of 1.2, most relevant to African-American men.

A large prospective cohort study of prostate cancer in a group of nearly 60,000 Dutch men followed for 19 years by Boers, et al, found no association between exposure to pesticides, PAHs (present in fire smoke and engine exhausts), or diesel exhaust; in fact, all rates were lower than expected in those with occupational exposure to these agents. According to the authors, the results suggest no association between occupational exposures and prostate cancer, and subgroup analyses showed null results for occupational exposures to pesticides, PAHs, diesel exhaust, metal dust, metal fumes, or mineral oil, and localized or advanced prostate cancer.

A 2007 study of more than 600 men with prostate cancer by Fritschi, et al, found no statistically significant association between prostate cancer and pesticides, diesel exhaust or PAHs, and no dose response relationship was demonstrated. The authors explained: "'Diesel exhaust was not found to be associated with prostate cancer in our study nor in a recent large prospective study. A small case-control study in Germany found a strong relationship with diesel exhaust, but this study used controls with histological proof of no cancer or benign prostatic hypertrophy (BPH), which may not be representative of the general male population. The Montreal case-control study found prostate cancer to be associated with liquid fuel combustion products, as well as with PAHs from coal and diesel exhaust.'" The authors concluded: "'The association of prostate cancer and BPH with several occupational exposures, including metals, PAHs, oils, pesticides, fertili[z]ers and wood were examined in this study. We found no evidence that any of these exposures were strong occupational risk factors for either prostate cancer or BPH."

A 2004 article by Bostwick, et al, summed up the occupational data with respect to prostate cancer: "'Many industries, occupations, and exposures have been studied in relation to prostate cancer risk, but the findings have been inconclusive. Of greatest concern is farming and, to a lesser extent, working in the rubber industry. Numerous other factors have shown inconsistent results, negative associations, or have very limited

data with prostate cancer risk, including smoking, energy intake, sexual activity, marital status, vasectomy, social factors (lifestyle, socioeconomic factors, and education), physical activity, and anthropometry."

Dr. Allems also discussed firefighter exposure to carcinogens. He recognized it was indisputable that firefighters are exposed to carcinogens in smoke and post-fire gasses, and that in the usual course of their firefighting duties, they are exposed to numerous toxins and recognized human carcinogens that are present in the general products of combustion, i.e. smoke, particulates, vapors and fumes. Moreover, depending on the specific compound being consumed by fire, carcinogens may be present that are specific to the material being consumed. Dr. Allems listed the recognized and suspected human carcinogens that could be present in products of combustion: asbestos, PAHs, benzo(a)pyrene, benzene, formaldehyde, arsenic, dioxins, PCBs and vinyl chloride.

Dr. Allems stated that the most prevalent carcinogens in fire smoke are asbestos, benzene and PAHs, which include benzo(a)pyrene, and that while a variety of PAHs are known or suspected carcinogens with the skin, lung and bladder as the target organs, PAHs are not associated with prostate cancer. Dr. Allems recognized that while occupational exposures to the products of combustion have been reduced significantly in recent years by the advent of strict respiratory protection mandates, some inhalation of airborne carcinogens and skin contact with soot containing carcinogens is unavoidable in the firefighting profession. Dr. Allems noted, however, that the actual long term cancer risks from these exposures is not clear and on the whole, epidemiological studies do not show that firefighters as a group have an increased rate of cancers compared to the general population.

Dr. Allems also recognized that firefighters can be exposed to vehicular exhaust from vehicles entering and leaving the firehouse, and when riding on the open vehicles to fire scenes. Dr. Allems explained that the IARC has published an extensive and

authoritative monograph on the carcinogenic potential of vehicular exhaust, and noted that diesel motor exhaust contains higher concentrations of carcinogenic substances than emissions from gasoline engines. Epidemiologic studies on occupational groups exposed to vehicular exhaust have focused on jobs that involve incontrovertible potential for exposure on a chronic/daily basis, such as railway and garage workers, toll booth attendants, and forklift drivers; the human epidemiologic data suggests an association between heavy exhaust exposure and cancer of the lung and bladder, but not prostate cancer. IARC's summary rating for diesel engine exhaust is 2A (probably carcinogenic in humans based on "limited" evidence in human studies that it is associated with lung and bladder cancer), while the rating for gasoline engine exhaust is 2B (probably carcinogenic in humans based on "inadequate" evidence of cancer causation in humans).

Dr. Allems listed a number of epidemiologic studies that have been performed regarding cancer mortality rates in firefighter cohorts. In two, the authors found the rate of prostate cancer mortality to be less than the general population – one by 40% and the other by 70%. A 1994 study by Aronson, et al, of 5,995 firefighters found a marginally increased standard mortality ratio for prostate cancer compared to the rate in the general non-firefighting population, but it was not statistically significant; a similar result was found by Tornling, et al. that same year. A 1993 study by Guidotti found results similar to Aronson's and Tornling's, but when the data was analyzed with respect to time in the profession, an increased risk of prostate cancer with increased latency period was not demonstrated, e.g., there was no "dose response" pattern established which would lend credibility to long term occupational carcinogen exposure as a cause of prostate cancer. Demers, et al, found a slightly increased rate of prostate cancer deaths in 2,447 Seattle and Tacoma firefighters which was marginally statistically significant, but like Guidotti's study, when their data was analyzed for latency and exposure intensity as measured by time spent in the profession and time since first exposure, no association was found; instead, incidence rates dropped with increased markers of exposure. Moreover, when

Portland firefighters were included in their analysis, Demers did not find a statistically significant increase in prostate cancer deaths. A 1998 study of United States firefighters by Ma, et al, found a marginally increased rate of prostate cancer. In 2004, Zeegers, et al, found an increased risk of prostate cancer in police officers but not firefighters; firefighters tended to have a prostate cancer rate approximately 70% of the general population rates.

A 2007 study by Bates found a marginally increased rate of prostate cancer in California firefighters based on registry data. Dr. Allems criticized the study, noting that there was no information gathered about length of service/duration of exposure that would allow the data to be analyzed for a dose response trend. According to Dr. Allems, if there were a true occupational association, the pattern of disease occurrence should increase with increasing markers of exposure to the "proposed culprit carcinogen or job," but the report did note demonstrate that. Baris, et al, studied the mortality patterns of a cohort of 7,789 Philadelphia firefighters and found the same rates for prostate cancer as expected in the general population; when the data was analyzed for latency and exposure indices, there was an inverse relationship between exposure markers and prostate cancer risks, such that those with lower exposure potential had higher rates of prostate cancer.

Dr. Allems explained that in "authoritative reviews of cancer risk of firefighters" by Guidotti in 1995 and 2007, prostate cancer was not one of the index cancers discussed because it generally had not been reported at higher rates by firefighters. A 2006 meta-analysis of the firefighter mortality literature by LeMasters, et al, did not find a statistically significant increase in prostate cancer standard mortality rates in firefighters. According to Dr. Allems, incidence studies showed a small increase in risk that was not adequately explained given that there are no identified carcinogens to which firefighters are exposed that are known to cause prostate cancer.

Dr. Allems also cited to a 2009 National League of Cities review of state firefighter presumption laws and epidemiological research which recounted the above

firefighter data and noted that "zero studies found strong or moderate associations between firefighting and prostate cancer; three studies reported a weak association and nine studies found no association."

***The Opinion of Haskins's Expert, Dr. Fishman***

On April 12, 2012, Haskins's expert, Ira Fishman, M.D., Q.M.E., a diplomate of the American Board of Internal Medicine, issued a report in which he concluded that Dr. Allems's opinion was insufficient to rebut the cancer presumption of section 31720.6. Dr. Fishman noted that earlier epidemiologic studies examined the relationship of the occupation of firefighting to the development of various cancers, some of which found an increased incidence of prostate cancer while others did not, but asserted most of those studies contained small numbers of firefighters in their cohorts. Dr. Fishman found two more recent medical articles concerning the subject particularly instructive because they included much larger numbers.

The first was the registry based case-control study performed by Bates, which included 804,107 records of subjects with cancer between the ages of 21-80, of which 3,659 were firefighters. According to Bates, his statistical analysis of firefighter cancer data produced evidence that firefighting was a risk for several types of cancer, including testicular, brain and prostate cancer, as well as leukemia and possibly thyroid cancer. Prostate cancer had an increased odds ratio of 1.22, which Dr. Fishman believed was statistically significant. Dr. Fishman explained that the strengths of the study were: (1) there were a large number of cases with histological confirmation of diagnosis; and (2) the controls were representative of the population that generated the cases. Dr. Fishman recognized there also were weaknesses in the study, as there was no standardization of the recordings from which the study got its information and the author had limited access to data on confounders.

The second was the 2006 review and meta-analysis performed by LeMasters, et al, on cancer risk among firefighters, in which 32 studies were reviewed, 26 of which were

included. For prostate cancer among firefighters, the authors found an increased summary risk estimate from which they concluded there was a probable increased risk. The authors argued this positive association was too large to be explained solely by confounders such as age, race and genetics. The authors suggested that increased risk of prostate cancer in firefighters could be due to increased exposure to PAHs and diesel engine emissions.

Dr. Fishman also cited the 2010 edition of Volume 98 of the "IARC Monographs on the Evaluation of Carcinogenic Risks to Human" which covers "Painting, Firefighting, and Shiftwork." The report cited to the LeMasters meta-analysis and explained that it showed significantly elevated cancer risk for 10 of the 21 cancer types analyzed, including prostate cancer, with moderate summary relative risk estimates for all types except testicular cancer. For four of the sites, including the prostate, findings were consistent across study designs and the types of studies available. The report noted that since the LeMasters analysis, two additional large studies of cancer in firefighters had been published, Ma and Bates, and that the working group performed another meta-analysis to assess the impact of those recent studies. Prostate cancer showed a significant summary risk estimate; there was a 30% elevated risk based on 17 studies and approximately 1800 cases. While 17 of the 20 studies of prostate cancer reported elevated risk estimates that ranged from 1.1 to 3.3, only two reached statistical significance and only one showed a trend with duration of employment. The report concluded there was "limited evidence in humans for the carcinogenicity of occupational exposure as a firefighter" and therefore "[o]ccupational exposure as a firefighter is possibly carcinogenic to humans."

Dr. Fishman opined that the "recent exhaustive and comprehensive analysis of the firefighter cancer mortality literature by the IARC is sufficient to conclude that there is a reasonable link between prostate cancer and the occupation of firefighting reflected by more than chance association but less than the preponderance of evidence." Dr. Fishman

further opined there was nothing in the IARC monograph that would provide medically sound information to rebut the section 31720.6 cancer presumption. He also noted the researchers in the 2009 National League of Cities review stated that firefighting as a cause of cancer could not be refuted, they could not deny linkages between firefighters and an elevated incidence of cancer, and they located three studies that demonstrated a weak association between firefighting and prostate cancer. In Dr. Fishman's opinion, this was sufficient to establish a reasonable link. Moreover, Dr. Fishman believed it was obvious that no medical literature was available to rebut the presumption.

Dr. Fishman criticized Dr. Allems's opinion, explaining that the statement in the LeMasters 2006 meta-analysis that there is a probable risk of prostate cancer with firefighting was sufficient to reject Dr. Allems's analysis of the case, and Dr. Allems failed to cite the 2010 IARC Monograph 98. Dr. Fishman believed Dr. Allems was using an inappropriate standard of medical-legal proof, namely scientific probability or certainty that certain carcinogens are specifically linked or not linked to prostate cancer, and it was impossible to rebut the cancer presumption using this approach, as a reasonable link between the occupation of firefighting and prostate cancer already existed without specific medical literature available to rebut it.

***Dr. Allems's Supplemental Report***

On August 13, 2012, Dr. Allems issued a supplemental report in which he addressed Dr. Fishman's opinion. Dr. Allems stated his opinion remained unchanged, as Dr. Fishman appeared to be making a legal, not a medical, argument, and overlooked a lot of details. Dr. Allems explained that the toxicology literature does not identify a known prostate carcinogen to which exposure occurs environmentally, which includes all of the known and suspected carcinogens to which firefighters can be exposed. Moreover, the epidemiological literature generally demonstrates "a lot of scatter" and implicates a wide range of jobs that do not share, or even involve, any specific exposure to carcinogens, and the data on prostate cancer in firefighters is weak and inconsistent. In

Dr. Allems's opinion, this and the other data cited in his prior report are at odds with Dr. Fishman's apparent certainty that firefighting has been established as a cause of prostate cancer.

Dr. Allems also explained that the studies which estimate prostate cancer risk in firefighters either find no association or a statistically insignificant association, and consistently fail to find a positive trend with time spent on the job or other markers of smoke exposure. Dr. Allems noted the IARC monograph points this out when it states that only two of the 17 studies that reported an elevated risk reached statistical significance and only one showed a trend with duration of employment. One of these was the Bates study, which was based on eleven cases of prostate cancer in their firefighting population – which Dr. Fishman's opinion does not take into account. Dr. Allems also quoted from the IARC monograph's discussion of the difficulties with exposure assessment in firefighters: that "human epidemiological studies at best used indirect (poor) measurements of exposure" to the numerous carcinogens to which firefighters are exposed; the firefighters' exposure varies considerably depending on their job activities; and "only crude measures of exposure, such as duration of employment and number of runs, have been used in these studies."

Dr. Allems further explained that it was easy to cherry pick a study or two that finds an association between prostate cancer and the occupation of interest, and some people, such as Dr. Fishman, overlook the lack of statistical significance or the lack of a dose response trend. Dr. Allems, however, did not believe the literature provided good or convincing evidence that firefighters are at increased risk of prostate cancer compared to the general non-firefighting male population. Moreover, "there are no identified prostate carcinogens, and no carcinogens in the products of combustion have been 'reasonably linked' to prostate cancer."

In Dr. Allems's opinion, the fact that no IARC group 1 or group 2A carcinogens have the prostate as a target organ seriously undermines any claim that a specific job or

exposure is associated with prostate cancer. Dr. Allems attached the tables from the Schottenfeld text on group 1 and 2A carcinogens and their target organs to his report, which show that the prostate is not mentioned as a target organ for any group 1 (known) or group 2A (probable) human carcinogen. He also attached the summary table from the IARC summary on firefighting which he stated further illustrated that with respect to the products of combustion to which firefighters can be exposed, the prostate is not listed as a target organ.

***The Administrative Hearing***

An administrative hearing was held, at which Haskins provided testimony concerning the carcinogens to which he was exposed and the experts' reports were admitted into evidence. After receiving written briefs from the parties, the hearing officer issued her proposed findings of fact and recommended decision. She found that the section 31720.6 cancer presumption applied and the Board did not rebut it. She determined that the essence of Dr. Allems's opinion was that there was no reasonable link between prostate cancer and exposure to the carcinogens associated with firefighting because the research community had failed to establish a reasonable link between the two, and concluded, based on the case law, this was not an accurate view of "what constitutes preponderating proof of no reasonable link." The hearing officer summarized her findings as follows: "[T]he fact that current toxicologic literature does not contain 'good or convincing' findings that link firefighting (or the products of combustion) with prostate cancer: [¶] – does not prove that such a link doesn't exist (nor that it is improbable) as between [Haskins]'s exposures and [Haskins]'s prostate cancer; [¶] - does not prove that the specific carcinogens to which [Haskins] was exposed (alone, in combination, in number of exposures and/or in duration of exposures) are not reasonably linked to [Haskins]'s prostate cancer; and [¶] – does not rebut the . . . section 31720.6 presumption." Accordingly, the hearing officer found Haskins was entitled to a service-connected disability retirement.

***The Board's Decision***

In September 2013, after the Board submitted written objections to which Haskins filed a response, the Board adopted its own findings of fact, conclusions of law and decision. The Board agreed with the hearing officer that the cancer presumption applied, but found that the presumption had been rebutted. The Board determined that Dr. Allems had provided medical evidence, through medical studies, to show each exposure Haskins testified to was not reasonably linked to prostate cancer. The Board explained that Dr. Allems's evidence was derived from studies which examined the association between Haskins's exposures and prostate cancer and found to have either no association, a weak association, or no statistically significant association. The Board further noted that Dr. Allems's evidence that the IARC had evaluated Haskins's exposures and determined the prostate was not a targeted organ site for any such exposures demonstrated the evidence he presented should not be considered "'the absence of medical evidence' representing 'a void of information.'" Instead, the Board found such evidence sufficient to show that a reasonable link between Haskins's exposure and his prostate cancer does not exist.

The Board was aware Dr. Fishman presented evidence of one statistically significant case study showing an increased risk that was correlated to years of employment, but the Board discounted the study and others Dr. Fishman presented because they did not study the link between specific exposures and prostate cancer. The Board pointed out that while Dr. Fishman argued Dr. Allems was using an inappropriate standard of legal proof, the only way the section 31720.6 cancer presumption can be rebutted is by producing evidence to show that the exposures at issue are not linked to the applicant's cancer. The Board concluded the medical evidence was sufficient to show the carcinogenic exposures Haskins testified to at the hearing were not reasonably linked to his prostate cancer, and therefore the presumption had been rebutted. Accordingly, the Board denied Haskins' application for a service-connected disability retirement and instead granted him a non-service connected disability retirement.

***The Petition for Writ of Mandate***

Haskins filed a petition for writ of administrative mandamus, seeking an order compelling the Board to reverse its decision. In his points and authorities supporting the petition, Haskins argued the Board had not proven there was no reasonable link between his prostate cancer and his exposures to the multiple carcinogens to which he testified because Dr. Allems's opinion did not conclusively show there was no link between the two. Haskins further argued that Dr. Allems failed to address all of the carcinogens to which he claimed exposure. Haskins urged the trial court to consider the hearing officer's analysis and find that the Board did not rebut the presumption.

After oral argument on the petition in April 2014, the trial court took the matter under submission. In June 2014, it issued a minute order in which it found that the "weight of the substantial evidence" supported the Board's determination that the cancer presumption of section 31720.6 had been rebutted. Accordingly, the trial court denied the writ.

## DISCUSSION

"Ordinarily, we review a trial court's denial of administrative mandamus for substantial evidence. The trial court's task is to undertake independent review of the evidence in the administrative record, while our task is limited to a determination of whether substantial evidence in the administrative record supports the trial court's ruling." (*Pellerin v. Kern County Employees' Retirement Ass'n* (2006) 145 Cal.App. 4th 1099, 1105.) We review "a pure question of law" de novo. (*Ibid.*) Whether the Board rebutted the cancer presumption in section 31720.6 by demonstrating the carcinogens to which Haskins was exposed at work are not reasonably linked to prostate cancer is a question of disputed fact to which the substantial evidence standard of review applies. (*Sameyah v. Los Angeles County Employees Retirement Ass'n* (2010) 190 Cal.App.4th 199, 208 (*Sameyah*).)

Section 31720.6, subdivision (a) provides that if a firefighter who has completed five years or more of service under either a specified pension or retirement system develops cancer, "the cancer so developing or manifesting itself in those cases shall be presumed to arise out of and in the course of employment. The cancer so developing or manifesting itself in those cases shall in no case be attributed to any disease existing prior to that development or manifestation."

Section 31720.6, subdivision (b) provides, in pertinent part, that "[n]otwithstanding the existence of nonindustrial predisposing or contributing factors, any . . . firefighter member . . . described in subdivision (a) permanently incapacitated for the performance of duty as a result of cancer shall receive a service-connected disability retirement if the member demonstrates that he or she was exposed to a known carcinogen as a result of performance of job duties. [¶] 'Known carcinogen' for purposes of this section means those carcinogenic agents recognized by the International Agency for Research on Cancer, or the Director of the Department of Industrial Relations."

Section 31720.6, subdivision (c) provides, in pertinent part: "The presumption is disputable and may be controverted by evidence, that the carcinogen to which the member has demonstrated exposure is not reasonably linked to the disabling cancer, provided that the primary site of the cancer has been established. Unless so controverted, the board is bound to find in accordance with the presumption. . . . "

There is no dispute that the presumption set forth in subdivision (a) applies in this case. Haskins served as a firefighter for more than five years and developed prostate cancer during those years on the job. The issue to be resolved in this appeal concerns subdivision (c). While there is no dispute that the primary site of Haskins's cancer was his prostate, the issue here is whether the Board rebutted the cancer presumption by establishing that the carcinogens to which Haskins demonstrated exposure "[are] not reasonably linked" to his prostate cancer.

To qualify for a service-connected disability retirement, Haskins had the burden of proving he "was exposed to a known carcinogen as a result of performance of job duties." (§ 31720.6, subd. (b); *Sameyah*, *supra*, 190 Cal.App.4th at p. 212.) The evidence demonstrates Haskins was exposed to carcinogens as a result of his work as a firefighter. Haskins testified that during his career he may have been exposed to many of the chemical and carcinogens recognized in the medical and scientific literature to be associated with firefighting, including diesel fumes, pesticides and herbicides, hydrogen sulfide, PAHs, creosote, PCBs, PVCs, cadmium, asbestos, benzo(a)pyrene, benzene, formaldehyde, arsenic, dioxins, and vinyl chloride. He also was exposed to secondhand tobacco smoke. There is no dispute that these substances are carcinogens.

The trial court found the Board demonstrated that Haskins's carcinogenic exposures at work were not reasonably linked to his prostate cancer within the meaning of section 31720.6, subdivision (c). This finding is supported by substantial evidence.

*Sameyah* is the only published case to address the section 31720.6 cancer presumption. There, the plaintiff, the widow of a deputy sheriff who died of Burkitt's lymphoma, sought, but was denied, service-connected survivor death benefits. (*Sameyah*, *supra*, 190 Cal.App.4th at p. 201.) On appeal from the trial court's denial of her petition for peremptory writ of mandate, the appellate court addressed the issues of whether the retirement association rebutted the cancer presumption by establishing the primary site of the lymphoma and demonstrating the carcinogens to which the sheriff was exposed at work were not reasonably linked to his lymphoma. (*Id.* at p. 208.)

The appellate court noted, and the parties agreed, the cancer presumption of section 31720.6 was the same in all material respects relevant to the issues on appeal as the workers compensation cancer presumption in Labor Code section 3212.1.[4]

[4] Labor Code section 3212.1, which applies to active firefighters and peace officers, provides, in pertinent part:

(*Sameyah*, *supra*, 190 Cal.App.4th at p. 210.) Therefore, the court looked to a case which addressed "'the showing an employer must make to rebut the presumption' in Labor Code section 3212.1[,]" *City of Long Beach v. Workers' Comp. Appeals Bd.* (2005) 126 Cal.App.4th 298 (*Garcia*), which involved an 11-year police officer who developed kidney cancer after being exposed to benzene from filling his patrol car with gasoline. (*Sameyah*, *supra*, 190 Cal.App.4th at p. 210.)[5]

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"(b) The term 'injury,' as used in this division, includes cancer, including leukemia, that develops or manifests itself during a period in which any member described in subdivision (a) is in the service of the department or unit, if the member demonstrates that he or she was exposed, while in the service of the department or unit, to a known carcinogen as defined by the International Agency for Research on Cancer, or as defined by the director. [¶] ... [¶]

"(d) The cancer so developing or manifesting itself in these cases shall be presumed to arise out of and in the course of the employment. This presumption is disputable and may be controverted by evidence that the primary site of the cancer has been established and that the carcinogen to which the member has demonstrated exposure is not reasonably linked to the disabling cancer. Unless so controverted, the appeals board is bound to find in accordance with the presumption. This presumption shall be extended to a member following termination of service for a period of three calendar months for each full year of the requisite service, but not to exceed 120 months in any circumstance, commencing with the last date actually worked in the specified capacity."

[5] Haskins argues that the presumptions in section 31720.6 and Labor Code section 3212.1 are not the same, and section 31720.6 contains a "stronger" presumption because it contains an "anti-attribution" clause in subdivision (a) that states that the cancer shall not be attributed to any pre-existing disease, and subdivision (b) provides that a firefighter member permanently incapacitated as a result of cancer shall receive a service-connected disability retirement if the member demonstrates exposure to a known carcinogen as result of performance of job duties "[n]otwithstanding the existence of nonindustrial predisposing or contributing factors."

In his reply brief, Haskins cites to *City and County of San Francisco v. Workers' Compensation Appeals Board* (1978) 22 Cal.3d 103 (*Wiebe*), and asserts it describes the difficulty of rebutting a presumption of causation with the "anti-attribution" clause. In *Wiebe*, our Supreme Court upheld the constitutionality of a statute that provided that an employer may not rebut the presumption that "heart trouble" which develops during a police officer's employment arises out of and in the course of employment by evidence attributing the officer's heart trouble to a preexisting heart condition. (*Wiebe*, *supra*, 22 Cal.3d at pp. 106-107.) We fail to see the relevance of either this case or the so-called

In *Garcia*, the appellate court held that to rebut the cancer presumption, "the employer must prove the absence of a reasonable link between the cancer and the industrial exposure to the carcinogen. A mere showing of absence of medical evidence that the carcinogen has been shown to cause the particular cancer contracted by the employee is not sufficient to rebut the presumption." (*Garcia, supra,* 126 Cal.App.4th at pp. 305-306.) The court reasoned that the "*absence* of medical evidence linking a known carcinogen with a particular form of cancer simply represents a void of information, and cannot be considered proof a reasonable link does *not* exist." (*Id.* at p. 316.)

While the employer complained its burden of proof was "'almost impossible'[,]" as it required it to prove a negative and "'find evidence that conclusively shows no link between the alleged exposure and the cancer,'" and one the Legislature did not intend, the appellate court disagreed, stating that was "precisely what the plain language of the statute requires." (*Garcia, supra,* 126 Cal.App.4th at p. 315.) As the court explained, the "inescapable conclusion" from the statutory amendments, and legislative history, which shifted the burden of proof to the employer to disprove a reasonable link, was that "the Legislature intended to remove the burden from employees and enable them to obtain benefits even when it was not possible to prove the cancer was linked to the particular carcinogen." (*Ibid.*)

The *Garcia* court further explained that "an employer demonstrates the absence of a reasonable link if it shows no connection exists between the carcinogenic exposure, or that any such possible connection is so unlikely as to be absurd or illogical. Contrary to the City's argument, the statute does *not* require the employer to prove 'the absence of *any possible* link.' (Italics added.) The statute requires proof no *reasonable* link exists. A link that is merely remote, hypothetical, statistically improbable, or the like, is not a

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"anti-attribution" clause, as the Board does not assert that Haskins's prostate cancer was caused by a preexisting disease.

reasonable link. The employer need not prove the absence of a link to a scientific certainty; instead, it must simply show no such connection is reasonable, i.e., can be logically inferred." (*Garcia, supra,* 126 Cal.App.4th at p. 316.)

The court in *Garcia* agreed that the burden on the employer was a difficult one, but disagreed that the standard was impossible to meet. (*Garcia, supra,* 126 Cal.App.4th at p. 317.) The court addressed ways in which an employer might rebut the presumption, such as through medical studies that demonstrate particular cancers have been shown not to be caused by certain carcinogens, by demonstrating it is highly unlikely the cancer was industrially caused because the period between the exposure and manifestation of the cancer was not within the cancer's latency period, or through the nature of the manifestation or other medical evidence that shows the lack of connection. (*Ibid.*) The court recognized other methods of proof may exist, such as showing the quantity of the carcinogen to which the employee was exposed, or the length of time of exposure, was too small or brief to have any detrimental effect. (*Id.* at pp. 317-318.)

In reviewing the administrative decision denying reconsideration of the workers' compensation judge's findings and award of benefits for substantial evidence, the appellate court in *Garcia* found the City failed to rebut the statutory presumption because the agreed medical examiner's opinion that the officer's cancer was not occupationally related was based on the absence of a known cause of kidney cancer and the absence of medical studies showing a link between kidney cancer and benzene. (*Garcia, supra,* 126 Cal.App.4th at p. 321.) While the examiner opined it was reasonably medically probable there was not a logical connection between benzene exposure and kidney cancer, as there was no medical evidence that benzene had been shown to cause kidney cancer, he also stated he could say only that there was no positive linkage between the two, and since he could not say there was no negative linkage, there was always a potential relationship. (*Id.* at p. 307.) The appellate court explained the fact that no

existing medical studies show a positive link between the cancer and exposure did not rebut the presumption. (*Id.* at p. 321.)

Applying the principles stated in *Garcia* to rebuttal of the cancer presumption of section 31720.6, the appellate court in *Sameyah* concluded there was substantial evidence to support the trial court's finding that the retirement association demonstrated the sheriff's carcinogenic exposures were not reasonably linked to his lymphoma. (*Sameyah, supra,* 190 Cal.App.4th at p. 213.) The court explained that substantial evidence showed (1) the lymphoma was caused by a virus, (2) chemical exposure is not a known cause of Burkitt's lymphoma, and (3) the latency period between exposure to the chemicals at issue there and the development of a disabling cancer would be 10 years or longer. (*Id.* at p. 214.) The appellate court agreed with the trial court that this showing was sufficient to demonstrate that the sheriff's work-related chemical exposures were not reasonably linked to the development of his lymphoma. (*Ibid.*)

Here, the medical reports are in conflict on whether the presumption has been rebutted. Dr. Allems's opinion that there was no reasonable link between prostate cancer and the known and suspected carcinogens that firefighters can be exposed to was based on (1) the fact that toxicology literature does not identify a known prostate carcinogen to which exposure occurs environmentally; (2) the epidemiological literature demonstrates "a lot of scatter and implicates a wide range of jobs that do not share (or necessarily even involve) any specific exposures to carcinogens"; and (3) the data on prostate cancer in firefighters is weak and inconsistent.

For each of the potential exposures to which Haskins testified, Dr. Allems provided medical evidence, via medical studies, to show the particular exposure was not reasonably linked to prostate cancer. The two tables from the 2006 study by Schottenfeld, which list the known target organs for substances and mixtures that have been evaluated by the IARC as definite and possible human carcinogens address each of these exposures and none are cited as a cause of prostate cancer. Dr. Allems did not

believe the epidemiological studies provided good or convincing evidence that firefighters are at increased risk of prostate cancer compared to the general non-firefighting male population, and any claim that a specific job is associated with prostate cancer is seriously undermined by the fact that the Schottenfeld study shows that no IARC group 1 or group 2A carcinogens have the prostate as a target organ.

We agree with the trial court that this showing is sufficient to demonstrate Haskins's work-related carcinogenic exposures are not reasonably linked to the development of his prostate cancer. The trial court reasonably could find that the link between these exposures and prostate cancer could not be logically inferred because the link was unlikely.

Haskins contends Dr. Allems's opinion is insufficient to rebut the presumption. First, he argues that Dr. Allems did not address all the carcinogen exposures to which he testified, such as asbestos, soot, tar, mineral oil, creosote, PCB, cadmium, polyvinyl chloride, vinyl chloride, arsenic, benzopyrene, formaldehyde, silica or second hand tobacco smoke. To the contrary, Dr. Allems offered the opinion that there was no reasonable link between any of the potential carcinogens to which Haskins may have been exposed as a firefighter and prostate cancer.

Haskins next argues Dr. Allems and the Board discounted or ignored important parts of the record, namely the statement in the IARC monograph on "Painting, Firefighting and Shiftwork," that a meta-analysis "showed significant summary risk estimates" of prostatic cancer 30% "in excess based on 17 studies and approximately 1800 cases." Dr. Allems, however, did address the monograph in his supplemental report, explaining that it supported his conclusion that the studies that estimate the prostate cancer risk in firefighters find either no association or one that is not statistically significant, and consistently fail to find a positive trend with time spent on the job or other markers of smoke exposure.

Haskins asserts his case is like *Garcia* and, like the examiner in *Garcia*, Dr. Allems's opinion established only an uncertainty of cause, not an absence of cause. Haskins further asserts that the Board was required to "conclusively show" there was no "reasonable link", i.e. no "logical connection," between the exposure and cancer, citing *Garcia, supra,* 126 Cal.App.4th at pp. 315-316, but it failed to meet this burden as it only showed that no studies exist showing a positive link between the exposure and cancer.

As explained in *Garcia* and repeated in *Sameyah*, while the Board was required to prove no reasonable link exists between the carcinogens to which Haskins was exposed and his prostate cancer, it was not required to prove the absence of a link to a scientific certainty. (*Sameyah, supra,* 190 Cal.App.4th at p. 211; *Garcia, supra,* 126 Cal.App.4th at p. 316.) Unlike the retirement association in *Garcia*, the Board did not attempt to rebut the presumption by an absence of medical knowledge or merely showing an absence of a positive link; instead, it showed, though Dr. Allems's reports, that the IARC had evaluated the carcinogens at issue as definite or probable human carcinogens, and did not identify any of them as a prostate carcinogen, and the epidemiological studies do not provide "good or convincing" evidence that firefighters are at an increased risk of prostate cancer and are undermined by the fact that none of these carcinogens have the prostate as the target.

Accordingly, we conclude that the trial court did not err in denying Haskins's petition. As did the court in *Sameyah*, "we appreciate that the purpose of the presumption is to ease the [retirement] member's burden of proving his or her case, and that the presumption 'effectuate[s] the substantive policy goal of applying pension legislation broadly.' [Citation.] Still, the presumption set forth in section 31720.6 is a rebuttable one, and in this case substantial evidence supports the trial court's decision that the Board rebutted the cancer presumption by making the showing outlined in subdivision (c)." (*Sameyah, supra,* 190 Cal.App.4th at p. 215.)

## DISPOSITION

The judgment is affirmed. Each party shall bear its own costs on appeal.

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GOMES, J.

WE CONCUR:

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HILL, P.J.

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FRANSON, J.