IN THE DISTRICT COURT
AT WELLINGTON

I TE KŌTI-Ā-ROHE
KI TE WHANGANUI-A-TARA

[2023] NZACC 172 **ACR 26/22**

UNDER	THE ACCIDENT COMPENSATION ACT 2001
IN THE MATTER OF	LEAVE TO APPEAL UNDER SECTION 162 OF THE ACT
BETWEEN	ALLIANCE GROUP LIMITED Applicant
AND	ACCIDENT COMPENSATION CORPORATION First Respondent
AND	STEPHEN MCLENNAN Second Respondent

Hearing:	On the papers
Submissions:	S Winter for the applicant I Hunt for the first respondent P Schmidt for the second respondent
Judgment:	25 October 2023

JUDGMENT OF JUDGE D L HENARE
[Leave to Appeal to the High Court
Section 162 Accident Compensation Act 2001]

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[1] This is an application for leave to appeal against a judgment of His Honour Judge PR Spiller delivered on 4 April 2023.[1]

[2] There are two questions of law raised by the applicant (AGL) in the appeal and endorsed by the first respondent (the Corporation). The first is whether the Court erred in admitting the evidence of Dr Newburn in the appeal. The second is whether the

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1 *McLennan v Accident Compensation Corporation* [2023] NZACC 54.

District Court correctly applied the significantly greater risk test, being the third limb under s30(2)(c)(ii) of the Accident Compensation Act 2001 (the Act) to qualify for cover for a work- related gradual process injury.

[3] Judge Spiller had already found in his previous decision that Mr McLennan met the first requirement for cover for personal injury as a result of workplace exposure to glutaraldehyde.[2]

Background

[4] The background to the case is set out in the judgment as follows:[3]

> [2] Mr McLennan was born in 1956 and worked as a shepherd from around 1984.
>
> [3] In early 2005, Mr McLennan commenced work at a freezing works plant. He was employed essentially as a shepherd at the marshalling yards, where sheep were received from trucks and prepared for the freezing works chain. After off-loading, sheep were gradually moved towards the chain, via a series of pens, involving, at some points, cleaning procedures. Mr McLennan's work-place activities included spraying sheep with an agricultural product which contained glutaraldehyde.
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> [4] On 30 July 2008, Dr Stephen Dawson, GP, recorded that Mr McLennan reported chest pains, coughed up blood and had a headache.
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> [5] On 6 November 2008, Dr Dawson recorded that Mr McLennan reported constant headaches, chest pains, and coughing up blood.
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> [6] On 20 November 2008, Dr Dawson recorded that Mr McLennan reported headaches, sore throat, burning in the chest, racing heart, and a constant headache. Mr McLennan noted that he had contacted the poisons centre and "his symptoms are consistent with glutaraldehyde".

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2 *McLennan v Accident Compensation Corporation* [2021] NZACC 73.

3 Ibid at [2] to [19].

[7] On 8 December 2008, Dr Dawson recorded that Mr McLennan reported headaches and very inflamed nasal mucosa.

[8] On 10 December 2008, Mr McLennan, with the assistance of Dr Dawson, sought cover for personal injury due to "exposure to chemical fumes" on 1 December 2008. In a separate claim lodged by Dr Dawson, it was submitted that there had been "exposure to glutaraldehyde in spray". In February 2009, Mr McLennan stopped working at the plant.

[9] On 8 July 2009, AGL, as an accredited employer, made a decision declining to grant cover on Mr McLennan's claim. AGL accepted that Mr McLennan may have experienced various symptoms following exposure to the detergent-based glutaraldehyde product. However, symptoms *per se* were not evidence of injury and it was not satisfied that his symptoms could be shown to have been caused by a physical injury.

[10] On 13 June 2011, AGL's decision was quashed on review. The Reviewer considered that AGL had not properly investigated Mr McLennan's claim and directed, *inter alia*, that he be referred to:

(1) a respiratory specialist to carry out respiratory function testing ("RFT"); and

(2) an occupational physician to investigate Mr McLennan's claim and explore whether there were systemic toxic effects, before issuing a new decision.

[11] On 17 December 2012, AGL (after the required process had been completed) declined Mr McLennan's claim for cover for a work-related gradual process injury resulting from exposure to glutaraldehyde, on the basis that there was no evidence that his symptoms could be causally linked to a physical in jury and in particular glutaraldehyde.

[12] On 25 August 2017, counsel for Mr McLennan engaged Dr Gil Newburn, Neuropsychiatrist, to provide an opinion on what diagnosis best fitted Mr McLennan's symptoms and presentation; what was the most likely cause of

these symptoms; why Mr McLennan's symptoms persisted well after his exposure to stockwash stopped; and the usefulness of patch testing and respiratory testing to determine glutaraldehyde poisoning.

[13] On 31 October 2017, Dr Newburn reported:

> Mr McLennan presents with a neurotoxic syndrome secondary to exposure to glutaraldehyde. At the age of fifty-two he had an onset of symptoms, in a familiar work environment, with no prior evidence through his life before this set of symptoms that he was an individual subject to abnormal illness behaviour. There is no evidence previously of any dependency seeking behaviour, not of the use of medical or surgical symptoms in order to foster an avoidance of work responsibilities, or indeed of life responsibilities generally. Rather, the opposite is the case. Following exposure to glutaraldehyde, he developed a set of symptoms, also reported by others in his workplace, and in other environments (e.g. Judgement of Judge Nicola Mathers) which are consistent with data set out in other documents (e.g. Department of Labour Guidelines on Occupational Use of Glutaraldehyde), and other research (Glass, 1997) in a New Zealand setting. He presents with a typical range of symptoms seen in neurotoxic syndromes, which match also those described by Glass (1997), and a course that is typical for those who have developed neurotoxic syndrome from a broad range of organic solvent compounds.
>
> Dr Beasley, while sitting on the fence somewhat initially, provides an opinion that the concentration of glutaraldehyde as measured in the work environment was too low to be associated with injury. Unfortunately, this relates only to a general statistical measure, and takes no account of individual's sensitivities. It is notable in the work environment that there was no protective clothing, and masks to provide respiratory filters. Therefore, and whatever the air concentration showed, there is no specific measure of personal exposure. While it is second-hand information, the information is nevertheless that others developed similar, albeit less severe, symptoms within the same environment, with the exception of the case referred to by Judge Mathers.
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> There is no evidence of any other disorder. While there is some anxiety in relation to his symptoms, this is commensurate with his symptoms, and is not an abnormal reaction. It has not prevented his return to work, and is not associated with any other disabling process. There is no evidence for depressive illness, or any other psychiatric process.
>
> I note other assessment has ruled out an allergic skin or respiratory reaction. He does continue to have upper respiratory symptoms, but it is outside my expertise to comment on these further. I do note however that the absence of evidence for an allergic reactivity bears no relationship to the development of a neurotoxic syndrome.
>
> Response to specific questions posed.

1. What diagnosis best fits Mr McLennan's symptoms and presentation?

This is a neurotoxic syndrome consequent upon exposure to probably glutaraldehyde within the stock wash material. The combination of cognitive, behavioural and physical symptoms matches those described in other documents including that by Glass (1997), matches other data described by others exposed to glutaraldehyde, particularly in the health industry, and also those described by others in relation to other forms of organic solvent neurotoxicity arising from a broad range of well-described compounds.

2. What is the most likely cause of these symptoms?

Glutaraldehyde, within the Stockwash product he was exposed to in his work as a shepherd at the Pukeuri Freezing Works. There is no history of exposure to any other neurotoxic compound. There is no evidence for any other form of abnormal reactivity to workplace changes, with a long history of capacity to manage hard work, long hours, and stressful environments. There is no evidence for any models of exposure to dependency seeking behaviour in his formative or later years, nor indeed any evidence for the presence of this. In the absence of such history, it would be highly unusual to present with abnormal illness behaviour or psychogenically determined symptoms at the age of fifty-two. On the basis of probability this is far more likely to be due to toxin exposure. Similarly, there is no other evidence for any other condition present which would explain his symptoms.

3. Mr McLennan's symptoms persisted well after his exposure to Stockwash stopped. What is the best explanation for this?

The usual pattern of development of neurotoxic syndromes with exposure is that symptoms will appear in the setting where there is exposure, and for a variable period of time (except with a very large acute exposure), will settle away from that environment. Gradually over time, symptoms will become more severe over the course of exposure, and take longer to settle away from this environment, until they reach a point where even removal from the environment does not lead to settling of the symptoms. At some point, which is variable from individual to individual, the symptoms will become permanent. It is notable in Mr McLennan's case that while the history he initially provides, and that which has been focussed on by others, is on a sudden onset of symptoms in April 2008, he had in fact been developing symptoms for some months prior to this. In this regard, he was probably his own worst enemy, as, given his nature of being hardworking and wanting to do the best job possible, he had simply continued in the employment situation, with no complaint. It was not until a more severe level of symptoms broke through, and did not settle readily, that he voiced concern. Even then, his level of concern voiced was extremely limited initially, and he struggled to continue to work until the end of 2008. This is not the pattern of an individual who is avoided of work, or who is looking for excuses to become dependent. Thus, he presents with a typical pattern of chronic symptoms once he has crossed a particular threshold of symptoms being maintained with exposure over a prolonged length of time.

> *4. Mr McLennan has undergone patch testing and respiratory testing. Can you please comment on the usefulness of such testing in coming to a determination about glutaraldehyde poisoning?*
>
> I note that my expertise relates to the brain, and not to respiratory or dermatology conditions. Testing has shown no evidence of allergic reactivity. However, this does not preclude the development of neurotoxicity and indeed bears little relationship to this. Neurotoxicity relates to chemical effects of organic solvents on the brain and its function, and not to an allergic process, and therefore the absence of evidence of allergic reactivity in no way precludes a diagnosis of neurotoxicity.
>
> I note that Mr McLennan has not had any specific therapeutic input for neurotoxicity. There are a number of areas where he could be assisted to maintain or develop a better quality of life. It would help him if these areas could be addressed.

[14] On 6 August 2018, the Reviewer dismissed Mr McLennan's application for review. The Reviewer concluded that Mr McLennan had not established that he had sustained any physical injury as a result of exposure to glutaraldehyde while working as a shepherd.

[15] On 9 August 2018, a Notice of Appeal was lodged. On 6 May 2021, Judge Spiller issued a judgment in which he concluded:[4]

> [48] In light of the above evidence, the Court finds that Mr McLennan suffered a personal injury as a result of his exposure to glutaraldehyde in his workplace. The Court is satisfied that Mr McLennan has presented sufficient material pointing to proof of causation on the balance of probabilities.
>
> [49] For the above reasons, the appeal is allowed, and the review decision dated 6 August 2018 is set aside. The matter is remitted for a further review to be conducted as to whether the balance of the criteria in section 30 of the Act have been satisfied.

[16] On 7 December 2021, Dr John Monigatti, Occupational Physician and Corporation clinical advisor provided a report on the significantly greater risk test contained in section 30 of the Act. Dr Monigatti wrote in part:

> Glutaraldehyde is a commercial chemical used primarily as a disinfectant and biocide. It has numerous uses in industrial, agricultural, and medical settings ...
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> Many occupational groups are exposed to glutaraldehyde, therefore, with the risk being highest for health care workers who:

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4 *McLennan* see note 2 above.

- cold-sterilise instruments in endoscopy and surgical units when glutaraldehyde solution is poured into or out of the sterilizing pans;

- work in operating rooms. dialysis departments, endoscopy units, and intensive care units where glutaraldehyde formulations are used in infection control procedures;

- prepare the alkaline solutions or fix tissues in histology and pathology labs;

- sterilise benchtops with glutaraldehyde solutions;

- develop x-rays.

Most of the atmospheric monitoring has been done in hospitals and dental clinics for this reason.

The level of exposure to glutaraldehyde depends upon the dose, duration. and work being done. Absorption into the body occurs primarily through inhalation although dermal contact and ingestion may occur also.

Occupational exposure to glutaraldehyde has often been associated with symptoms of respiratory tract irritation, particularly in medical facilities close to the sterilisation source. In occupational settings where personal or workplace air sampling was performed, self-reported respiratory tract symptoms following short-term exposures occurred at concentrations as low as 0.05 ppm.

Glutaraldehyde irritates the nose, eyes and skin upon direct contact. Occupational exposure to glutaraldehyde has been commonly associated with nasal and ocular irritation and severe dermal irritation.

Information regarding neurological effects in workers exposed to glutaraldehyde is limited to reports of increased incidences of self-reported headaches during disinfection processes in which glutaraldehyde was used. Glutaraldehyde-induced neurotoxiclty has not been demonstrated in either humans or animals.

Numerous reports suggest that glutaraldehyde causes dermal sensitisation in occupational settings where glutaraldehyde is used as a germicide. The dermal sensitisation potential of glutaraldehyde has not been demonstrated in limited, controlled human studies but there is support from animal studies.

There is some evidence for glutaraldehyde-induced respiratory hypersensitivity in occupationally-exposed individuals. Results from single-blind placebo-controlled studies of health workers with occupational exposure to glutaraldehyde and diagnosed with glutaraldehyde-induced occupational asthma and rhinitis suggest an immunologic mechanism. Other epidemiological studies revealed no evidence of glutaraldehyde-induced respiratory sensitisation, however. There is no evidence of glutaraldehyde-induced respiratory sensitization in available animal studies.

Short-term exposure to high levels of glutaraldehyde may result in sudden headaches drowsiness, and dizziness. Breathing glutaraldehyde can irritate the nose, throat, and respiratory tract, causing coughing and wheezing. It causes strong irritation to the eyes and Ingestion may result in abdominal pains, cramps, vomiting, diarrhoea, and or a burning sensation in the chest. At very high doses. vascular collapse and coma have occurred.

Because glutaraldehyde is a sensitiser, after repeated exposures an allergic response can occur. This means that some workers will become very sensitive to glutaraldehyde and have strong reactions if they are exposed to even small amounts. They may have sudden asthma attacks with difficult breathing, wheezing, coughing, and tightness in the chest. Prolonged exposure can cause a skin allergy and chronic eczema, and afterwards, exposure to small amounts produces severe itching and skin rashes.

In summary, glutaraldehyde is recognised as being a contact irritant, dermal sensitiser and possible respiratory sensitiser. The only long-term health effects it is known to cause are skin rashes and, potentially, asthma. Any opinion that glutaraldehyde has chronic adverse health effects other than these is based on speculation, not evidence based medicine, irrespective of the dose and duration of exposure. In particular, there are no known long term cerebral poisoning effects that might constitute "neurotoxic syndrome".

Mr McLennan had low-level exposure to Ecosafe Stockwash Plus, a spray containing glutaraldehyde and surfactant applied to sheet prior to slaughter. The symptoms he complained of, and accepted by the Court as being indicative of personal injury, were chest pain, headaches, inflamed and gummed-over eyes, sore throat, palpitations and haemoptysis. Only one, headache, could possibly be considered a neurological symptom and most headaches are not caused by neurotoxicity or indicative of physical injury.

1) What is the risk of a person carrying out the relevant task in the relevant work environment developing the injury concerned- i.e. neurotoxic syndrome ("x")?

There is no known risk

2) What is the risk of persons not performing that task in that environment suffering from that personal injury ("y")?

There is no known risk.

3) Is "x" significantly greater than "y"?

No.

[17] On 13 January 2022, the Reviewer dismissed the application for review on the basis there was no medical or expert evidence to counter the opinion of Dr Monigatti, and so Mr McLennan did not meet the qualifying criteria for a

work-related gradual process injury. On 8 February 2022, a Notice of Appeal was lodged.

[18] On 1 April 2022, Dr Newburn provided a further report, in which he stated:

> In my report dated 31 October 2017, I described the constellation of effects suffered by Mr McLennan as a neurotoxic syndrome. I used the term "neurotoxic syndrome" to refer to the effects of glutaraldehyde poisoning. These effects were respiratory distress, headache, fatigue, a sore runny nose, blurred vision, and heart palpitations. These short-term effects of glutaraldehyde poisoning have passed, leaving a longer-term acquired sensitivity to chemicals.
>
> The effects of glutaraldehyde poisoning are well described in the literature and align with the symptoms suffered by Mr McLennan. The Department of Labour's guideline for the safe use of glutaraldehyde provides a useful summary of the effects of glutaraldehyde poisoning.
>
> In terms of the question about whether persons employed in a work environment where there is exposure to stock wash containing glutaraldehyde are at materially greater risk of being poisoned by glutaraldehyde than persons who do not work in this environment, I note that glutaraldehyde is not a naturally occurring chemical. It is an industrially produced compound and its use as a disinfectant is generally limited to commercial and medical applications. Glutaraldehyde poisoning is suffered only by those who come into contact with it, usually workers applying a disinfecting product that contains glutaraldehyde as an active agent.
>
> Glutaraldehyde is an effective sterilising agent because it is very poisonous. Even when used at recommended levels there is a risk that some workers will have an adverse reaction to it. Often there is variation in the concentration of glutaraldehyde that workers are exposed to, as likely occurred in this case.
>
> In short, the risk of glutaraldehyde poisoning is significantly greater for workers employed in an environment where there is exposure to glutaraldehyde than for persons who do not work in such an environment. This is simply because glutaraldehyde is not a naturally occurring chemical or a common household substance. Workers exposed to glutaraldehyde have some risk of being poisoned while persons not exposed to glutaraldehyde have zero risk of being poisoned.

[19] On 25 August 2022, Dr Monigatti provided a further report and stated:

> Mr McLennan's advocate has an unusual interpretation of the "significance of risk" test. It is not a comparison of the risks between specific working groups and the "general public". Years ago, John Miller Law argued successfully in the District Court that the comparison was between workers performing a particular task or working in a particular environment than workers who were not. This was because certain disorders such as carpal tunnel syndrome and hip osteoarthrosis were so strongly associated with age that if other workers

and non-workers alike were lumped together, the incidence and prevalence of these disorders in the elderly non-working population would be so great as to swamp any cases in certain workers that were truly attributable to the work – sometimes causing the third step not to be met when it should have been. Since that judgement, ACC has compared the working group of interest with other groups performing dissimilar work, which negates the age factor and allows a true comparison of relative risk to be made.

Even if such were not the case, the advocate's "general public" would include many workers who use glutaraldehyde when performing different tasks in different working environments. In my last memorandum I advised that glutaraldehyde has numerous uses in industrial, agricultural, and medical settings. It is ridiculous to hold that the mere presence of glutaraldehyde defines the working environment in the way the advocate suggests, given that most processes in which it is used are very different from stock wash application and that a myriad of other factors – some common and some not – make up the environment. The stipulation to Dr Newburn that the substance had to be a naturally occurring one that everyone is exposed to is as fatuous as calling "glutaraldehyde poisoning" a personal injury (i.e. physical) without identifying any bodily harm or tissue damage. In contrast, neurotoxic injury (meaning brain poisoning) does constitute a personal injury because it specifies a target organ.

In my previous comment I stated that glutaraldehyde is a well-recognised irritant of the nose, eyes and skin upon direct contact, and that occupational exposure to glutaraldehyde had been commonly associated with nasal and ocular irritation and severe dermal irritation. Glutaraldehyde is also a is a sensitiser that can causes asthma and allergic contact dermatitis. Information regarding neurological effects in workers exposed to glutaraldehyde is limited to reports of increased incidences of self-reported headaches during disinfection processes in which glutaraldehyde was used, however, with glutaraldehyde-induced neurotoxicity having been demonstrated in neither humans nor animals. So, whether "those who do not perform that employment task or are employed in that environment" refers to other workers or other workers plus non-workers, there is no evidence that people employed as Mr McLennan was, are at significantly greater risk than anyone else of suffering a brain injury from work involving exposure to glutaraldehyde.

In answer to your questions:

1. What injurious effects were suffered by Mr McLennan because of glutaraldehyde poisoning?

The medical specialists with recognised expertise in toxicology (which excludes Dr Newburn) who interviewed and examined Mr McLennan or reviewed the file were unsure. Glutaraldehyde is a pungent substance. Chemicals that trigger odours may cause health effects ranging from mild discomfort to multi-symptomatic incapacity. Those with strong odours that cause eye, nose, throat or lung irritation may cause some people to feel a burning sensation that leads to coughing, wheezing or other breathing problems. Others may get headaches or feel dizzy or nauseous. Some people develop physiological effects from

> odour even when their exposure is much lower than that typically required to cause direct health effects, owing to the perception that if there is a strong smell it must be doing physical harm.
>
> Mr McLennan's symptoms were not those of respiratory or mucous membrane inflammation, which suggests that the concentration of glutaraldehyde fumes was below the irritant threshold. He had a range of non-specific symptoms after exposure to a pungent substance at levels measured as being lower than are known to cause harm in humans. As there appears to have been a temporal link I can only postulate that Mr McLennan had a peculiar sensitivity to the biocide which caused him to react symptomatically in the way that he did. I cannot be certain whether this response was physiological or behavioural but given that the clinicians were unable to find any evidence of the conditions that glutaraldehyde is known to cause, I can only conclude that there may have been physiological symptoms of relatively short duration but beyond that the response was and remains behavioural.
>
> Judge Spiller, in finding that Mr McLennan had suffered a personal injury as a result of his exposure to glutaraldehyde in his workplace, may have thought the same. He did not specify a neurotoxic injury.
>
> 2. *Are persons employed in a work environment where there is exposure to stock wash containing glutaraldehyde at significantly greater risk of being poisoned by glutaraldehyde than persons who do not work in this environment?*
>
> No, as advised previously. Dr Newburn furnished no objective evidence to the contrary, only opinion.

Relevant Law

[5] An applicant is entitled to appeal to the High Court on questions of law pursuant to s 162 of the Act.

[6] In *Impact Manufacturing v* ARCIC,[5] Doogue J discussed what is meant by a question of law in relation to Accident Compensation appeals. His classification was summarised by Churchman J in *Q*:[6]

> Whether or not a statutory provision has been properly construed or interpreted and applied to the facts as a question of law ... a mixed question of law and fact is assailable as a matter of law ... a question-maker's treatment of facts can amount to an error of law. There will be an error of law where there is no evidence to support the decision, the evidence is inconsistent with, and contradictory of the decision, or the true and only reasonable conclusion on the evidence contradicts the decision ... whether or not particular evidence is relevant to a particular issue is a question of law.

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5 *Impact Manufacturing v Accident Rehabilitation and Compensation Insurance Corporation* HC Wellington AP266/00, 6 July 2001, Doogue J.

6 *Q v Accident Compensation Corporation* [2011] NZHC 3023 at [23].

[7] Importantly, the questions of law that are the subject of the application for leave to appeal must be capable of bona fide and serious argument.[7]

The Court's judgment of 4 April 2023

[8] Judge Spiller began his analysis setting out the three requirements under the Act, to qualify for cover for a work-related gradual process injury.

[9] In respect to the first requirement finding personal injury as a result of exposure to glutaraldehyde, His Honour clarified:[8]

> ... this Court is mindful that it has found that Mr McLachlan suffered a personal injury as a result of his exposure to glutaraldehyde in his workplace. In making this finding, the Court repeatedly noted in its the reasons that Mr McLachlan suffered a personal injury as a result of his "exposure to glutaraldehyde" in his workplace, rather than "neurotoxic syndrome". In any event, Dr Newburn stated in his report that he used the term "neurotoxic syndrome" to refer to the effects of glutaraldehyde poisoning. This Court is satisfied that Dr Newburn addressed the correct issue in point.

[10] In respect to the second requirement, the parties had agreed Mr McLennan did not have exposure to glutaraldehyde in his non-work activities.[9]

> This Court has found that Mr McLennan meets the first requirement for cover in that he suffered a personal injury as a result of his exposure to glutaraldehyde in his workplace. It is accepted by the respondents that Mr McLennan meets the second requirement for cover in that he did not have exposure to glutaraldehyde in his non-work activities. The issue at appeal is whether Mr McLennan meets the third requirement for cover, that persons exposed to glutaraldehyde in stock wash have a significantly greater risk of suffering from glutaraldehyde poisoning than persons who are not exposed to the glutaraldehyde in stock wash. This comparison involves consideration of medical evidence along with the application of judicial impression and should be resolved by analysis of all the facts in the case.

[11] The third requirement and outstanding issue in the appeal related to the significantly greater risk test under s30(2)(c)(ii) of the Act.

[12] His Honour considered the submissions of AGL and the Corporation not to admit the evidence of Dr Newburn in the appeal. Judge Spiller set out the considerations

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7 *Impact Manufacturing* at [4].
8 *McLennan v Accident Compensation Corporation* [2023] NZACC 54 at [30].
9 At [26].

relevant to his decision both to admit Dr Newburn's evidence and to give weight to this evidence. His Honour stated:[10]

> This Court finds that Dr Newburn's medical opinion proceeds logically from as clear or settled a basis of fact as is possible; provides an appropriate analysis of that factual material; shows an appropriate level of regard for and consideration of medical research and studies bearing on the issue at hand; and comes to a logically reasoned conclusion.

The submissions for AGL and the Corporation

[13] For AGL, Mr Winter submitted there is error of law because:

(a) The Court should not have admitted Dr Newburn's evidence because he is not qualified to give opinion on the significantly greater risk test, which requires expert opinion from an occupational physician.

(b) The Court's analysis is wrong;

(c) The Court applied three different risk tests; and

(d) The points of law raised are capable of serious and bona fide argument.

[14] For the Corporation, Mr Hunt submitted:

(a) Dr Newburn's evidence was inadmissible under the Evidence Act and ought not to have been admitted under s156 of the Act because Dr Newburn has no expertise in toxicology;

(b) Had the evidence been ruled inadmissible, the appeal could not have succeeded and on that basis, there is an arguable error of law;

(c) In the alternative, if the Court finds Dr Newburn's evidence is admissible, then Judge Spiller was in error in giving weight to this evidence;

(d) There is another case subject to a leave to appeal application where the evidence was arguably inadmissible in terms of the Evidence Act, and

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10 At [32].

which was admitted by the Court pursuant to s156 of the Act. Both cases raise matters of public importance and attest to the fact that the High Court should determine whether there is an error of law.

(e) On the question of the significantly greater risk test, the Corporation abides the decision of the Court.

First question: whether Dr Newburn's evidence should have been admitted

[15] The common submission of Mr Winter and Mr Hunt is that Dr Newburn's evidence should not have been admitted because he is not an expert in toxicology, which is the area of expertise for expert opinion evidence to assist the Court in this case.

[16] Judge Spiller considered the relevant case law as to appropriately qualified experts and acknowledged that the Court would normally require expert evidence of a practitioner qualified in the field of toxic disease conditions. His Honour cited *inter alia*, *Green,* a case where the Court relied on the assessment of the medical and scientific evidence by medical experts to assist understanding of the facts and issues.[11]

[17] The medical expertise before Judge Spiller was that of a neuropsychiatrist and an occupational physician. The evidence shows Dr Monigatti is the convenor of the Corporation's Toxicology Panel which comprises diverse medical disciplines. A member of that panel is Professor Glass, Toxicologist whose research is cited by Dr Newburn in his report referred to in the judgment.

> [13] On 31 October 2017, Dr Newburn reported:
>
> Mr McLennan presents with a neurotoxic syndrome secondary to exposure to glutaraldehyde. At the age of fifty-two he had an onset of symptoms, in a familiar work environment, with no prior evidence through his life before this set of symptoms that he was an individual subject to abnormal illness behaviour. There is no evidence previously of any dependency seeking behaviour, not of the use of medical or surgical symptoms in order to foster an avoidance of work responsibilities, or indeed of life responsibilities generally. Rather, the opposite is the case. Following exposure to glutaraldehyde, he developed a set of symptoms, also reported by others in his workplace, and in other environments (e.g. Judgement of Judge Nicola Mathers) which are consistent with data set out in other documents (e.g. Department of Labour Guidelines on Occupational Use of Glutaraldehyde), and other research (Glass, 1997) in a New Zealand setting.

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11 Ibid at [29].

He presents with a typical range of symptoms seen in neurotoxic syndromes, which match also those described by Glass (1997), and a course that is typical for those who have developed neurotoxic syndrome from a broad range of organic solvent compounds.

Dr Beasley, while sitting on the fence somewhat initially, provides an opinion that the concentration of glutaraldehyde as measured in the work environment was too low to be associated with injury. Unfortunately, this relates only to a general statistical measure, and takes no account of individual's sensitivities. It is notable in the work environment that there was no protective clothing, and masks to provide respiratory filters. Therefore, and whatever the air concentration showed, there is no specific measure of personal exposure. While it is second-hand information, the information is nevertheless that others developed similar, albeit less severe, symptoms within the same environment, with the exception of the case referred to by Judge Mathers.

There is no evidence of any other disorder. While there is some anxiety in relation to his symptoms, this is commensurate with his symptoms, and is not an abnormal reaction. It has not prevented his return to work, and is not associated with any other disabling process. There is no evidence for depressive illness, or any other psychiatric process.

I note other assessment has ruled out an allergic skin or respiratory reaction. He does continue to have upper respiratory symptoms, but it is outside my expertise to comment on these further. I do note however that the absence of evidence for an allergic reactivity bears no relationship to the development of a neurotoxic syndrome.

Response to specific questions posed.

1. What diagnosis best fits Mr McLennan's symptoms and presentation?

This is a neurotoxic syndrome consequent upon exposure to probably glutaraldehyde within the stock wash material. The combination of cognitive, behavioural and physical symptoms matches those described in other documents including that by Glass (1997), matches other data described by others exposed to glutaraldehyde, particularly in the health industry, and also those described by others in relation to other forms of organic solvent neurotoxicity arising from a broad range of well-described compounds.

2. What is the most likely cause of these symptoms?

Glutaraldehyde, within the Stockwash product he was exposed to in his work as a shepherd at the Pukeuri Freezing Works. There is no history of exposure to any other neurotoxic compound. There is no evidence for any other form of abnormal reactivity to workplace changes, with a long history of capacity to manage hard work, long hours, and stressful environments. There is no evidence for any models of exposure to dependency seeking behaviour in his formative or later years, nor indeed any evidence for the presence of this. In the absence of such history, it would be highly unusual to present with abnormal illness behaviour or psychogenically determined symptoms at the age of fifty-two. On the basis of probability this is far more likely to be due to toxin exposure. Similarly, there is no other evidence for any other condition present which would explain his symptoms.

3. Mr McLennan's symptoms persisted well after his exposure to Stockwash stopped. What is the best explanation for this?

The usual pattern of development of neurotoxic syndromes with exposure is that symptoms will appear in the setting where there is exposure, and for a variable period of time (except with a very large acute exposure), will settle away from that environment. Gradually over time, symptoms will become more severe over the course of exposure, and take longer to settle away from this environment, until they reach a point where even removal from the environment does not lead to settling of the symptoms. At some point, which is variable from individual to individual, the symptoms will become permanent. It is notable in Mr McLennan's case that while the history he initially provides, and that which has been focussed on by others, is on a sudden onset of symptoms in April 2008, he had in fact been developing symptoms for some months prior to this. In this regard, he was probably his own worst enemy, as, given his nature of being hardworking and wanting to do the best job possible, he had simply continued in the employment situation, with no complaint. It was not until a more severe level of symptoms broke through, and did not settle readily, that he voiced concern. Even then, his level of concern voiced was extremely limited initially, and he struggled to continue to work until the end of 2008. This is not the pattern of an individual who is avoided of work, or who is looking for excuses to become dependent. Thus, he presents with a typical pattern of chronic symptoms once he has crossed a particular threshold of symptoms being maintained with exposure over a prolonged length of time.

4. Mr McLennan has undergone patch testing and respiratory testing. Can you please comment on the usefulness of such testing in coming to a determination about glutaraldehyde poisoning?

I note that my expertise relates to the brain, and not to respiratory or dermatology conditions. Testing has shown no evidence of allergic reactivity. However, this does not preclude the development of neurotoxicity and indeed bears little relationship to this. Neurotoxicity relates to chemical effects of organic solvents on the brain and its function, and not to an allergic process, and therefore the absence of evidence of allergic reactivity in no way precludes a diagnosis of neurotoxicity.

I note that Mr McLennan has not had any specific therapeutic input for neurotoxicity. There are a number of areas where he could be assisted to maintain or develop a better quality of life. It would help him if these areas could be addressed.[12]

...

[18] On 1 April 2022, Dr Newburn provided a further report, in which he stated:

In my report dated 31 October 2017, I described the constellation of effects suffered by Mr McLennan as a neurotoxic syndrome. I used the term "neurotoxic syndrome" to refer to the effects of glutaraldehyde poisoning. These effects were respiratory distress, headache, fatigue, a sore runny nose, blurred vision, and heart palpitations. These short-term effects of glutaraldehyde poisoning have passed, leaving a longer-term acquired sensitivity to chemicals.

The effects of glutaraldehyde poisoning are well described in the literature and align with the symptoms suffered by Mr McLennan. The Department of Labour's guideline for the safe use of glutaraldehyde provides a useful summary of the effects of glutaraldehyde poisoning.

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12 At [13]. [18] and [31].

> In terms of the question about whether persons employed in a work environment where there is exposure to stock wash containing glutaraldehyde are at materially greater risk of being poisoned by glutaraldehyde than persons who do not work in this environment, I note that glutaraldehyde is not a naturally occurring chemical. It is an industrially produced compound and its use as a disinfectant is generally limited to commercial and medical applications. Glutaraldehyde poisoning is suffered only by those who come into contact with it, usually workers applying a disinfecting product that contains glutaraldehyde as an active agent.
>
> Glutaraldehyde is an effective sterilising agent because it is very poisonous. Even when used at recommended levels there is a risk that some workers will have an adverse reaction to it. Often there is variation in the concentration of glutaraldehyde that workers are exposed to, as likely occurred in this case.
>
> In short, the risk of glutaraldehyde poisoning is significantly greater for workers employed in an environment where there is exposure to glutaraldehyde than for persons who do not work in such an environment. This is simply because glutaraldehyde is not a naturally occurring chemical or a common household substance. Workers exposed to glutaraldehyde have some risk of being poisoned while persons not exposed to glutaraldehyde have zero risk of being poisoned.
>
> ...
>
> [31] Third, the opinion of Dr Newburn is that the risk of glutaraldehyde poisoning is significantly greater for workers employed in an environment where there is exposure to glutaraldehyde than for persons who do not work in such an environment. Dr Newburn noted that:
>
> (a) the effects of glutaraldehyde poisoning are well described in the literature and align with the symptoms suffered by Mr McLennan, and the Department of Labour's guideline for the safe use of glutaraldehyde provided a useful summary of the effects of glutaraldehyde poisoning;
>
> (b) glutaraldehyde is not a naturally occurring chemical, it is very poisonous, and, even when used at recommended levels, there is a risk that some workers will have an adverse reaction to it;
>
> (c) glutaraldehyde poisoning is suffered only by those who come into contact with it, usually workers applying a disinfecting product that contains glutaraldehyde as an active agent;
>
> (d) workers exposed to glutaraldehyde have some risk of being poisoned while persons not exposed to glutaraldehyde have zero risk of being poisoned.

[18] The admissibility of Dr Newburn's evidence was directly addressed by Judge Spiller. His Honour considered s 156(1) of the Act which gives the Court a discretion to admit evidence that would otherwise be inadmissible.

[19] His Honour acknowledged the qualifications of Dr Monigatti and he took into account Dr Newburn's medical qualifications (including MB ChB). His Honour gave

weight to Dr Newburn's evidence because he found "his [Dr Newburn's] analysis was consistent with relevant medical literature and guidelines, together with his close knowledge of Mr McLennan's working environment and health symptoms".[13]

[20] In my opinion, Judge Spiller adopted the conventional approach under the Evidence Act in his treatment and consideration of the evidence. His Honour assessed the conflicts in evidence and considered that Dr Newburn's report provided substantial help in his understanding of all the evidence. His Honour found that Dr Newburn's analysis of the evidence had previously established cause, and in the second appeal, His Honour preferred Dr Newburn's analysis directed to the significantly greater risk test. He cited the relevant dicta from *Mehrtens* and *MacMillan.*[14] His Honour's findings too follow the principles from the case law he considered.[15]

[21] This Court finds Judge Spiller's approach to admissibility of the evidence is consistent with core principles in the case law cited in the judgment, relating to the admissibility of expert opinion and the weight to be given to the evidence. These considerations proceeded from an evaluation of clear or settled basis of fact, the nature and quality of the analysis, the appropriate level of regard for research and reasoned conclusion. In my view, Judge Spiller exercised his discretion both to admit and to give weight to the evidence of Dr Newburn in accordance with the Evidence Act 2006 and s156 of the Act.

[22] For the sake of completeness, Mr Hunt submitted the District Court's treatment of admissibility of evidence in this case and another case, may be factors to take into account in deciding whether to grant leave to appeal to the High Court. Mr Hunt submitted both cases raise the same point, that is the admission of expert evidence under the Evidence Act 2006. Further, the cases raise matters of public importance. For these reasons, it is appropriate the High Court determine whether there is error of law.

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13 At [29].
14 At [23] and [24].
15 At [32].

[23] In this appeal, the Court has found as a matter of fact and law that Judge Spiller was entitled in accordance with principle, both to admit and to give weight to Dr Newburn's evidence.

[24] The case law is clear that in order to grant leave to appeal, the Court must be satisfied a question of law is capable of serious argument and involves some interest, public or private, of sufficient importance to outweigh the cost and delay of a further appeal. I do not see the issue of admissibility of evidence in this case is a question of public importance to support determination by the High Court. Aside from the general submission made by Mr Hunt on public importance, there are no detailed submissions with authority on point before this Court.

[25] Further, there is already ample guidance from this Court's case law on admissibility and treatment of evidence, some of which is cited in Judge Spiller's judgment.

[26] On the first question, the Court answers "Yes." In my view, Judge Spiller directed himself to relevant considerations when both admitting and giving weight to the evidence of Dr Newburn in the appeal.

Second question: whether the Court correctly applied the third limb of the work- related gradual process test

[27] On this question, Mr Hunt submitted the Corporation abides the decision of the Court.

[28] The test in s 32(c)(ii) is whether the risk of injury is significantly greater for persons who are employed in that type of environment than for persons who are not.

[29] Mr Winter submitted His Honour did not provide the analysis required by *Knox.*[16]. His Honour did cite the relevant passages from *Knox*, together with *Hunter*[17] which informed his own analysis and his judicial impression.[18]

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16 At [21].
17 At [22].
18 At [33].

[30] Judge Spiller stated the enquiry in the case was whether "persons exposed to glutaraldehyde in stock wash have a significantly greater risk of suffering from glutaraldehyde poisoning than persons who are not exposed to the glutaraldehyde in stock wash".[19] His Honour was entitled to find an increased risk, satisfying the test, having regard to consideration of the medical evidence together with the application of judicial impression based on the facts of the case.

[31] Mr Winter submitted this finding was not available because Judge Spiller discusses glutaraldehyde in stock wash, whereas Dr Newburn discusses glutaraldehyde in the environment. Mr Winter submitted "there are multiple interpretations for persons who are employed in that environment".

[32] This Court finds that the environment was explained by Judge Spiller, that is, one where workers are exposed to glutaraldehyde in stock wash as stated in the conclusion reached in the judgment. Preferring the evidence of Dr Newburn, His Honour explained that glutaraldehyde in the stock wash is then sprayed into the environment.

[33] Mr Winter submitted that Dr Newburn did not identify a significantly greater risk in the context of glutaraldehyde poisoning. Further, Mr Winter submitted there is divergence of opinion between Dr Newburn and Dr Monigatti.

[34] Dr Newburn provided reason why the risk of glutaraldehyde poisoning is significantly greater for workers with glutaraldehyde exposure than for workers who do not have that exposure, because workers exposed to glutaraldehyde have some risk of being poisoned, while workers not exposed to glutaraldehyde have zero risk of being poisoned. Judge Spiller set out Dr Newburn's reasoning to support the test. [20]

[35] His Honour found that Dr Newburn's opinion proceeded logically from as clear or settled basis of fact as is possible; provided the appropriate analysis of the factual material; had regard for and consideration of medical research and studies leading to a logically reasoned conclusion. This evidence enabled His Honour to find an increased risk, thereby satisfying the significantly greater risk test.

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19 At [26].
20 At [31].

[36] His Honour did not have to identify a percentage chance of being poisoned. The statutory test does not require more than an informed evaluation of risk on the evidence. His Honour cited case law that a stringent test requiring percentages to be identified is not required.

[37] His Honour concluded that his finding on the significantly greater risk test was reached after consideration of the facts and the law, that is the medical evidence together with the application of his judicial impression.

[38] On the second question, the Court answers "Yes". Judge Spiller correctly applied the third limb test of the work-related gradual process, to find that Mr McLennan qualifies for cover for a work-related gradual process injury.

Decision

[39] On the two questions raised, the Court answers "Yes" and "Yes".

[40] No points of law have been raised capable of bona fide and serious argument to qualify for the grant of leave.

[41] Accordingly, the application for leave to appeal to the High Court is dismissed.

Judge D L Henare
District Court Judge

Solicitors: Young Hunter, Christchurch for the first respondent
Schmidt Peart Law, Auckland for the second respondent