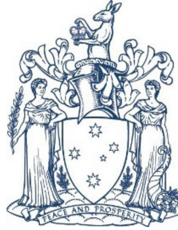

Court Reference: **COR 2020 003895**

IN THE CORONERS COURT
OF VICTORIA
AT MELBOURNE

FINDING INTO DEATH FOLLOWING INQUEST

Form 37 Rule 63(1)

Section 67 of the ***Coroners Act 2008***

INQUEST INTO THE DEATH OF SHANE TUCK

Findings of:	Judge John Cain State Coroner
Delivered on:	11 December 2023
Delivered at:	Coroners Court of Victoria 65 Kavanagh Street, Southbank, Victoria, 3006
Inquest Hearing Dates:	18 July 2023, 26 July 2023 – 28 July 2023
Counsel Assisting:	Dr Gideon Boas of Counsel instructed by Ms Abigail Smith, Senior Coroner's Solicitor, Coroners Court of Victoria

REPRESENTATION

Australian Football League	Mr Ben Ihle KC and Ms Gayann Walker instructed by DLA Piper
Australian Football League Players Association	Ms Rachael Ellyard, instructed by Australian Football League Players Association
Secretary for the Department of Jobs, Skills, Industry and Regions	Mr Liam Brown SC and Ms Sarala Fitzgerald, instructed by the Victorian Government Solicitor's Office
Richmond Football Club	Mr David Neal SC and Mr Sam Stafford instructed by Richmond Football Club

TABLE OF CONTENTS

INTRODUCTION 5

THE PURPOSE OF A CORONIAL INVESTIGATON 6

INQUEST 8

SCOPE OF INQUEST 8

INTERESTED PARTIES 10

EVIDENCE 11

MATTERS IN RELATION TO WHICH A FINDING MUST, IF POSSIBLE, BE MADE 11

Identity of the deceased, pursuant to section 67(1)(a) of the Act 11

Medical cause of death, pursuant to section 67(1)(b) of the Act 11

Autopsy *11*

Chronic Traumatic Encephalopathy *12*

Circumstances in which the death occurred, pursuant to section 67(1)(c) of the Act 12

Sporting career *12*

Mental health diagnosis and treatment *14*

Events of 19 and 20 July 2020 ..... *17*

Conclusions *17*

MATTERS CONNECTED WITH THE DEATH PURSUANT TO SECTION 67(3) OF THE ACT AND RECOMMENDATIONS PURSUANT TO SECTION 72(2) OF THE ACT 18

SPORTS RELATED CONCUSSION, REPETITIVE HEAD TRAUMA AND CTE 19

Australian Position Statements 21

Consensus Statement on Concussion in Sport – 6th edition 22

AFL POLICIES, GUIDELINES, RULES AND PRACTICES 24

AFL framework 25

AFL approach to CTE 27

AFL Brain Health Initiative 29

Rule and policy changes in the AFL 30

Identification and management of head injuries **33**
Hawkeye and concussion spotters *33*
Medical assessment of players *35*
Voluntary retirement of players **39**
Education and awareness training **40**
Elite AFL/W clubs *40*
Education within community football *42*
Education for medical practitioners and coaches *48*
Research **51**
Mouthguard accelerometers *52*
Protective helmets *55*
Baseline testing *56*
Brain banks **58**
Conclusions on the AFL Framework **60**
ROLE OF AFL PLAYER'S ASSOCIATION **61**
Conclusions on the AFLPA **64**
BOXING POLICIES, GUIDELINES, RULES AND/OR PRACTICES **64**
Amateur boxing **67**
National regulation and registration **70**
Safety of participants in professional boxing **73**
Baseline testing *74*
No fight periods and stoppage rules *76*
Age restrictions *78*
Reduction of brain injury through changes to rules *80*
Sparring *82*
Education and research **84**
Educational material *84*
Research *86*
Conclusions with respect to boxing **88**
FINDINGS **89**
TABLE OF RECOMMENDATIONS **90**

INTRODUCTION

1. Shane Tuck (Shane) was born on 24 December 1981 to parents Michael and Faye Tuck. At the time of his passing on 20 July 2020, he was 38 years old.

2. Shane met his wife, Katherine Tuck in 2003 and they had two children together. At the time of his passing, Shane and Katherine were separated and he was residing with his parents in Berwick, Victoria. He is also survived by his two siblings, Renee and Travis.

3. In 2000, Shane was drafted to play for the Hawthorn Football Club. He was de-listed by Hawthorn at the end of the 2001 season and subsequently moved to Adelaide where he met his wife, Katherine.[1] Whilst in Adelaide, Shane played for West Adelaide in the South Australian National Football League.

4. Shane and Katherine moved to Melbourne at the end of 2003 after he was drafted by Richmond Football Club (**RFC**) and played his first game for RFC in July 2004.[2]

5. Shane had a successful career in the Australian Football League (**AFL**) from 2004 to 2013. He played 173 games for RFC and was made a life member in 2012.[3] At the end of the 2013 AFL season, he and his family moved back to Adelaide. He commenced an apprenticeship in carpentry.[4]

6. In late 2014, Shane quit his apprenticeship and became a full-time professional boxer from 2015 to 2017. During his boxing career, although registered under the Office for Recreation Sport and Racing in South Australia, he competed in four professional boxing bouts in Victoria overseen by the Victorian Professional Boxing and Combat Sports Board.

7. Following a long battle with mental health issues, Shane was sadly found deceased in his parent's home on 20 July 2020.

8. In her coronial impact statement, Renee Tuck stated that her family will never be fully healed or set free from the experience of Shane being taken away. Shane was described

[1] Exhibit 1 at 1519.
[2] Exhibit 1 at 46.
[3] Ibid.
[4] Exhibit 1 at 1528.

by Renee as physically strong and very disciplined and as a good man, who wanted the best for everyone.[5]

THE PURPOSE OF A CORONIAL INVESTIGATON

9. Shane's death constitutes a 'reportable death' under the *Coroners Act 2008* (Vic) (**the Act**), as the death occurred in Victoria and the death appears to have been unnatural and unexpected.

10. The jurisdiction of the Coroners Court of Victoria is inquisitorial. The role of the coroner is to independently investigate reportable deaths to ascertain, if possible, the identity of the deceased, the cause of death and the circumstances in which death occurred.

11. It is not the role of the coroner to lay or apportion blame, but to establish the facts. It is not the coroner's role to determine criminal or civil liability arising from the death under investigation, or to determine disciplinary matters.

12. The expression 'cause of death' refers to the medical cause of death, incorporating where possible, the mode or mechanism of death.

13. For coronial purposes, the phrase 'circumstances in which the death occurred' refers to the context or background and surrounding circumstances of the death. Rather than being a consideration of all circumstances which might form part of a narrative culminating the death, it is confined to those circumstances which are sufficiently proximate and casually relevant to the death.

14. The broader purpose of coronial investigations is to contribute to a reduction in the number of preventable deaths, both through the observations made in the investigation findings and by the making of recommendations by coroners. This is generally referred to as the Court's 'prevention' role.

15. Coroners are also empowered to:

    a) report to the Attorney-General on a death;

    b) comment on any matter connected with the death they have investigated, including matters of public health or safety and the administration of justice; and

---

[5] Coronial Impact Statement of Renee Tuck.

c) make recommendations to any Minister or public statutory authority on any matter connected with the death, including public health and safety or the administration of justice.

16. These powers are the vehicle by which the prevention role may be advanced.

17. All coronial findings must be based on proof or relevant facts on the balance of probabilities. In determining these matters, I am guided by the principles enunciated in *Briginshaw v Briginshaw*.[6] The effect of this and similar authorities is that coroners should not make adverse findings against, or comments about individuals, unless the evidence provides a comfortable level of satisfaction that they caused or contributed to the death.

18. The proof of facts underpinning a finding that would, or may, have an extremely deleterious effect on a party's character, reputation or employment prospects demands a weight of evidence commensurate with the gravity of the facts sought to be proved.[7] Facts should not be considered to have been proven on the balance of probabilities by inexact proofs, indefinite testimony or indirect inferences. Rather, such proof should be the result of clear, cogent or strict proof in the context of a presumption of innocence.[8]

19. The Victoria Police assigned Senior Constable Stan Tasic to be the Coroner's Investigator for the investigation into Shane's death. Senior Constable Tasic conducted inquiries on my behalf and submitted a coronial brief of evidence.

20. This finding draws on the totality of the material obtained in the coronial investigation of Shane's death, that is, the material on the Court File, the coronial brief, further material including expert reports obtained by the Court, together with the transcript of the evidence adduced at inquest and the submissions of Counsel Assisting and the interested parties.

21. In writing this finding, I do not purport to summarise all of the material evidence but refer to it only in such detail as appears warranted by forensic significance and narrative clarity. It should not be inferred from the absence of reference to any aspect of the evidence that it has not been considered.

---

[6] (1938) 60 CLR 336.

[7] *Anderson v Blashki* [1993] 2 VR 89, following *Briginshaw v Briginshaw* (1938) 60 CLR 336.

[8] *Briginshaw v Briginshaw* (1938) 60 CLR 336 at pp 362-3 per Dixon J.

22. With an investigation of this magnitude, it is appropriate that I acknowledge the significant work of all who were involved in assisting me.

23. I thank Senior Constable Tasic, the Coroner's Investigator in this investigation and compiled a comprehensive coronial brief that was of great assistance.

24. I thank Counsel Assisting, Dr Gideon Boas and the counsel and solicitors who represented the interested parties, for their work and comprehensive submissions.

25. I also acknowledge and thank Ms Abigail Smith, Senior Solicitor at the Coroners Court of Victoria, who has worked diligently and provided me with invaluable assistance through the entirety of this investigation.

INQUEST

26. I convened the Coroners Court of Victoria for the inquest on 18 July 2023 and 26 July 2023 to 28 July 2023.

SCOPE OF INQUEST

27. The Scope of Inquest was finalised on 12 October 2021 pursuant to section 64(b) of the Act, as follows:

> *"The following issues are to be canvassed during the coronial investigation:*
>
> *A post-mortem neuropathological examination conducted by Associate Professor Michael Buckland found that Mr Tuck suffered from severe chronic traumatic encephalopathy (CTE) at the time of his death. After receiving submissions from the interested parties the following relevant matters will be investigated by the Coroner:*
>
> 1. *What are the circumstances of Mr Tuck's death.*
> 2. *Did Mr Tuck suffer head injuries, including concussion during his Australian Football League (AFL) career.*
> 3. *Did Mr Tuck suffer head injuries, including concussion, during his professional boxing career.*
> 4. *What connection, if any, can be established between:*

a. *the head injuries sustained during Mr Tuck's football career and his diagnosis of CTE.*

b. *the head injuries sustained during Mr Tuck's football career and his diagnosis of CTE.*

c. *the head injuries sustained during Mr Tuck's boxing career and his diagnosis of CTE.*

d. *Mr Tuck's diagnosis of CTE and his death.*

Depending on the answers to questions 2 - 5 above:

5. *On a review of the available research, are the policies, guidelines, rules and/or practices of the AFL reasonable and proportionate to address the risk of CTE occurring as a result of the head injuries that are incurred by AFL players.*

6. *On what scientific basis are such policies, guidelines, rules and/or practices founded.*

7. *What role in addressing the risk of CTE occurring as a result of head injuries occurred by AFL players, if any, should be played by the AFL Players Association (AFLPA).*

8. *On a review of the available research, are the policies, guidelines, rules and/or practices of the Victorian Professional Boxing and Combat Sports Board of Victoria (PBCSB) adequate and appropriate to address the risk of CTE occurring as a result of the head injuries incurred by professional boxers.*

9. *On what scientific basis or bases are such policies, guidelines, rules and/or practices founded.*

10. *What lessons can be drawn from the practice of sporting codes in other jurisdictions, nationally and internationally, that might better inform the approach taken by the AFL and PBCSB.*

28. On 19 October 2021, I held a directions hearing in this matter to discuss the Scope of Inquest. It was agreed between the parties that it was open on the evidence to conclude with respect to:

    a. item 2 of the Scope of Inquest, Shane sustained knocks to his head at various times during his football career;

    b. item 3 of the Scope of Inquest, Shane sustained knocks to his head at various times during his boxing career;[9] and

    c. items 4 and 5 of the Scope of Inquest, there is epidemiological research demonstrating that individuals that suffer repetitive brain injuries, including in sport, may develop CTE and that there is a broad consensus that symptoms of CTE usually comprise of cognitive deficits and that symptoms can emerge years or decades after the brain injury was sustained.

29. Consequently, I determined that I would hold a forward-looking inquest which focused on items 6 to 9 of the Scope of inquest that being the prevention opportunities as they arise from the circumstances that led to Shane's death.

30. I also received a coronial impact statement from Renee Tuck on behalf of her family. That coronial impact statement was read in open court on the last day of the inquest.

INTERESTED PARTIES

31. Four interested parties were granted leave to appear at the inquest. They were:

    - The AFL.
    - The Secretary of the Department of Jobs, Skills, Industry and Regions (**DJSIR**).
    - The Australian Football League Players Association (**ALFPA**).
    - The RFC.

32. Interested party status was granted to Mrs Katherine Tuck who was represented by Griffin Lawyers. Mrs Tuck formally withdrew from the coronial proceeding on 19 April 2023.

[9] Transcript of Directions Hearing on 19 October 2021.

33. Monash Health and the South Australian Office of Recreation, Sport and Racing although granted interested party status chose to maintain a watching brief over this proceeding.

EVIDENCE

34. At inquest viva voce evidence was heard from two witnesses:

    - Mr Alan Clayton – Chair of the Professional Boxing and Combat Sports Board; and
    - Dr Michael Makdissi – AFL Chief Medical Officer.

35. In addition, Dr Robert Cantu, Medical Director and Director of Clinical Research at the Dr Robert C. Cantu Concussion Centre provided expert evidence. Dr Cantu also provided me with an expert report on 12 June 2023 which formed part of the coronial brief of evidence.

36. Following the inquest, Counsel Assisting and Counsel for all interested parties provided written submissions. In writing this finding, I have considered all of the evidence and the submissions of the interested parties.

37. I also received a coronial impact statement from Shane's sister, Ms Renee Tuck which she read in open court. I am very grateful to Renee for providing me with the coronial impact statement which enabled me to better understand the great loss and pain that Renee and her family have suffered since Shane's death.

MATTERS IN RELATION TO WHICH A FINDING MUST, IF POSSIBLE, BE MADE

Identity of the deceased, pursuant to section 67(1)(a) of the Act

38. On 10 July 2020, Mr Shane Tuck was visually identified by his mother, Mrs Faye Tuck.

39. Identity is not in dispute and requires no further investigation.

Medical cause of death, pursuant to section 67(1)(b) of the Act

Autopsy

40. On 23 July 2023, Dr Linda Iles, Specialist Forensic Pathologist at the Victorian Institute of Medicine conducted an autopsy and provided a written report of her findings dated 2 October 2020.[10]

41. The autopsy revealed ligature abrasions about the neck and bilateral hyoid bone fractures from the post-mortem CT imaging.

42. Toxicological analysis of blood detected cocaine, benzoylecgonine, ecgonine methyl ester, methylamphetamine, diazepam, nordiazepam, temazepam, hydroxyrisperidone and mirtazapine.

43. Dr Iles formulated the cause of death as:

    (1)(a) Hanging.[11]

44. I accept the opinion of Dr Iles as the cause of death.

Chronic Traumatic Encephalopathy

45. Associate Professor Michael Buckland of the Neuropathology Laboratory at the Royal Prince Alfred Hospital conducted a special examination of Shane's brain and provided a report of his findings dated 30 September 2020. He concluded that it fulfilled the current diagnostic criteria for severe CTE (Stage III/UV).[12]

46. Associate Professor Buckland de-identified and referred Mr Tuck's case for review at a Concussion Legacy Foundation Global Brain Bank meeting held via Zoom on 21 April 2021. The consensus diagnosis of the neuropathology working group was of severe (High) CTE (Stage III).[13]

Circumstances in which the death occurred, pursuant to section 67(1)(c) of the Act

Sporting career

47. During the course of Shane's football career with RFC, he received numerous head knocks. Katherine recalled that after he received the head knocks, he suffered from headaches and did not appear to be himself.[14]

[10] Exhibit 1 at 22.
[11] Exhibit 1 at 23.
[12] Exhibit 1 at 39-40.
[13] Exhibit 1 at 40-1.
[14] Exhibit 1 at 1525.

48. In around 2006, Katherine noticed changes in Shane's behaviour. She observed that his initial concentration and interest in his health and fitness had developed into obsessive behaviours.[15]

49. On 26 November 2008, Dr Greg Hickey referred Shane to a neurologist. He stated that Shane had been treated for dizziness and felt that he had become *somewhat forgetful*. During his neurological assessment, Shane reported that he had been concussed a lot, but never had loss of consciousness.[16]

50. On 5 January 2009, Shane had a CT brain scan, and the results were normal.[17] Katherine saw an increase in Shane's compulsive behaviour throughout 2009.[18]

51. In 2010, Shane received treatment for depression, anxiety and heart palpitations.[19] Shane became increasingly disengaged from his family and appeared to be preoccupied with thoughts about his status and the dynamic among players and peers at RFC. He also began having trouble sleeping.[20]

52. In 2011, during a post season medical assessment, Shane reported having suffered a concussion in August 2010 and experiencing residual health problems.[21]

53. Following Shane's retirement from professional football at the end of the 2013 AFL season, Katherine and Shane returned to Adelaide. He commenced a carpentry apprenticeship and Katherine recalled that he developed a listlessness, forgetfulness and continued to disengage from his family.[22]

54. In 2015, Shane and Katherine separated. Shane continued to stay with Katherine when visiting their children and she recalled that he was forgetful and repeatedly locked himself out of the house.

55. On 11 November 2015, Shane competed in his first professional boxing match at the Melbourne Convention and Exhibition Centre. He suffered a severe knock-out[23] and lost

---

[15] Exhibit 1 at 1524.
[16] Exhibit 1 at 1403 – 1404.
[17] Exhibit 1 at 1397.
[18] Exhibit 1 at 1526.
[19] Exhibit 1 at 1410.
[20] Exhibit 1 at 1527.
[21] Exhibit 1 at 1502.
[22] Exhibit 1 at 1529.
[23] Exhibit 1 at 1016.

consciousness during the fight. Shane was taken to the emergency department at the Alfred Hospital in Melbourne. He had suffered a 4.5mm posterior parafalcine subdural hematoma.[24]

56. On 8 December 2015, Shane attended the emergency department at Flinders Medical Centre in Adelaide with anxiety and low mood. He reported suicidal thoughts without any plans.[25] He stayed at his parents' house in Berwick, Victoria during his recovery.

57. On 30 January 2016, Shane attended the emergency department at the Alfred Hospital complaining of pain in his head.

58. Shane competed in three further professional boxing bouts in Victoria on 25 March 2017, 19 May 2017 and 26 August 2017.[26]

Mental health diagnosis and treatment

59. In January 2018, Shane and Katherine reconciled and he moved into her house in Adelaide. By mid-2018, Katherine stated that Shane started showing concerning behaviours and he told her that he was hearing voices. He began seeing a psychiatrist shortly thereafter.[27]

60. In 2019, Katherine observed a rapid deterioration in Shane's mental health. He was drinking heavily, and he continued to hear voices. He told Katherine that he had nothing else to offer but sport and that he needed to return to boxing.[28]

61. On 18 May 2019, Shane was admitted to the psychiatric unit at Flinders Medical Centre in Adelaide following an overdose on 20 x 1mg lorazepam tablets. He presented with depression, auditory hallucinations and obsessive intrusive thoughts.[29] Shane was treated with fluvoxamine, aripiprazole, lorazepam and quetiapine and received six sessions of electroconvulsive therapy (**ECT**). He was discharged from the service on 3 June 2019.[30]

62. Following his discharge, Shane travelled between Adelaide and Melbourne for a brief period before deciding to stay in Melbourne. The AFLPA Mental Health Navigator

---

[24] Exhibit 1 at 8.
[25] Exhibit 1 at 8.
[26] Exhibit 1 at 1012.
[27] Exhibit 1 at 1530.
[28] Exhibit 1 at 1531.
[29] Exhibit 1 at 8.
[30] Ibid.

Service facilitated referrals for Shane including to forensic psychologist, Dr Louise Steel from Psychology in the Park.

63. Throughout 2020, Shane continued to suffer with mental health issues for which he received ongoing treatment and support from Dr Steel and the Monash Mental Health Service. Shane's last visit to Adelaide was in March 2020 prior to the COVID-19 pandemic.[31]

64. On 5 April 2020, Shane was admitted to Casey Hospital as a psychiatric inpatient for an Assessment Order under the *Mental Health Act 2014* (Vic) (**MH Act**) after taking an overdose of 30x10mg tablets of temazepam and reportedly having written a suicide note.[32]

65. The following day, Shane was assessed by Dr Martin Preston, Consultant Psychiatrist and reported taking the overdose to end his life in the context of ongoing auditory hallucinations. He reported a past and present history of depression with psychotic symptoms and substance abuse and believed that his DNA had been altered. He also stated that he was no longer feeling suicidal. Dr Preston revoked the Assessment Order as Shane agreed to stay in hospital and receive treatment.

66. On 7 April 2020, Dr Preston placed Shane on a Temporary Treatment Order under the MH Act to prevent him from leaving the ward. Shane had reported hearing voices commanding him to kill himself and he wanted to be discharged from hospital.[33]

67. On 4 May 2020, Shane was discharged from Casey Hospital after a period of stability on a Community Temporary Treatment Order. He agreed to resume his sessions with his psychologist and to attend drug and alcohol counselling with the SECADA service. He also agreed to continue taking his prescribed medications. The following day, Shane was assessed by the Continuing Care Team (**CCT**) and described experiencing intrusive thoughts.[34]

68. On 25 May 2020, the Mental Health Tribunal made Shane subject to a Community Treatment Order for 26 weeks.[35]

---

[31] Exhibit 1 at 1532.
[32] Exhibit 1 at 8–9.
[33] Exhibit 1 at 10
[34] Exhibit 1 at 13.
[35] Exhibit 1 at 14.

69. On 1 June 2020, Shane and his mother attended a face-to-face review with Dr Ajay Vijayakrishnan and other members of the CCT, including his case manager Ms Alison Raftis. Shane reported ongoing hallucinations with minimal response to the current treatment. He denied suicidal thoughts and agreed to alert his family if they did re-emerge. A plan was made to further investigate whether previous traumatic brain injury was contributing to Shane's presentation, and to make referrals for a neuropsychology assessment and an MRA brain scan.[36]

70. On 17 June 2020, Dr Vijayakrishnan had a meeting with Ms Raftis regarding the slow pace of improvement in Shane's mental state. Shane and Ms Raftis agreed on a safety plan.[37]

71. On 24 June 2020, Ms Raftis attended the Tuck family home to deliver Shane's medications. Shane did not want to be seen as a family gathering was taking place. He was informed of a neuropsychology assessment which had been organised through the AFL that was scheduled for 13 July 2020.[38]

72. The following day, Michael contacted Ms Raftis and advised that Shane was struggling with voices and that he told Faye that he wished that he had killed himself. Shane advised Ms Raftis that he had been struggling with voices, but he was ok.[39]

73. Shane and his mother attended a further review with Dr Vijayakrishnan and his case manager on 30 June 2020. Shane reported ongoing auditory hallucinations. Dr Vijayakrishnan discussed a change of medication to clozapine, but it was decided to delay that pending the neuropsychology assessment. Additional doses of paliperidone tablets were added to Shane's daily medication regime.

74. On 6 July 2020, Faye contacted Ms Raftis and advised that Shane was actively and very loudly responding to voices. Ms Raftis discussed treatment strategies, including distraction techniques that had been useful in the past, such as listening to music. Shane was told to take extra tablets of paliperidone to help him cope.[40]

[36] Exhibit 1 at 14.
[37] Exhibit 1 at 15, 16.
[38] Exhibit 1 at 15.
[39] Ibid.
[40] Exhibit 1 at 16.

75. Following this contact between Faye and Ms Raftis, the evidence suggests that there was no further contact between Monash Health nor an assessment of the state of Shane's mental health.

Events of 19 and 20 July 2020

76. At around 11.00pm on 19 July 2020, Shane hugged both of his parents and told them that he loved them. They were both suspicious of Shane's behaviour and decided to check on him during the night.[41] Michael checked on Shane at midnight and again at 3:00am. Both times Shane was asleep in bed.[42]

77. At around 8:30am on 20 July 2020, Michael could not find Shane and saw that his car was still in the driveway. Michael went to check the storeroom and found Shane hanging by a rope from a beam. He took a knife and cut Shane from the beam before lowering him to the ground.[43]

78. Emergency services attended the scene and Shane was sadly confirmed to be deceased. There were no suspicious circumstances identified by Victoria Police.

Conclusions

79. Having considered all of the available evidence in this matter, including the documents which formed the coronial brief and the evidence of the witnesses at inquest, I am satisfied that no further investigation into the circumstances of Shane's death is required.

80. As part of my investigation into the circumstances of Shane's death, I reviewed the care and treatment that was provided to Shane by the Monash Mental Health Service to ascertain whether there may have been any missed opportunities by the mental health team in providing care to Shane.

81. I sought information from Dr George Antony, Unit Head, Casey Adult Mental Health Services at Monash Health in relation to the care and treatment provided to Shane. In particular, the decision to reduce the frequency of the contact between the service and Shane and his family in the three weeks before his death, how the plan for Shane to take additional paliperidone was assessed for efficacy and compliance and why there was no

[41] Exhibit 1 at 19.
[42] Ibid.
[43] Ibid.

assessment of Shane's mental health after Faye contacted the service on 6 July 2020 reporting a deterioration in his mental health.

82. Dr Antony provided two statements on 1 March 2022 and 30 June 2022 (respectively) which provided a thorough explanation of the clinical rationale for the decisions made by Shane's treating time and an outline of the range of procedures in place at the Monash Mental Health Service regarding mental health care and escalation of care.

83. I am satisfied that the mental health care and treatment provided to Shane was reasonable and appropriate in all the circumstances and I did not identify any missed opportunities.

MATTERS CONNECTED WITH THE DEATH PURSUANT TO SECTION 67(3) OF THE ACT AND RECOMMENDATIONS PURSUANT TO SECTION 72(2) OF THE ACT

84. My conclusions in this matter with respect to items 6 to 9 of the Scope of Inquest are comments within the meaning of section 67(3) of the Act and recommendations made pursuant to section 72(2) of the Act.

85. Section 67(3) of the Act provides:

> *'A coroner may comment on any matter connected with the death, including matters relating to public health and safety or the administration of justice.'*

86. Further, section 1 of the Act provides that one of the purposes of the Act is to 'contribute to the reduction of the number of preventable deaths and fires through the findings of the investigation of deaths and fires and the making of recommendations.'

87. In that regard, section 72(2) of the Act empowers a coroner to make recommendations to any Minister, public statutory authority or entity on any matter connected with a death, including recommendations relating to public health and safety or the administration of justice.

88. The meaning of the words 'connected with the death' were considered in *Thales Australia Limited v Coroners Court of Victoria & Ors*.[44] In that matter, Beach J stated that whilst the words connected with are capable of describing a spectrum of relationships

[44] [2011] VSC 133.

ranging from direct and immediate to tenuous and remote, his Honour agreed with the interpretation of these words given by Muir J in *Doomadgee v Cements*[45] where Muir J noted that:

> '*…there was no warrant for reading "connected with" as meaning only "directly connected with" ...something connected with a death may be as diverse as the breakdown of a video surveillance system, the reporting of the death, a police investigation into the circumstances surrounding the death, and practices at the police station or watchhouse concerned*.'

89. There are several complex and interrelated issues that are connected with Shane's death which warrant comment by me. These issues include those matters set out at items 6 to 9 of the Scope of Inquest and matters of general public health and safety.

90. In formulating my comments and recommendations in this matter, I have had regard to all of the relevant evidence, including the coronial brief, viva voce evidence and the written submissions of Counsel Assisting and the interested parties.

91. I have also had regard to the Senate Committee Report on 'Concussions and repeated head trauma in contact sports' report[46] which was published in September 2023 (the **Senate Report**) which was referenced in the written submissions of the AFL.

SPORTS RELATED CONCUSSION, REPETITIVE HEAD TRAUMA AND CTE

92. In light of Shane's diagnosis of high stage CTE (Stage III) and its relevance to his death, it was important to understand the current state of play in Australia with respect to CTE and to consider whether there is scope for improvements in player safety.

93. Broadly speaking, CTE refers to progressive neurodegeneration triggered by repeated experiences of head trauma, culminating in chronic cognitive and neuropsychiatric symptoms.[47]

94. The current neurological diagnosis of CTE is characterised by evidence of patchy distributions of hyperphosphorylated tau deposits in neurons and glia. Tau deposits are

---

[45] [2006] 2 Qd.R.352.

[46] Senate Standing References Committee on Community Affairs, Parliament of Australia, *Concussions and repeated head trauma in contact sports* (5 September 2023).

[47] Bennett Omalu et al, 'Chronic traumatic encephalopathy, suicides and parasuicides in professional American athletes: the role of the forensic pathologist' (2010) 31(2) Am J Forensic Med Pathology 130.

commonly found in perivascular locations and distributed towards cortical sulci.[48] The neurofibrillary tangles commonly associated with CTE and are often found to be a hallmark of Alzheimer's disease and related to neurodegenerative disorders.

95. CTE cannot be diagnosed during life and can only be diagnosed with certainty by a post-mortem neuropathological examination of the brain using special immunohistochemical stains for the protein tau. There are, however, clinical features that predict with a very significant degree of sensitivity the presence of CTE in the living and are used by clinicians to manage suspected CTE patients.[49] These include:

- Substantial exposure to repetitive head trauma;
- The presence of core features of progressive Cognitive Impairment, especially executive function and/or episodic memory impairment;
- Delayed onset symptoms;
- Motor signs of Parkinsonism;
- Psychiatric features of depression, anxiety, apathy, or paranoia; and
- Neurobehavioural Dysregulation.[50]

96. The presence of three or more supportive features notably increases the likelihood of CTE and when combined with extensive exposure and dementia reaches probably CTE status.[51]

97. A 2017 US study of over 1300 brains, including 600 former American footballers, demonstrated a very strong correlation between years of football played and risk of CTE. Those who had played fifteen seasons or more had ten times the risk of CTE than those who played for less than five years. The current literature supports the conclusion that CTE is not associated with the number of concussions but rather repetitive head trauma, including concussions and sub-concussive hits.[52]

---

[48] John D Arena et al, 'Astroglial tau pathology alone preferentially concentrates at sulcal depths in chronic traumatic encephalopathy neuropathologic change' (2020) 2(2) Brain Communications 1, 6.

[49] John D Arena et al, 'Astroglial tau pathology alone preferentially concentrates at sulcal depths in chronic traumatic encephalopathy neuropathologic change' (2020) 2(2) Brain Communications 1, 6.

[50] Exhibit 1 at 2399 [36].

[51] Exhibit 1 at 2400 [37].

[52] Exhibit 1 at 2398 [35].

98. It has been suggested that prevention opportunities in sport involve actions to limit exposure to head injuries, such as penalising intentional strikes to the head and adhering to strict return-to-play guidelines with the evidence supporting a conclusion that CTE risk can be reduced by reducing the overall number of hits to a head players receive during their sporting career.[53]

Australian Position Statements

99. The Concussion in Sport Australia Position Statement 2019 (**2019 Position Statement**),[54] and the Concussion and Brain Health Position Statement 2023 (**2023 Position Statement**)[55] provide guidance to sporting organisations in Australia about the potential long-term consequences of concussions or an accumulation of sub-concussive head impacts as well as the importance of ensuring the safety and welfare of participants in sport.

100. The Position Statements recognise the potential long-term consequences of concussion or the accumulation of sub-concussive head impacts resulting from ongoing participation in contact, collision and combat sports. They also note that there is an association between a history of exposure to repetitive head trauma and cognitive deficit later in life. The Position Statements note that there is a need for further well-structured longitudinal studies exploring the strength of the link between sport-related repetitive head trauma, concussion and CTE.

101. The studies that purport to show a link between sport related concussion and CTE consist of case reports, case series, retrospective and post-mortem analyses and rely on retired athletes volunteering for an autopsy diagnosis with selection bias being evident in many reports. It is noted that to date, these studies have not adequately controlled other potential contributing factors such as alcohol abuse, drug abuse, genetic predisposition and psychiatric illness.

102. The importance of risk reduction, prevention and education is highlighted in the 2023 Position Statement. I note that whilst it is not possible to completely remove the risk of head injuries from contact sports, the main pathway to reducing repetitive head trauma is through changes to rules and regulations within sport and by modification to training

---

[53] Exhibit 1 at 2402 [46].

[54] Australian Institute of Sport, *Concussion in Sport Australia Position Statement* (February 2019).

[55] Australian Institute of Sport, *Concussion and Brain Health Position Statement* (February 2023).

methods to decrease the likelihood of head trauma. In addition, it recognises the importance of personal protection equipment such as helmets, soft-shell headgear and mouthguards a factor that influences risk of concussion.

103. Beyond prevention, the 2023 Position Statement recognises that best way to protect athletes against acute and long-term effects of concussion is to ensure that every concussion is treated seriously and that concussed athletes are removed from the field of play and are not returned to sport prematurely.

104. The Position Statements highlight that whilst general awareness and knowledge about concussion has improved over recent years with the availability of guidelines and educational materials, it remains less than optimal. To effectively improve awareness and understanding in the community, education must be targeted at groups that are at risk of concussion and for sporting organisations to continue to develop their practices around concussion and repetitive head trauma and to actively inform their members and participants.

Consensus Statement on Concussion in Sport – 6th edition

105. Over the past two decades, the Concussion in Sport Group (**CISG**) has developed five international consensus statements on sport-related concussion and repetitive traumatic head injuries. The 6th edition was published in June 2023[56] and summarises the processes and outcomes of the 6th International Conference on Concussion in Sport held in Amsterdam on 27 to 30 October 2022.

106. The consensus statements are developed for healthcare professionals involved in the care of athletes at risk of sport-related concussion or who have sustained a suspected sport-related concussion at any level of sport (recreational or professional). They also shape concussion protocols in a myriad of international sports, such as football, National Football League in the United States, rugby union, ice hockey and AFL.

107. The 2023 Consensus Statement, proposes the following definition of sport-related concussion:

> '*…traumatic brain injury caused by a direct blow to the head, neck or body resulting in an impulsive force being transmitted to*

[56] Patricios, Jon S et al. "Consensus statement on concussion in sport: the 6th International Conference on Concussion in Sport-Amsterdam, October 2022." *British journal of sports medicine* vol. 57,11 (2023) 695-711.

the brain that occurs in sports and exercise-related activities. This initiates a neurotransmitter and metabolic cascade, with possible axonal injury, blood flow change and inflammation affecting the brain. Symptoms and signs may present immediately, or evolve over minutes or hours, and commonly resolve within days, but may be prolonged.'[57]

108. It is acknowledged in the 2023 Consensus Statement that implementing primary prevention of sport-related concussion across all levels of sport is a priority that can have significant public health impact and will mitigate the burden of injury, risk of recurrent injury and potential for persisting symptoms.

109. Sport specific strategies are recommended as concussion prevention interventions, such as policy and rule changes that limit the number and duration of contact practices, intensity of contact in practices and strategies restricting collision time in practices. It is suggested that future research should focus on the prospective evaluation of relevant sport-specific policy and rule modifications aimed at reducing sport-related concussion and head impact rates. These principles are extended to children and adolescents who partake in contact sports.

110. The optimal concussion management strategies are suggested to include mandatory removal from play following an actual or suspected concussion, requirements to receive a medical clearance before returning to play from a healthcare practitioner and education for coaches, parents, and athletes regarding the signs and symptoms of concussion with a view to reducing recurrent concussion rates.

111. The 2023 Consensus Statement also considers the recognition of concussion to be the first step in initiating the management of sport-related concussion including the removal of a participant from the field to avoid further potential injury with return to play restrictions. It is suggested that any player with signs that warrant removal from the field of play should not return to a match or training that day unless evaluated with a multi-modal assessment. These assessments are said to require at least ten to fifteen minutes and should take place away from the field of play.

112. There is currently no clear evidence of factors that, if present, would unequivocally lead to retirement or discontinued participation in contact or collision sports. It is noted in the

[57] Patricios, Jon S et al. "Consensus statement on concussion in sport: the 6th International Conference on Concussion in Sport-Amsterdam, October 2022." *British journal of sports medicine* vol. 57,11 (2023) 697.

2023 Consensus Statement that this should be a multifaceted decision that should involve clinicians with expertise in traumatic brain injury and sport and should involve a comprehensive clinical evaluation. For children or adolescents, the parents or guardian should be involved in the discussion.

113. In relation to CTE, the 2023 Consensus Statement acknowledges that CTE is very uncommon in community samples and brain banks using strict criteria for case identification and is more commonly found in brain bank samples of former professional athletes with high exposure to repetitive head impacts. Whilst acknowledging the limitations of the current research around CTE, the 2023 Consensus Statement states that:

> *'…it is reasonable to consider extensive exposure to repetitive head impacts, such as that experienced by some professional athletes, as potentially associated with the development of the specific neuropathology described as CTE.*'[58]

114. It remains that as CTE is not a clinical diagnosis and it is presently not known whether CTE causes specific neurological or psychiatric problems or the extent to which CTE is inevitably progressive. Notwithstanding this, in 2021 the first consensus criteria for traumatic encephalopathy syndrome (**TES**) were published. The TES criteria is a new clinical diagnosis that can be used to determine the extent to which CTE identified after death was associated with TES during life.

115. The principles outlined in the Positions Statements and the 2023 Consensus Statement are addressed in further detail below with respect to items 6 – 9 of the Scope of Inquest.

AFL POLICIES, GUIDELINES, RULES AND PRACTICES

116. The reasonableness and proportionality of the current AFL policies, guidelines, rules and practices (the **AFL Framework**) were considered at inquest. My comments and the conclusions that I have reached in relation to these issues are set out in further detail below.

---

[58] Patricios, Jon S et al. "Consensus statement on concussion in sport: the 6th International Conference on Concussion in Sport-Amsterdam, October 2022." *British journal of sports medicine* vol. 57,11 (2023) 705.

AFL framework

117. The AFL is the governing body and National Sport Organisation for Australian Football which includes the direct administration of elite AFL and AFLW[59] competitions, as well as certain state league competitions.[60]

118. The AFL's approach to player wellbeing and safety considerations, as well as its approach to the management of head injuries is directed by the Strategic Plan (2022 – 2026) (**Strategic Plan**).[61]

119. The Strategic Plan is an integrated framework for managing the potential impacts of sport-related concussion in elite AFL/W and other Australian rules football leagues. The Strategic Plan is intended to be a public statement of the AFL's intention to improve safety and wellbeing of players not just in the short-term but medium-term and long-term, particularly relevant to concussion and repeated head trauma.[62]

120. In addition to the Strategic Plan, the remaining documents comprising the AFL Framework are developed with a view to identifying reasonable and proportionate opportunities to reduce the number and severity of head impacts a player will sustain over the course of their career.[63] Those documents comprise the:

    a) Laws of Australian Football 2023 (the **Laws**);

    b) AFL Regulations effective as at 28 February 2023 (the **Regulations**);

    c) AFL Tribunal Guidelines 2023;

    d) Guidelines for the Management of Sport-Related Concussion – AFL & AFLW, March 2023 (the **Guidelines**); and

    e) The Management of Sport Related Concussion in Australian Football with Specific Provisions for Children and Adolescents (Aged 5 – 17) (the **Community Guidelines**).

---

[59] Hereinafter all references to elite AFL and AFLW clubs will be referred to AFL/W.
[60] Exhibit 1 at 2336.
[61] Written submissions of the AFL dated 18 September 2023, p 3.
[62] Transcript of Inquest Proceeding, 28 July 2023, p 224.
[63] Transcript of Inquest Proceeding, 26 July 2023, p 108, line 25 – p 109, line 10.

121. All Australian rules football matches are governed by the Laws which have been amended over the years to reflect the current accepted position on impacts of repetitive head trauma and sport-related concussion, which has included changes to the game play.

122. The Laws are to be read in conjunction with the Guidelines which are developed in collaboration with the AFL Doctors Association. The purpose of the Guidelines is to provide guidance for the diagnosis and management of concussion in the AFL/W, to protect the short- and long-term welfare of players. The Guidelines are continually modified and enhanced in line with evolving scientific evidence and focus on the acute management, return to play and investigation and management of complex cases of sport-related concussion.[64]

123. The AFL Concussion Scientific Committee provides scientific advice, guidance and oversight on the AFL's concussion and head trauma strategy for all levels of Australian rules football.[65] In addition, the AFL Concussion Steering Group manages the AFL's research strategy while working with external organisations.[66] AFL personnel also participate in the CISG as well as other research and practice groups both domestically and aboard. The AFL also conduct a number of their own research projects and work closely with the AFL Doctor's Association. These projects and issues are further discussed in my analysis below.

124. Having regard to the AFL Framework, Dr Cantu stated in his report that the approach to concussion by the AFL is not only a reasonable and proportionate framework for the protection of participants in training and playing Australian rules football but is state of the art.[67] Dr Cantu commended the AFL for following the 2017 Consensus Statement and being prepared to update its documents in light of the recently published 2023 Consensus Statement.

125. This issue was addressed by Dr Cantu in his expert report where he observed that:

- CTE risk is most precisely correlated not with the number of concussions sustained but rather with the amount of repetitive head trauma someone has accumulated and as such, he would find it appropriate for the AFL to address

[64] Exhibit 1 at 2318.
[65] Exhibit 1 at 2338.
[66] Ibid.
[67] Exhibit 1 at 2400 [40].

the issue of cumulative head hits and to diligently seek ways to reduce them when and wherever possible[68]; and

- it would be prudent for the AFL to put in place rules and procedures which would greatly mitigate the total number of head impacts a player receives each year and consequently during their career.

126. I also note that in his evidence at inquest, Dr Cantu commented, referencing a paper recently published by his group at Bostin University, that it may not just be the number of hits that increases the incidents or risk of CTE, but also the severity of the hits.[69]

AFL approach to CTE

127. A primary focus of this inquest was on CTE and specifically the risk of it occurring as a consequence of repetitive head trauma and concussion in sport.

128. During the course of my investigation, Mr Stephen Meade, Head of Legal and Regulatory at the AFL Commission provided a letter to the Court that provided a consolidated outline of the current practices and policies of the AFL with respect to concussion management and CTE. Mr Meade confirmed that whilst the AFL does not presently have a policy or other document that specifically addresses the prevention of CTE, it has a comprehensive head trauma and concussion strategy.[70]

129. The state of the evidence is that no specific changes have been made to the AFL Framework in relation to CTE. The AFL submitted that its prevention and management strategies relating to head trauma and concussion have evolved over time to reflect the empirical evidence as to the presentation of injury or risk of injury, and incremental understanding of concussion and head trauma informed by the medical literature which in practice, is characterised by an increased level of conservatism.

130. The AFL contend that the welfare remit of the AFL is broader than CTE and concussion and is focused on the health, safety and welfare of all its players at all levels of competition. The AFL also contend that the AFL Framework addresses concussion as well as repetitive head impact (and the consequences of both).[71] The AFL consider Dr

---

[68] Exhibit 1 at 2402.
[69] Transcript of Inquest Proceeding, 19 July 2023, p 39.
[70] Exhibit 1 at 48-49.
[71] Written submissions of the AFL dated 19 September 2023, p 3.

Cantu's opinion in relation to the appropriateness of the AFL Framework to be a narrow construction and one that does not accurately account for its scope and effect.[72]

131. Dr Michael Makdissi, the Chief Medical Officer of the AFL, gave evidence on this issue at inquest and provided a statement to the Court dated 13 July 2023.

132. Dr Makdissi's evidence in that statement is that the current approach of the AFL Framework is based on the most up to date verified and accepted scientific information, including the 2023 Consensus Statement and that it addresses the full spectrum of injuries that can occur (including severe traumatic brain injury, structural injuries, concussion, through to head trauma that does not cause symptoms) and not only concussion.[73]

133. Dr Makdissi also stated that the '*AFL continues to review and refine its rules and policies based on the latest and best accepted scientific information'* such as the 2023 Consensus Statement which he considers to be '*best practice*'.[74]

134. The Strategic Plan does not expressly address the issue of CTE, but it does provide a definition for sport-related concussion which, according to Dr Makdissi, flows through all the AFL's thinking, including the AFL Framework. The definition is as follows:

> '*…mild traumatic brain injury caused by direct or indirect trauma to the head, or to the body with force transmitting to the head, which occurs through participation in sport.*'[75]

135. While the Strategic Plan confirms that sport-related concussion is the most common form of head injury associated with Australian rules football, Dr Makdissi's evidence is that the definition is intentionally broad so as to encapsulate the spectrum of head trauma that may occur,[76] including more severe traumatic brain injury and repetitive head trauma and their potential implications for long-term brain health (such as the diagnosis of CTE).

136. Dr Makdissi stated that while CTE is important, it is not the only issue that should be considered and that the AFL Framework should be intentionally broad to account for the continuing evolution of the relevant science within this practice area.

---

[72] Written submissions of the AFL dated 19 September 2023, p 4.
[73] Transcript of Inquest Proceeding, 28 July 2023, p 202.
[74] Exhibit 1 at 1736-20.
[75] Exhibit 1 at 1741.
[76] Transcript of Inquest Proceeding, 28 July 2023, p 226.

AFL Brain Health Initiative

137. The AFL have approved funding of up to $25 million over the next decade for the AFL Brain Health Initiative (**AFL BHI**). The AFL BHI is a longitudinal program which will aim to monitor the brain health of AFL/W players across their career (from recruitment to retirement) and later into life. The AFL BHI will also examine the factors associated with recovery from sport-related concussion and return to play, and long-term player brain health and wellbeing.

138. The purpose of the AFL BHI is to monitor the brain health of players (current and past) over time including collecting symptoms, brain function testing and imaging. Dr Makdissi's evidence is that there are two main components to the AFL BHI:

- clinical support for players who are experiencing problems after playing football; and
- collecting data with the player's permission and consent and monitoring them over time.[77]

139. The focus of the AFL BHI has been on establishing the program for elite AFL/W players. Whilst there is an intention that any learning from the AFL BHI will flow down to lower tier competitions, Dr Makdissi confirmed that the work to have it flow down to the lower tier competitions has not yet been commenced.[78]

140. Dr Makdissi also confirmed that as part of the longitudinal study, the AFL is looking at TES (the diagnostic process of identifying patients who have symptoms that are consistent with CTE or a neurodegenerative disease) and the monitoring of symptoms in players. At inquest, Dr Cantu explained the benefit of TES, noting that whilst CTE cannot be definitively diagnosed in living individuals, it can be assessed with probabilities with diagnostic criteria such as TES which can enable the treatment of patients who are exhibiting symptoms of what may ultimately be CTE.[79]

141. It is anticipated that the longitudinal study will be commenced by the 2023-2024 AFL/W season with the outcomes to be made publicly available. I commend the AFL for

---

[77] Transcript of Inquest Proceeding, 28 July 2023, p 265.
[78] Transcript of Inquest Proceeding, 28 July 2023, p 268.
[79] Transcript of Inquest Proceeding, 19 July 2023, p 44.

undertaking this longitudinal study and believe that it is important work that will contribute to better outcomes for AFL/W players.

Rule and policy changes in the AFL

142. During the course of my investigation, the AFL usefully provided a document which summarises the rule and policy changes that have occurred in the AFL to reduce the number and magnitude of head impacts and concussion.[80]

143. This document demonstrates that the initial focus for the AFL was on reducing the occurrence of concussions which has evolved over the past years to also consider repeated head impacts.[81] The AFL contend that one of the objectives of underlying changes to the Laws is to ensure player health and safety is protected and to ensure that in-game contact is within acceptable bounds.

144. At inquest, Dr Makdissi adopted the AFL's submission to the Senate Inquiry into concussions and repeated head trauma in contact sports with respect to changes to the AFL regulations and tribunal guidelines, as follows:

> '*The AFL has made more than 30 rule changes to the AFL regulations and tribunal guidelines since 2005 to assist in the deterrence of conduct causing or giving rise to the risk of concussion and other head trauma…and to both encourage and enforce change of behaviour on field*'.[82]

145. Some of the relevant changes include but are not limited to:

- banning boxing training at AFL/W clubs;
- rules changes related to tackling and protecting the head;[83]
- the 2020 amendment to the AFL Guidelines upgrading impact categorisations based on the potential to cause serious injury; and
- The AFL Tribunal Guidelines were also amended in 2021 to require a higher sanction when prohibited contact between players involved head contact.

---

[80] Exhibit 1 at 187 – 188.

[81] Transcript of Inquest Proceeding, 28 July 2023, p 210, lines 15 – 28.

[82] Exhibit 1 at 2345; Transcript of Inquest Proceeding, 28 July 2023, pp 223–4.

[83] Transcript of Inquest Proceeding, 28 July 2023, p 211, line 26 – p 212, line 4.

146. Dr Makdissi gave evidence at inquest to the effect that the Rules, the Guidelines and Tribunal Guidelines speak to a duty of care among players in respect of tackling in a game of Australian rules football or at training.[84]

147. The AFL Framework also deters intentional or careless contact by players and reduces not only concussion, but also the number and magnitude of head trauma and head impact in the game.[85] Some relevant examples include:

- players are coached to contest and take possession of the ball in a way that protects the head and minimises potential head contact and concussion;
- high contact is prohibited, whether it is intentional or because of careless or, in some circumstances, accident or incidental contact;
- immediate deterrence within the game is achieved via a free tick; and
- for more serious or habitual offending post-game deterrence through player suspensions or financial sanctions.[86]

148. One issue that was strongly asserted by Dr Cantu in his report and at inquest was that a reduction in full contact training had the potential to significantly reduce the instances of head trauma in players including the risk of developing CTE and other brain trauma related injuries and disease.[87]

149. Dr Cantu, when pressed about the idea that a game like Australian rules football requires players to have an understanding of tackling technique (as well as how to be tackled), he remained clear in his opinion that this could be practiced within a regime that did not involve full contact training.[88] Whilst Dr Cantu conceded that he had limited knowledge of Australian rules football[89], he noted that there were comparisons with the NFL, including that aspects of the NFL game also involve 360 degree contact tackling.[90]

---

[84] Transcript of Inquest Proceeding, 28 July 2023, p 212 line 30 – p 213, line 12.
[85] Transcript of Inquest Proceeding, 28 July 2023, pp 212 and 215.
[86] See AFL Laws – 18.3 Prohibited contact; 18.7 Rough Contact and 22.2 Reportable offences.
[87] Exhibit 1 at 2402 [46] where he refers to "dramatic reduction in total head impacts which may approximate more than sixty percent [and] would be anticipated to dramatically reduce the risk not only for CTE but as well as the risk of concussion injury". See also Transcript of Inquest Proceeding, 19 July 2023, pp 47 – 48.
[88] Transcript of Inquest Proceeding, 19 July 2023, pp 85 – 87. Dr Cantu gave an example of an Ivy League NFL team, Dartmouth, which had implemented a rule of only mannequin and thud tackling to great on field success (see p 86, line 27 – p 87, line 7).
[89] Transcript of Inquest Proceeding, 19 July 2023, pp 87 – 88.
[90] Transcript of Inquest Proceeding, 19 July 2023, p 86, lines 14 – 20.

150. Dr Makdissi addressed the evidence given by Dr Cantu, specifically that the AFL were considering a limitation on full contact training by AFL/W clubs in the off-season, pre-season and during the season but that any decision of this kind will be guided by medical evidence. Dr Makdissi stated that the AFL has yet to impose any other restrictions or limitations on training.[91]

151. Dr Makdissi also confirmed the recent ban on boxing training at AFL/W clubs.[92] At inquest, Dr Cantu commended and supported the AFL on this recent change.

152. I accept the evidence of Dr Cantu that a reduction in contact training has the potential to significantly reduce the instance of head trauma in players and the associated risk of developing other traumatic brain injuries including CTE. Notwithstanding this, I do acknowledge that there are differences between the NFL and Australia rules football, including the way in which the sports are practiced and played.

153. Having considered the evidence and written submissions of the parties on this issue, I am of the view that it would be appropriate for the AFL to consider implementing limitations on the number of full contact training sessions at AFL/W clubs in the off-season, pre-season and during the season with reference to relevant research, proper medical advice and the regime that has been implemented in the NFL.

154. Notwithstanding this, I accept the submission of the AFLPA and AFL that the NFL regime should not simply be transferred to AFL/W and consideration should be given to implementing a balanced approach to reducing the risks and frequency of head contact in training, whilst allowing players to further develop their skills in a unique and fast-paced game.

Recommendation 1: The AFL consider implementing rules and guidelines that limit the number of contact training sessions in the off season, pre-season and during the season with a view to implementing these amended rules and guidelines by the commencement of the AFL/W 2025 pre-season.

[91] Transcript of Inquest Proceeding, 28 July 2023, p 281, lines 18-31
[92] Transcript of Inquest Proceeding, 28 July 2023, p 211.

Identification and management of head injuries

155. The AFL Guidelines and Community Guidelines address the steps to be taken when head injuries are sustained or suspected at a game or training, as follows:

a) if a player is diagnosed with concussion, that player is removed from the game and placed under the elite concussion recovery protocols;[93]

b) if a player is suspected of having a concussion, but is not showing signs and symptoms, that player is removed and assessed;[94] and

c) under the Community Guidelines, if a player sustains a head impact which is a concussion or suspected concussion, they are removed from the match, and it is recommended that they seek medical treatment.[95]

156. AFL Regulation 35 prohibits medically unfit players from taking part in Australian rules football games or training. At an elite level, Regulation 12.6 applies when a player is removed from the ground for assessment. The club doctor is required to undertake an assessment of the player as soon as practicable, and the player is not allowed to return to the field of play for a minimum of 15 minutes.[96] Since 2021, in a situation where a player is entered into concussion protocols, the AFL have had a mandatory minimum recovery period of 12 days post-concussion under the Guidelines.[97]

157. At inquest, Dr Makdissi was asked to confirm the process for identifying and managing head injuries at AFL/W training sessions. He stated that whilst club doctors are present at contact training sessions, in his experience there is less pressure on players to return to the field of play at a training session as opposed to during a match. Dr Makdissi confirmed that it is the role of the club doctor and medical staff, as well as the trainer to detect the signs and symptoms of concussion and report them if necessary.[98]

<u>Hawkeye and concussion spotters</u>

158. In his letter to the Court, Mr Meade stated that technology plays an important role in concussion management in the AFL/W through the use of the CSX concussion

---

[93] Exhibit 1 at 2322.
[94] Exhibit 1 at 2325.
[95] Exhibit 1 at 2324.
[96] Exhibit 1 at 2227 [12.6(b)].
[97] Exhibit 1 at 2328.
[98] Transcript of Inquest Proceeding, 28 July 2023, p 272, lines 8 – 20.

management app (**CSX App**). The CSX App is mandatory for all assessments of concussion or suspected concussion whether it occurs during training or during matches.[99]

159. The Guidelines mandate that the club doctors use the CSX App and the AFL Head Injury Assessment (**HIA**), which is a rapid sideline screening tool for a suspected concussion.[100] The HIA is to be used in conjunction with the Sport Concussion Assessment tool 5th edition (**SCAT5**) and clinical judgement. The HIA and SCAT5 have been incorporated in the CSX App.

160. The AFL have implemented a broadcast video feed 'Hawkeye' to monitor in-match play. The video can be reviewed to allow observation of the mechanism of injury, identification of symptoms or early signs of concussion. A sideline video review is mandatory in the assessment of suspected concussion.[101]

161. In addition, external independent reviewers, including medically trained spotters in the media centre during AFL/W games now monitor the match-play for suspected head injury events. The spotters flag any incidents that may have been missed, to the game-day doctors via direct contact (for the AFLW) or message on Hawkeye or direct phone communication.

162. From time to time, the independent reviewers or spotters will refer to Dr Makdissi if there is a concern or question about the potential signs being shown by a player or whether the symptoms or signs may have been missed.[102] The AFL also have established a network of experienced expert clinicians that work in the management of sports-related concussion to assist with such matters.[103]

163. I commend the AFL for the work that it has done in developing and implementing the CSX App, Hawkeye and the use of concussion spotters. It is clear that these initiatives have and continue to assist the AFL in identifying and managing head injuries in AFL/W games.

---

[99] Exhibit 1 at 2322.
[100] Ibid.
[101] Exhibit 1 at 2323.
[102] Transcript of Inquest Proceeding, 28 July 2023, p 231, lines 12 – 14.
[103] Exhibit 1 at 378.

Medical assessment of players

164. Dr Cantu gave evidence about the use of independent spotters in the NFL that provide reports to the field which may cause a player to be removed from the contest and medically examined on the sideline by a medical team. This examination is conducted by the team physician and their staff, plus an independent neurotrauma consultant not related to the team. Dr Cantu confirmed that in the NFL the independent spotter has the power to remove a player from the field for a medical assessment.[104]

165. At inquest, Dr Cantu further opined that there are certainly advantages to having an independent spotter who is not connected with the club being responsible for spotting the signs of traumatic brain injury and that players may have a greater faith in a system where individuals making those decisions are not tied to a particular club.[105]

166. At inquest, Dr Makdissi responded to Dr Cantu's evidence noting that game day decisions to assess and to determine whether a player has suffered a concussion is one that is exclusively made by the club doctor and not by an independent medical officer appointed by the AFL.[106]

167. Dr Makdissi stated that the signs and symptoms of head injury are often brief and that the early motor and coordination signs may be missed if the player cannot be assessed in the first five minutes.[107] Dr Makdissi stated that AFL/W club doctors play a critical role in making a decision as to whether a player has suffered a concussion or head injury, especially given the club doctor's familiarity with the player. Dr Makdissi also confirmed that the AFL/W club medical team have access to the field of play at all times.

168. Dr Makdissi confirmed that the decision to assess and to determine whether a player has suffered concussion is one that is exclusively made by the club employed doctor.[108] There is presently no independent medical personnel that monitors or engages with the club doctors and has the power to enforce a player being removed, assessed or ruled as having suffered a concussion.

---

[104] Transcript of Inquest Proceeding, 19 July 2023, p 69, lines 4 – 14.
[105] Transcript of Inquest Proceeding, 19 July 2023, p 57.
[106] Transcript of Inquest Proceeding, 28 July 2023, p 271, lines 5 – 14.
[107] Transcript of Inquest Proceeding, 28 July 2023, p 232, lines 8 – 20.
[108] Transcript of Inquest Proceeding, 28 July 2023, p 271.

169. Return to play decisions for players are managed through a multifaceted individualised clinical approach by the club doctor. As part of the off-field assessment, the club doctor is required to review any available video footage of the incident. If the doctor considers the player has not suffered a concussion the player may return to the field of play but must be monitored for the duration of the match or training and undergo a further SCAT5 assessment at the completion of the match or the following day. If a player is withheld from play with a presumptive diagnosis of concussion, but on subsequent assessment over the next 24 to 48 hours the diagnosis is changed, the case details must be submitted and discussed with the AFL Chief Medical Officer.[109]

170. In complex cases, multidisciplinary management with an independent clinician having expertise in concussion management is recommended to assist with management decisions including return to play.

171. At inquest, Dr Cantu gave evidence that the NFL use a system whereby independent medical practitioners determine whether a player is removed from the field of play and assessed for concussion. This is not a decision that rests with the club doctor or other club official.[110]

172. Dr Makdissi's evidence in response to being asked questions about the NFL approach and whether it is something that the AFL would consider, was that the AFL had not yet seen a need to go to that next level, but that it might be something that the AFL would look at adding into its programs.[111]

173. On 29 July 2023, the day following the conclusion of the inquest, an incident occurred at an AFL game between Port Adelaide and Adelaide in which two Port Adelaide players collided. One of those players was returned to the field of play without a concussion assessment, conduct for which the club was subsequently fined by the AFL.

174. In response to a request from the Court, Dr Makdissi prepared a supplementary statement dated 11 August 2023, in which he in part addressed the AFL's view on this event and restated the evidence cited above that the use of independent medical practitioners might be something that the AFL looks at adding to its programs and would consider.[112]

---

[109] Exhibit 1 at 2325.
[110] Transcript of Inquest Proceeding, 19 July 2023, p 42, lines 7 – 11.
[111] Transcript of Inquest Proceeding, 28 July 2023, p 271, line 29 – p 272, line 1.
[112] Statement of Michael Makdissi, dated 11 August 2023, [27] – [28].

175. In written submissions, Counsel Assisting proposed that I recommend that the AFL implement a rule by which an independent appropriately medically trained officer, employed by the AFL and unconnected with any AFL/W club, have the power during the course of any game of AFL/W, based on their live and/or video assisted review of any incident, to instruct the club doctor to withdraw a player from the field of play and enter into the existing concussion protocols. Counsel Assisting submitted that such a recommendation would be consistent with the practice in the NFL and avoid a repeat of the incident which occurred on 29 July 2023.[113]

176. The AFL submitted that the proposed recommendation was not supported by the evidence nor consistent with the NFL policy, which is that concussion spotters have the authority to remove a player for assessment only and not compel a player to enter into concussion protocols. The AFL proposed a more conservative, evidenced based approach, as follows:

> '*The AFL consider the implementation of a rule whereby its concussion spotters, based on live and/or video assisted review of an incident be empowered to mandate a player be removed from the field of play for a medical assessment*'.[114]

177. The AFLPA submissions support a recommendation to the AFL on the appointment of independent appropriately medically trained officers to assist with the assessment and management of potential concussion incidents. The AFLPA also echo the submissions of the AFL in that the role of the independent medical officer would more appropriately be to monitor the game for potential concussion incidents, and if required based on their review of any incident, to instruct the club doctor to withdraw a player from field of play.[115]

178. The AFLPA contend that there would be a risk in a system where an independent person who is not physically present at the game and does not personally know or treat the players in the game, instructing the club doctor to withdraw a player from the field of play and enter into concussion protocols.

---

[113] Written submissions of Counsel Assisting dated 18 August 2023, p 3 [11].
[114] Written submissions of the AFL dated 19 September 2023, p 8.
[115] Written submissions of the AFLPA dated 12 September 2023, pp 2 – 3.

179. It is submitted by the AFLPA that the final decision on whether a player enters concussion protocols should be made by the club doctor following their assessment, and if appropriate with consultation with the independent medical officer.[116]

180. Having considered the available evidence and the written submissions, I accept that there is some benefit to the AFL/W club doctor assessing a player with whom they are familiar for the signs and symptoms of concussion and that there may be some risk in a system where an independent medically trained spotter, who is not physically present at the game, instructs the club doctor to withdraw a player from the field of play and enter into the existing concussion protocols. In this regard, I accept that it would be more appropriate for that individual to be physically present at an AFL/W game, to work directly with the club doctors on the field, as opposed to watching the match on a live feed from another location.

181. I am of the view that an appropriate response to this issue by the AFL is two-fold. Firstly, I consider that the AFL should implement a rule whereby the concussion spotters currently used at all elite AFL/W games, be empowered to mandate that a player be removed from the field of play for a medical assessment based on their live and/or video review of an incident.

182. Secondly, I am of the view that the AFL should employ independent medical practitioners to attend all elite AFL/W games to assist club doctors in the assessment of a player for a suspected or actual head injury. In this regard, I consider that the decision to enter a player into concussion protocols should be a joint decision by the independent medical practitioner and the club doctor. If a situation arises whereby the club doctor and independent medical practitioner cannot agree, the opinion of the independent medical practitioner should prevail.

183. I do not consider this initiative to be overly burdensome on the AFL as the evidence provided by Mr Meade is that the AFL has already established a network of experienced expert clinicians that work in the management of sports-related concussion.

184. I believe that these initiatives will assist with mitigating repeat incidents such as the one that occurred at the Port Adelaide on 29 July 2023.

---

[116] Written submissions of the AFLPA dated 12 September 2023, p 3.

Recommendation 2: The AFL implement a rule whereby concussions spotters at elite AFL/W games be empowered to mandate that a player be removed from the field of play for a medical assessment based on their live and/or video review of an incident.

Recommendation 3: The AFL employ independent medical practitioners to attend all elite AFL/W games to assist club doctors in the assessment of a player for a suspected or actual head injury. Whilst the decision to enter a player into concussion protocols should be a joint decision by the independent medical practitioner and the club doctor, if a situation arises whereby the club doctor and independent medical practitioner cannot agree, the opinion of the independent medical practitioner should prevail.

Voluntary retirement of players

185. The voluntary retirement of players from professional sport is a challenging issue that continues to be subject of international discussion, as is evidenced from the 2023 Consensus Statement.

186. At present, there is no criteria that can be identified to say that if a player suffers or is showing certain symptoms that they should retire. At inquest, Dr Makdissi was asked questions about the AFL's position on the forcible retirement of players and gave evidence to the effect that it is about understanding the risk versus benefit of the decision which should be made collaboratively with input from a multidisciplinary group.[117]

187. Dr Makdissi confirmed that there is presently no rule in place which gives the AFL the power to forcibly retire a player, save for a situation where they are not signed by a club.[118] Notwithstanding this, Dr Makdissi noted that the AFL have set up a panel to support players and clubs in a situation where a player has suffered from repeated head impacts or has been struggling with symptoms following a concussion. Through this initiative, the AFL are able to bring together a group of independent experts to review the case and help the player make a decision.[119]

188. Dr Makdissi further stated that the AFL will continue to address these issues and continue to look at all of the options to reduce both concussion and the number and magnitude of

[117] Transcript of Inquest Proceeding, 28 July 2023, pp 273 – 274.
[118] Transcript of Inquest Proceeding, 28 July 2023, p 274.
[119] Ibid.

head impacts in the game, including looking at the international consensus for guidance.[120]

Education and awareness training

Elite AFL/W clubs

189. With reference to the AFL, Priority 1 of the Strategic Plan is to '*Educate all elite or pathways players, coaches, support staff and game officials consistently*'.[121]

190. At inquest, Dr Makdissi was asked questions to clarify the steps that are being taken to affect this priority and provide elite level education within the AFL/W.

191. At inquest, Dr Makdissi confirmed that:

   - AFL/W club doctors educate staff and players;
   - the AFL requires coaches to undertake compulsory head injury training as part of their annual accreditation;[122]
   - the AFL provide internal AFL/W club education[123]; and
   - in his capacity as the AFL Chief Medical Officer, with the assistance of AFL medical practitioners, conducts annual education sessions with all AFL/W clubs.[124]

192. Dr Makdissi stated that individualised education briefings are provided to players by club doctors when they take annual baseline measurements from players. These briefings comprise an explanation or reiteration of what concussion is, the AFL policies and processes in relation to the management of concussion, and the importance of honest and candid reporting of symptoms if head trauma occurs.

193. Dr Makdissi stated that whilst the focus of the education sessions is on concussion and concussion management, the education sessions cover topics broader than just

[120] Transcript of Inquest Proceeding, 28 July 2023, pp 233 – 234.
[121] Exhibit 1 at 1749.
[122] Transcript of Inquest Proceeding, 28 July 2023, p 250, lines 16 – 23.
[123] Transcript of Inquest Proceeding, 28 July 2023, p 222, lines 5 – 13.
[124] Transcript of Inquest Proceeding, 28 July 2023, p 245, lines 7 – 21.

concussion,[125] with the purpose being to ensure that players and coaches are aware of their responsibilities, the processes and protocols.[126]

194. At inquest, Dr Makdissi agreed that the majority of references in the AFL documents that deal with sport related concussion were to concussion and not to repetitive head trauma and other trauma that may fall short of concussion. This aligns with the definition of 'sport-related concussion' in the Strategic Plan. That definition is broader than concussion and includes '*severe traumatic brain injury and repetitive head trauma and their potential implications for long-term brain health*'.[127] He also stated that there was merit in further reviewing that material to more obviously or expressly refer to repetitive head trauma or other trauma which falls short of concussion.[128]

195. In written submissions, Counsel Assisting submitted that I should consider making a recommendation to the AFL to review its educational material (written, oral and other media) directed at AFL/W players relating to head trauma to more obviously and expressly refer to risks associated with head trauma short of concussion, including the risk of developing CTE. Counsel Assisting further submitted that the educational material should incorporate a more detailed science-based explanation of these risks.[129]

196. This proposed recommendation is supported by the AFLPA who further submit that the AFL should provide more regular, fit for purpose and collaborative player education on concussion.

197. In its written submissions, the AFL proposed a recommendation in the following terms:

> '*The AFL review its educational offerings to ensure the most-up-to-date evidence-based information is relayed to the players, including in relation to the risk posed by repetitive head trauma (including CTE)*.'[130]

198. I also acknowledge Recommendation 7 of the Senate Inquiry Report which recommends that the Department of Health and Aged Care in consultation with relevant stakeholders, consider how best to improve community awareness and education regarding concussion and repeated head trauma, with these measures being health lead. It also recommended

---

[125] Transcript of Inquest Proceeding, 28 July 2023, p 245.
[126] Ibid.
[127] Exhibit 1 at 1741.
[128] Transcript of Inquest Proceeding, 28 July 2023, p 261, lines 3 – 26.
[129] Written submissions of Counsel Assisting dated 18 August 2023, p 10.
[130] Written submissions of the AFL dated 19 September 2023, p 13.

the development of awareness and education initiatives with appropriate consideration given to dissemination strategies; the need to review or update existing materials; and ensuring tailored resources are available to different cohorts including, players, parents, coaches, teachers, other volunteers involved in sport and the general public.

199. Having considered all of the evidence on this issue, as well as the written submissions of the parties, I agree with the principles set out in Recommendation 7 of the Senate Inquiry Report. I believe that there is merit in the AFL further reviewing its educational material to more obviously or expressly refer to repetitive head trauma or other trauma which falls short of concussion, including the risk of CTE. In doing so, I consider that the AFL should ensure that the information is evidence-based and that it includes a science-based explanation of the risks associated with repetitive head trauma.

Recommendation 4: The AFL in consultation with the ALFPA consider how to best improve player awareness and review its current educational material on concussion and repeated head trauma including the risk of CTE to expressly address:

a) **recognising the acute signs and symptoms of concussion and head trauma;**

b) **responding and managing concussion and head trauma; and**

c) **understanding the short and long-term risks of concussion and repeated head trauma.**

Education within community football

200. Further to the above, Priority 2 of the Strategic Plan states:

> '*Education in community football, provide access to concussion specific education across every community competition, make education accessible to culturally and linguistically diverse groups, partnering with government and other sporting codes and other to enhance the reach and quality concussion related training*'.[131]

[131] Exhibit 1 at 1749.

201. At inquest, Dr Cantu provided an opinion that educational material to be delivered at a community level should:

- involve experts, including those with relevant paediatric expertise, to develop and deliver the training;
- educate coaches and schools delivering football programs;
- engage the target audience, namely parents and players; and
- inform of the risks posed by repetitive head impacts in a way that was accurate, but not inciting undue concern.[132]

202. Further, Dr Makdissi gave evidence at inquest in relation to the education programs that are run by the AFL for community football level and how these programs meet the requirements as specified by Dr Cantu.

203. According to Dr Makdissi, there are two key messages which are disseminated to the community football community as follows:[133]

    a) recognising, removing and seeking appropriate medical care in relation to concussion; and

    b) reducing the risk of concussion, and injury prevention.

204. Dr Makdissi gave evidence to the effect that there is an enormous number of community football organisations, and it is not practicable for AFL doctors to attend all community football clubs to provide in-person information sessions. To address this issue, the AFL has developed a number of initiatives including the developed the Community Guidelines, a series of webinars and updated their website with information relevant to community-based organisations and clubs.

205. The following webinars were developed by Dr Makdissi with Dr Vicky Anderson, Neuropsychologist from Royal Children's Hospital:

    a) 'AFL webinar on child and youth concussion'; and

    b) 'A practical guide to concussion management in the AFL Season 2023'.

[132] Transcript of Inquest Proceeding, 26 July 2023, p 125, line 2 – p 127, line 29.
[133] Transcript of Inquest Proceeding, 28 July 2023, p 252.

206. At inquest, Dr Makdissi confirmed that the webinars are available to everyone within the broader football community.[134] In 2022, there were approximately 8000 attendees for the AFL webinars.

207. The 'AFL webinar on child and youth concussion' is directed to the playing of football by young people, the risk of concussion, return to school, play and other activities. In answering questions about this webinar at inquest, Dr Makdissi acknowledged that the presentation is focused on concussion and that there is minimal (or no) reference to other types of head injuries.[135]

208. The 'Practical guide to concussion management in the AFL Season 2023' presentation is a community education tool for people who are already engaged with playing Australian rules football. At inquest, Dr Makdissi confirmed that its reach does not extend to individuals who are prospective players, such as Auskick participants. Dr Makdissi acknowledged that whilst the term sport-related concussion is used throughout the presentation, there is only one presentation slide that refers to any a head injury other than concussion.[136]

209. Dr Makdissi also stated that the AFL website has been updated with number of publicly available resources[137] for prospective players of AFL and their families including the Community Guidelines, frequently asked questions/common themes drawn from the webinars and the HeadCheck App.[138]

210. More recently, the AFL has also engaged a group of individuals experienced to assist with disseminating educational material across multiple platforms including social media. Dr Makdissi stated that one purpose of this initiative is to make the language and information around head trauma and developing serious brain injury in the AFL education material more accessible to both parents and participants.[139]

211. At inquest, Dr Cantu noted that the content of the educative material, especially aimed towards children or youth participants, should be carefully worded and every effort should be used to avoid hysteria. In responding to this evidence, Dr Makdissi stated that

[134] Transcript of Inquest Proceeding, 28 July 2023, pp 246 – 247.
[135] Transcript of Inquest Proceeding, 28 July 2023, p 245.
[136] Transcript of Inquest Proceeding, 28 July 2023, pp 259 – 260.
[137] Transcript of Inquest Proceeding, 28 July 2023, p 252.
[138] Transcript of Inquest Proceeding, 28 July 2023, p 251, line 30 – p 252, line 20 and p 291, lines 10 – 31.
[139] Transcript of Inquest Proceeding, 28 July 2023, p 251 lines 8 – 21, p 260, lines 21 – 25 and p 262.

the AFL is mindful of the messaging that is being provided to the community (including children) and that it is a real focus of the AFL.

212. Dr Makdissi's evidence was that the AFL does not presently have any educational documents that are available to prospective participants of Australian rules football or their families which provide information about concussion or repetitive head trauma in the sport. Dr Makdissi agreed that the AFL needs to do more to reach the broader football community with its educational material and stated that it is something that the AFL may consider.[140]

213. On this point, Dr Makdissi stated that information pertaining to the risk of developing CTE through repetitive head trauma that may be sustained when playing Australian rules football will be expressly and explicitly part of the educational material the AFL is developing for the community.[141] Dr Makdissi confirmed that the AFL had not considered disseminating information to participants of Australian rules football and their families about particular times in a player's career where there may be a heightened risk of receiving head knocks (such as moving from non-contact to contact play, or underage to open age competition), but considered it to be a good thought.[142]

214. In written submissions, Counsel Assisting submitted that I should consider making the following recommendations about community education in the AFL:

    a) Develop and disseminate broadly repetitive head trauma educational materials to prospective participants in Australian rules football or their families, and do so expeditiously;

    b) Continue to develop and disseminate broadly educational material through social media and messaging likely to reach children and the broader community with accessible language concerning the risk of repetitive head trauma and its consequences by the playing of Australian rules football, and do so expeditiously;

    c) Review existing and develop further educational material, and disseminate it, concerning expressly and explicitly the risk of developing CTE through repetitive

[140] Transcript of Inquest Proceeding, 28 July 2023, p 259 and p 260, lines 19 – 20.
[141] Transcript of Inquest Proceeding, 28 July 2023, p 262, lines 13 – 27.
[142] Transcript of Inquest Proceeding, 28 July 2023, p 282, lines 13 – 28.

head trauma associated with the playing of Australian rules football, and do so expeditiously;

d) Develop and disseminate information targeted at different points of transition in the playing of Australian rules football, such as moving from non-contact to contact game play and moving from under age to open age competition, specific information about heightened risk of head knocks in these environments and reinforcing the risks of repetitive head injury, including developing long term injury and disease such as CTE; and

e) Develop and disseminate information differentiated for particular environments, such as the playing of football in rural as opposed to suburban competitions, and regularly follow up with clubs in the different environments to ensure the education and practice of football is consistent with the AFLs position on head trauma. [143]

215. The AFL submit that the proposed recommendations at (a), (b) and (c) above are largely addressed in the Senate Inquiry Report and the AFL's current planned educational offerings.[144]

216. In relation to proposed recommendation (d), this was accepted in part by the AFL with an amendment to the proposed wording which would give the AFL further latitude to further consider the issues, as follows:

> '*The AFL consider developing and disseminating information targeted at points of transition in the playing of Australian [rules] football that is specific to the level of transition and including information about heightened risk of repetitive head impacts, including the development of neurodegenerative disease, including CTE.*'[145]

217. The AFL submitted with respect to proposed recommendation (e) that it is not a matter relevantly connected to Shane's death and was not explored in any of the evidence before the Court.[146]

---

[143] Written submissions of Counsel Assisting dated 18 August 2023, p 12.
[144] Written submissions of the AFL dated 19 September 2023, p 14.
[145] Written submissions of the AFL dated 19 September 2023, p 14.
[146] Ibid.

218. I have thoroughly reviewed the evidence and submissions of the AFL and Counsel Assisting on this issue. Whilst I accept that proposed recommendations (a), (b) and (c) are to an extent addressed by the Senate Inquiry report and the current initiatives of the AFL, I am of the view that there is more work to be done by the AFL to further its educational materials and initiatives for the broader Australian rules football community on the risks of repetitive head trauma and developing CTE when playing Australian rules football.

219. I strongly urge the AFL to continue to develop and disseminate its educational materials for prospective players and their families which address broadly the risks of repetitive head trauma (and the long-term effects of same) when playing Australian rules football. I also urge the AFL to review its existing educational materials to expressly address these issues including the risks of contracting CTE and other neurodegenerative conditions.

220. I also urge the AFL to continue to take steps to develop educational materials with accessible language, and disseminate it through a variety of platforms including in-person and virtual forums, social media platforms and webinars to reach children and the broader community concerning the risk of repetitive head trauma and its consequences by the playing of Australian rules football.

221. I also urge the AFL to consider developing accessible and informative educational material that can be adopted at all community levels and in all environments in which Australian rules football is played including in suburban competitions, rural settings and through AFL supported competitions such as Auskick. I suggest that the AFL give consideration to obtaining evidence-based advice with respect to the most appropriate means to reach different community groups with that educational material.

<u>Recommendation 5</u>:

The AFL:

a) **continue to develop and disseminate its educational materials for prospective players and their families on the risk of repetitive head trauma in Australian rules football;**

b) **review existing and develop further educational material, and disseminate it, concerning expressly and explicitly the risk of developing CTE through**

repetitive head trauma associated with the playing of Australian rules football, and do so expeditiously;

c) **continue to develop educational material with accessible language, and disseminate it through variety of platforms including in-person and virtual forums, social media platforms and webinars to reach children and the broader community concerning the risk of repetitive head trauma and its consequences by the playing of Australian rules football, and do so expeditiously;**

d) **consider developing and disseminating information targeted at points of transition in the playing of Australian rules football that is specific to the level of transition and including information about heightened risk of repetitive head impacts, including the development of neurodegenerative disease, including CTE; and**

e) **in developing this accessible and informative educational material that further consideration be given to how that educational material can be adopted at all community levels and in all environments in which Australian rules football is played including in suburban competitions, rural settings and through AFL supported competitions such as Auskick. The AFL consider obtaining evidence-based advice with respect to the most appropriate means to reach different community groups with its educational material.**

Education for medical practitioners and coaches

222. The AFL Doctor's Association (**AFLDA**) is responsible for the health and wellbeing of players under their care.[147] Dr Makdissi described the AFLDA as a collaborative group made up of approximately 100 AFL/W club doctors and other medical professionals[148] that have an interest in looking after Australian rules football including psychiatrists, radiologists and neurologists.[149]

[147] Transcript of Inquest Proceeding, 28 July 2023, p 217.
[148] Transcript of Inquest Proceeding, 28 July 2023, p 219.
[149] Transcript of Inquest Proceeding, 28 July 2023, p 221.

223. The focus of the AFLDA is on the care of the players and the mentoring and education of club doctors.[150] The AFLDA attend annual professional development conferences with each of the AFL/W clubs sending a representative of their medical team to be in attendance.[151]

224. An annual briefing of the AFL Concussion Management Guidelines occurs with club doctors at the AFLDA professional development weekend. Periodic updates are also sent out by the AFL Head of Safety and Laws, the AFL Medical Director and expert concussion consultants during the monthly AFLDA meeting. Guidance is also provided to club doctors via the AFL Club Medical Handbook to assist them in discharging their functions in compliance with the AFL rules.

225. Dr Makdissi confirmed that the doctors that are part of the AFLDA have an educative role within the elite AFL/W teams. This includes informal education, formal presentations in relation to key areas of concern such as concussion and head trauma. At the lower levels (Victorian Football League, amateur football and community football) the educational function becomes less formal education for players and the group and more an informal education. Dr Makdissi noted that this is a matter of time and resources where doctors are spending more time responding to what is happening rather than being proactive about education and preventing injury.[152] Dr Makdissi confirmed that the majority of club doctors and other medical practitioners are both engaged professionally by AFL/W or other clubs and also have community facing practices.[153]

226. Dr Makdissi also confirmed that the AFL oversees coaching and accreditation in respect of the leagues for which it has responsibility. It is also a compulsory aspect of coaching accreditation that there be training specifically in relation to head injuries.[154]

227. In written submissions, Counsel Assisting submitted that I should consider making a recommendation in relation to the implementation of education to medical colleges, medical degrees and through professional groups and training around repetitive head

---

[150] Transcript of Inquest Proceeding, 28 July 2023, p 220, lines 4 – 8.
[151] Transcript of Inquest Proceeding, 28 July 2023, pp 219 – 220-.
[152] Transcript of Inquest Proceeding, 28 July 2023, p 222.
[153] Transcript of Inquest Proceeding, 28 July 2023, p 220.
[154] Transcript of Inquest Proceeding, 28 July 2023, p 250, lines 16 – 23.

trauma associated with playing Australian rules football and the risk of developing serious brain injury and disease, including CTE.[155]

228. The AFL submitted that it sees patent wisdom in the proposed recommendation of Counsel Assisting, however that limiting the recommendation only to AFL understates the importance of health practitioners being aware of potential long-term consequences of repetitive head impacts.[156]

229. In this regard, I accept the proposed recommendation of Counsel Assisting and the submission of the AFL, noting that any such education should not be limited to repetitive head trauma associated with playing Australian rules football.

230. I also acknowledge (noting the purpose of section 7 of the Act, which states that a coroner should avoid unnecessary duplication) Recommendation 8 of the Senate Inquiry report which recommended that:

> '*…the Australian Government, in partnership with state and territory governments consider how best to address calls for:*
>
> - *the development of standardised, evidence-based, and easy-to-access concussion and head trauma guidelines for [general practitioners];*
> - *suitable for general practice consultations for people with concussion, repeated head trauma and other complex care needs; and*
> - *increased training for first aid responders at sporting venues that focuses specifically on treating concussion and head injury*.'

<u>Recommendation 6</u>: The Royal Australian College of General Practitioners give consideration to expanding the education programs for general practitioners provided at medical colleges, in medical degrees and within the ongoing professional development and training programs on the short and long-term effects of repetitive head trauma associated with contact sports and the risk of developing serious brain injury and disease, including CTE.

[155] Written submissions of Counsel Assisting dated 18 August 2023, p 12.
[156] Written submissions of the AFL dated 19 September 2023, p 15.

<u>Recommendation 7</u>: The AFL continue to disseminate and develop evidence-based, and easy to understand education materials for concussion and repetitive head trauma for elite AFL/W and community club doctors, coaches, trainers and other volunteers involved in the Australian football community.

Research

231. There is a strong consensus that further research is required to improve the understanding of CTE, its diagnosis as well as the prevention of repetitive head trauma and the impacts of CTE in AFL/W players.

232. In his report, Dr Cantu stated that approximately 20% of individuals diagnosed with CTE had no reported concussions while alive.[157] At inquest, Dr Cantu clarified his opinion and gave evidence to the effect that concussions are often missed, even with the assistance of expert medical advice from the sidelines.[158] Dr Cantu also noted in his report that further research is an opportunity for the AFL to better understand the total number of hits that individuals are taking over a season and to address the issue of cumulative head hits and seek ways to diligently seek ways to reduce them where possible.[159]

233. During the course of the coronial investigation, I was provided with a document named the 'Current Concussion Activities and Research Strategy AFL' which formed part of the coronial brief. Dr Makdissi gave evidence in relation to this document at inquest and the relevant research projects that the AFL has recently finalised or are still conducting.[160]

234. In this regard, the AFL is now contractually required to invest a minimum of $250,000 per annum into research related to concussion and head trauma, as a result of a bargaining agreement in 2017 which advocated for the AFL to increase expenditure to support research projects.

235. In the period between 2017 and 2020, the AFL contributed approximately $300,000 to research projects that are directed towards the prevention and management of concussion.

---

[157] Exhibit 1 at 2398 [35].
[158] Transcript of Inquest Proceeding, 19 July 2023, p 42.
[159] Exhibit 1 at 2402 [45]; Transcript of Inquest Proceeding, 19 July 2023, p 53.
[160] Transcript of Inquest Proceeding, 28 July 2023, p 234.

Some of the 15 current research projects concerning sport-related concussion may be relevant to CTE.

Mouthguard accelerometers

236. Dr Makdissi was asked questions about the AFL's progress with research into the use of mouthguard accelerometers, including an ongoing research project that has been undertaken in partnership with Monash University and an Australian-based company named 'Head IQ'.[161] Dr Makdissi confirmed that the trial of the mouthguard technology has been running for a few years and is due to be completed at the end of the 2023 AFL/W season.

237. This research project is funded by the AFL and has been rolled out across all elite AFL/W clubs with approximately 60% of players having been fitted with the mouthguards and 20% of them having worn them at some stage during the season.[162] Dr Makdissi stated that there have been previous issues with the validity of the data from the mouthguards and that data is currently made available to players two weeks after a game.

238. Whilst mouthguard technology is available to other Australian ruels football leagues, Dr Makdissi confirmed that the cost of the use of the technology would need to be met by each individual football club. The mouthguards are also not currently used in training.[163] Dr Makdissi also confirmed that the AFL would start to look at implementation commencing in the 2024 season depending on the outcome of the analysis of the data from the 2023 season.[164]

239. At inquest, Dr Cantu gave evidence that this technology has been in use in the NFL for some time and that the data that had been collected has enabled the NFL to conclude approximately 60% of the total head hits occurred in practice, leading to a rule change around contact practice in the NFL.[165]

240. At inquest, Dr Makdissi was asked questions in relation to the use of the mouthguard technology in the AFL. Dr Makdissi confirmed that the mouthguard accelerometer that is used in the NFL is *essentially* the same as the technology that the AFL are working

---

[161] Transcript of Inquest Proceeding, 28 July 2023, pp 235 – 236.
[162] Transcript of Inquest Proceeding, 28 July 2023, p 237, lines 14 – 22.
[163] Transcript of Inquest Proceeding, 28 July 2023, p 238, line 22.
[164] Transcript of Inquest Proceeding, 28 July 2023, p 239, lines 8 – 18.
[165] Transcript of Inquest Proceeding, 19 July 2023, p 47, line 26 – p 48, line 2 and p 78, lines 6 – 17.

with. He also confirmed that it was not different or more difficult to use that technology in the AFL context.[166]

241. At present, the use of mouthguard accelerometers is not mandated at an elite level within the AFL/W. Dr Makdissi stated that once the technology was functional and wearable that consideration would be given to making it mandatory for players.[167]

242. I have reviewed the evidence on mouthguard accelerometers and it is clear that this technology is an invaluable resource in identifying and collecting data on the number of head knocks players experience in the playing and training of contact sports (such as Australian rules football) and that its benefits are accepted.[168] I note that this technology has been in the research stage with the AFL for more than four years and that it has been in use and effectively so in the NFL for some time.

243. In written submissions, Counsel Assisting proposed the following recommendations with respect to the use of mouthguard accelerometers in the AFL/W[169]:

   a) the AFL accelerate implementation of the mandatory use of mouthguards with built in accelerometers for all AFL/W players, to be worn both at training and during game play; and

   b) until full implementation of the mandatory use of mouthguards with built in accelerometers for all AFL/W players, the AFL use and augment its present data collection on head knocks (i.e. the weekly review of all head knocks referred to by Dr Makdissi).[170]

244. The AFL in its written submissions questioned the phrasing of proposed recommendation with respect to accelerating research, given that the research is being conducted in collaboration with an outside entity, Monash University. The AFL submitted that there can be no suggestion that the research is lagging or that there is anything that being done to prevent appropriate progression.[171]

[166] Transcript of Inquest Proceeding, 28 July 2023, p 278, lines 15 – 19.
[167] Transcript of Inquest Proceeding, 28 July 2023, p 278, line 26 – p 180, line 12.
[168] See for example, Transcript of Inquest Proceeding, 28 July 2023, p 279, lines 15 – 17.
[169] Written submissions of Counsel Assisting dated 18 August 2023, p 5.
[170] Transcript of Inquest Proceeding, 28 July 2023, p 271, lines 16 – 28.
[171] Written submissions of the AFL dated 19 September 2023, p 9.

245. The AFL also submitted that there are a number of issues such as legal, contractual and privacy considerations to be taken into account when mandating the use of new equipment. The AFL submitted that I consider making a *more balanced* recommendation, as follows:

> '*The AFL take reasonable steps to promote the use of instrumented mouthguards for all players so as to advance the wellbeing of players and the game in general*'.[172]

246. In forming my conclusions on this issue, I acknowledge the submission of the AFL with respect to the legal, contractual, personal autonomy and privacy considerations that may arise with mandating the use of mouthguard accelerometer technology in elite AFL/W. I also acknowledge that data collection was addressed by Recommendation 2 of the Senate Inquiry Report with research being the subject of Recommendations 3, 4 and 6.

247. Having considered all of the evidence on this issue, including the expert opinion of Dr Cantu, following the collection and analysis of mouthguard accelerometer data from the 2023 AFL/W season, I strongly urge the AFL to complete the research on the use of mouthguard accelerometers as soon as possible. I am of the view that access to this data is vitally important in understanding the occurrence of repetitive head injuries in elite AFL/W and that it will be an invaluable resource for the AFL in further promoting brain health and safety of its players in the future.

248. I also strongly urge the AFL to take all reasonable steps to promote and extend the use of the technology in elite AFL/W clubs with a view to extending player use of the technology in both matches and training to 80% for the 2024 AFL/W season.

<u>Recommendation 8</u>: The AFL take all reasonable steps to promote and extend the use of mouthguard accelerometer technology in elite AFL/W clubs with a view to extending player uptake to 80% for the 2024 AFL/W season. In doing so, the AFL should consider obtaining specialist advice on overcoming any legal and privacy issues which may prevent the AFL from mandating the use of the mouthguard accelerometer technology in elite AFL/W clubs and using the data for clinical research purposes.

[172] Written submissions of the AFL dated 19 September 2023, p 9.

Protective helmets

249. At inquest and in his report, Dr Cantu provided an opinion about the potential benefits of wearing soft protective helmets in a game such as Australian rules football and that it might be an area of research that the AFL may be interested in.[173] In providing that evidence, Dr Cantu provided an example of the studied benefits of concussion reduction is women's lacrosse in Florida in the United States.[174] However, in providing his opinion, Dr Cantu stated that there needs to be more work and research in the area and that the literature on this subject is presently '*muddied*'.[175]

250. At inquest, Dr Makdissi responded to Dr Cantu's opinion and gave evidence about the current state of the research by the AFL into the use of protective helmets. In that regard, Dr Makdissi gave evidence to the effect that a standard for an AFL-specific helmet did not presently exist and that the AFL have been undertaking headgear research at the elite AFL and the community football levels.[176]

251. In around 2019, the AFL commissioned a bio mechanist to develop a standard for an AFL fit for purpose helmet. Dr Makdissi confirmed that the project is still underway and that the AFL helmets may be available for use in the 2024 and 2025 seasons.[177]

252. Dr Makdissi stated that helmets would initially be deployed on a voluntary basis and that there would be a number of steps to be taken before consideration would be given to making the use of helmets mandatory.[178] Dr Makdissi's evidence on this point was that consideration would need to be given to whether the wearing of helmets would create negative unintended consequences in terms of head trauma. However, he confirmed that if the research and data showed a material benefit in the use of the helmets, the AFL would give consideration to making the wearing of such protective gear mandatory.[179]

253. In written submissions, Counsel Assisting proposed that a recommendation be directed to the AFL for it to accelerate its research and implementation of the use of protective

---

[173] Transcript of Inquest Proceeding, 19 July 2023, p 50.
[174] Transcript of Inquest Proceeding, 19 July 2023, p 50, lines 1 – 12.
[175] Transcript of Inquest Proceeding, 19 July 2023, p 50, line 2.
[176] Transcript of Inquest Proceeding, 19 July 2023, p 80, lines 9 – 27.
[177] Transcript of Inquest Proceeding, 28 July 2023, p 277, lines 5 – 8.
[178] Ibid.
[179] Transcript of Inquest Proceeding, 28 July 2023, p 277, lines 13 – 29.

helmets at the professional level and that, if research supports it, make the wearing of helmets mandatory.[180]

254. The AFLPA support the acceleration of the AFL's research but do not support the proposition that the helmets be made mandatory for all players. The AFLPA echo the position of the AFL that further research into the benefits of using helmets must be completed before determining whether their use should be mandatory.[181]

255. The AFL submitted that Counsel Assisting's proposed recommendation is contingent upon an outcome which is yet to eventuate and that it should not be adopted. The AFL also submitted that the unchallenged evidence was that the research project is in train, it is a priority and that there are multifactorial considerations to be taken into account with respect to making a piece of equipment, such as a helmet mandatory.[182]

256. I support and acknowledge the research that is currently being undertaken by the AFL with respect to developing protective helmets for Australian rules football. I also accept the challenges in accelerating this research but urge the AFL to continue with its efforts to complete this project as soon as possible.

Baseline testing

257. At inquest, Dr Makdissi informed the Court that baseline testing is not presently mandated in elite AFL/W clubs, although it does happen to a *degree* for clinical purposes.[183] Dr Makdissi stated that some AFL/W clubs undertake more comprehensive and formal neuropsychological testing, whilst other clubs undertake symptom screening tests, brain function tests, pen and paper tests and computerised screening tests.[184]

258. Dr Makdissi noted that whilst the AFL could mandate baseline testing for clinical purposes, where it was to be used for research purposes, consent would be required from each player.[185] The evidence at inquest was to the effect that baseline testing may be strongly recommended or mandated should it be seen to have clinical utility or be helpful in monitoring brain function such as formal neuropsychological testing.[186]

[180] Written submissions of Counsel Assisting dated 18 August 2023, p 6.
[181] Written submissions of the AFLPA dated 12 September 2023, p 5.
[182] Written submissions of the AFL dated 19 September 2023, p 9.
[183] Transcript of Inquest Proceeding, 28 July 2023, p 266.
[184] Ibid.
[185] Transcript of Inquest Proceeding, 28 July 2023, p 267, lines 11 – 27.
[186] Ibid.

259. Dr Makdissi also stated that mandating baseline testing for research purposes raises ethical issues given that participants would need to opt in for the data to be used lawfully.[187] However, he agreed that if the purpose of the baseline testing was to be explained to players, that there would be a good number of volunteers.[188]

260. In written submissions, Counsel Assisting submitted that I should consider making a recommendation that the AFL make mandatory appropriate neurological baseline testing for each player with respect to each player's clinical profile and to educate and strongly recommend to each player the collection and deidentification of neurological data to further longitudinal research into player brain health and the impact of repetitive brain trauma in the playing of AFL/W football.[189]

261. The AFLPA submitted that the intent of baseline testing for clinical purposes is supported, provided that it is evidence-based and compliant with privacy regulations and player consent.[190] Correspondingly, the AFL acknowledged in written submissions that it does see utility in a recommendation directed to standardised baseline testing and suggested that I give consideration to a recommendation on the following terms:

> '*The AFL consider developing – either in consultation with other sports or alone – standardised neurological baseline testing based on current best practice and to use concerted efforts to explore options to obtain consent of AFL and AFLW players to engage in the BHI and consent to their baseline testing being used for research purposes*.'[191]

262. Having considered the evidence and written submissions on this issue, I acknowledge that there are some difficulties with recommending that the AFL mandate the use of baseline testing in elite AFL/W including obtaining consent from each player for their data to be used for research purposes.

263. Notwithstanding this, I strongly urge the AFL to develop and implement standardised neurological baseline testing for all elite AFL/W players. The data obtained from the

[187] Transcript of Inquest Proceeding, 28 July 2023, p 267, line 3 – p 268, line 6.
[188] Transcript of Inquest Proceeding, 28 July 2023, p 267, line 28 – p 268, line 6.
[189] Written submissions of Counsel Assisting dated 18 August 2023, p 7.
[190] Written submissions of the AFLPA dated 12 September 2023, p 5.
[191] Written submissions of the AFL dated 19 September 2023, p 10.

standardising neurological baseline testing should be linked to the clinical profile of each player and should occur at the beginning of each elite AFL/W season.

264. I also consider that the AFL should educate elite AFL/W players on the benefits of neurological baseline testing and in doing so, encourage elite AFL/W players to engage in the AFL BHI and consent to their baseline data being used for broader research purposes.

Recommendation 9: The AFL develop and implement standardised neurological baseline testing for all elite AFL/W players. The data obtained from the standardising neurological baseline testing should be linked to the clinical profile of each player and should occur at the beginning of each elite AFL/W season. The data obtained by the AFL should be used to further longitudinal research into player brain health and the impact of repetitive head trauma in the playing of Australian rules football. If a player does not wish for their deidentified data to be used for research purposes, they should be required to opt out.

Recommendation 10: The AFL should develop educational material aimed at elite AFL/W players on the benefits of neurological baseline testing and the use of the deidentified data for clinical purposes to further longitudinal research into player brain health and repetitive head trauma in the playing of Australian rules football. Any such educational material should be evidence-based, updated with the current scientific research and disseminated with the assistance of the AFLPA.

Brain banks

265. Coroner Paresa Spanos in the *Inquest into the death of Danny Frawley* (**Frawley Inquest**) recommended pursuant to section 72(2) of the Act that the AFL:

> '*…actively encourages players and, their legal representatives after their death, to donate their brains to the Australian Sports Brain Bank in order to make a meaningful contribution to research*

into [CTE] and thereby improve the safety of future generations of footballers and other engaged in contact sports'.[192]

266. In his letter to the Court, Mr Meade commented on the work that has been done by the AFL since the Frawley Inquest to address the recommendation of Coroner Spanos, as follows:

> '*…by already encouraging the donation of brains to the Victorian Brain Bank, the AFL substantively already complies with the recommendation made by Coroner Spanos*.'[193]

267. The issue of brain banks and specifically the measures that can be taken to encourage donation rates for scientific research into brain heath and disease, including CTE is addressed by Recommendation 5 of the Senate Inquiry Report.

268. At inquest, Dr Makdissi gave evidence to the effect that the AFL, along with the AFLPA, actively encourage players to consider brain donation in an alumni pack.[194] Players are also encouraged to voluntarily provide information to the AFL following their retirement which may lead to a recommendation or request that the player donate their brains upon death to the Australian Brain Bank.

269. Dr Makdissi stated that he considers the work of brain banks to be critical to:

    - the collection and storage of data and the success of research into brain health;
    - understanding long term effects of sport-related concussion and degenerative problems with the brain; and
    - information sharing.

270. Dr Makdissi also confirmed that funding has been withdrawn from brain banks, leading to closures, including that of the Victorian Brain Bank.[195]

271. In written submissions, Counsel Assisting submitted that I should consider making a recommendation that the AFL and AFLPA expedite and improve their communications with AFL/W players, past and present, encouraging them to donate their brains at end of

---

[192] Inquest into the death of Danny Frawley (Coroners Court of Victoria, Coroner Spanos, 23 February 2021), Recommendation 1, p 22.
[193] Exhibit 1 at 52.
[194] Transcript of Inquest Proceeding, 28 July 2023, p 264.
[195] Transcript of Inquest Proceeding, 28 July 2023, p 289, lines 1 – 3.

life to the Australian Sports Brain Bank, noting that this organisation is staffed by eminent practitioners in this area (including Associate Professor Michael Buckland) and its Families Ambassador is Renee Tuck, Shane's sister, who also made a statement at Shane's Inquest. That encouragement could include concrete information and education about the risk of CTE in football that is delivered throughout a player's career and beyond.[196]

272. This proposed recommendation is accepted by the AFL and AFLPA, subject to the recommendation not elevating or preferring one brain bank over others.[197]

273. In this regard, I accept the proposed recommendation of Counsel Assisting, subject to the amendment as proposed by the AFL and AFLPA.

274. Counsel Assisting also submitted, that with respect to Dr Makdissi's evidence about the government withdrawing funding from brain banks, that I should consider making a recommendation in relation to the ongoing adequate funding of brain banks. I accept this proposed recommendation by Counsel Assisting.[198] This proposed recommendation was also accepted by the AFL and ALPA.[199]

Recommendation 11: The AFL and AFLPA expedite and improve their communications with AFL/W players (past and present) and encourage them to donate their brains at end of life for further research. That encouragement should include concrete information and education about the risks associated with repetitive head trauma including CTE that is delivered throughout a player's career and beyond.

Recommendation 12: The Commonwealth Department of Health facilitate the adequate funding of brain banks nationally.

Conclusions on the AFL Framework

275. Shane, like many professional Australian rules football players began his career in his formative years during which he experienced head trauma. It is noted that Shane retired

[196] Written submissions of Counsel Assisting dated 18 August 2023, p 8.
[197] Written submissions of the AFL dated 19 September 2023, p 11; Written submissions of the AFLPA dated 12 September 2023, p 6.
[198] Written submissions of Counsel Assisting dated 18 August 2023, p 8.
[199] Written submissions of the AFL dated 19 September 2023, p 11; Written submissions of the AFLPA dated 12 September 2023, p 7.

from professional football prior to the implementation of the current AFL Framework aimed at minimising the consequences of concussions, repetitive head trauma and other related injuries.

276. Having considered the available evidence, including Dr Cantu's expert opinion, I am satisfied that the current position of the AFL Framework is consistent with the adopted principles on CTE (and related issues) in the Position Statements and 2023 Consensus Statement.

277. There is a strong consensus that more research is required to improve the understanding of CTE, its diagnosis and the prevention or at least minimisation of the impacts of CTE in AFL Players, including mitigating and managing the occurrence of repetitive head injuries in Australian rules football. I commend the AFL for its commitment to the supporting research in this important area of player wellbeing, health and safety.

ROLE OF AFL PLAYER'S ASSOCIATION

278. An issue considered in this coronial investigation was what role, if any, should be played by the AFLPA in addressing the risk of CTE occurring as a result of head injuries incurred by AFL/W players.

279. The AFLPA is the peak body representing the professional and personal interests of players both past and present. The AFLPA membership has extended to AFLW players since 2015. As part of their operations and responsibility, the AFLPA is responsible for advocating for the continuing development and revision of policies and procedures directed towards player safety and welfare issues.[200]

280. In February 2021, Mr James Gallagher, the then General Manager of Legal and Player Affairs, provided a letter to the Court addressing the AFLPA perspective on CTE. In that letter, Mr Gallagher indicated that the risks to the health and safety of its members in relation to concussion and repetitive head knocks are an important area of focus for the AFLPA.[201]

281. The AFLPA's focus on concussion primarily falls into five areas: education, appropriate assessments, advocating for all reasonable steps to be taken to protect players from concussion including modification to rules and equipment, support to address health and

[200] Exhibit 1 at 995.
[201] Ibid.

wellbeing issues related to playing AFL and advocating for the support of research into concussion, particularly in the context of the AFL.[202]

282. As the AFLPA is a representative body and not an employer, Mr Gallagher explained that they are not responsible for the medical treatment of concussion or the implementation of a safe workplace. The AFLPA does not employ medical practitioners with expertise in concussion. Instead, the AFLPA takes advice about concussion from external sources to inform their advocacy position.[203]

283. In his letter to the Court, Mr Gallagher noted that the AFLPA's position with respect to CTE reflects the advice in the 2019 Position Statement. It is their position that a clear link between sport-related concussion and CTE has not yet been established but they agree that there may be a link.[204]

284. The ALFPA have not confirmed their position in relation to the 2023 Position Statement which considers that extensive exposure to repetitive head impacts as being potentially associated with the development of CTE. However, the AFLPA consider that even if such a link is merely possible, they consider it essential that all reasonable actions are taken to limit the risk of head knocks insofar as possible in a robust contact sport and that a conservative approach is taken to the return to training and playing following any concussive incident.

285. Mr Gallagher stated that the AFLPA is strongly of the view that the health and wellbeing of AFL players should be supported long after they cease playing, and they support continued research into concussion and CTE. For its part, the AFLPA supports players through the AFL Players Injury and Hardship Fund and manage a specialist in-house mental health and wellbeing team that can be accessed by past and present players and their immediate family.

286. The AFLPA continue to support research regarding concussions and CTE. In his letter to the Court, Mr Gallagher advised that following the Frawley Inquest, the AFLPA immediately contacted the Australian Sports Brain Bank to explore how the two organisations might work together to further research into head injuries and CTE.

---

[202] Exhibit 1 at 995.
[203] Exhibit 1 at 996.
[204] Ibid.

287. In July 2023, I sought an update from the AFLPA on this issue, including information on the current research initiatives of the AFLPA in relation to head injuries and CTE. Ms Megan Comerford, General Manager – Legal at the AFLPA provided a letter in response to this request.

288. Ms Comerford confirmed that the AFLPA continue to actively encourage members to donate their brains after death to the Australian brain banks for research purposes through publishing AFLPA handbooks for members on an annual basis and sending communications to members with information about donating their brains to brain banks.[205]

289. Ms Comerford also confirmed that whilst as a matter of general practice, the AFLPA does not commission its own research in relation to head injuries and CTE, it is currently establishing a new Health, Safety and Wellbeing Committee which will provide advice to the organisation, including in relation to concussion issues. The agency also continues to advocate for, and support concussion research undertaken by the AFL and other medical and sport research groups, which includes:

- Advocating for increased expenditure by the AFL to support research projects into concussion. As part of these negotiations, the AFL is now contractually required to invest a minimum of $250,000 per annum into research projects related to concussion and head trauma.

- Collaborating with the AFL on industry research projects into concussion, including the proposed AFL Brain Health Initiative (Longitudinal Research Program).

- Conducting annual surveys of current AFL/W players, which helps us to understand the viewpoints and experiences of our members, thereby informing the AFLPA advocacy position on concussion issues.

290. In written submissions, the AFLPA submitted that it is the AFL including the AFL/W clubs that employ players who have primary responsibility for ensuring that players are protected, as far as they reasonably can be, from the risks associated with repetitive head

[205] Exhibit 3 - Letter from Megan Comerford dated 24 July 2023.

knocks. It was further submitted that the role of the AFLPA, as a professional association for players, is to work with the AFL and with AFL/W clubs to support players.[206]

Conclusions on the AFLPA

291. I am satisfied that the AFLPA are undertaking its role as a professional organisation that advocates and supports AFL/W players past and present in an appropriate and consistent manner.

292. The AFLPA have indicated that they would welcome a recommendation to be more involved in the development and delivery of concussion and CTE related education. The AFLPA also drew my attention to Dr Makdissi's comments at the Melbourne hearing of the Senate Inquiry, as follows:

> *'I think that we need some continuing education…we need to be working with the player's association on that. This is not just the AFL or the doctors standing in front of the players talking to them, because we know that players don't necessarily listen to those people. They do listen better to their colleagues, their companions and other players.'*[207]

293. I agree that the ALPA have a role to play in assisting the AFL with delivering concussions and CTE related training. I recommend that the AFL explore with the AFLPA how they may engage the AFLPA in assisting with education and training for players.

<u>**Recommendation 13**</u>**: I recommend that the AFL explore with the AFLPA how they may engage the AFLPA in assisting with education and training for players on concussion and the risks associated with repetitive head trauma.**

BOXING POLICIES, GUIDELINES, RULES AND/OR PRACTICES

294. This coronial investigation considered a number of issues related to reasonableness and proportionality of the current framework for professional and amateur boxing and combat sports in Victoria.

[206] Written submissions of the AFLPA dated 12 September 2023, p 8.
[207] Written submissions of the AFLPA dated 12 September 2023, p 9.

295. Many of these issues were addressed by Dr Cantu in his report and at inquest, including initiatives that may improve that current framework with a view to mitigating and reducing the number of head injuries sustained by those persons that engage in professional and amateur boxing and combat sports. I also note that in his evidence at inquest, Dr Cantu stated that the DJSIR and the Board are taking advances in the right direction and that if not now, the boxing framework will soon be state of the art.[208]

296. In Victoria, the professional boxing and combat sports industry is regulated pursuant to the *Professional Boxing and Combat Sports Act 1985* (Vic) (the **Boxing Act**), the *Professional Boxing and Combat Sports Regulations 2018* (Vic) (the **Regulations**) and the *Rules for the conduct of professional boxing contests in Victoria 2018* (the **Rules**).

297. The Boxing Act establishes a system of approvals to conduct professional contests, licensing regime for promotors, trainers, match-makers, referees, timekeepers, and judges and provides a framework for register contestants. The purpose of the Boxing Act is to reduce the risk of malpractice, promote safety and uphold industry integrity by ensuring that those that hold licences are fit and proper persons.

298. The Professional Boxing and Combat Sports Board (the **Board**) is established pursuant to section 14 of the Boxing Act. The Board is responsible for the oversight of professional boxing and combat sports in Victoria and is responsible for advising the Minister for Tourism, Sport and Major Events on all matters relating to professional contests and supervising the conduct of weigh-ins and promotions.

299. Mr Alan Clayton is the Chair of the Professional Boxing and Combat Sports Board, having assumed the role in May 2023. During the course of the coronial investigation, Mr Clayton provided two statements and gave evidence at inquest.

300. Section 23 of the Boxing Act empowers the Board to make the Rules which are issued in the interests of safety and the integrity of professional boxing in Victoria. In particular, with respect to contestant safety, the Rules include specific non-fight periods for specific contest outcomes,[209] and provide concussion management guidelines (including a return to fight strategy).

---

[208] Transcript of Inquest Proceeding, 26 July 2023, pp 143 – 144.
[209] Exhibit 1 at 1561.

301. In 2021, the Department of Jobs, Precincts and Regions (as it was then known) (on behalf of the Board) engaged Sports Medicine Australia (**SMA report**) to undertake an expert review of concussion awareness and management for professional boxing and combat sports.[210] Although the SMA report was not commissioned for the purpose of the coronial investigation, it does refer to several matters that are of relevance. The SMA report made 36 recommendations about how to best promote safety in the context of concussion in the professional boxing and combat sports sector in Victoria and formulate guiding principles to support the design and development of strategies to improve concussion education and awareness.

302. All of the 36 recommendations have been accepted by the Board and are at various stages of implementation.

303. In her statement to the Court dated 30 August 2022, then Chair of the Board Simone Bailey, stated these recommendations will inform a more holistic policy response to concussion and head trauma in the professional boxing and combat sports industry, as will research into the recently identified TES criteria.

304. On 4 July 2023, Mr Alan Clayton provided a statement to the Court which included an update on the Board's progress on implementing the recommendations in the SMA Report and the Board's current approach to traumatic brain injury and concussions.

305. In his statement, Mr Clayton stated that since the time of the SMA report, the Board has significantly progressed arrangements to support the introduction of mandatory concussion and brain trauma educations for participants, established the Medical Advisory Sub-Committee to the Board (**MASC**) and continued development of a Brain Trauma and Concussion Management Policy (**BTCM Policy**).[211]

306. The purpose of the BTCM Policy is to promote research into and develop policies and guidelines that address the impact of repetitive head trauma on the long-term health standard and status of an individual. At inquest, Mr Clayton stated that he had considered the analysis in Dr Cantu's report and that the focus of the BTCM Policy will not only be

[210] Exhibit 1 at 1736-1.
[211] Exhibit 2 – Statement of Mr Alan Clayton PSM dated 4 July 2023, p 3.

on concussion, but also repetitive head trauma, sub-concussive or asymptomatic head trauma and on CTE.[212]

307. At the time that the BTCM Policy is finalised, it is expected to be a central information resource for all participants and industry stakeholders. Mr Clayton confirmed that revisions to the current Rules and Boxing Guidelines have been prepared to align with the development of the BTCM Policy. These documents will also be further reviewed for alignment with the most recent Consensus Statement and other relevant publications.[213]

Amateur boxing

308. There is no formal relationship between professional boxing and amateur boxing in Victoria, given the ambit of the Boxing Act and, in particular, the Board's statutory functions. The Boxing Act does not give the Board any power to oversee amateur boxing organisations and it does not regulate amateur boxing in Victoria, save for any contest or exhibition that is conducted for profit, where there is a monetary reward or an admission fee.

309. Amateur boxing in Victoria is self-regulated and oversight is provided by amateur boxing organisations which obtain their recognition from the Minister. Section 5A of the Boxing Act provides for the Board to advise about the suitability of amateur associations for recognition by the Minister[214] but there is otherwise no formal relationship between professional and amateur boxing in Victoria.[215]

310. Amateur boxing is self-regulated through the Victorian Amateur Boxing Association and Victorian Amateur Boxing League, which are recognised by the Minister. At present these organisations are the only two amateur organisations approved by the Minister. These organisations are responsible for amateur boxing activities in Victoria, including the training and accreditation of amateur boxing coaches, judges and referees, the registration of boxers, coaches and officials, and the enforcement of strict safety standards in the sport.

311. At inquest, Mr Clayton confirmed that the Board intends to build upon its current relationships with these amateur organisations and there has been recent contact between

[212] Transcript of Inquest Proceeding, 27 July 2023, pp 183 – 4.
[213] Exhibit 2 – Statement of Mr Alan Clayton PSM dated 4 July 2023, p 6.
[214] Exhibit 2 - Statement of Mr Alan Clayton PSM dated 21 July 2023, p 1.
[215] Ibid.

the Board and amateur organisations with respect to the work that is being done by the Board in responding to the recommendations in the SMA report.[216] I commend the Board for taking this initiative.

312. The Board is currently exploring available avenues through which it can provide more effective support and guidance to amateur boxing and amateur combat sports. At inquest, Mr Clayton confirmed that the Board intends to provide the outcomes and materials developed in response to the SMA Report to recognised amateur associations. Mr Clayton stated that he wished to '*open the channels*' so that the amateur boxing organisations may be receptive to receiving material, including educative material.[217]

313. In his statement of 21 July 2023, Mr Clayton acknowledged that there is a strong similarity between professional boxing and combat sports and its amateur equivalent. He also acknowledged that the resources available to the Board mean it is uniquely placed to provide policy advice and guidance to amateur boxing and combat sports organisations, particularly in relation to emerging health and safety matters that effect boxing and combat sports generally. Nevertheless, Mr Clayton noted that whilst the Board will continue to encourage amateur organisations to embrace any future changes and developments, the current regulatory framework does not authorise the Board to set enforceable standards for amateur boxing.[218]

314. In his statement, Mr Clayton stated that the government has funded a review of the Board's regulatory framework and any reforms required to ensure it is empowered to adequately address participant safety.[219]

315. At inquest, Mr Clayton noted that the Board is still to determine the terms of reference for the regulatory review, including its content, but it will include a review of practices, customs and approaches within the Board's remit. It is anticipated that the regulatory review will commence shortly and continue through 2024.

[216] Transcript of Inquest Proceeding, 27 July 2023, p 155.
[217] Transcript of Inquest Proceeding, 27 July 2023, p 155.
[218] Exhibit 2 – Statement of Mr Alan Clayton PSM dated 21 July 2023, p 1.
[219] Exhibit 2 - Statement of Mr Alan Clayton PSM dated 4 July 2023, p 7.

316. Mr Clayton also stated that a legal advisor was appointed in July 2023 to provide advice to the Board on its regulatory powers, and any necessary regulatory and legislative reforms recommended as part of the regulatory review.[220]

317. In written submissions, Counsel Assisting proposed that I make a recommendation to the Minister or relevant government representative that the government take steps to extend the regulatory review of professional boxing and combat sports to also cover amateur boxing in Victoria.[221]

318. The written submissions filed on behalf of DJSIR suggest that whilst this proposed recommendation might be '*worthy at a level of generality, it cannot [be seen] to have any connection with Shane's death, or the evidence given at inquest*'.[222]

319. Counsel Assisting also submitted that I should consider making a recommendation that the education and training regime for amateur registration be as extensive as it is proposed it will be for professional boxing.[223]

320. DJSIR submitted that the need for this proposed recommendation is questioned given the Board's stated intention to build on its current relationships with amateur boxing and combat sports organisations and to make available the Board's policies, research, education materials and communication initiatives to those bodies, including matters arising from the implementation of the recommendations from the SMA report.[224]

321. As I have already noted, the strong similarity between professional boxing and combat sports and its amateur equivalent was acknowledged by Mr Clayton in his evidence, as was the fact that the Board is uniquely placed to provide advice and guidance to amateur boxing and combat sports organisations.

322. In this regard, I am of the opinion that the regulatory review presents a unique opportunity for DJSIR and the Board to further develop and extend its oversight and regulation of amateur boxing and combat sports organisations with a view of improving the health and safety of its participants. I consider that it would be a missed opportunity for the regulatory review not to be extended to include amateur boxing and combat sports. The

---

[220] Exhibit 2 - Statement of Mr Alan Clayton PSM dated 4 July 2023, p 7.
[221] Written submissions of Counsel Assisting dated 18 August 2023, p 14.
[222] Written submissions of DJSIR dated 19 September 2023, p 5.
[223] Ibid.
[224] Written submissions of DJSIR dated 19 September 2023, p 6.

findings and recommendations in the Senate Inquiry Report also focus attention on the management of concussion and repetitive head injuries in all contact sports with boxing (both professional and amateur) falling into that category.

323. Similarly, whilst I do not dispute that the Board has stated its intention to build on its current relationships with its amateur equivalents, I am of the view that more work needs to be done to ensure that the amateur training and education regime aligns with the current processes in professional boxing and combat sports. I consider that it would be beneficial to standardise the training and education regimes in amateur and professional boxing and combat sports to set clear expectations as to how repetitive head trauma and concussion should be managed. This initiative should be considered as part of the broader regulatory review.

Recommendation 14: The DJSIR extend the terms of reference for the review of the Board's regulatory framework to include a review of the oversight and regulation of amateur boxing and combat sports in Victoria and that the training and education regimes in amateur and professional boxing and combat sports be aligned and standardised.

National regulation and registration

324. Shane was registered as a professional boxer in South Australia, but during his boxing career he participated in four professional boxing matches in Victoria.

325. There is presently no national regulatory body overseeing the registration of professional boxers in Australia. The onus is on contestants to advise if they are registered as a professional boxer in another Australian State or Territory or even overseas and if they have been banned, or currently suspended from competition. Similarly, if a professional boxer registered in Victoria competes in a professional contest outside of Victoria, they must notify the Board in writing of the result and any injury sustained before they can compete in another contest.

326. Dr Cantu provided an opinion that there is no national boxing organisation in the United States and each of the various states is responsible for their own policies, guidelines, rules

and regulations.[225] Dr Cantu was asked whether he saw value in a national body of that nature to which he confirmed that he did.

327. In response to Dr Cantu's evidence, Mr Clayton gave evidence to the effect that he was not aware of any appetite or momentum in relation to national regulation in Australia. Mr Clayton used the example of the greyhound racing industry and the move to nationally regulate that sport. In relation to the greyhound racing industry, Mr Clayton stated that '*…it wasn't possible because of the nature of the state-based operations and how they're usually state [legislated].*'[226] However, Mr Clayton stated that he considers this to be an important issue as the Board are regularly required to assess the suitability of interstate and overseas fighters seeking to compete in Victoria.

328. At inquest, Mr Clayton gave evidence with respect to the Board's processes for assessing the suitability of an interstate or overseas boxer for a match in Victoria. Mr Clayton stated that the Board are provided with the boxer's history including their wins and losses, number of fights and outcomes from their last fight. If there is information that is unclear, Mr Clayton sated that the boxing member on the Board will contact a boxer's trainer or other relevant individuals and inquire about certain matters.[227] Mr Clayton commented that there is a lot of internal knowledge within the Board with respect to people in the professional boxing community and additional information on fighters is often sourced through those connections.

329. Further, Ms Simone Bailey provided a statement to the Court on 25 January 2022 in which she provided the following relevant information:

- DJSIR maintains a database on behalf of the Board which contains details of registered boxers, including their name, age, trainer, gender, serology results, injuries, medical suspensions and fight history;
- other similar databases are in place in other jurisdictions;
- result of contests are provided to "BoxRec", the publicly available official record keeper of the sport of boxing; and

[225] Exhibit 1 at 2404 [50].
[226] Transcript of Inquest Proceeding, 27 July 2023, p 176, lines 20 – 22.
[227] Transcript of Inquest Proceeding, 27 July 2023, p 177, line 18 – p 178, line 17.

- BoxRec cites the venues, referees, judges, official weights, knock out times and promoters.[228]

330. Whilst it is clear that the Board's remit is only to professional boxing in Victoria, at inquest Mr Clayton was asked about the prospect of national regulation and sharing of information. Mr Clayton confirmed that the Board was interested in sharing the data and making the data transparent. Mr Clayton also stated that the Board is presently sharing data transparently to assist other states in formulating their own policy and standard approaches which he considers also helps with consistency between jurisdictions.[229]

331. In written submissions, Counsel Assisting recommended that I should consider making recommendations along the following lines:

    - that the Board develop a database of boxers containing appropriate data about that fighter enabling an objective assessment of a proposed match easier and more accurate; and
    - that the Board explore with its interstate counterparts the development of a national database of all boxers registered to fight in Australia to make evidence-based processes applicable to all.[230]

332. I accept that there may not be any appetite or momentum for national regulation of professional boxing and combat sports in Australia. However, I am of the view that there is room to improve the current processes for maintaining data on boxers and assessing a boxer's suitability for a fight within Victoria. Whilst I acknowledge that the Board is provided with a participant's history when making an assessment as to suitability for a match, I consider it to be unsatisfactory for the Board to rely on internal knowledge within the boxing community to obtain additional information or data about a participant in making that assessment. I am of the view that it is too uncertain to leave it to a chance exchange among Board members or other members of the boxing community to gather information about a participant's boxing history.

333. Taking into account that DJSIR already maintains a database on behalf of the Board which contains details of registered boxers, and other similar databases exist in other

[228] Exhibit 1 at 1570.
[229] Transcript of Inquest Proceeding, 27 July 2023, p 180, lines 4 – 13.
[230] Written submissions of Counsel Assisting dated 18 August 2023, p 13.

Australian jurisdictions, I do not consider that it would be particularly burdensome for DJSIR and the Board to work with their interstate counterparts to develop and implement a national database of boxers. Without dictating the information or data to be included on any such database, I would suggest that it should include at a minimum the name, age, trainer, gender, serology results, injuries, medical suspensions, and fight history of a boxer.

334. Whilst I acknowledge that there may be legal, contractual and privacy considerations to be addressed as part of this initiative, it is a matter for DJSIR and the Board as to what processes they would implement to update a national database and address any issues with the sharing of medical or other health information related to the fighter.

335. I accept Counsel Assisting's proposed recommendations on this issue.

Recommendation 15: DJSIR and the Board work with their interstate counterparts to develop a national database of all boxers registered to fight in Australia with a view to making evidence-based processes applicable to all. Without dictating the information or data to be stored on the database, it should include to a minimum of the name, age, trainer, gender, serology results, injuries, medical suspensions and fight history of all registered boxers.

Safety of participants in professional boxing

336. The role of the Board in overseeing the safety of participants in professional boxing includes, but is not limited to:

- officiating and attending events, liaising with participants, trainers, referees, promoters and alike;
- licensing and registering those that are involved in professional boxing;
- monitoring and assessing the matching of participants and the adequacy of the matching by promotors and match makers; and
- monitoring the sign-off by trainers in terms of the competency of contestants or fighters and what is required of them.

337. In his evidence at inquest, Mr Clayton stated that in his view, the role of the Board in participant safety is something that has been developed at an operational level through custom and practice.[231]

338. In May 2023, the MASC was established to support and provide advice and recommendations about key health and medical issues associated with professional boxing and combat sports to the Board. It is expected that the MASC will meet four to five times a year and report to the Board following each meeting.[232]

339. The terms of reference from the MASC include keeping up to date with key health and medical developments in the sector, reviewing and making recommendations for repetitive brain injury, including concussion education resources, reviewing relevant policies, information best practice and collecting and analysing injury data.[233]

340. The first inaugural meeting took place on 5 May 2023. As part of that meeting the MASC agreed to provide advice to the Board about options for the introduction of baseline and neurological testing for contestants as well as the findings and recommendations in Dr Cantu's expert report.

341. I commend the Board for establishing the MASC. I am of the view that the support, advice and recommendations to be provided by the MASC will greatly assist the Board in making evidence-based medical and health decisions for participants in boxing and combat sports.

Baseline testing

342. As I outlined above, the Board is in the process of implementing the BTCM Policy which will contain information and guidance, amongst other things, about baseline neurological testing of boxers.[234]

343. At inquest, Dr Cantu provided an opinion about the importance of neurological baseline testing to measure an individual's degradation over time.[235] Dr Cantu explained that an individual's deterioration from their baseline may not always be obvious unless compared against themselves. Dr Cantu used the example of Muhammad Ali as an

[231] Transcript of Inquest Proceeding, 27 July 2023, p 159.
[232] Exhibit 2 – Statement of Mr Alan Clayton PSM, dated 4 July 2023, pp 2 and 18.
[233] Exhibit 2 – Statement of Mr Alan Clayton PSM, dated 4 July 2023, p 18.
[234] Statement of Alan Clayton PSM, 4 July 2023 [36.3]; Exhibit 1 at 1736-5.
[235] Transcript of Inquest Proceeding, 26 July 2023, p 112, lines 1-17.

individual who started from a very high baseline, and although he had a high level of deterioration over time, he would still score well within the normal range.[236]

344. At inquest, Mr Clayton confirmed baseline testing is of importance to the Board and the proof of neurological testing was required in assessing return to fight decisions and in the collection and distribution of data.[237] The Board also has the power to compel that the testing occur.[238]

345. Mr Clayton further commented that the Board has committed to introducing and looking at how baseline neurological testing can be implemented in the future. Mr Clayton was unable to confirm how the data collected from the baseline testing would be used by the Board and noted that there are a number of issues to be addressed before it could be implemented.[239]

346. Whilst Mr Clayton was unable to confirm how the Board would operationalise baseline testing, he noted that DJSIR has received funding to develop an online portal for combat sports participants and industry stakeholders. Mr Clayton stated that the digital portal will provide a simple way for stakeholders, participants, trainers, and others to interact with the Board, as opposed to using paper-based and other less reliable administrative processes. It will also provide an opportunity for electronic data-collection.[240]

347. In written submissions, Counsel Assisting proposed a recommendation to the Board as follows:

> '*that [the Board] expedite the implementation of appropriate systems for baseline neurological testing and collection of that information longitudinally for clinical use in respect of individual boxers as well as use in research around the impact on brain health of boxing more generally over time, and that the portal format referred to by Mr Clayton or other suitable source be developed to assist trainers and policy makers in understanding the impact on brain health of boxing by reference to evidence*.'[241]

[236] Transcript of Inquest Proceeding, 26 July 2023, p 112,
[237] Transcript of Inquest Proceeding, 27 July 2023, p 171, lines 13 – 31.
[238] Transcript of Inquest Proceeding, 27 July 2023, p 182, line 11.
[239] Transcript of Inquest Proceeding, 27 July 2023, pp 180 – 181.
[240] Transcript of Inquest Proceeding, 27 July 2023, p 171, lines 22 – 30.
[241] Written submissions of Counsel Assisting dated 18 August 2023, p 17.

348. The DJSIR submitted that there was no evidence to suggest that the Board was not progressing its baseline testing plans at a reasonable pace and that it is a high priority for the Board and MASC. The DJSIR also submitted that it would not be appropriate to rush this work, given its importance and that Mr Clayton suggested the gathering of evidence of neurological testing would be explored in the development of the digital portal.[242]

349. Having considered the evidence on this issue, including the opinion of Dr Cantu, I am of the view that neurological baseline testing is of the upmost importance and is essential in being able to assess and manage participant safety.

350. I do accept that there are a number of issues (such as privacy and legal considerations) to be addressed before neurological baseline testing can be implemented by the Board and/or DJSIR. I also accept that the Board is progressing its baseline testing plans at a reasonable pace. However, I strongly urge the Board to continuing its current endeavours to implement neurological baseline testing for boxing and combat sport participants in Victoria as soon as possible.

351. In doing so, I am of the view that the Board and DJSIR should consider how the data gathered from baseline neurological testing could be used to inform any changes to the rules and regulations of boxing in the future and in research on the brain health of professional boxers overtime.

Recommendation 16: The Board and DJSIR continue to develop appropriate systems for baseline neurological testing and collection of that data longitudinally to inform changes to the rules and regulations of boxing in Victoria, and in research on the brain health of professional boxers overtime.

No fight periods and stoppage rules

352. As at the time of Shane's death, all professional boxers in Victoria were required to undergo a pre-fight medical examination by the ringside physician within 24 hours of the contest and a subsequent examination immediately following. After the post-fight examination, the ringside physician was required to complete a declaration stating whether a medical clearance was required before the next contest and was required to

[242] Written submissions of DJSIR dated 19 September 2023, p 8.

nominate a non-fight period on the post-fight medication examination form. The Board also had the power to impose a non-fight period on any contestant.

353. Since the time of Shane's last contest in Victoria, the Board updated its risk management practices. On or about 23 April 2018, the Board imposed a mandatory 15-day non-fight period for all contestants, regardless of the outcome of the bout and implemented concussion management guidelines into the Rules. In addition, Rule 11.21 of the Rules provides authority to a medical practitioner to stop a contest at any time if certain criteria are met.

354. At inquest, Dr Cantu was asked to provide his opinion about the appropriateness of the current framework with respect to non-fight periods and stoppage rules. Dr Cantu gave evidence to the effect that the information he was shown with respect to non-fight periods was generally appropriate and fairly comparable to other jurisdictions.[243] However, Dr Cantu referred to the cookie cutter approach, noting that individuals do not react the same to concussions or head injuries and stated that rather than suggesting an arbitrary amount of time, that the severity of the injury and how the individual is recovering should be a guide for stand down periods.[244]

355. When pressed on this issue by Counsel for DJSIR, Dr Cantu was referred to the Rules which provide for medical staff or the Board to impose a period longer than a 15-day non-fight period.[245] Dr Cantu agreed that this was an appropriate way to manage individual cases that might be suffering a more severe concussion.[246]

356. Mr Clayton's evidence at inquest was that he considers the current non-fight period to be a '*minimum standard*' and that those involved in the management of fighters need to be cognisant of the individual circumstances of each and every fighter and responses should be based on medical assessments of individuals.[247] Mr Clayton stated that although these minimum standards are embraced within the Rules, there needs to be a better understanding throughout professional boxing.

357. Further, at inquest, Dr Cantu was asked to comment on the importance of stoppage rules during a contest. Dr Cantu opined that it was an important issue and noted that the ability

---

[243] Transcript of Inquest Proceeding, 26 July 2023, pp 113 – 114.
[244] Transcript of Inquest Proceeding, 26 July 2023, p 115.
[245] Exhibit 1 at 1079 [Rules 7.31, 7.32 and 7.37].
[246] Transcript of Inquest Proceeding, 26 July 2023, p 136.
[247] Transcript of Inquest Proceeding, 27 July 2023, p 163.

to stop a contest varied between jurisdictions.[248] During the course of his evidence, Dr Cantu was also taken to the relevant stoppage rules and asked for his comment on whether those rules are to an adequate or good standard. Dr Cantu commended the considerable authority a ringside physician has to stop a contest under the Rules and found it to be '*very positive*'.[249]

358. Having considered the evidence on this issue, including Dr Cantu's opinion, I commend the Board for implementing the mandatory minimum 15-day non-fight period and for implementing concussions management guidelines into the Rules. I consider the current framework for non-fight periods and the stoppage of contests to be reasonable and proportionate in the circumstances.

Age restrictions

359. In his report, Dr Cantu referred to studies which have shown a strong dose correlation between years of play/participation and risk of CTE status and severity.[250] At inquest, Dr Cantu furthered his opinion and agreed that the greater number of head traumas, concussive or sub-concussive that a person experiences over the course of their playing career, the greater the risk of developing CTE.[251]

360. Dr Cantu also stated that minors (people under the age of 18 years of age) should not be permitted to participate in boxing and that this is certainly true of persons below 14 years of age.[252] Dr Cantu also opined that parental consent should be obtained or required for any person under 18 years of age should that person wish to participate in boxing. He further stated that obtaining consent is not in itself adequate and education of the parent/guardian and child of the risks associated with brain injury from boxing is also necessary.[253]

361. In written submissions, Counsel Assisting submitted that I should consider making the proposed recommendations along the following lines:

a) Persons below the age of 14 should not be permitted to engage in any boxing activity involving hits to the head. To the extent that requires engagement with

[248] Transcript of Inquest Proceeding, 26 July 2023, pp 112 – 113.
[249] Transcript of Inquest Proceeding, 26 July 2023, p 135, lines 2 – 28.
[250] Exhibit 1 at 2403 [49].
[251] Transcript of Inquest Proceeding, 19 July 2023, p 44.
[252] Transcript of Inquest Proceeding, 26 July 2023, p 123, line 30 – p 124, line 18.
[253] Transcript of Inquest Proceeding, 26 July 2023, p 117, line 25 – p 118, line 5.

amateur boxing and its organisations, the Minister or other appropriate government representative should implement this restriction on registered amateur boxing organisations and/or extend the jurisdiction of the Board to enable it to have regulatory oversight of amateur boxing; and

b) Utilising the same modalities, require explicit and age appropriate education to prospective child boxers and their parents/guardians about the risks associated with boxing (including sparring) of repetitive head injury, traumatic brain injury and developing CTE.[254]

362. In response to those proposed recommendations, DJSIR submitted that Shane was an adult when he boxed in Victoria and there is no evidence that Shane ever participated in boxing when he was a child. Therefore, however worthy such proposed recommendations might be at a level of generality, it cannot have any connection with Shane's death, or the evidence at inquest.[255]

363. I acknowledge that there is no evidence that Shane participated in boxing as a child, and that participants in professional boxing matches must be over the age of 18.[256] However, I do not consider myself to be restricted to making recommendations which are directly connected with the circumstances of Shane's death.[257]

364. In this regard, I accept the evidence of Dr Cantu and agree that persons under the age of 18 should not be permitted to participate in boxing and that this is certainly true of those persons under the age of 14 years. I also agree that if a person under the age of 18 wishes to participate in boxing that parental/guardianship consent should be required and that the participants and parents/guardians should be educated about the associated and increased risks of brain injury, such as CTE.

365. Although not directly addressed at inquest, I am of the view that these principles should extend to the oversight and regulation of amateur boxing in Victoria including individuals not participating in boxing matches under 14 years of age and that, if they do participate, informed parental or guardianship consent should be obtained.

[254] Written submissions of Counsel Assisting dated 18 August 2023, p 17.
[255] Written submissions of DJSIR dated 19 September 2023, p 7.
[256] Exhibit 1 at 1078 [Rule 7.2].
[257] [2011] VSC 133.

<u>Recommendation 17</u>:

As part of the regulatory review, the DJSIR and the Board:

a) review the current rules and regulations for professional and amateur boxing in Victoria with a view to restricting persons under the age of 14 years from participating in any boxing activity involving hits to the head. To the extent that requires engagement with amateur boxing and its organisations, the Minister or other appropriate government representative should implement this restriction on registered amateur boxing organisations and/or extend the jurisdiction of the Board to enable it to have regulatory oversight of amateur boxing; and

b) utilising the same modalities, develop and disseminate explicit and age appropriate education to prospective child boxers and their parents/guardians about the risks associated with boxing (including sparring) of repetitive head injury, traumatic brain injury and developing CTE.

<u>Reduction of brain injury through changes to rules</u>

366. It is not disputed that the very purpose of boxing, by its rules, engages the hitting and damage of a person's body or head. The scoring zone under the Rules is listed as the '*face, jaw, head, solar plexus, [and] liver*' and state that '*…legal punches that cause damage score the highest*'. Under the Rules, cuts and bruises are incidental and damage is assessed rather from observation of a level of debilitation, staggering, change of complexion or weakening of an opponent.

367. At inquest, Dr Cantu was asked whether in his opinion, modifying the rules relating to the scoring system of boxing would ameliorate or reduce the risk of CTE in a boxer. Dr Cantu gave evidence to the effect that while there may be ways to ameliorate or reduce the risk of CTE, the rule changes may not be practical for professional fighting.[258]

368. Dr Cantu provided an example from the scoring system in amateur boxing where a blow strike to a legal part of the body or head counting the same whether it is a light or heavy

[258] Transcript of Inquest Proceeding, 26 July 2023, p 120.

blow. He opined that if this were to be translated to professional boxing that it could mitigate the risk of CTE, but that it would be unlikely to be accepted because of the spectacle of boxing, as opposed to the medical ramifications of such a rule changes.[259]

369. When asked to clarify his opinion from a medical standpoint, Dr Cantu stated that there are safeties that could be put in place that would '*diminish the risk that these athletes are taking*', but in the sense of changing the scoring system or making head gear mandatory, he did not consider that it would be supported by those who participate in or watch the sport.[260]

370. Dr Cantu was also asked to provide an opinion on whether the reduction of the length of a round and/or the reduction of the overall length of a fight would have an impact medically on the consequence of head trauma taken in the context of boxing. In response, Dr Cantu opined that it would be expected to diminish the amount of head trauma somebody would take.[261]

371. In written submissions, Counsel Assisting submitted that I should consider making a recommendation to the Board that it investigate the viability of amending its rules, including reducing the length of rounds, the overall length of a fight, changing the scoring system to reduce scoring based on higher impact, and considering the use of protective head gear in fight, with a view to reducing the number and impact of head traumas experienced by boxers during fights and, concomitantly, the risk of CTE and other neurological brain disease.[262]

372. Having considered the evidence on this issue, I agree that it would be appropriate for DJSIR and the Board, as part of the regulatory review to undertake research to further understand the viability of amending the rules and regulations of boxing with a view to reduce the occurrence of head trauma experienced by boxers during their career and to improve participant health and safety.

Recommendation 18: DJSIR and the Board undertake ongoing research to investigate the viability of amending its rules, including reducing the length of rounds, the overall length of a fight, changing the scoring system to reduce scoring based on higher impact,

[259] Transcript of Inquest Proceeding, 26 July 2023, pp 121 – 122.
[260] Ibid.
[261] Transcript of Inquest Proceeding, 26 July 2023, p 123.
[262] Written submissions of Counsel Assisting dated 18 August 2023, p 20.

with a view to reducing the amount of head trauma experienced by boxers in their career and the associated risk of CTE and other neurological brain disease.

Sparring

373. In his report, Dr Cantu observed that what was lacking in the Board policies was the broader issue of repetitive head trauma sustained by boxers not only during bouts but especially during sparring training sessions.[263]

374. At inquest, Dr Cantu furthered his opinion and agreed that the more substantial the head trauma in terms of severity and number of episodes, the greater the association or risk of the person developing CTE. Dr Cantu also gave evidence to the effect that sparring needs to be better understood and that further research is required to better understand how many blows to the head a person can take before it increases their risk of CTE.[264]

375. Dr Cantu also stated that he considered it to be unfortunate that sparring is not better regulated as individuals can receive a tremendous number of hits to the head placing them at risk for later life issues.[265] He opined that it would be '*advantageous to…have some rules and regulations about how many fights somebody can have in a given year [and] how many rounds of sparring somebody can participate in…a given year*'.[266]

376. Dr Cantu also stated that it is conceivable that boxing could be practised in such a way that the amount of sparring and taking blows to the head is minimised and the amount of time spent hitting bags or gloves is maximised, so that the number of blows suffered by a boxer is dramatically reduced.[267] Dr Cantu also strongly supported educational material which is explicit in explaining the risk of developing CTE from the practice of boxing in bouts as well as sparing.[268]

377. In written submissions, Counsel Assisting proposed that I consider making a recommendation to the Board along the following lines:

---

[263] Exhibit 1 at 2403 [48].
[264] Transcript of Inquest Proceeding, 26 July 2023, p 108.
[265] Transcript of Inquest Proceeding, 26 July 2023, p 105
[266] Transcript of Inquest Proceeding, 26 July 2023, p 108.
[267] Transcript of Inquest Proceeding, 26 July 2023, p 132, lines 25 – 30.
[268] Transcript of Inquest Proceeding, 26 July 2023, p 116, line 25 – p 117, line 7.

a) Develop and implement specific education and training to boxers, trainers and other boxing stakeholders about the risk of repetitive head injury from sparring, including developing CTE; and

b) Explore ways in which the Board might reduce the amount of sparring allowed to occur, including banning sparring by boxers not formally registered and restricting sparring by registered boxers in the lead up to a bout.[269]

378. DJSIR submitted that there was no evidence about Shane's sparring and boxing training activities whilst he was a professional boxer and while it is accepted that such a recommendation may be worthy, it cannot be said to have a connection with Shane's death, or the evidence given at inquest.[270]

379. Whilst I accept that the inquest did not explicitly explore evidence related to Shane's sparring and boxing training activities whilst he was a professional boxer, I do not consider myself to be restricted to making recommendations which are directly connected with the circumstances of Shane's death.[271]

380. Having considered the evidence on this issue, I agree that there would be a benefit in the Board exploring ways in which it might reduce the amount of sparring allowed to occur, including restricting sparring by registered boxers in the lead up to a bout and at training.

381. In this regard, I adopt proposed recommendation b) above in part, as I accept that it would be difficult for the Board to ban sparring for boxers that are not formally registered.

382. I will address the proposed recommendation a) above when discussing the topic of education and research later in this finding.

<u>Recommendation 19</u>: **The Board explore ways to reduce the amount of sparring for professional boxers including restricting sparring by registered boxers in the lead up to a bout and at training.**

[269] Written submissions of Counsel Assisting dated 18 August 2023, p 16.
[270] Written submissions by the DJSIR dated 19 September 2023, p 7.
[271] [2011] VSC 133.

Education and research

<u>Educational material</u>

383. In his report, Dr Cantu opined that the focus of the educational material used by the Board should not only be on concussion but also the effects of repetitive head impacts and repetitive traumatic brain injury including CTE. Dr Cantu noted that he did not see a mention of CTE in the materials that he was provided and believes that it should be a major focus of education and research.[272]

384. At inquest, Dr Cantu gave evidence to the effect that people who engaged in activities such as boxing that put them at risk of concussion or later life issues including but not limited to CTE sustained as a result of repetitive head trauma, should fully understand that risk at the time that they undertake the activity.[273] Dr Cantu agreed that the Board should address the issue of head trauma short of concussion, sub-concussive hits or asymptomatic head trauma in its education of people participating in boxing or proposing to do so.

385. In response to Dr Cantu's opinion, Mr Clayton stated that:

> '*…we accepted that…our focus was overly narrow and that Dr Cantu had pointed out that we should be considering CTE…repeated brain trauma, [traumatic brain injury] and…our medical people accepted that we were too narrow…and we should broaden our view, then the detail of that is subject of further work*'.[274]

386. Mr Clayton also stated that BTCM Policy will not only focus on concussion, but also on repetitive head trauma, sub-concussive or asymptomatic head trauma and on CTE.[275] However, when pressed on the issue of whether things such as repetitive head trauma and traumatic brain injury or the long-term effects of a person participating in boxing would be addressed in the educational training and other materials being developed, he would only say that he would take that back to the medical advisors on the Board's MASC.[276]

---

[272] Exhibit 1 at 2404 [50].
[273] Transcript of Inquest Proceeding, 26 July 2023, p 106.
[274] Transcript of Inquest Proceeding, 27 July 2023, p 190, lines 20 –26.
[275] Transcript of Inquest Proceeding, 27 July 2023, p 183, lines 26 –29.
[276] Transcript of Inquest Proceeding, 27 July 2023, pp 187 – 189.

387. In his first statement to the Court, Mr Clayton outlined the Board's current educational initiatives for boxers, trainers, promoters and others, including the response to recommendations 29 to 33 of the SMA report.[277] These initiatives include a centralised repository of concussion and brain trauma resources on the Sport and Recreation Victoria website and the development of concussion and brain educational videos with the assistance of DJSIR.

388. At inquest, Mr Clayton gave evidence about the educational videos noting that the content was adjusted following a review of Dr Cantu's opinion about CTE and repetitive head knocks in order to broaden the focus from concussion alone.[278] In his statement dated 4 July 2023, Mr Clayton also confirmed that the educational videos will be supplemented with additional communication material such as posters, brochures, and social media messaging promoted in a variety of settings, including gyms and venues hosting promotions. These materials will also be distributed directly to all current registration and licence holders and state combat sport commissions.[279]

389. Further, since 1 July 2023, the Board has also provided educative material on concussion and brain trauma as a mandatory prerequisite for all registrations, licences and permits.[280] Applicants are required to review the material and answer questions to confirm their comprehension and intention to comply with the Board's policies in this area. At inquest, Mr Clayton commented that whilst this change will target new members of professional boxing, the next issue to manage is targeting those that are already registered, licenced and permitted to work within the industry.[281]

390. The Board is still undertaking the necessary steps to communicate the new mandatory education requirement to the industry. Mr Clayton advised that following notification, keeping in mind a reasonable time will need to be set aside to ensure completion, any subsequent non-compliance will be investigated by the Board and sanctions under the Act will be considered. It is my opinion that any such sanctions should include the suspension, cancellation and non-renewal of licences and registration.

[277] Exhibit 2 – Annexure B.
[278] Transcript of Inquest Proceeding, 27 July 2023, p 164, lines 21 – 28.
[279] Exhibit 2 – Statement of Mr Alan Clayton PSM dated 4 July 2023, p 4.
[280] Ibid.
[281] Transcript of Inquest Proceeding, 27 July 2023, p 167.

391. In his evidence, Mr Clayton also confirmed that there have been a number of papers released recently (including the 2023 Consensus Statement) which will need to be reviewed by the MASC. It is then intended that the MASC will present to the Board on any implications for their procedures, processes and rules.[282]

392. In written submissions, Counsel Assisting submitted that I should consider making a recommendation to the Board that its educational material, including its proposed mandatory training for registration be developed to specifically address not just concussion but the risks associated with repetitive head impact and traumatic brain injury in boxing, and the potential effects of that in the long-term on a person participating in boxing, including sparring training, as well as specific reference to the potential long-term effects of head knocks in boxing that include the development of CTE and other neurodegenerative diseases.[283]

393. This proposed recommendation was generally accepted by DJSIR in its written submissions.[284] I therefore accept the proposed recommendation of Counsel Assisting.

Recommendation 20: I recommend to the Board that its educational material, including its proposed mandatory training for registration be developed to specifically address not just concussion but the risks associated with repetitive head impact and traumatic brain injury in boxing, and the potential effects of that in the long term on a person participating in boxing, including sparring training, as well as specific reference to the potential long term effects of head knocks in boxing that include the development of CTE and other neurodegenerative diseases.

Research

394. Dr Cantu's undisputed evidence is that in his experience and the research shows that the more substantial the head trauma in terms of severity and number of episodes, the greater the association or the greater the risk of that person developing CTE.

[282] Transcript of Inquest Proceeding, 27 July 2023, p 168, lines 4 – 15.
[283] Written submissions of Counsel Assisting dated 18 August 2023, p 15.
[284] Written submissions of the DJSIR dated 19 September 2023, p 7.

395. At inquest, Dr Cantu gave evidence to the effect that more research needs to be done into the longitudinal effects of boxing and stated that '*there ought to be either directly involved or funding research…into CTE in boxers*'.[285]

396. Dr Cantu noted that it is difficult to measure the number of head impacts a boxer would receive per year and that further research is required. He opined that there is far greater opportunity to study CTE in living individuals and to understand what parameters we might put around how much sparring is done, how many fights an individual has in a given year and how much head trauma an individual takes in a given period of time.[286]

397. Dr Cantu stated that '*mouthguard accelerometers would be the way…that's most practical to obtain that kind of data*'[287] and that it would be helpful to understand what forces boxers are routinely suffering in sparring sessions and in bouts. Whilst he was aware of small studies being done with mouthguard accelerometers, he was unaware of any large-scale projects.[288]

398. At inquest, Mr Clayton indicated that the Board would be interested in research into mouthguard accelerometer technology,[289] but that he would take it on advisement from the MASC.[290]

399. In written submissions, Counsel Assisting submitted that I should consider making a recommendation that the Board undertake longitudinal research into the number and severity of head knocks a boxer takes in *a sparring context*, including research based on the (mandatory) use of accelerometers in mouthguards in boxers.[291]

400. Having considered the evidence on this issue, I accept Counsel Assisting's proposed recommendation in part. However, I consider that the longitudinal research into the number and severity of head knocks should not be limited to the context of sparring. In this regard, I accept the evidence of Dr Cantu that more research needs to be done into the longitudinal effects of boxing and agree that there is far greater opportunity to study CTE in living individuals.

[285] Transcript of Inquest Proceeding, 26 July 2023, p 120.
[286] Transcript of Inquest Proceeding, 26 July 2023, p 134.
[287] Transcript of Inquest Proceeding, 26 July 2023, p 106.
[288] Ibid.
[289] Transcript of Inquest Proceeding, 27 July 2023, p 186.
[290] Ibid.
[291] Written submissions of the DJSIR dated 19 September 2023, p 16.

401. I am of the view that the Board and DJSIR should work together as a matter of priority to develop a longitudinal research project aimed at trialling the use of mouthguard accelerometer technology to monitor the number and severity of head knocks sustained by a boxer per year. It is a matter for the Board and DJSIR on advice from the MASC (or based on other relevant medical advice) to determine the terms of reference for any such longitudinal research project of that kind.

402. I am also of the view that the Board and DJSIR on advice from the MASC should seek to develop and implement specific education and training for boxers, trainers and other boxing stakeholders about the risk of repetitive head injury from sparring, including developing CTE.

Recommendation 21: The Board and DJSIR on advice from the MASC:

a) develop a longitudinal research project aimed at trialling the use mouthguard accelerometer technology to monitor the number and severity of head knocks sustained by boxers per year. It is a matter for the Board and DJSIR on advice from the MASC (or based on other relevant medical advice) to determine the terms of reference for any such longitudinal research project of that kind; and

b) develop and implement specific education and training to boxers, trainers and other boxing stakeholders about the risk of repetitive head injury from sparring, including developing CTE.

Conclusions with respect to boxing

403. The state of the evidence confirms that it has been a significant period of time since an in-depth review of the regulation of professional boxing and combat sports in Victoria has occurred.

404. I commend the DJSIR and the Board on the establishment of the MASC and the commission of the SMA report. I also commend the Board for adopting the recommendations in the SMA report and for undertaking further initiatives to better manage the health and safety of boxing participants in matches and in training including reducing the occurrence and impact of repetitive head injuries for professional boxing participants in Victoria.

405. However, having considered all of the available evidence, including the expert opinion of Dr Cantu, I believe that many of the initiatives that have been implemented by the DJSIR and the Board, while heading in the right direction, are still in the early stages of the renewal and that more work needs to be done for the professional boxing framework to align with the principles in the Position Statements and 2023 Consensus Statement. This includes but is not limited to, increased national regulation of professional boxing, additional education for participants and those that are otherwise engaged with amateur and professional boxing, increasing the health and safety of participants through initiatives such as rule changes and baseline testing, and additional research to better understand the short and long term effects of concussion and repetitive head injuries (such as CTE and other neurological degenerative conditions) for participants of boxing and combat sports in Victoria.

406. I am optimistic that the review of the Board's regulatory framework will provide for a further opportunity for the DJSIR and Board to consider the matters addressed in this finding.

FINDINGS

407. Having held an inquest into the death of Shane Tuck, I make the following findings, pursuant to section 67(1) of the Act:

a) the identity of the deceased was Shane Tuck, born 24 December 1981;

b) the death occurred on 20 July 2020 at Berwick, Victoria;

c) the cause of death was *hanging*;

d) Shane received head injuries in the course of his football and boxing pursuits;

e) Shane died with (High) CTE (Stage III);

f) Shane intended to take his own life in the context of an ongoing mental health battle; and

g) the death occurred in the circumstances set out herein.

408. Having considered all of the available evidence, including the opinion of Dr Cantu, I am satisfied that CTE is not only associated with the number of concussions sustained by a participant but is rather associated with repetitive head trauma, including concussive and

sub-concussive hits. Whilst I accept that CTE cannot be definitively diagnosed in life, there are clinical features that predict with a very significant degree the presence of CTE in living patients, including those features shown by Shane prior to his death, such as, cognitive and episodic memory impairment and psychiatric features including depression, anxiety, and/or paranoia.

TABLE OF RECOMMENDATIONS

Pursuant to section 72(2) of the Act, I make the following recommendations:

Recommendation 1:

The AFL consider implementing rules and guidelines that limit the number of contact training sessions in the off season, pre-season and during the season with a view to implementing these amended rules and guidelines by the commencement of the AFL/W 2025 pre-season.

Recommendation 2:

The AFL implement a rule whereby concussions spotters at elite AFL/W games be empowered to mandate that a player be removed from the field of play for a medical assessment based on their live and/or video review of an incident.

Recommendation 3:

The AFL employ independent medical practitioners to attend all elite AFL/W games to assist club doctors in the assessment of a player for a suspected or actual head injury. Whilst the decision to enter a player into concussion protocols should be a joint decision by the independent medical practitioner and the club doctor, if a situation arises whereby the club doctor and independent medical practitioner cannot agree, the opinion of the independent medical practitioner should prevail.

Recommendation 4:

The AFL in consultation with the ALFPA consider how to best improve player awareness and review its current educational material on concussion and repeated head trauma including the risk of CTE to expressly address:

a) recognising the acute signs and symptoms of concussion and head trauma;

b) responding and managing concussion and head trauma; and

c) understanding the short and long-term risks of concussion and repeated head trauma.

Recommendation 5:

The AFL:

a) continue to develop and disseminate its educational materials for prospective players and their families on the risk of repetitive head trauma in Australian rules football;

b) review existing and develop further educational material, and disseminate it, concerning expressly and explicitly the risk of developing CTE through repetitive head trauma associated with the playing of Australian rules football, and do so expeditiously;

c) continue to develop educational material with accessible language, and disseminate it through variety of platforms including in-person and virtual forums, social media platforms and webinars to reach children and the broader community concerning the risk of repetitive head trauma and its consequences by the playing of Australian rules football, and do so expeditiously;

d) consider developing and disseminating information targeted at points of transition in the playing of Australian rules football that is specific to the level of transition and including information about heightened risk of repetitive head impacts, including the development of neurodegenerative disease, including CTE; and

e) in developing this accessible and informative educational material that further consideration be given to how that educational material can be adopted at all community levels and in all environments in which Australian rules football is played including in suburban competitions, rural settings and through AFL supported competitions such as Auskick. The AFL consider obtaining evidence-based advice with respect to the most appropriate means to reach different community groups with its educational material.

Recommendation 6:

The Royal Australian College of General Practitioners give consideration to expanding the education programs for general practitioners provided at medical colleges, in medical degrees and within the ongoing professional development and training programs on the short and long-term effects of repetitive head trauma associated with contact sports and the risk of developing serious brain injury and disease, including CTE.

Recommendation 7:

The AFL continue to disseminate and develop evidence-based, and easy to understand education materials for concussion and repetitive head trauma for elite AFL/W and community club doctors, coaches, trainers and other volunteers involved in the Australian football community.

Recommendation 8:

The AFL take all reasonable steps to promote and extend the use of mouthguard accelerometer technology in elite AFL/W clubs with a view to extending player uptake to 80% for the 2024 AFL/W season. In doing so, the AFL should consider obtaining specialist advice on overcoming any legal and privacy issues which may prevent the AFL from mandating the use of the mouthguard accelerometer technology in elite AFL/W clubs and using the data for clinical research purposes.

Recommendation 9:

The AFL develop and implement standardised neurological baseline testing for all elite AFL/W players. The data obtained from the standardising neurological baseline testing should be linked to the clinical profile of each player and should occur at the beginning of each elite AFL/W season. The data obtained by the AFL should be used to further longitudinal research into player brain health and the impact of repetitive head trauma in the playing of Australian rules football. If a player does not wish for their deidentified data to be used for research purposes, they should be required to opt out.

Recommendation 10:

The AFL should develop educational material aimed at elite AFL/W players on the benefits of neurological baseline testing and the use of the deidentified data for clinical purposes to further longitudinal research into player brain health and repetitive head trauma

in the playing of Australian rules football. Any such educational material should be evidence-based, updated with the current scientific research and disseminated with the assistance of the AFLPA.

Recommendation 11:

The AFL and AFLPA expedite and improve their communications with AFL/W players (past and present) and encourage them to donate their brains at end of life for further research. That encouragement should include concrete information and education about the risks associated with repetitive head trauma including CTE that is delivered throughout a player's career and beyond.

Recommendation 12:

The Commonwealth Department of Health facilitate the adequate funding of brain banks nationally.

Recommendation 13:

I recommend that the AFL explore with the AFLPA how they may engage the AFLPA in assisting with education and training for players on concussion and the risks associated with repetitive head trauma.

Recommendation 14:

The DJSIR extend the terms of reference for the review of the Board's regulatory framework to include a review of the oversight and regulation of amateur boxing and combat sports in Victoria and that the training and education regimes in amateur and professional boxing and combat sports be aligned and standardised.

Recommendation 15:

DJSIR and the Board work with their interstate counterparts to develop a national database of all boxers registered to fight in Australia with a view to making evidence-based processes applicable to all. Without dictating the information or data to be stored on the database, it should include to a minimum of the name, age, trainer, gender, serology results, injuries, medical suspensions and fight history of all registered boxers.

Recommendation 16:

The Board and DJSIR continue to develop appropriate systems for baseline neurological testing and collection of that data longitudinally to inform changes to the rules and regulations of boxing in Victoria, and in research on the brain health of professional boxers overtime.

Recommendation 17:

As part of the regulatory review, the DJSIR and the Board:

a) review the current rules and regulations for professional and amateur boxing in Victoria with a view to restricting persons under the age of 14 years from participating in any boxing activity involving hits to the head. To the extent that requires engagement with amateur boxing and its organisations, the Minister or other appropriate government representative should implement this restriction on registered amateur boxing organisations and/or extend the jurisdiction of the Board to enable it to have regulatory oversight of amateur boxing; and

b) utilising the same modalities, develop and disseminate explicit and age-appropriate education to prospective child boxers and their parents/guardians about the risks associated with boxing (including sparring) of repetitive head injury, traumatic brain injury and developing CTE.

Recommendation 18:

DJSIR and the Board undertake ongoing research to investigate the viability of amending its rules, including reducing the length of rounds, the overall length of a fight, changing the scoring system to reduce scoring based on higher impact, with a view to reducing the amount of head trauma experienced by boxers in their career and the associated risk of CTE and other neurological brain disease.

Recommendation 19:

The Board explore ways to reduce the amount of sparring for professional boxers including restricting sparring by registered boxers in the lead up to a bout and at training.

Recommendation 20:

I recommend to the Board that its educational material, including its proposed mandatory training for registration be developed to specifically address not just concussion but the risks associated with repetitive head impact and traumatic brain injury in boxing, and the potential effects of that in the long term on a person participating in boxing, including sparring training, as well as specific reference to the potential long term effects of head knocks in boxing that include the development of CTE and other neurodegenerative diseases.

Recommendation 21:

The Board and DJSIR on advice from the MASC:

a) develop a longitudinal research project aimed at trialling the use mouthguard accelerometer technology to monitor the number and severity of head knocks sustained by boxers per year. It is a matter for the Board and DJSIR on advice from the MASC (or based on other relevant medical advice) to determine the terms of reference for any such longitudinal research project of that kind; and

b) develop and implement specific education and training to boxers, trainers and other boxing stakeholders about the risk of repetitive head injury from sparring, including developing CTE.

I convey my sincerest sympathy to Shane's family for their loss.

Pursuant to section 73(1B) of the Act, I order that this finding be published on the Coroners Court of Victoria website in accordance with the rules.

I direct that a copy of this finding be provided to the following:

Shane's Family

Australian Football League

Australian Football League Player's Association

Richmond Football Club

The Secretary of the Department of Jobs, Skills, Industry and Regions

South Australian Office of Recreation, Sport and Racing

Monash Health

The Royal Australian College of General Practitioners

Commonwealth Department of Health and Aged Care

Senior Constable Stan Tasic, Coroner's Investigator

Signature:

JUDGE JOHN CAIN
STATE CORONER

Date: 11 December 2023

NOTE: Under section 83 of the ***Coroners Act 2008*** ('the Act'), a person with sufficient interest in an investigation may appeal to the Trial Division of the Supreme Court against the findings of a coroner in respect of a death after an inquest. An appeal must be made within 6 months after the day on which the determination is made, unless the Supreme Court grants leave to appeal out of time under section 86 of the Act.