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A HEAD START:

TACKLING CONCUSSION IN AUSTRALIA

Incidence, challenges and innovations in prevention, diagnosis and management

April 2025

Foreword

Concussion represents a significant yet often overlooked public health concern in Australia today. With rising incidence across sports participation, workplace accidents, and everyday activities, the impacts extend far beyond the immediate injury—affecting individuals' cognitive function, mental health, and overall quality of life.

The economic burden on our healthcare system continues to grow, with costs stemming from diagnosis, treatment, and long-term management of post-concussion symptoms.

What has become increasingly clear is that our traditional approaches to concussion management are insufficient. While treatment protocols have improved, we face a critical need to shift our focus toward prevention, early detection, and accessible screening. This is where innovation meets necessity.

Emerging technologies can transform our approach to concussion management. Advanced screening tools powered by AI now offers unprecedented opportunities to provide baseline testing and objective replicable measures to not only detect concussion but also manage return to play and return to work.

However, technology alone cannot solve this challenge. That's why Sciana is establishing networks of pharmacies throughout Australia equipped with these innovative tools and staffed by trained professionals. By leveraging the accessibility and community presence of pharmacies, we aim to bring concussion screening and awareness to more Australians than ever before.

This paper outlines the current state of concussion in Australia, emerging solutions, and a roadmap for implementing more effective prevention and early intervention strategies. It represents our commitment to addressing this growing public health concern through the thoughtful integration of innovative technology, healthcare expertise, and community-based resources.

Candice Smith
Chief Executive Officer

Dr Craig Nossel
Chief Medial Officer

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SECTION 1

CONCUSSION IS A GROWING PUBLIC HEALTH CONCERN ACROSS AUSTRALIA

01

Introduction

Concussion is a complex and frequently misunderstood neurological condition that is also referred to as mild traumatic brain injury (mTBI). It occurs when an external force causes the brain to move rapidly within the skull, leading to temporary functional impairments in cognition, balance, and neurological processing. While concussions do not typically result in structural damage detectable on standard neuroimaging, they can have significant short- and long-term effects on individuals' health and wellbeing.

In Australia, concussion is a growing public health concern, particularly within the sports, healthcare, and occupational safety landscapes. Contact sports such as Australian rules football, rugby, and soccer report some of the highest concussion rates, with increasing attention being placed on player safety and long-term neurological risks.

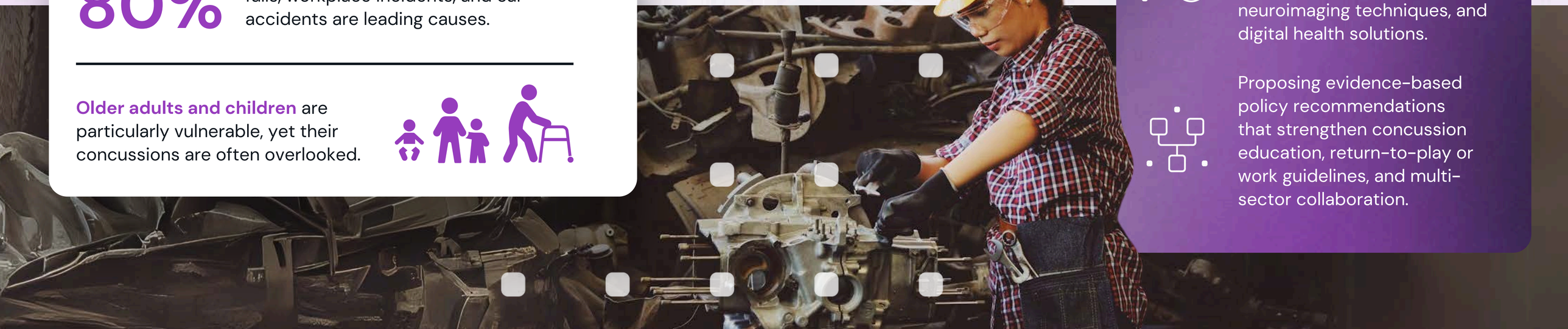
Outside of sport, concussions frequently occur in workplace settings, motor vehicle accidents, and falls, particularly among older adults. Despite this widespread prevalence, concussion remains underdiagnosed and underreported, partly owing to its variable presentation and the reliance on self-reported symptoms.

Beyond the Field: Why concussions are everyone's concern

80%

While sports grab headlines, **80% of concussions happen off the field** – falls, workplace incidents, and car accidents are leading causes.

Older adults and children are particularly vulnerable, yet their concussions are often overlooked.



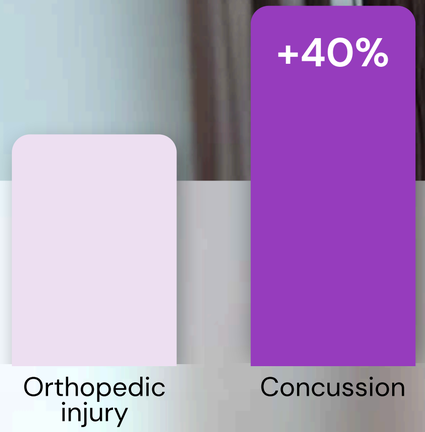
Key objectives of this white paper include:

- Clarifying the incidence, causes, and long-term effects of concussion, with a focus on high-risk populations.
- Highlighting advancements in concussion diagnosis and management, including clinical assessment tools, biomarkers, neuroimaging techniques, and digital health solutions.
- Proposing evidence-based policy recommendations that strengthen concussion education, return-to-play or work guidelines, and multi-sector collaboration.

The hidden impact of concussions

A lasting effect on mental health

Recent research has highlighted the link between repeated concussions and **permanent impacts on cognitive, behavioural, and social functioning.**



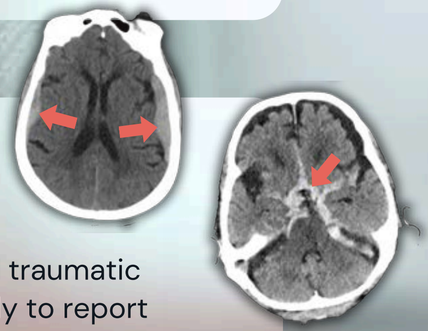
Increased mental health risk

Children and youths who sustained a concussion had a **40% increased risk** of developing a mental health issue compared to orthopedic injuries.

5.5 YEARS

Long-Term Psychological Effects

A high frequency of post-injury psychiatric disorders is evident up to **5.5 years post-injury.**



Higher risk of PTSD & depression

People who had experienced mild traumatic brain injury (mTBI) were more likely to report PTSD & major depressive disorder.

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SECTION 2

WHAT IS HAPPENING?
RATES
RISKS
REALITIES

02

The concussion landscape in Australia

Concussion is a significant public health issue in Australia, affecting individuals across sports, workplaces, and daily activities.

This demographic is particularly vulnerable due to balance issues, frailty, and pre-existing conditions that heighten their risk of head trauma.

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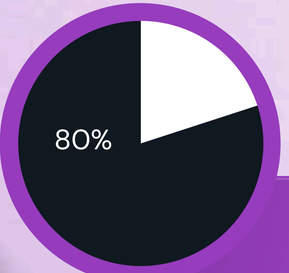

80%
of concussion hospitalisations are unrelated to sport

By age 16,
1 in 5 children
will experience a concussion

Falls cause nearly
50%
of concussion-related hospitalisations in older adults

Emergency department visits have increased by
5% per year
for the past 8 years

Nearly
half
of all traumatic brain injury (TBI) hospitalisations were due to concussions

High-risk industries
include construction, law enforcement, emergency response, and the military.

Workplace concussions often go unreported or are misattributed to general head trauma, leading to gaps in official statistics.

In 2021 - 2022, there were
17,700
emergency department visits and
10,800
hospitalisations for concussions

Indigenous Australians experience higher TBI rates, with concussions making up
74–90%
of cases.

Over
20%
of sports-related hospitalisations are due to concussions

Concussive head injury in children and adolescents, Gary J Browne, Stefan Dimou, Australian Family Physician, July 2016

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Realities

Australia's approach to concussion management has evolved in recent years, but global comparisons indicate room for improvement in data collection, public awareness, and policy enforcement.

In countries like Canada and the United States, concussion surveillance systems are more extensive, particularly in sports and military settings. The National Collegiate Athletic Association (NCAA) and National Football League (NFL) have strict mandatory reporting and return-to-play protocols, ensuring that concussions are properly managed at all levels of competition.

Many athletes, particularly in community and amateur sports, choose to **continue playing despite experiencing concussion symptoms** owing to fear of losing their position or disappointing their team.

17.2% **of professional Australian rugby league players**

admitted to not reporting at least one concussion over two seasons, primarily due to not wanting to miss games or training sessions.

The underreporting problem

Underreporting and misdiagnosis make accurately assessing concussion incidence a major challenge

The Australian Institute of Sport (AIS) reports that concussions in contact sports make up a major portion of sports injuries, though the true number is likely higher due to underreporting at community and amateur levels.

Medical misdiagnosis further complicates the issue, as concussion symptoms often overlap with other conditions such as migraines, stress-related disorders, or inner ear dysfunctions.

Without objective diagnostic tools, many cases go undetected, leading to inadequate treatment and prolonged recovery times.

In workplaces, employees in high-risk industries may fail to recognise concussions or avoid reporting them due to concerns about job security and potential loss of work hours.

The Murdoch Children's Research Institute

has reported that one in five children will have suffered from concussion by the age of 16.

One in eight children and adolescents have been diagnosed with a concussion by a health professional in Australia, with common causes including falls, recreational injuries, sports, or motor vehicle accidents.

Concussion in children and adolescents may lead to mental health problems such as anxiety, depression, post-traumatic stress, attention problems and withdrawal later on. It is therefore important to identify and manage concussion in the early stages after an injury to accelerate recovery, paying close attention to physical, cognitive, emotional and sleep-related symptoms.

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SECTION 3

WHAT IS HAPPENING?

CAUSES
COMPLICATIONS
COSTS
CHALLENGES

03

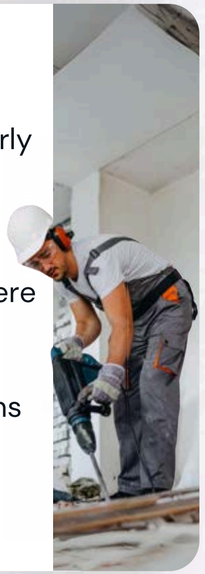
Causes and major risk factors of concussions

Sports and recreational activities

High-impact sports such as Australian rules football, rugby league, rugby union and soccer involve frequent collisions, falls, and rapid changes in movement, increasing the likelihood of head injuries. Studies have shown that concussions represent a significant proportion of injuries at both professional and amateur levels, with growing concern over the cumulative effects of repeated head trauma.

Workplace injuries

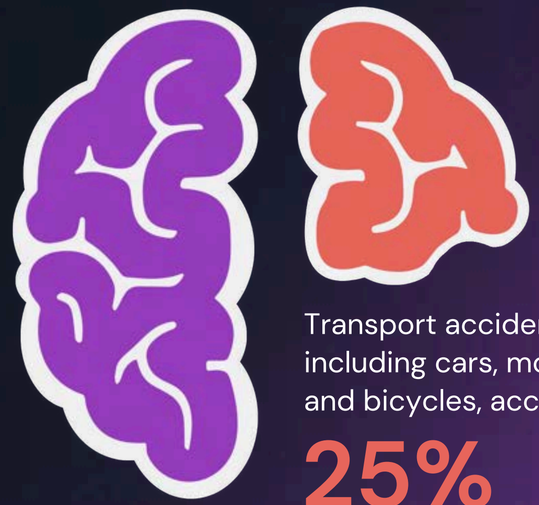
Certain occupational settings present a heightened risk for concussion, particularly in construction, law enforcement, emergency response, and military personnel. Workers in these fields are frequently exposed to environments where falls, blunt force trauma, and explosive forces can lead to head injuries. Despite workplace safety regulations, concussions often go undiagnosed or unreported, leading to prolonged symptoms and increased susceptibility to further injury.



Falls are responsible for

50%

of concussion hospitalisations



Transport accidents, including cars, motorcycles, and bicycles, account for

25%

Concussions account for

80–90%

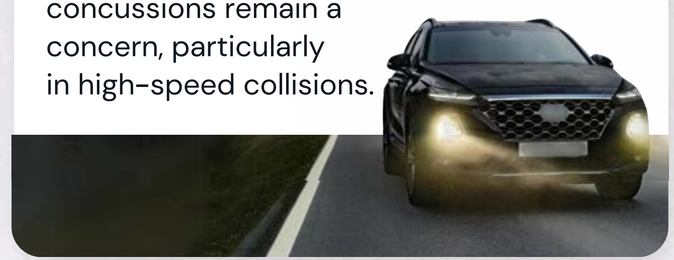
of all traumatic brain injuries (TBIs)

Falls and accidents

Among older adults and young children, falls are a leading cause of concussion. In ageing populations, factors such as balance impairments, muscle weakness, and medication side effects contribute to a higher risk of falls, which often result in head trauma. Similarly, children are prone to concussions owing to their high levels of physical activity, developing motor skills, and lack of awareness of safety precautions.

Motor vehicle accidents

Road trauma is another significant contributor to concussion incidence. Motor vehicle accidents frequently result in whiplash injuries and direct head impacts, leading to traumatic brain injuries of varying severity. While seatbelt use and advancements in vehicle safety technology have reduced the severity of injuries, concussions remain a concern, particularly in high-speed collisions.



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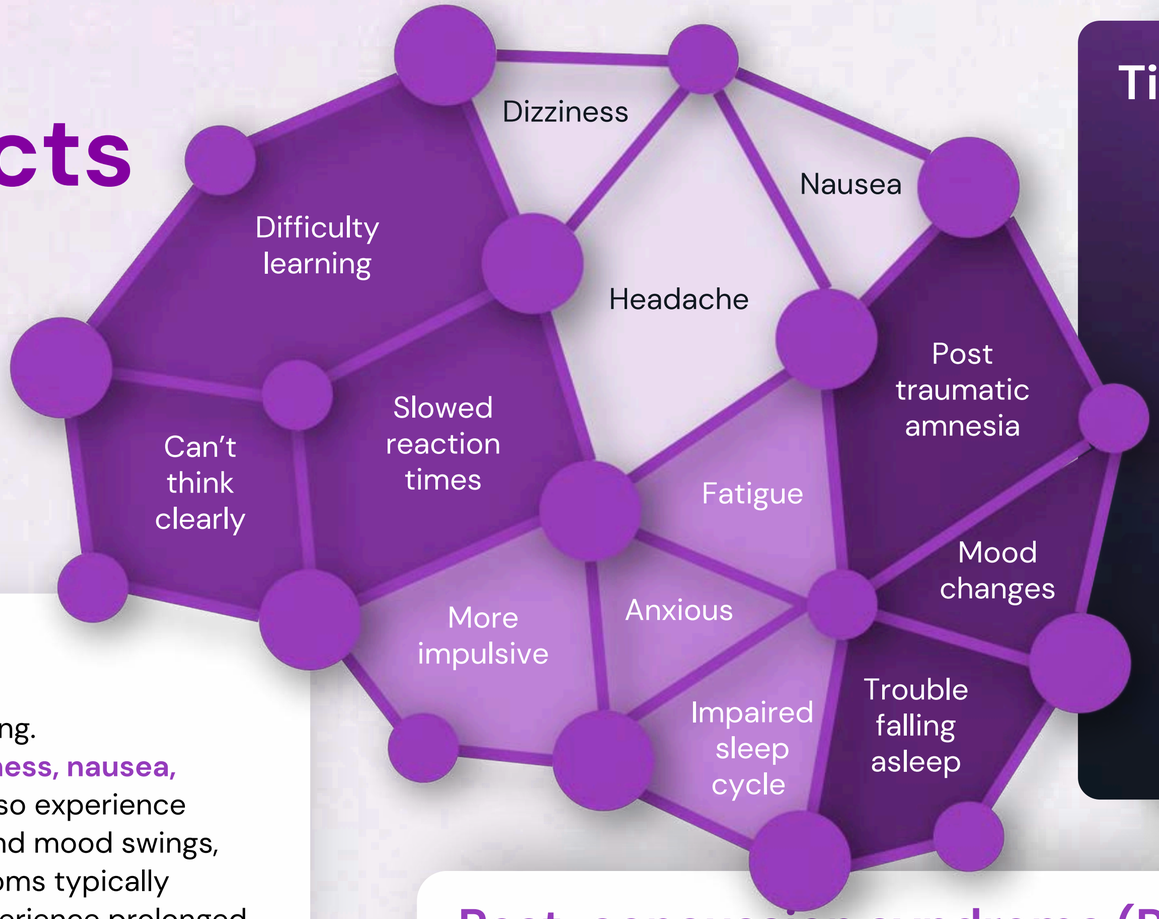
Immediate & persistent effects of concussion

Concussions can cause immediate disruptions in brain function, impacting cognition, motor skills, and emotional health. While many recover within weeks, some experience lingering symptoms that interfere with daily life and require further medical attention.



Timeline

First few weeks
- Headaches
- Nausea
- Fatigue

Months later
- Chronic dizziness
- Sleep issues
- Trouble concentrating

Ongoing
- Increased mental health risks

Concussion can lead to a range of immediate neurological and physiological impairments, affecting cognitive function, motor skills, and emotional wellbeing. Common acute symptoms include **headaches, dizziness, nausea, confusion, and memory deficits**. Many individuals also experience emotional disturbances, such as irritability, anxiety, and mood swings, which can interfere with daily activities. While symptoms typically resolve within a few weeks, some individuals may experience prolonged effects requiring further medical attention.

15–25% of adults
30% of children

experience persistent post-concussion symptoms beyond the expected recovery period.

Post-concussion syndrome (PCS)

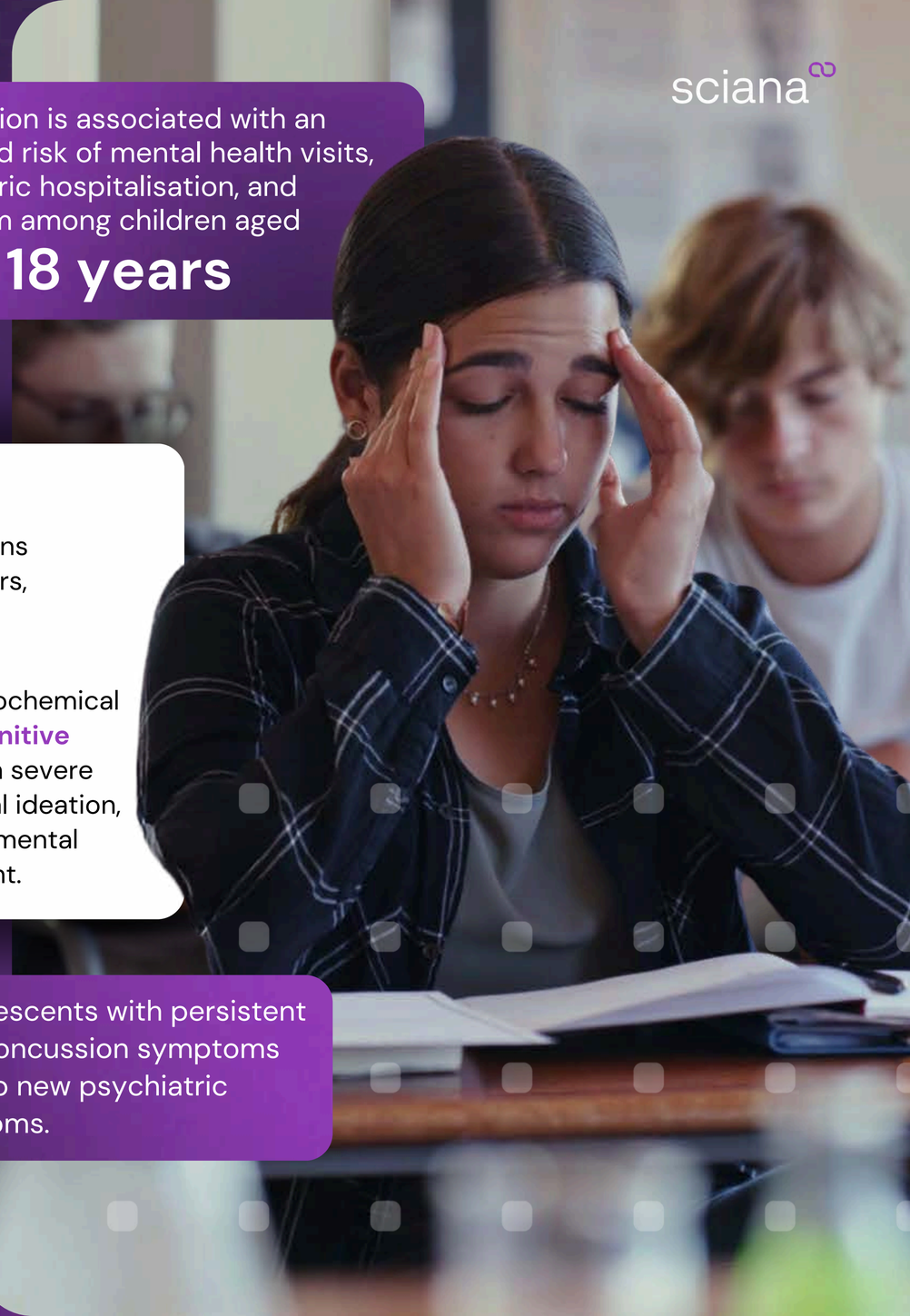
For some individuals, concussion symptoms persist beyond the expected recovery period, leading to post-concussion syndrome (PCS). PCS is characterised by **ongoing symptoms such as chronic headaches, dizziness, sleep disturbances, and difficulty concentrating,** lasting weeks or even months after the initial injury. The exact cause of PCS remains unclear, but factors such as pre-existing mental health conditions, multiple concussions, and inadequate rest during recovery may contribute to prolonged symptoms.

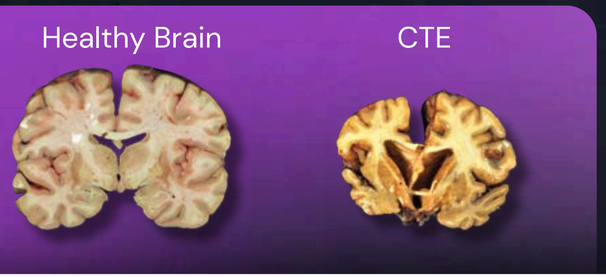
The long-term impact of concussions

Repeated concussions can lead to lasting neurological and psychological consequences. Conditions like chronic traumatic encephalopathy (CTE) and increased mental health risks, such as depression and PTSD, highlight the need for better concussion management and support.

Concussion is associated with an increased risk of mental health visits, psychiatric hospitalisation, and self-harm among children aged

5 to 18 years





Chronic traumatic encephalopathy (CTE)

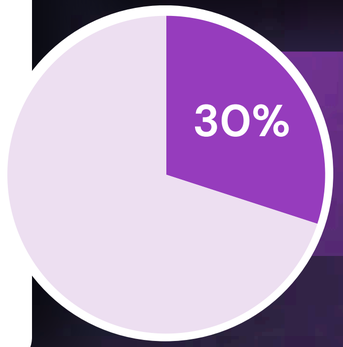
Repeated concussions and exposure to sub-concussive impacts (a blow to the head that does not cause symptoms) have been linked to CTE, a progressive neurodegenerative disease primarily observed in athletes, military personnel, and individuals with a history of repetitive head trauma.

CTE is associated with **memory loss, impaired judgement, aggression, depression, and motor dysfunction**, often appearing years or even decades after the initial head injuries.

Mental health implications

There is growing evidence that concussions increase the risk of mental health disorders, including depression, anxiety, and **post-traumatic stress disorder (PTSD).**

Concussions can disrupt the brain's neurochemical balance, leading to **mood instability, cognitive impairments, and sleep disturbances**. In severe cases, individuals may experience suicidal ideation, highlighting the need for comprehensive mental health support in concussion management.



30% of adolescents with persistent post-concussion symptoms develop new psychiatric symptoms.

The cost of inaction

Annual cost >$1 billion

The societal burden of concussion extends far beyond individual health outcomes, creating ripple effects throughout Australia's economy and communities. **When accounting for direct healthcare expenditures, workplace productivity losses, and long-term disability support, estimates suggest a combined cost of over $1 billion annually.** With many cases unreported or misdiagnosed, the true economic impact may be even higher.

$550 million in lost earnings

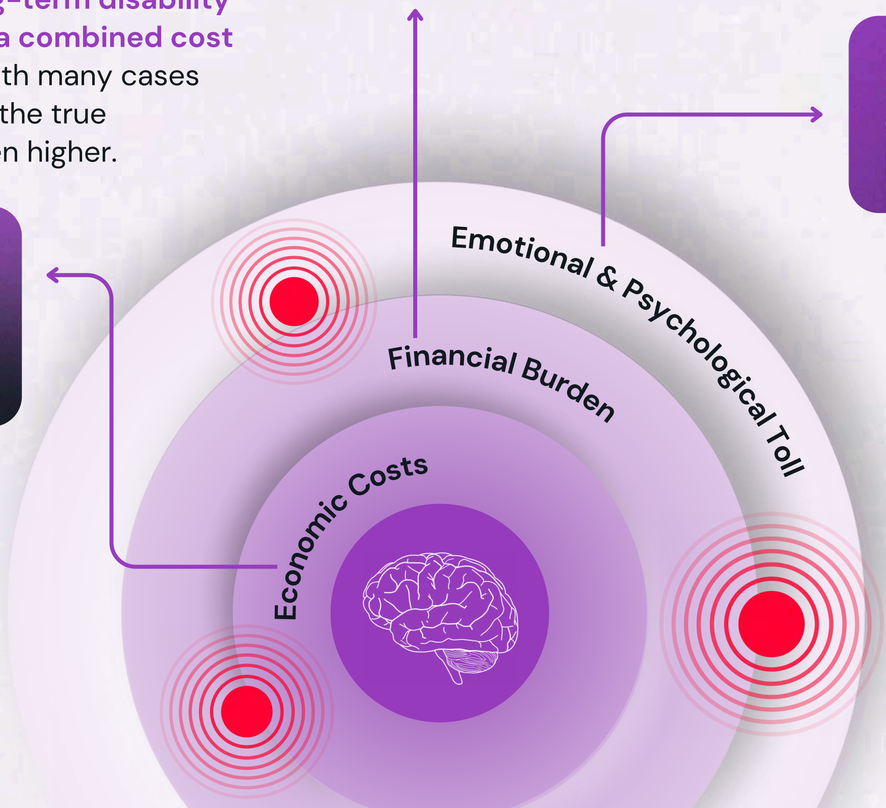
A study by Auckland University of Technology published in the journal Health Economics revealed the substantial impact of concussions on earnings and employment. **The losses amount to $22,800 within the first four years post injury for an individual**, and $550 million for the approximately 25,000 working adults in NZ who experience a concussion each year.

36.7% experience mental health problems

A literature review conducted by Murdoch Children's Research Institute involving nearly 90,000 participants aged 18 and under, found that **36.7% of participants experienced problems like depression, anxiety and post-traumatic stress.** 20% also experienced problems like aggression, attention issues and hyperactivity after concussion.

Annual cost >$50million in hospitalisation

It is estimated that over **$50 million is spent on concussion-related hospital admissions** across Australia's health system each year. This excludes ED related costs.



"The reality is that approximately **25% of individuals who sustain a concussion will experience persistent symptoms beyond four weeks.** For some, this marks a major turning point, with lasting impacts on their mental health, academic achievement, employment prospects, risk of further injury, and overall quality of life. Early identification of ongoing issues is critical.

Comprehensive multimodal brain health screening by suitably trained health professionals is essential to detect specific impairments early and enable timely, multidisciplinary rehabilitation and referrals. At Your Brain Health, we support this vital process by providing accessible, efficient digital screening tools, complemented by ongoing education and resources for individuals, families, and healthcare providers."

Associate Professor James McLoughlin
Chief Academic Officer, Your Brain Health

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SECTION 4

WHAT IS BEING DONE?

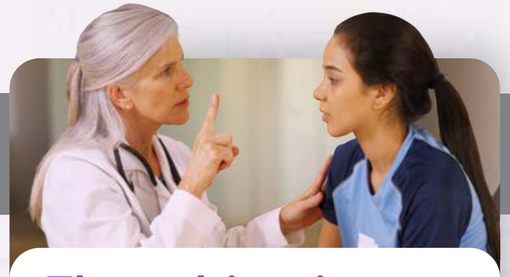
04

Why concussions are so hard to diagnose

Many concussions go unrecognised

Emergency departments and general practitioners serve as frontline responders for concussion management, yet existing protocols often lack standardisation. Many concussions go unrecognised in emergency departments owing to time constraints, reliance on subjective symptom reports, and lack of specialist neurological assessments.

Similarly, GPs do not always have access to the latest concussion screening tools or ongoing training in concussion care, with over 50% saying they don't feel comfortable managing someone with concussion.



The subjective nature of diagnosis

Patients may underreport symptoms owing to lack of awareness, fear of exclusion from sports, or work-related concerns, while clinicians may struggle to differentiate concussion from other neurological conditions with overlapping symptoms.

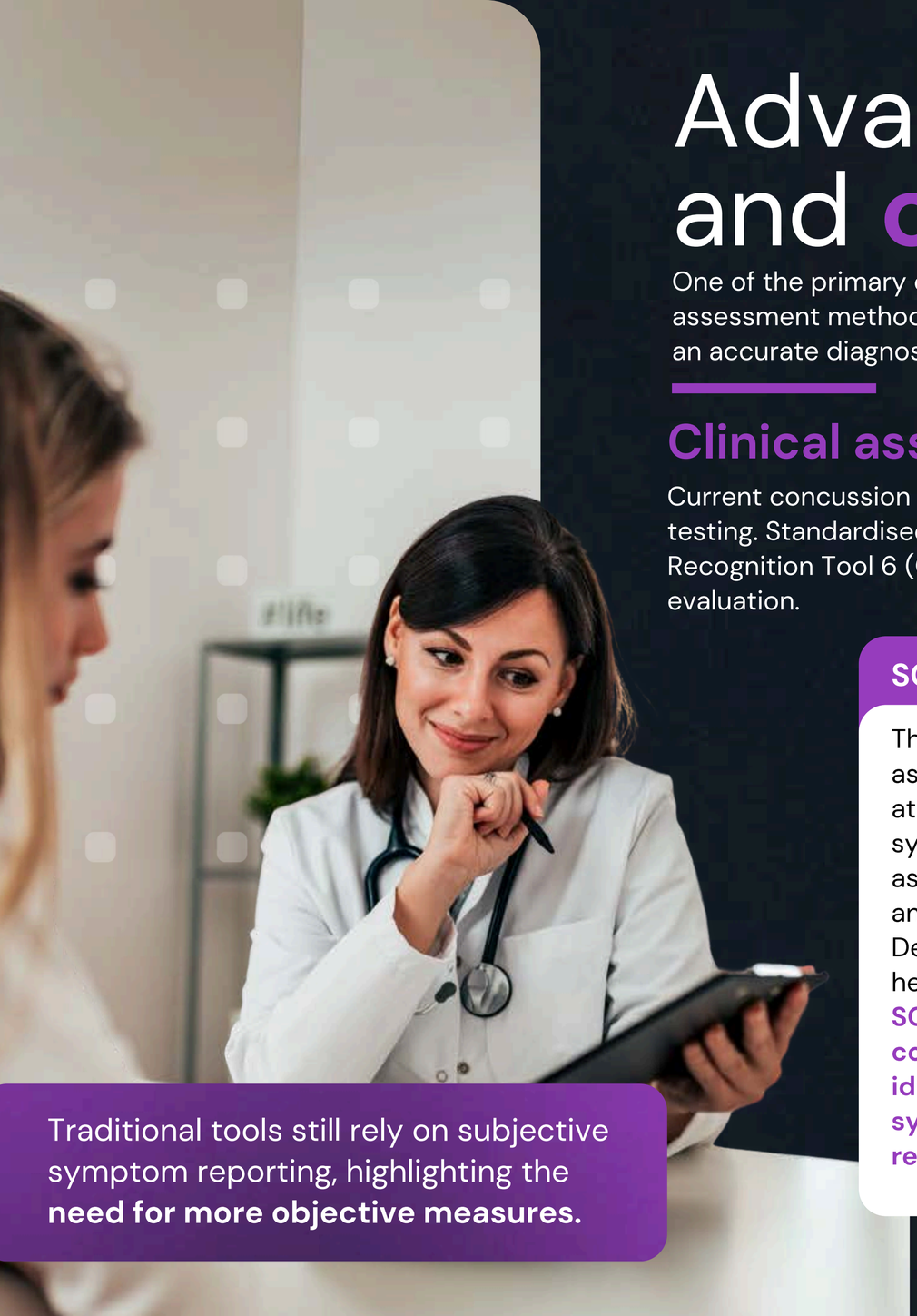
No two concussions are the same

Concussion symptoms can vary significantly among individuals, adding complexity to the diagnostic process. While some people experience immediate cognitive impairment, headaches,
and dizziness, others may have delayed-onset symptoms, such as mood changes, sleep disturbances, and difficulty concentrating.

The heterogeneous nature of concussion presentation means that a single diagnostic approach may not be effective for all cases. Personalised assessment strategies that consider individual symptom profiles and risk factors are needed to enhance early detection and tailored treatment plans.

The way forward

Strengthening concussion triage systems, implementing mandatory concussion training for healthcare professionals, and integrating digital assessment tools can improve early detection and management in both emergency and primary care settings.



Advancements in diagnosis and clinical assessment

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One of the primary challenges in diagnosing concussion is the lack of objective diagnostic tools. Current assessment methods rely heavily on self-reported symptoms and subjective clinical evaluations, making an accurate diagnosis difficult.

Clinical assessment tools

Current concussion assessment protocols depend largely on clinical symptom checklists and neurocognitive testing. Standardised tools such as the Sport Concussion Assessment Tool 6 (SCAT6) and Concussion Recognition Tool 6 (CRT6) are widely used in sports and medical settings to assist in immediate concussion evaluation.

SCAT6

The gold-standard tool for assessing concussion in athletes. It incorporates symptom evaluation, cognitive assessment, balance testing, and neurological screening. Designed for use by healthcare professionals, **SCAT6 ensures a comprehensive approach to identifying concussion symptoms and guiding return-to-play decisions.**

CRT6

A simplified version of SCAT6, the **CRT6 is designed for non-medical personnel**, such as coaches and parents, to assist in recognising concussions and ensuring appropriate medical follow-up.

Neurocognitive tests

Computer-based cognitive assessments, such as the Immediate Post-Concussion Assessment and Cognitive Testing (ImPACT) , **provide objective data on reaction time, memory, and processing speed**, offering valuable insights into cognitive function following a concussion.

Traditional tools still rely on subjective symptom reporting, highlighting the **need for more objective measures.**

Blood-based biomarkers for concussion diagnosis

Advancements in biomarker research are transforming concussion diagnosis. Blood-based biomarkers, such as GFAP and UCH-L1, provide objective measures of brain injury, moving concussion detection beyond self-reported symptoms.

Recent advancements in blood-based biomarkers have opened new possibilities for the objective diagnosis of concussion.

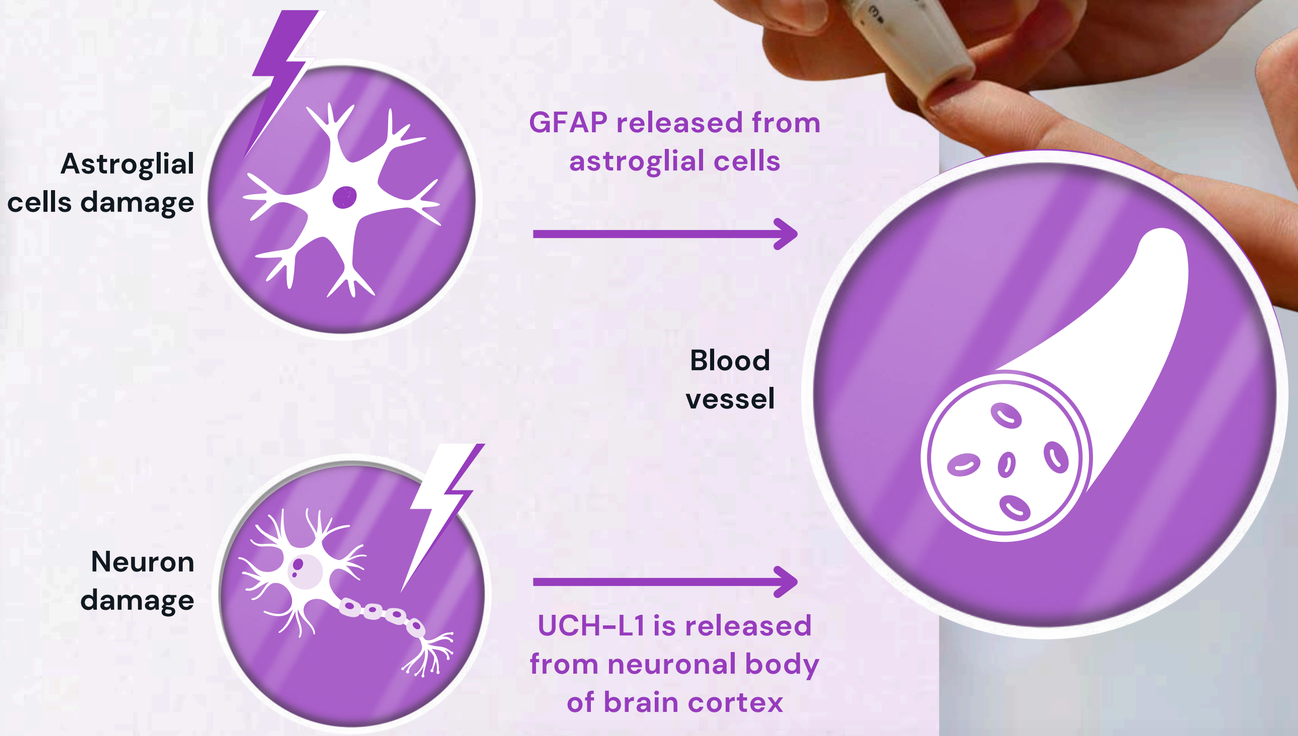
Two promising biomarkers, glial fibrillary acidic protein (GFAP) and ubiquitin C-terminal hydrolase L1 (UCH-L1), have demonstrated strong potential in distinguishing concussed individuals from those without brain injury.

GFAP

This protein is released when astrocytes (a type of brain cell) are damaged. Elevated GFAP levels in the bloodstream can indicate brain injury, making it a useful biomarker for detecting concussions and mTBIs.

UCH-L1

Found in neuronal cell bodies, UCH-L1 is released into the bloodstream following neuronal damage. Elevated levels correlate with axonal injury, helping to differentiate concussions from other non-brain-related conditions.



These biomarkers are now being explored for point-of-care diagnostic tools, potentially allowing for rapid blood tests in emergency departments, sports sidelines, and military settings.

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Neuroimaging advancements

Traditional imaging techniques such as CT scans and standard MRI are often insufficient for diagnosing concussions, as they primarily detect structural injuries rather than subtle brain dysfunction. Advanced neuroimaging techniques, however, are improving the ability to detect and monitor concussive injuries.

Diffusion Tensor Imaging (DTI)

A specialised MRI technique that evaluates white matter integrity.
It is particularly useful for detecting diffuse axonal injury, which is common in concussions but often goes undetected on standard scans.

AI-Driven Imaging

Artificial intelligence is being integrated into neuroimaging to enhance diagnostic accuracy.

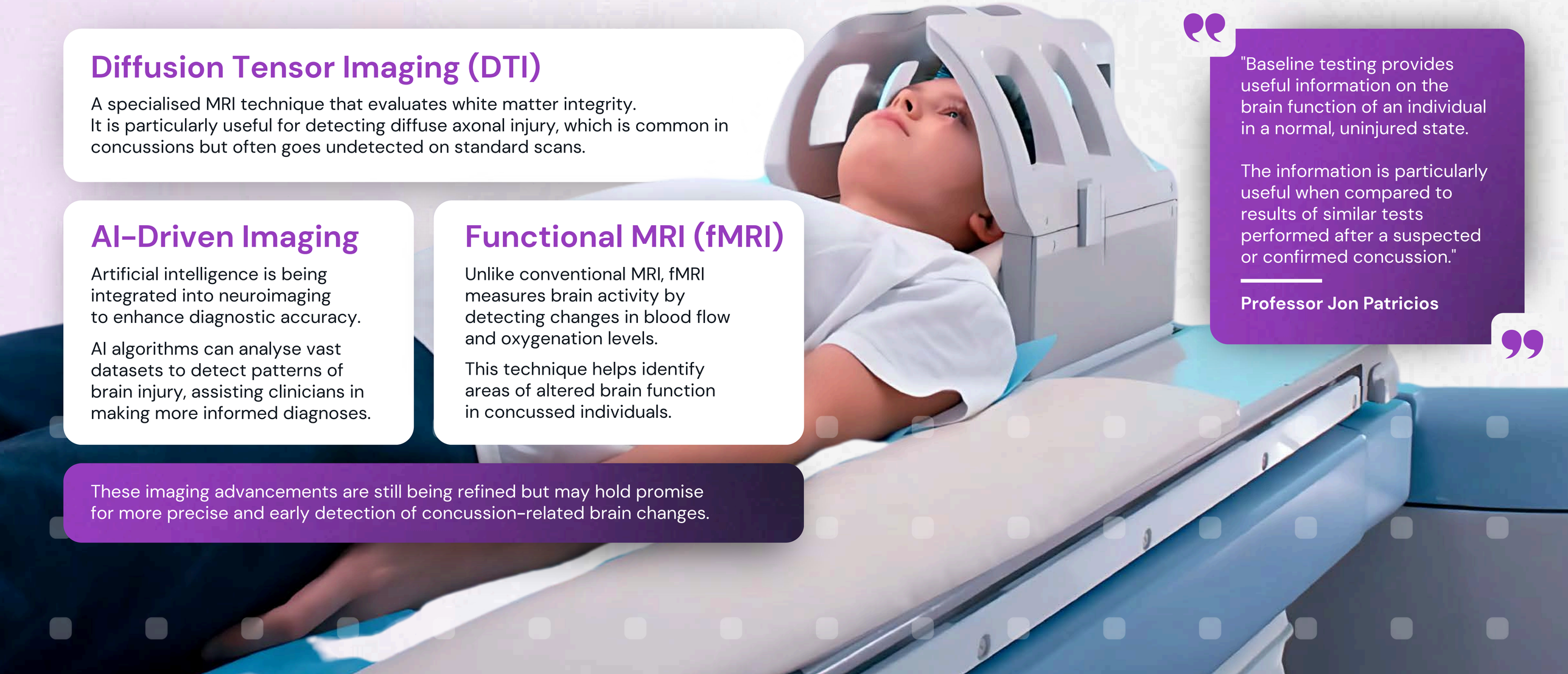
AI algorithms can analyse vast datasets to detect patterns of brain injury, assisting clinicians in making more informed diagnoses.

Functional MRI (fMRI)

Unlike conventional MRI, fMRI measures brain activity by detecting changes in blood flow and oxygenation levels.

This technique helps identify areas of altered brain function in concussed individuals.

These imaging advancements are still being refined but may hold promise for more precise and early detection of concussion-related brain changes.



"Baseline testing provides useful information on the brain function of an individual in a normal, uninjured state.

The information is particularly useful when compared to results of similar tests performed after a suspected or confirmed concussion."

Professor Jon Patricios

Wearable sensors and telemedicine solutions

Wearable sensors and telemedicine technologies are transforming concussion management by offering real-time data on head impacts and enhancing accessibility to assessments and follow-ups. In both sports and military environments, these tools play a crucial role in identifying potential concussions early, reducing risks, and improving the overall quality of care.

Sensors for impact monitoring

In sports and military settings, wearable sensor technology has the potential to revolutionise concussion detection by providing real-time data on head impacts.

Smart mouthguards

Equipped with accelerometers and gyroscopes, these devices track impact forces to the head, offering valuable data to coaches and medical personnel.

Head-impact sensors

Devices embedded in helmets, mouthguards, or headbands measure the force, angle, and frequency of head impacts. These sensors help identify potentially concussive blows, prompting sideline evaluations.

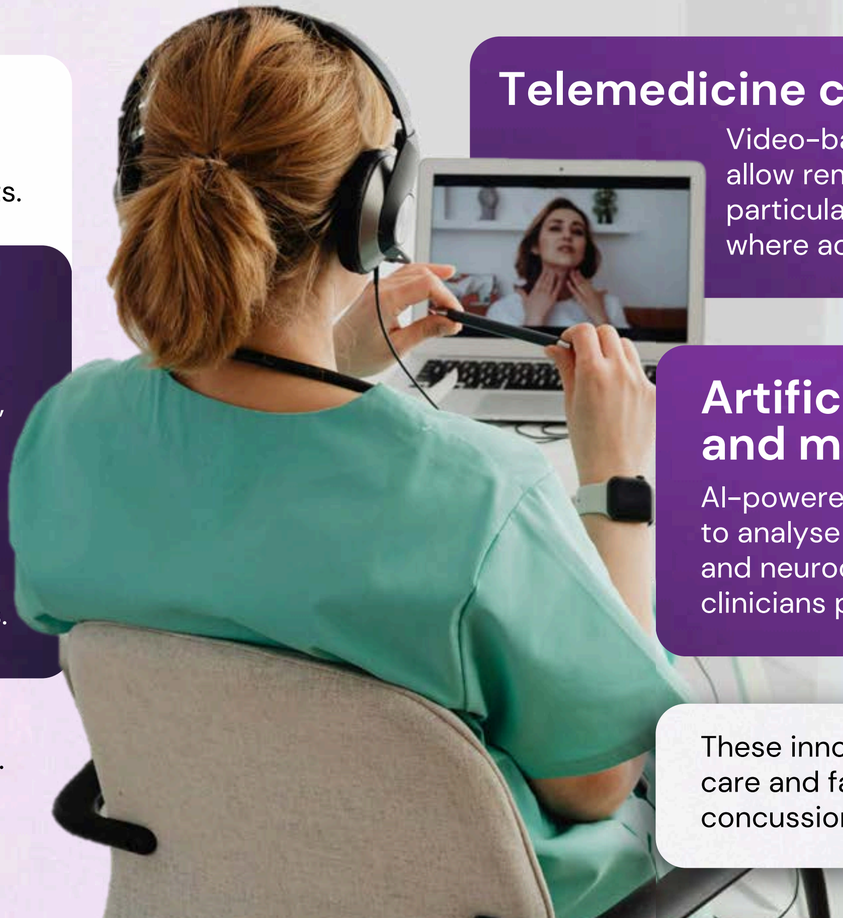
While these technologies do not diagnose concussions, they provide objective data on head trauma exposure, assisting in early intervention and risk reduction.

Telemedicine and digital health solutions

The rise of telemedicine and mobile health applications is improving concussion management, making assessments and follow-ups more accessible.

Mobile applications for symptom tracking

Apps like HeadCheck and Concussion Tracker enable athletes, patients, and clinicians to track symptoms, cognitive function, and recovery progress.



Telemedicine consultations

Video-based neurological assessments allow remote concussion evaluations, particularly in rural and remote areas where access to specialists is limited.

Artificial intelligence and machine learning

AI-powered tools are being developed to analyse patient-reported symptoms and neurocognitive test results, helping clinicians personalise treatment plans.

These innovations ensure continuity of care and facilitate better monitoring of concussion recovery over time.

Making clinical screenings accessible

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Oculomotor/Vestibular-Ocular (OM/VO) performance shows over a 90% accuracy in detecting concussions.

NEUROFLEX®
Brain Health for Life

Sciana Concussion Checks (Baseline and Assessment)

- Through an exclusive partnership with **NeuroFlex®**, Sciana uses virtual reality technology to objectively measure **Oculomotor/Vestibular-Ocular (OM/VO) performance in a 5-10 minute test.**
- When combined with clinical interviews, symptom assessment, and neurocognitive testing, VOMS consistently shows over **90% accuracy in detecting concussions.**
- NeuroFlex® performs **8 neurological tests** specifically designed to provoke subtle vestibular symptoms that identify concussions that other tests miss NeuroFlex® is registered with the FDA, Australian TGA, European Medicines Agency, UK MHRA, Health Canada & South Africa HPRA.

Tangible results derived through applied data science

NeuroFlex® has conducted extensive research, performing:

- 10,000+ tests on healthy brains
- 2,500+ tests on individuals with concussions
- Generating over 600,000 individual metrics

Through advanced data analysis, NeuroFlex® is driving innovation in concussion care by:

- Evaluating screening results, psychographic profiles, health behaviors, and healthcare costs to optimise intervention strategies.
- Measuring the effectiveness of campaigns and incentives in improving concussion detection and management.
- Developing AI-driven tools for earlier, more precise diagnosis.
- Collaborating with top academic institutions on groundbreaking research.

> NeuroFlex leverages AI to analyse vast and complex datasets related to oculomotor and vestibular-ocular performance, helping identify key patterns and relationships that are not apparent through traditional analytical methods. More broadly, AI is transforming the field of neurological and vestibular research by automating the analysis of high-dimensional data, improving the detection of subtle impairments, and supporting a more personalised approach to assessments and interventions.
>
> By applying advanced algorithms to NeuroFlex data, AI has the potential to refine clinical pathways, optimise rehabilitation strategies, and contribute to the broader understanding of how neurological conditions impact oculomotor function.

Dr Mimi Galiana

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SECTION 5

THE SOLVE: EVERY CONCUSSION COUNTS

05

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Prevention and policies

Addressing the growing burden of concussion in Australia requires a multi-faceted approach that includes education, improved safety protocols, regulatory measures, and investment in research. Effective policies should target healthcare professionals, athletes, workplaces, and the broader public to ensure better prevention, timely diagnosis, and optimal management. The following recommendations outline key strategies for improving concussion care at the national level.

Enhancing education and awareness

One of the most critical steps in improving concussion management is enhancing education and awareness among key stakeholders, including healthcare professionals, sports coaches, employers, and the general public.

Healthcare training programs should incorporate the latest evidence-based protocols for concussion recognition and management, including SCAT6, CRT6, and neurocognitive assessments.

Coaches and sports officials must be educated on concussion symptoms, removal-from-play policies, and appropriate recovery timelines to minimise long-term risks for athletes.

Public awareness campaigns should emphasise the dangers of ignoring concussion symptoms and the importance of early intervention. Initiatives such as social media outreach, school-based programs, and workplace seminars can increase concussion literacy among Australians.

Strong return-to-play and return-to-work guidelines

Ensuring a gradual and medically supervised return to activity is crucial in concussion recovery. Strengthened return-to-play and return-to-work guidelines can help prevent premature exposure to further injury.

For athletes, return-to-play protocols should require clearance from a medical professional, with stepwise progression to full activity.

For workers in high-risk industries, return-to-work protocols should align with established occupational health guidelines, ensuring individuals do not return to environments that may pose additional risks until fully recovered.

Regular monitoring and follow-ups post-concussion should be mandatory to track recovery and detect any lingering symptoms that may indicate prolonged impairment.

Prevention and policies

Investment in concussion research

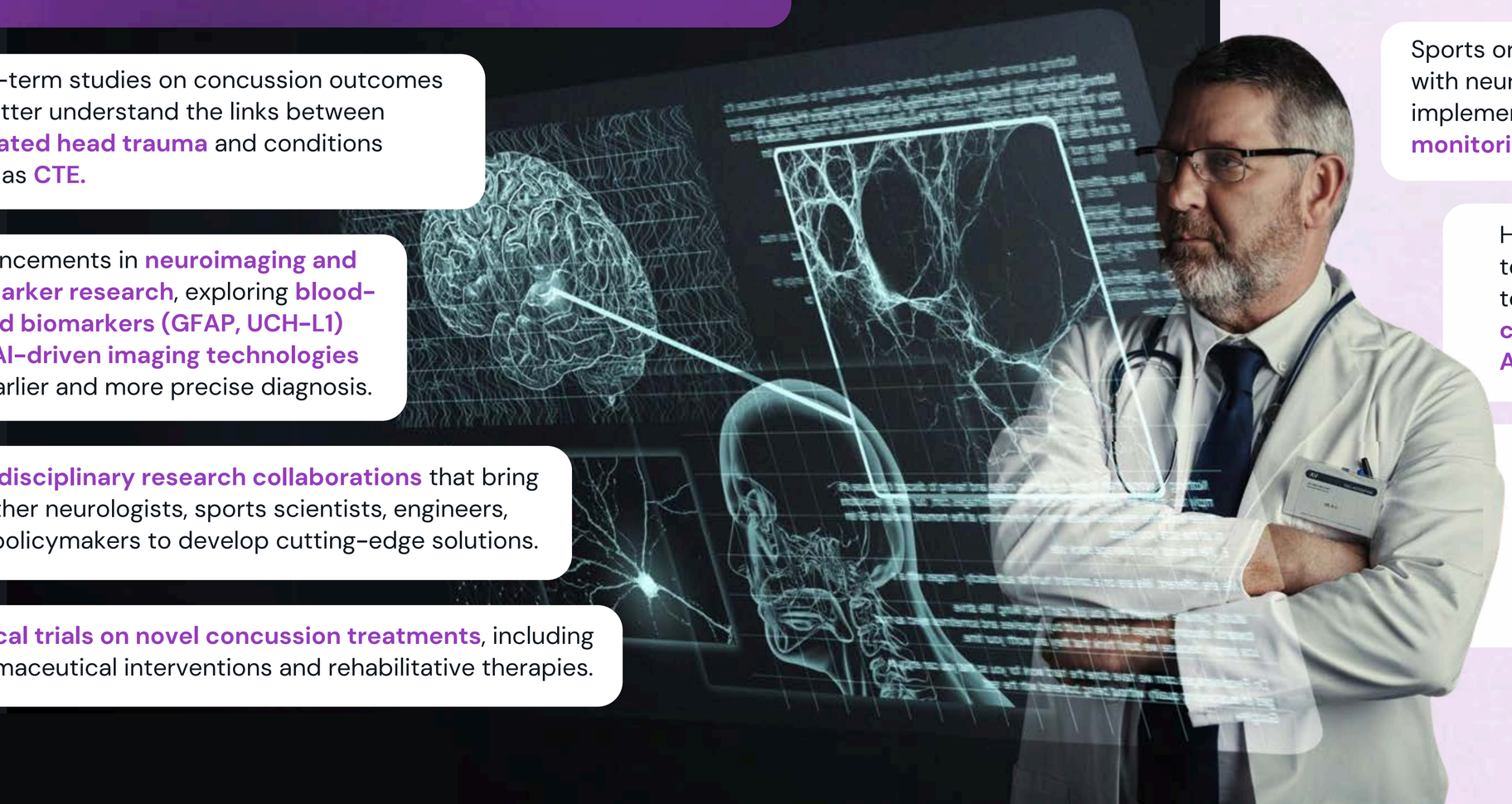
Greater investment in concussion research is essential to improving prevention strategies, diagnostic methods, and treatment approaches.

Long-term studies on concussion outcomes to better understand the links between **repeated head trauma** and conditions such as **CTE.**

Advancements in **neuroimaging and biomarker research**, exploring **blood-based biomarkers (GFAP, UCH-L1)** and **AI-driven imaging technologies** for earlier and more precise diagnosis.

Interdisciplinary research collaborations that bring together neurologists, sports scientists, engineers, and policymakers to develop cutting-edge solutions.

Clinical trials on novel concussion treatments, including pharmaceutical interventions and rehabilitative therapies.



Collaboration across sectors

A multi-disciplinary approach is required to align concussion prevention, diagnosis, and treatment strategies across sports, healthcare, industry, and technology sectors.

Sports organisations should collaborate with neurologists and data scientists to implement **real-time head-impact monitoring** in elite and grassroots sports.

Healthcare providers and technology developers can work together to **improve telemedicine concussion assessments and AI-driven symptom tracking.**

Regulatory agencies, policymakers, and researchers should cooperate to establish **consistent concussion management standards** across sectors.

Conclusion

As we look to the future of concussion management in Australia, it is clear that a paradigm shift is both necessary and achievable. The evidence presented throughout this white paper demonstrates that concussion represents not only a public health challenge but also an opportunity for innovation and systemic improvement. By integrating advanced screening technologies within accessible community settings such as pharmacies, we can fundamentally transform how concussions are identified, managed, and prevented.

This approach promises to reduce the substantial economic burden on our healthcare system while simultaneously improving outcomes for patients through earlier intervention and more comprehensive care.

The path forward requires collaborative effort from healthcare providers, technology developers, community pharmacies, sporting organisations, schools, employers and policy makers. Success will be measured not only by reducing the incidence and severity of concussions but also by creating a more informed and responsive society that prioritises brain health across all sectors.

By embracing the recommendations outlined in this paper and committing to their implementation, Australia has the opportunity to establish itself as a global leader in concussion prevention and management, creating a model that protects the cognitive well-being of current and future generations.

A paradigm shift in concussion management is both necessary and achievable.

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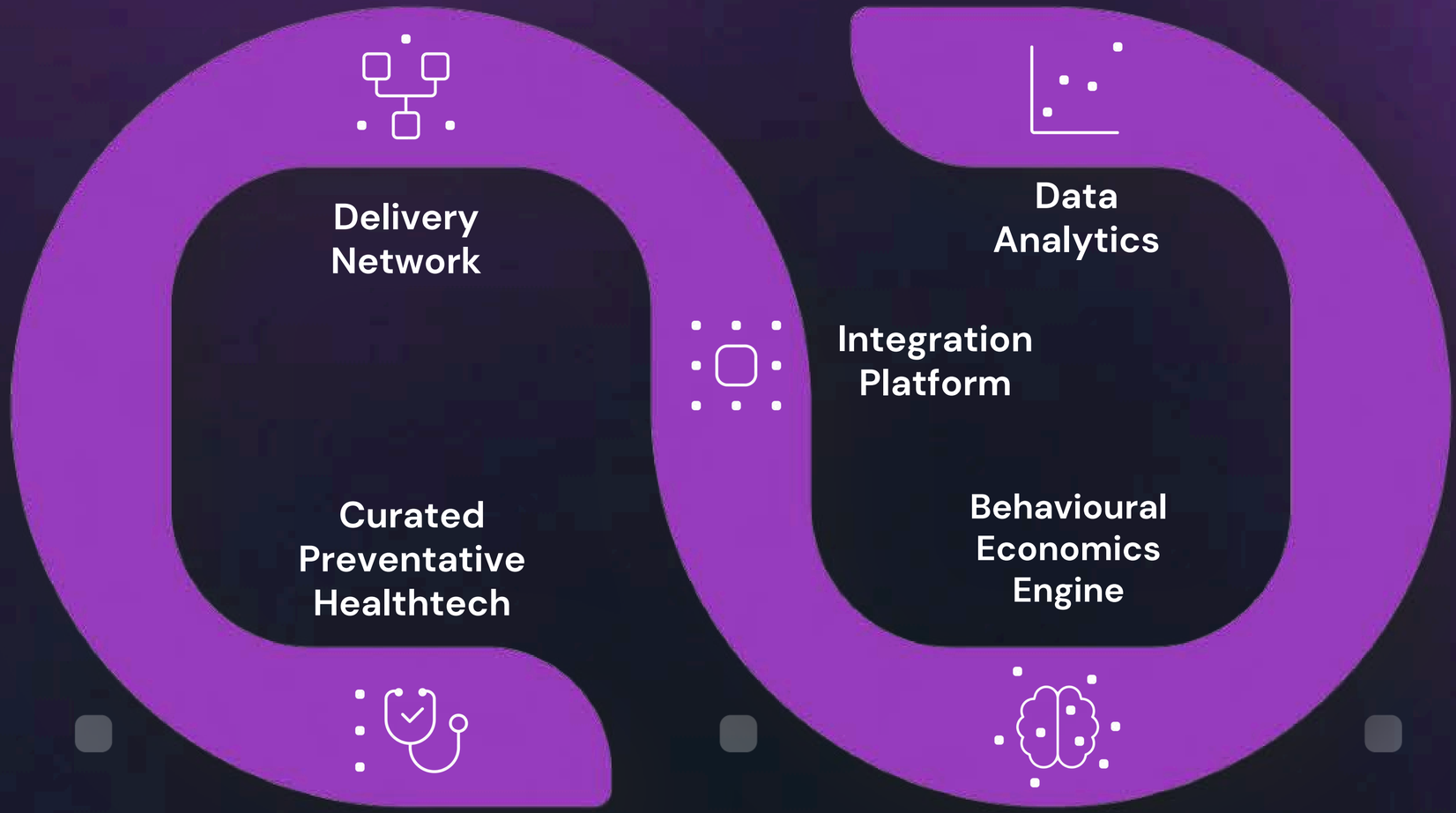
Delivery Network
Data Analytics
Integration Platform
Curated Preventative Healthtech
Behavioural Economics Engine

Sciana

Sciana is a health technology company focused on promoting early detection of health conditions and encouraging preventative care. We believe that by detecting health issues early we can improve outcomes and save lives.

Integrated Healthcare Ecosystem

We are a connector and an enabler, with the knowledge, insight and expertise to stand proud as a health-tech disruptor. Our difference is that we truly understand the problem, and how to realise the solution by combining behavioural science, technology and data analytics.

A platform to connect the health and wellbeing ecosystem

A secure technology platform bringing healthcare funders, providers and patients together through seamless data integration and payment gateway. Curated collection of cutting-edge preventative health technologies fully integrated into our platform puts our Network of pharmacies at the forefront of preventative healthcare.

Powered by a smart pharmacy network

A quality network of highly trained pharmacists across Australia equipped with the latest point of care technology and Sciana's behavioural science powered platform facilitates easier access to screening and testing, at a much lower price point than traditional laboratory-based tests.

Optimised customer engagement across the full customer journey (Marketing, Booking, Health reports, Recommendations, Communications, Program development) by combining behavioural economics with data analytics to:

- Drive adoption of preventative healthcare services.
- Facilitate program utilisation and health behaviour change.

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