



# Nutrition & Health Innovation Research Institute

2025 Annual Report

**ECU**  
EDITH COWAN  
UNIVERSITY

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Nutrition and  
Health Innovation  
Research Institute

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December 2022



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# Our Purpose, Vision, Mission and Research Pillars

Our purpose is to discover and share real-world solutions to improve health and quality of life.



## Our Vision

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Healthy people  
Healthy communities

## Our Mission

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Reduce disease by developing, translating and implementing nutrition and health innovation research.

## Our Research Pillars

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Nutrition and Disease Prevention



Innovative Healthcare



Public Health, Policy and Implementation



Biomedical Research



# About NHIRI

## Research Excellence & Innovation

Driving health breakthroughs through leading science and cutting-edge technologies.



## Community-Centred Research & Translation

Co-creating solutions with communities to accelerate real-world health impacts.



*Powered by people, partnerships, discovery, and impact.*

## Nutrition, Food Systems & Healthy Environments

Transforming nutrition and food environments to support healthier lives.



## Global Impact & Future Leadership

Shaping global health through innovation, partnerships, and future research leaders.



# 2025 Highlights and Achievements



**>150**

Total Members



**222**

Publications



**58**

HDR Students



**177**

Q1 Publications\*



**>5.3B**

Audience Reach



**>\$49M**

Advertising Value Equivalent



**45**

New Grants  
Awarded\*\*



**>\$4.6M**

Total External  
Income#



**>\$12.8M**

Total Grants  
Awarded\*\*



# Directors Report

**At the Nutrition & Health Innovation Research Institute, our vision is clear: healthy communities and healthy people.**

In 2025, our fifth year as an Institute, NHIRI consolidated its position as a leader in high-impact, translational health research.

This year was defined by scientific excellence with purpose. Our researchers advanced understanding of how and why people age differently, strengthened by respectful and inclusive consumer and community involvement.

We accelerated translation of research into practice, policy, and scalable solutions, while deepening engagement with industry, government, and global partners to strengthen health systems and communities.

NHIRI delivered advances across early life nutrition, heart and vascular health, neurology and dementia, cancer care, gut health, musculoskeletal health and performance, food systems, and healthy ageing demonstrating impact across every life stage.

From best-evidence randomised controlled trials improving blood-sugar regulation through cruciferous vegetables, to electrical brain stimulation enhancing recovery after ACL injury, to community-driven research shaping food security reform, our work continues to deliver measurable change.

Impact remains central to everything we do. In 2025, we released our first NHIRI Impact Report, reinforcing accountability and our role as a powerful voice for evidence-led change.

**“We are committed to shaping a healthier future for all through impactful research and evidence-based solutions. Furthermore, we work to influence public policy regarding community wellbeing.”**

Our commercialisation pipeline accelerated, with the automated abdominal aortic calcification (AAC) algorithm progressing toward spin-out through the Heart Foundation Catalyst Program, alongside scalable innovations such as ur gut®. Research excellence remained strong, with NHIRI publications cited nearly three times the global average with 313 outputs informing 899 policy documents across 226 policy bodies in 46 countries.

Looking to 2026, our focus remains clear: prevent disease, protect lives, transform healthcare, and create healthier communities, locally and globally.



Professor Jonathan Hodgson  
Director



Professor Joshua Lewis  
Research Program Lead



# Delivering an Exceptional Student Experience: ECU Strategic Goal 1

NHIRI supports student involvement through PhD programs, mentoring, and community projects. Student awards acknowledge academic excellence, research achievements, and leadership skills. Our Institute delivers an exceptional student experience, promoting excellence, inclusivity, and personal development.

58

HDR Students supervised by NHIRI Core members

8

New HDR Enrolments

6

HDR Completions

50

Publications co-authored by a HDR student



## HDR Student Completions

NHIRI is thrilled to announce the exceptional achievement of our students who completed their PhD's, with a further three submitting their theses.



### Afsah Saleem

Thesis title: Machine Learning for Computer-Aided Diagnostics from Complex Medical Images

NHIRI Supervisors: Dr Zulqarnain Gilani, Prof David Suter, Prof Josh Lewis



### Vanessa Sutton

Thesis title: The interplay between injury and body composition with performance in police recruits

NHIRI Supervisors: Dr Myles Murphy



### Gemma Jenkins

Thesis title: Communities of practice: Transforming education in the health professions

NHIRI Supervisors: A/Prof Leesa Costello, A/Prof Therese O'Sullivan



### Trent Bozanich

Thesis title: The association of total, plant and animal-based protein intake with the presence of frailty in older Australian community-dwelling women

NHIRI Supervisors: Dr Marc Sim, Dr Simone Radavelli-Bagatini, Dr Cassandra Smith



### Zaid Ilyas

Thesis title: Deep learning for medical image interpretation

NHIRI Supervisors: Dr Zulqarnain Gilani, Prof David Suter, Prof Josh Lewis



### Ensiyeh Keshtkaran

Thesis title: Automated Methods for Estimating Blood Alcohol Concentration Level from Facial Cues

NHIRI Supervisors: Dr Zulqarnain Gilani, Prof David Suter



# HDR Student Awards

## Individual Awards

**Vanessa Sutton** (NHIRI Master of Medical & Health Science by Research) - Student of the Year Award – Veterans, Emergency Services & Police Industry Institute of Australia (VESPIIA).

Read more: [ECU Newsroom](#)



Student of the Year Award winner ECU's Vanessa Sutton, with VESPIIA board director Ruben Proud (left) and VESPIIA CEO, Shannon Hennessy (right).



**Montana Dupuy** (NHIRI PhD student): ECU Vice-Chancellor's Student Awards - Letter of Recognition for Community Engagement  
Read more: [ECU Newsroom](#)

## Research Grants

**Carlos Toro Huamanchumo** (NHIRI PhD student): Novo Nordisk Research Grant – OBEMET Center for Obesity & Metabolic Health

Project: National study on barriers to obesity management in Peru.

## Conference Awards

- **Molly Coventry** (NHIRI PhD student) - Best Early Career Research Award (Sport Science), Sports Medicine Australia Conference, Hobart.



From L-R; Dr Ebonie Rio, Ms Molly Coventry, Dr Myles Murphy and A/Prof Andrea Mosler

## Conference Awards - continued

- **Liam Sherwood** (NHIRI Medical & Health Science by Research - Best Research Poster Award (Clinical Sports Medicine), Sports Medicine Australia Conference, Hobart.
- **Carlos Toro-Huamanchumo** (NHIRI PhD student) - Excellence in Poster Presentation (Clinical Science Section), Obesity Week 2025, The Obesity Society, Atlanta, USA.
- **Carlos Toro-Huamanchumo** (NHIRI PhD student) - Best Moderated Poster Presentation & Travel Award, 14th International Congress on Lipid & Atherosclerosis (CioLA 2025), Seoul, South Korea.
- **Carlos Toro-Huamanchumo** (NHIRI PhD student) - First Place Award - Oral Presentations (Early-Mid Career Researcher), WA Cardiovascular Research Alliance (WACRA), Perth, Australia.
- **Carlos Toro-Huamanchumo** (NHIRI PhD student) -Travel Grant - 2025 Annual Scientific Meeting, Australian Atherosclerosis Society (AAS), Sydney.
- **Haftom Abraha** (NHIRI PhD student) -Best ANZOS early career researcher poster, Endocrine Society of Australia (ESA) - Society of Reproductive Biology (SRB)-The Australian and New Zealand Obesity Society (ANZOS) in conjunction with Endocrine Nurses Society of Australia (ENSA) annual scientific meeting 2025
- **Arooba Maqsood** (NHIRI PhD student) - People's choice award for her poster presentation at the 2025 WACRA Heart-to-Vessel Research Showcase.



## Raising Awareness, Saving Lives: Free Blood Pressure Screening at ECU

PhD candidates Montana Dupuy and Carlos J. Toro-Huamanchumo played a key role in promoting heart health at ECU Joondalup, delivering free blood pressure screenings as part of May Measurement Month 2025, a global public health initiative that reaches millions of people worldwide to identify undiagnosed hypertension.

High blood pressure, often referred to as a silent threat, typically presents with no obvious symptoms until serious health complications occur. In Australia alone, more than half of people living with hypertension are unaware they have it.

Initiatives like May Measurement Month are vital in raising awareness and encouraging early detection. Through this campaign, ECU staff, students, and visitors were given the opportunity to take a simple yet potentially life-saving step by having their blood pressure checked.





## Arooba Maqsood

**“My research focuses on using Artificial Intelligence to estimate visceral fat (bad fat) from bone density machine scans - the hidden fat around organs that drives major health risks - providing a faster, affordable, and safer alternative to MRIs and CTs for earlier detection and improved patient care.”**

Arooba Maqsood is a PhD student in the School of Science at Edith Cowan University (ECU), with expertise in medical imaging and data-driven healthcare. Her work bridges Artificial Intelligence and clinical practice, focusing on developing accessible tools that improve early risk detection and preventive care.

She was recently recognised with a People’s Choice Award at the WACRA 2025 Heart-to-Vessel Research Showcase for her research on visceral fat estimation and has presented an oral paper at MICCAI 2025, one of the world’s leading conferences in medical imaging.

Passionate about improving health outcomes, Arooba’s research seeks to make advanced diagnostic insights more affordable, accessible, and impactful for both clinicians and patients.

**“My PhD research investigates the joint loading demands of elite basketball and how movement adaptations across the season relate to pain and injury.”**

Luciana Perez is a PhD candidate in Sport Science undertaking an integrated PhD, supported through a university–industry partnership with the Perth Wildcats.

Her research focuses on biomechanics and injury prevention, aiming to identify strategies that optimise performance while reducing pain and injury risk in professional basketball.

She holds a Master’s degree in Strength and Conditioning and is a Certified Strength and Conditioning Specialist (NSCA), with professional experience as both a strength and conditioning coach and sport scientist across Argentina, Spain, and India.



## Luciana Perez



# Undertaking Impactful World-Class Research: ECU Strategic Goal 2

At NHRI, we prioritise high-impact publications, strategic collaborations, and distinctive research areas that reflect ECU's commitment to research excellence. With **596 publications, 80% in Q1 journals**, with an **international audience reach exceeding 16 billion** from 2021-2025, we are making great strides towards enhancing ECU's global reputation.

19

Category 1 grants and fellowships led by NHRI Core Members

45

New grants awarded  
See full list in Appendix

6

New Category 1 grants and fellowships awarded

>\$12.8M

New grants awarded



## Category 1 Grants

- Bondonno, C., Lundberg, J., Tjønneland, A., Croft, K.D., Zheng, W., Sloth, J., Ye, X., Bondonno, N.P., Niklas, A.A., Mortensen, M.S. Dual origins, common threats: mapping endogenous and exogenous N-nitrosamine formation and chronic disease pathogenesis, National Health and Medical Research Council, Ideas Grants (2025), 2026 - 2030, **\$2,647,565.**
- Grehan, H.M., Arthur, P.W., Laga, H., Warburton, N., Smith, B., Gilani, S.Z.A., Bracknell, C., Tatarnic, N., Fiorentini, M., Travouillon, K., Kellner, S., Hopper, L., Wilson, S. The Digitisation Centre of Western Australia Phase 2: 3D Scanning vulnerable Reference, Taxonomy and Type Specimen Collections. Australian Research Council, Linkage, Infrastructure, Equipment and Facilities (LE26), 2026, **\$1,597,450.**
- Kennedy, M.A., Fortington, L.V., Bayes, S.J. Strengthening WA's Implementation Science and Translation Capacity, National Health and Medical Research Council, Supporting Research Translation Centre 2025-26, 2025 - 2026, **\$164,850.**
- Carville, K., Smith, K., Jansen, S., Lewis, J., Boxall, S., Jakupovic, H., Zhong, L., Barnard, S., Patton, V., Smith, J. Leaky Legs - Leg Edema Assessment and Knowledge Yield in Leg Edema and Gait Study, National Health and Medical Research Council, Collaborations in Health Services Research 2024, 2025 - 2027, **\$999,820.**
- Parmenter, B. Can Higher Flavonoid Diversity Keep the Doctor Away?, Heart Foundation, NHF - Postdoctoral Fellowships, 2026 - 2027, **\$312,593.**
- Suter, D. HyperGraph Classes, Robust Fitting and Clustering, Australian Research Council, Discovery Projects (DP25), 2025 - 2027, **\$770,768.**



>\$4.6M

External income received in 2025

1:4.6

2025 return on investment



# Grant Highlight...

## NHIRI Tackles Nutrition Gaps in Early Childhood Care

Helping build healthier futures from the first bite

### The Project...

NHIRI has been awarded a \$977,278 Healthway grant to develop Australia's first Best Practice Food Environment Guide for ECEC. Led by Dr Ros Sambell, Senior Lecturer in Public Health Nutrition and Chair of the National Nutrition Network for ECEC.

### Why this Research Matters...

Early childhood is a critical period as the first 2,000 days shape brain development, learning ability, and lifelong eating habits.

Yet many Early Childhood Education and Care (ECEC) services are not meeting core nutrition requirements.

### Key Facts...

- 50% of Australian children aged 0–5 attend childcare 27–38 hours per week.
- ~85,680 children attend centre-based or Family Day Care in WA.
- 90% of metropolitan ECEC services do not meet 50% of Australian Dietary Guidelines.

### Impact...

- Improved child nutrition during critical developmental years
- Better learning and health outcomes
- Stronger foundations for healthy futures across WA and beyond

"Currently, there are no prescribed guidelines to ensure consistent food quality across all ECEC services. However, limited data collected indicates 90% of metropolitan services are failing to meet 50% of the Australian Dietary Guidelines for all food groups when providing meals to children," ECU Senior Lecturer Dr Ros Sambell.

### What the Guide Will Do...

- Establish evidence-based nutrition standards
- Provide practical tools for educators and cooks
- Support consistent assessment across services
- Be adaptable for metro, regional and remote communities



# Grant Highlight...

## Leaky Legs Collaborative Research Project

### Why this Research Matters...

A collaboration between Edith Cowan University's Nutrition & Health Innovation Research Institute, Silverchain, Sir Charles Gairdner Hospital and Curtin University has secured funding from the National Health and Medical Research Council to improve healing outcomes and quality of life for people living with venous leg ulcers.

### NHIRI's Research Role...

NHIRI will assess and monitor the nutritional status of 75 patients participating in the study and design targeted nutrition strategies to support healing.

### The Collaboration...

- Edith Cowan University (NHIRI)
- Silverchain
- Sir Charles Gairdner Hospital
- Curtin University

### Food-based Innovation...

Led by Dr Liezhou Zhong (NHIRI), researchers are developing nutrient-dense enriched foods such as ice creams and cookies enhanced with amino acids and fruit and vegetable bioactives to support wound healing in a more enjoyable and sustainable way.

Funded by NHMRC  
(\$999,803 Collaboration  
in Health Services  
Research Program).

### Patient Impact...

- Supports wound recovery and nutrient intake
- Easier to follow than supplement regimens
- Potential to improve long-term dietary habits and reduce hospital readmissions

This project strengthens collaboration between healthcare and research, improving health service delivery and outcomes for patients across Western Australia and beyond.

# Grant Highlight...



## Emerging NHIRI Researchers Recognised for Groundbreaking Health Solutions

### Why this research matters...

The prestigious WA Near-Miss Awards (WANMA) Emerging Leaders Program, part of the WA Future Health Research and Innovation (FHRI) Fund, provides critical support to early and mid-career researchers whose highly ranked NHMRC applications narrowly missed funding. This investment enables recipients to strengthen and resubmit their proposals, supporting career progression and building Western Australia's capacity for world-class medical research.

### NHIRI Researchers Driving Innovation

Among NHIRI's Emerging Leaders is A/Prof Marc Sim, who is developing Australia's first nutrition guidelines for falls prevention. His project combines artificial intelligence with nutrition science to identify those most at risk of falling and provide practical, food-based prevention strategies.

**“Falls are a leading cause of injury and hospitalisation in older adults. Our work aims to take the guesswork out of prevention by providing clear, evidence-based dietary advice for those at risk,” A/Prof Sim said.**

### Our award winning researchers and projects...

- A/Prof Marc Sim, who's developing Australia's first nutrition guidelines for falls prevention.
- Dr Lauren Blekkenhorst, whose research is identifying which specific vegetables offer the greatest heart health benefits, enabling more personalised, heart-healthy dietary advice for Western Australians.
- Dr Zulqarnain Gilani is developing an AI-based tool to detect early signs of advanced atherosclerosis by analysing abdominal aortic calcification.
- Dr Myles Murphy is investigating why muscle strength does not fully recover following ACL injuries, particularly in women, aiming to reduce early-onset osteoarthritis.
- Dr Mary Kennedy is advancing exercise oncology by connecting exercise specialists with cancer care pathways across WA.

### Strengthening WA's Health Future

The WANMA Program directly supports the FHRI Fund's mission to build research leadership, create skilled jobs, and improve health outcomes across Western Australia. ECU's success in this program reflects both the calibre of its researchers and the University's commitment to research that delivers real-world impact.

For more information on the FHRI Fund and the WANMA Program, visit:

[Future Health Research and Innovation Fund – Health and medical research](#)

# Grant Highlight...



## WA FHRI Fund Backs NHIRI Researchers Driving Health Innovation

### Why this research matters...

Six ECU researchers have secured more than \$1.34 million in funding from the Western Australian Future Health Research & Innovation (FHRI) Fund, recognising their potential to deliver transformative health outcomes for the community. The funded projects span cancer diagnostics, cardiovascular health, and healthy ageing, demonstrating ECU's growing impact in addressing Western Australia's most pressing health challenges.

Three NHIRI researchers were recognised under the FHRI WA Near Miss Awards (WANMA) Emerging Leaders program, which supports outstanding early-career researchers who narrowly missed out on a National Health and Medical Research Council (NHMRC) Investigator Grant.

The WANMA Emerging Leaders program provides 12-month grants and three-year fellowships, supporting researchers to strengthen and resubmit their applications to the NHMRC.



Dr Claire Pulker received a Fellowship for her research into **The advertising practices of Australian supermarkets and their influence over population diets**, aiming to identify opportunities for supermarkets to better promote and support healthy eating.



Dr Abadi Kahsu Gebre was funded for his project, **Getting to the heart of healthy ageing: reducing falls in older Australians with cardiovascular disease**.



Dr Cassandra Smith was funded for her project, **My heart matters: co-designing interventions to empower cardiovascular disease education, screening and prevention in women**.

## Grant Highlight...



# NHIRI Researcher Among Australia's Top Scientists Funded to Drive New Heart Health Breakthroughs

NHIRI researcher Dr Benjamin Parmenter has been awarded funding from the Heart Foundation, joining 67 leading Australian researchers supported through a \$13.7 million investment to advance cardiovascular research across 23 institutes nationwide.



### The Project...

Dr Parmenter received a Postdoctoral Fellowship, a program designed to support emerging leaders in cardiovascular science. His work examines how different types of dietary flavonoids interact to influence heart health, contributing to new strategies for preventing cardiovascular disease.

"It's an incredible honour to receive this support from the Heart Foundation," Dr Parmenter said.

"This funding will allow me to deepen our understanding of how different types of flavonoids work together to influence heart health, and how we can harness these compounds to help prevent cardiovascular disease."

Dr Anna Calkin, National Manager Research at the Heart Foundation, reinforced the importance of this investment: "Research is the key to saving more lives from heart disease. By supporting the next generation of discoveries, we are helping people to live longer, healthier lives."



# Grant Highlight...

## NHIRI Researchers Awarded Raine Priming Grants and Research Prizes

### Dr Marion Mundt



Dr Marion Mundt received a \$238,000 Raine Priming Grant for her project Harnessing the power of AI on DXA images for predicting physical ability and its decline. Her research uses DXA bone density scans to estimate physical function; strength, balance and mobility, to help older adults stay independent for longer.

"Our goal is to help older people stay independent for as long as possible..." Dr Mundt said.

She added: "This grant marks my first step towards becoming an independent researcher, and I'm excited about the opportunity to contribute to health research in a way that can make a real difference."

### Dr Benjamin Parmenter



Dr Benjamin Parmenter was awarded a \$193,790 Raine Priming Grant "Can higher flavonoid diversity keep the doctor away?", exploring how a diverse range of dietary flavonoids affects human health.

"This funding is a tremendous boost for our research team... with the potential to uncover insights that could shape future approaches to nutrition and health..." Dr Parmenter said.

He also received a \$5,000 Raine Research Prize and medallion for his publication on flavonoid diversity and reduced risk of chronic disease.

### Dr Myles Murphy



Dr Myles Murphy received a Raine Research Prize valued at \$5,000 and a medallion for his international work developing the TENDINS-A, an assessment tool for achilles tendon pain created with input from patients, clinicians and global experts.

"The TENDINS-A is a game changer in how we determine how severe a person's Achilles tendon pain is," Dr Murphy said.

## Grant Highlight...



# AI Innovation to Transform Cardiovascular Screening



Professor Josh Lewis

A team led by NHIRI's Professor Josh Lewis has been selected as a Heart Foundation Catalyst Partnership Grants Partner for their AI-driven solution to screen for blood vessel calcification. The project brings together researchers from ECU's Centre for Artificial Intelligence and Machine Learning, the University of Minnesota, and the University of Manitoba.

The team has developed a groundbreaking method to automatically detect and measure Abdominal Aortic Calcium (AAC) using low-cost, widely available DEXA scans - opening the door to scalable community-based vascular screening for the first time.

As a Catalyst Partner, the team received \$100,000 from the Heart Foundation to accelerate development and will work closely with the organisation to attract donors and funders to support translation into practice.

Cardiovascular disease remains a critical health challenge, responsible for 11% of all hospitalisations, with one in four deaths attributable to CVD. Current screening methods focus largely on risk factors, offering limited insight into the actual condition of a person's blood vessels.

**Professor Josh Lewis said "This solution complements, rather than replaces, existing tests. Our approach is scalable, and we hope this will transform our ability to monitor and change the trajectory of cardiovascular disease, addressing health inequities, saving lives and reducing healthcare costs in the process. Importantly we will partner with the Heart Foundation to accelerate development of this solution and make sure it is integrated into and complements existing CVD screening prevention initiatives."**

# Grant Highlight...



## Strengthening the Path from Research to Real-World Care



Dr Mary Kennedy  
Head of NHIRI's  
Implementation Cafe

Researchers at NHIRI are partnering with the Western Australian Health Translation Network (WAHTN) to find more effective ways to bring new science into clinical practice, ensuring that patients benefit sooner from advances in health and medicine.

The work is being led through NHIRI's Implementation Café, an initiative headed by Dr Mary Kennedy and Dr Lauren Fortington, together with Professor Sara Bayes from the School of Nursing and Midwifery, and evaluation and policy expert Dr Amy Vassallo from HealthERA.

"This collaborative work is essential to help identify barriers to research implementation that will improve the lives of people in WA and beyond," said Associate Professor Claus Christophersen, ECU Associate Dean (Research).

Implementation science remains a developing field, and as Professor Bayes noted: "The science of implementation, along with its theories, models and frameworks, is still a relatively new field. We're pleased to lend our expertise to this project, helping ensure WA's health professionals and researchers have the knowledge and skills they need to drive timely healthcare innovation."

WAHTN brings together universities, medical research institutes, hospitals, PathWest and the WA Department of Health to translate research into policy, practice and training.

**"WAHTN is delighted to support this important work, which has been made possible through our recent successful NHMRC Supporting Research Translation Centres grant," Dr Debra Turner, WAHTN General Manager.**

# Healthy People



**Turning research into strategies that prevent disease, support recovery, and improve quality of life.**

At NHIRI, we take an integrated approach to understanding health, recognising nutrition as the link that connects every aspect of wellbeing. From heart and kidney health to cancer, brain and mental health, gut health, bone strength, and physical performance, our research reveals how nutrition underpins the body's interconnected systems. This holistic focus is driving new ways to prevent disease, support recovery, and improve quality of life.

## Key Areas of Focus

- Blood vessel and heart health
- Cancer
- Kidney health
- Brain health and mental health
- Gut health
- Bone health
- Musculoskeletal injury and performance



## Spotlight on Healthy People

NHIRI's Healthy People research theme continues to transform how nutrition supports disease prevention and healthy ageing. Projects such as **Getting to the heart of healthy aging: a behaviour change program to promote dietary pattern changes** and **Unlocking a heart-healthy diet: the power of vegetables** are revealing how dietary patterns and vegetable bioactives protect cardiovascular and cognitive health.

The **AN-INSPIRE Study** explores links between kidney transplantation and heart disease, while **Exploring the gap in supportive cancer care in rural and remote WA** is improving access to supportive cancer care including exercise and nutrition across WA. These are some examples demonstrating NHIRI's commitment to advancing evidence-based strategies that help people live longer, stronger, and healthier lives.

# Healthy Futures



## Integrating nutrition and technology to inform the future of healthcare.

Research within NHIRI's Healthy Futures theme is redefining how nutrition and lifestyle influence long-term wellbeing. From cardiovascular and cognitive health to musculoskeletal strength and recovery, our studies continue to show how diet shapes health trajectories across life. Even in areas such as injury prevention or AI-enabled healthcare diagnostics where nutrition is not the central focus, dietary insights are increasingly integrated to enhance prevention, treatment, and recovery outcomes, ensuring a more holistic approach to future healthcare.

### Key Areas of Focus

- Food science to improve meal experiences
- AI in healthcare
- Food science to improve healthcare



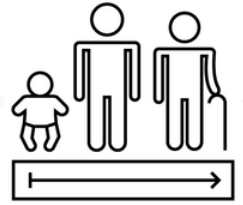
### Spotlight on Healthy Futures

NHIRI's Healthy Futures research harnesses technology and nutrition to create smarter health solutions. Professor Joshua Lewis leads studies **improving the detection and prevention of abdominal aortic calcification**, linking diet and lifestyle to cardiovascular health.

Dr Liezhou Zhong's innovative **3D food printing research** is transforming nutrition in aged care, making texture-modified meals both safer and more enjoyable.

Meanwhile, Dr Zulqarnain Gilani applies **explainable AI to enhance medical imaging and diagnostic precision**. Together, these projects are redefining the future of healthcare where prevention, personalisation, and innovation work hand in hand.

# Healthy Life Stages



## Supporting wellbeing from childhood through to healthy ageing.

NHIRI's Healthy Life Stages research focuses on supporting health and wellbeing from early childhood through to later life. This work recognises that nutritional needs, physical capacity, and social environments evolve over time. By understanding how families form healthy habits, how children learn about food, and how ageing impacts mobility, nutrition, and independence, this research is helping to shape practical strategies that promote quality of life at every stage. The goal is to ensure people not only live longer, but live well-supported, nourished, and connected across the lifespan.

### Key Areas of Focus

- Children
- Families
- Ageing



### Spotlight on Healthy Life Stages

Research within Healthy Life Stages spans early childhood, family wellbeing, and healthy ageing. **Mindful Mouthfuls** is supporting the development of healthy eating behaviours from infancy, helping to establish strong foundations for lifelong nutrition.

For older adults, **Preventing Falls in Older Australians** and **Innovative Approaches for a Falls-Free Future** are exploring the role of nutrition and lifestyle in maintaining mobility and independence.

Projects such as **BoneBoost Gelato** are developing new ways to support musculoskeletal health and reduce fracture risk, while **Printing an Appetite for Life** is using 3D food printing to improve the enjoyment and safety of texture-modified meals in aged care.

Together, these projects enhance health, dignity, and quality of life across key life stages.

# Healthy Nutrition and Food Environments



**Generating research that informs food policies, systems change, and community health.**

NHIRI's Healthy Nutrition and Food Environments research connects plant-based nutrition, food systems, and community health to drive meaningful change. By examining how foods are grown, distributed, and consumed, researchers are shaping healthier and more sustainable food environments. Insights from studies on plant nutrients inform policy and systems change, while collaborations with schools, industry, and government are translating evidence into practice. Through this integrated approach, NHIRI is helping to build resilient food communities and support long-term improvements in population health.

## Key Areas of Focus

- Food systems and policy
- Plant-based nutrition
- Food environments
- Food communities



## Spotlight on Healthy Nutrition and Food Environments

NHIRI's Healthy Nutrition and Food Environments research is creating healthier, more equitable food systems across all stages of life. Projects such as **Feeding the Future** and **Little Aussie Bugs** are improving children's nutrition and food literacy, helping educators and families foster lifelong healthy habits.

The **Australian Food Atlas** and related studies are generating national insights into food marketing, accessibility, and policy reform. Work in childcare and aged care settings is enhancing food provision and education, while research such as **The nitrate debate: does dietary source determine health impact?** is deepening understanding of how food composition influences cardiovascular and cognitive health.

Across regional, urban, and multicultural communities, NHIRI continues to turn research into practical strategies that make nutritious, sustainable food accessible for all.



# Publications



177

Q1 Publications



130

Publications with an international co-author



102

Publications with a NHIRI first or last author

## High impact publications >10

[Click here for full 2025 publication list](#)

GBD 2023 Chronic Kidney Disease Collaborators (2025). Global, regional, and national burden of chronic kidney disease in adults, 1990–2023, and its attributable risk factors: a systematic analysis for the Global Burden of Disease Study 2023. *Lancet*, 406(10518), 2461–2482. [https://doi.org/10.1016/S0140-6736\(25\)01853-7](https://doi.org/10.1016/S0140-6736(25)01853-7), **Q1**, **IF: 88.5**

Huaman, M. R., & Toro-Huamanchumo, C. J. (2025). A turning point in cardiac remodelling in obesity. *Nature Reviews Cardiology*, 22(6), 398–398. <https://doi.org/10.1038/s41569-025-01154-x>. **Q1**, **IF: 44.2**

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# NHIRI in the Media



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## VIDEO: Should junk food advertising be banned?

7:30 / Caslon Ho

7:30

Mon 17 Feb 2025



Should junk food advertising be banned?



## Alone Australia is back. An expert explains what happens to your body and mind when you're starving

Published: March 27, 2025 3:14pm AEDT

SBS Publioty



Alone Australia is back this week for a third season on SBS. And its ten contestants are learning what it means to be really hungry.

Author



Therese O'Sullivan  
Associate Professor in  
Cowan University

They've been dropped alone into separate areas of the Tasmanian wilderness to

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## Edith Cowan University research reveals cruciferous veg like broccoli, kale could reduce type 2 diabetes risk

Hannah Cross | The West Australian  
Mon, 22 September 2025 1:41PM 198 Comments



Edith Cowan University PhD student Emma Connolly investigated whether cruciferous vegetables like broccoli and kale are better for

## What should I eat (and avoid) while breastfeeding? How does my diet affect baby's milk?

Published: August 11, 2025 4:47pm AEST

# The veggie disease busters

Groundbreaking WA research pinpoints exactly what to put on your plate

HANNAH CROSS

It's not just a healthy serve of vegetables that can reduce the risk of type 2 diabetes and cardiovascular disease — it's also the type of vegetable, new research reveals.

Edith Cowan University PhD student Emma Connolly investigated whether cruciferous vegetables like broccoli and kale were better for stabilising blood sugar levels than root or squash vegetables like carrots, potatoes and pumpkin.

In a randomised trial, non-diabetic adults with high blood pressure consumed four daily serves of either cruciferous vegetables or root and squash vegetables with lunch and dinner over two weeks.

Participants wore glucose monitors to continuously track their blood sugar levels. When participants consumed cruciferous vegetables, they had less variable blood sugar levels compared with root and squash vegetables.

Fewer than one in 15 Australian adults are eating enough

vegetables, with cruciferous vegetables "among the least consumed," Dr Blekkenhorst said.

The findings suggest the more broccoli, kale, cabbage a person eats, the lower their risk of type 2 diabetes and cardiovascular disease.

Co-author Lauren Blekkenhorst said the study was "the first randomised controlled trial to directly compare different vegetable types" and their effects on blood sugar.

While more research is needed

to fully understand what is driving these results, it's once again cemented the superfood status of kale and its cruciferous counterparts.

Dr Blekkenhorst said there were likely "several mechanisms at play" that could explain why these types of vegetables are better at regulating blood sugar.

"We believe that the effects seen are largely due to a group of unique compounds found in cruciferous vegetables," she said.

She said simply adding some of these vegetables to your meals most days could make a big difference.

LIPOPROTEIN(A) – WHAT'S ALL THE NOISE ABOUT?

Lipoprotein(a) [Lp(a)] — pronounced "lip-protein (little a)" or "LP little a" is the most common inherited risk factor for heart disease. High Lp(a) levels occur in 20% of people, yet only 1-2% have ever been tested. It is inheritably very similar to low-density lipoprotein (LDL) cholesterol, which makes Lp(a) uniquely "sticky." This "stickiness" encourages the buildup of fatty plaques and narrowing of arteries, increasing the risk of heart attacks and strokes. As high Lp(a) is inherited, diet, exercise or health products have proved so far, the damage can begin in early childhood and

## ECU research debunks link between calcium supplements and dementia

Health | Research

## ECU research debunks link between calcium supplements and dementia

By Have a Go News - 07/10/2025



## Vegies for blood sugar

Cruciferous vegetables like broccoli and kale could help with the management of blood sugar levels, particularly for people at risk of type 2 diabetes and cardiovascular disease.

Edith Cowan University PhD student Ms Emma Connolly investigated whether cruciferous vegetable intake improved blood sugar control compared with root and squash vegetables.

"We found that, when participants consumed the cruciferous vegetables, they had less variable blood sugar



Lipoprotein(a) [Lp(a)] — pronounced "lip-protein (little a)" or "LP little a" is the most common inherited risk factor for heart disease. High Lp(a) levels occur in 20% of people, yet only 1-2% have ever been tested. It is inheritably very similar to low-density lipoprotein (LDL) cholesterol, which makes Lp(a) uniquely "sticky." This "stickiness" encourages the buildup of fatty plaques and narrowing of arteries, increasing the risk of heart attacks and strokes. As high Lp(a) is inherited, diet, exercise or health products have proved so far, the damage can begin in early childhood and

Our researchers contribute to Medical Forum magazine, Western Australia's monthly publication for general practitioners and medical specialists, key government people, hospital trainees and corporate subscribers.

BACK TO CONTENTS

GUEST COLUMN



## Brain and pain in hip osteoarthritis

The brain of people with hip osteoarthritis is driving motor control differently and may be contributing to their pain intensity, writes physiotherapist **Molly Coventry**.

Hip osteoarthritis is a debilitating chronic condition that affects one in 11 Australians.

People with hip osteoarthritis typically experience high levels of pain and impairments to daily function, which both contribute to poorer quality of life. Despite many interventions available to manage hip osteoarthritis, the overall burden continues to grow.

To better understand muscle function in people with the condition, we studied the brain function of people with hip osteoarthritis compared to those without hip osteoarthritis, finding that the mind played a part in this equation.

During the course of our research, we identified changes in both motor cortex processing and maximal muscle activation capacity in people with hip osteoarthritis.

The central nervous system, consisting of the brain and spinal cord, controls and coordinates our body's movement. The primary motor cortex of the brain sends signals to muscles via the spinal cord and motor neurons.

However, in the presence of pain, particularly chronic pain, those processes can be altered. This can result in a reduced ability to activate muscles, which is problematic as strong muscle activation provides support and stability to joints.

This ability to maximally activate our muscles is quantified using a technique called voluntary activation. It assesses the proportion of muscle fibres activated by the brain to drive strong muscle contractions. Our research demonstrated voluntary activation of the leg



shown in knee osteoarthritis and following anterior cruciate ligament reconstruction.

However, the research also demonstrated higher hip-related pain intensity was associated with a poorer ability to activate the leg muscles.

This finding suggests local pain inhibition is not a factor as we assessed the quadriceps at the knee, not hip, so all testing was pain free. We suspect that pain may interfere with the ability to perform strong muscle contractions in areas outside of the affected joint. This is clinically important as it suggests individuals with higher levels of pain are more likely to have poor muscle activation irrespective of pain region.

In the primary motor cortex of the brain, we have facilitatory and inhibitory pathways that work to increase or decrease overall neural

This research was led by Associate Professor Molly Coventry, who is currently a senior research fellow at the University of Western Australia. She is also a senior research fellow at the University of Western Australia. She is currently a senior research fellow at the University of Western Australia. She is currently a senior research fellow at the University of Western Australia.



### How electrical brain stimulation could aid ACL recovery

Electrical brain stimulation may help people recover quicker from ACL injuries by suggesting.



CPD VERIFIED

### Exercise in cancer care – it is time to deliver

Gone are the days when rest was considered the best option for people with cancer – exercise offers a range of benefits.

Medical Forum / Aug 25, 2025



### predict cardio events using bone scans

Researchers have created an AI algorithm to effectively analyse bone density to predict cardiovascular incidents.

Medical Forum / May 22, 2025



### WA-created AI system can detect chronic diseases

This WA created AI system can detect chronic diseases including disease in the early stages.

Medical Forum / Jul 31, 2025



### The link between gestational diabetes and ADHD

ADHD has been found to occur more often in children born to mothers who experienced gestational diabetes, according to ECU research.

Medical Forum / Apr 17, 2025



### Take could reduce vascular disease risk

Medical Forum / May 22, 2025



### Lack of culturally specific eating disorder screening tools

New WA research highlights the need for culturally specific screening tools to support Aboriginal and Torres Strait Islander youth.

Medical Forum / Oct 9, 2025



### WA research debunks link between calcium and dementia

Researchers found no evidence that calcium supplements increase long-term risk of dementia in older women.

Medical Forum / Oct 16, 2025



# 2025 NHIRI/NSA Research Symposium: An Appetite for Consumer-Driven Research

In December 2025, the Nutrition & Health Innovation Research Institute (NHIRI), in partnership with The Nutrition Society of Australia (NSA) Perth Group, hosted the NHIRI–NSA 2025 Research Symposium at Joondalup Resort. Titled An Appetite for Consumer-Driven Research, the symposium brought together researchers, higher degree by research (HDR) students, consumers, and community members to explore how meaningful engagement can strengthen research relevance, quality, and real-world impact.

The keynote featured **Dr Sarah Youngson**, who shared insights from a community-led initiative addressing energy drink consumption among children and young people. Her presentation highlighted the power of co-creation, demonstrating how strong relationships between researchers, community members, and stakeholders can drive effective, policy-relevant change. This theme was further explored in an invited presentation by Professor Gina Trapp, who reflected on lessons from the Amped Out energy drink study and the importance of listening to community voices throughout the research process.



Invited NHIRI presentations showcased diverse examples of consumer and community involvement across cardiovascular health, food security, and implementation science, reinforcing the value of partnership-based approaches. A dedicated session of rapid-fire HDR student presentations highlighted emerging research across nutrition, chronic disease, mental health, data science, and translational health, underscoring NHIRI's strong research pipeline and commitment to early-career development.

The program also featured invited PhD presentations from NSA scholars, strengthening cross-institutional collaboration and disciplinary exchange. The symposium concluded with award presentations and a networking lunch, providing valuable opportunities for connection and collaboration.

Overall, the NHIRI-NSA 2025 Research Symposium exemplified NHIRI's commitment to consumer-driven research, knowledge translation, and community engagement, and reinforced the Institute's role as a leader in advancing research that delivers tangible benefits for health policy, practice, and communities.



## HDR Research Awards – 2025 NHIRI Symposium

### **Pudamini Gomes – Judge's Choice**

This research examined the effectiveness of Fitness to Study policies in supporting tertiary performing arts students experiencing eating disorders and disordered eating, identifying implementation gaps and informing improvements to institutional student wellbeing frameworks.

### **Liam Sherwood – Judge's Choice Runner-Up**

This project developed and validated the Fear Avoidance after Concussion Tool (FACT), a novel patient-reported outcome measure that addresses an identified gap in the assessment of fear-avoidance behaviours following concussion.

### **Montana Dupuy – People's Choice Award**

This qualitative study explored barriers and enablers to increasing leafy green and cruciferous vegetable intake among adults with cardiovascular risk, generating insights to inform practical nutrition strategies and cardiovascular disease prevention efforts.



Prof Jonathan Hodgson and Ms Pudamini Gomes

Prof Jonathan Hodgson and Mr Liam Sherwood

Prof Jonathan Hodgson and Ms Montana Dupuy



## Electrifying Results for New ACL Recovery Plan

New research from NHIRI shows that electrical brain stimulation may significantly improve recovery after anterior cruciate ligament (ACL) reconstruction, one of the most common surgeries in sports medicine.

More than 75% of ACL injuries progress to surgery, yet many people still struggle to regain quadriceps strength. Senior Research Fellow Dr Myles Murphy explained:

**"After reconstructive surgery, one of the biggest issues that patients have is muscle weakness. The biggest driver of this is the brain, which actually stops the contraction of important leg muscles and results in rehabilitation being less effective."**

He noted that the brain even begins to recruit unrelated regions, such as visual centres, in an attempt to activate the leg.

Co-author and West Coast Eagles Head Team Physician Dr Casey Whife highlighted the long-term impact:

"We know that persisting quadriceps weakness leads to poor long-term outcomes, such as reduced participation in sports and increased rates of osteoarthritis."

To address this, the team trialled transcranial direct current stimulation, applying a small electrical current to the brain region controlling the leg while patients performed standard rehabilitation exercises. Early results suggest this approach helps maintain muscle strength and reduces the brain's compensatory workload.

Dr Murphy explained the method:

"...Because the current is so small, and is delivered externally, patients only report feeling 'tingling or itchiness' at the point where the sponges are connected to the head."

Dr Whife added:

**"This study highlights a significant step forward in addressing the neural barriers to recovery after ACL reconstruction... paving the way for more effective and efficient rehabilitation strategies..."**

While long-term outcomes are still being evaluated, the researchers note that electrical brain stimulation could offer a low-cost, easy-to-apply addition to exercise rehabilitation. Patients with implanted medical devices, however, should undergo professional screening before use.



## Cruciferous Vegetables Could Boost Blood Sugar Health

New research from NHIRI shows that everyday cruciferous vegetables, such as broccoli, cabbage and kale, may help stabilise blood sugar levels, offering a simple but powerful dietary strategy for people at risk of type 2 diabetes and cardiovascular disease.

PhD student Ms Emma Connolly investigated whether cruciferous vegetable intake improved glycaemic control (blood sugar control) compared to root and squash vegetables in non-diabetic adults with elevated blood pressure.

“Our participants wore glucose monitors throughout the study, so that we were able to measure blood sugar levels continuously throughout each two-week period,” Ms Connolly said.

**The findings were striking: “...when participants consumed the cruciferous vegetables, they had less variable blood sugar levels... and a smaller spike in sugar levels after the meals.” She added that “...stable blood sugar, with minimal peaks and less fluctuations is associated with better overall health and wellbeing.”**

Given that poor glycaemic control affects more than 541 million people worldwide, the implications are significant.

In Australia, the financial burden of type 2 diabetes coupled with cardiovascular disease is expected to exceed \$18.7 billion by 2031.

Ms Connolly emphasised the need for further study:

“Continued investigation will be crucial to determine how these vegetables can be effectively incorporated into dietary recommendations for improved blood sugar regulation and overall health management.”

Senior researcher Dr Lauren Blekkenhorst highlighted the opportunity for change:

**“Less than 1 in 15 Australian adults meet vegetable intake recommendations... Adding vegetables like broccoli, kale, bok choy, gai lan, and cabbage to your meals most days could make a big difference to your health.”**

This research was supported by the National Heart Foundation of Australia, the Department of Health Western Australia, and Edith Cowan University.



# AI Turns Routine Bone Scans Into a Tool for Detecting Dangerous Visceral Fat

Researchers at NHIRI are developing an artificial intelligence algorithm that can estimate visceral fat using routine bone density (DXA) scans, offering a quick, painless and affordable alternative to costly imaging.

PhD student Ms Arooba Maqsood described visceral fat as the harmful fat stored deep around organs and strongly linked to heart disease, diabetes and cancer. Obesity already poses a major global challenge, with significant health and economic consequences. In Australia alone, costs were A\$39 billion in 2019 and are projected to reach A\$228 billion by 2060.

Current screening methods such as BMI and waist measurements do not distinguish between types of body fat, creating inconsistencies in assessing obesity and related risks. While MRI and CT scans can accurately measure visceral fat, they are expensive and, in the case of CT, involve higher radiation levels.

DXA scans, already widely used to detect spinal fractures, present a valuable opportunity for opportunistic screening without additional testing.

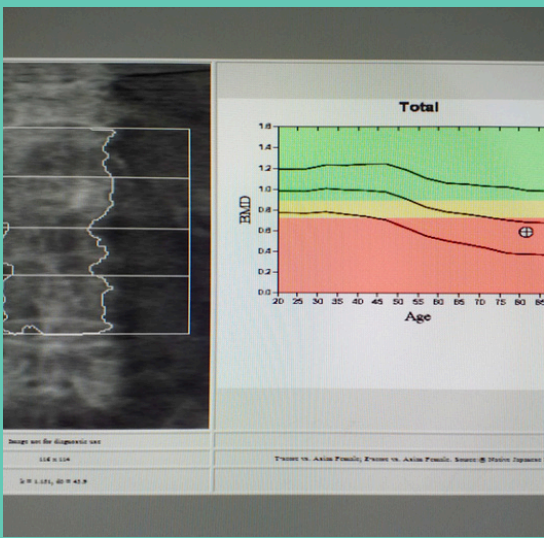
NHIRI's AI model has been trained on thousands of DXA images to predict visceral fat levels, with plans to expand the dataset internationally to strengthen accuracy and diversity.

Senior lecturer and lead AI scientist Dr Syed Zulqarnain Gilani said the work aligns with NHIRI's focus on early intervention, supported by the Heart Foundation, Raine Medical Research Foundation and the WA Department of Health through the FHRI Fund.

Ms Maqsood presented the research at the International Conference on Medical Image Computing and Computer Assisted Interventions in Korea later this year.

AI could transform routine DXA scans into a low-cost, accessible tool for detecting dangerous visceral fat, supporting earlier detection and better long-term health.

# AI-Enabled Bone Scans Help Detect Hidden Heart and Fall Risks



NHIRI researchers, in collaboration with the University of Manitoba, have developed an automated machine learning program that can identify cardiovascular risk, falls risk and fracture risk using routine bone density scans. By analysing vertebral fracture assessment (VFA) images, the program can rapidly detect the presence and severity of abdominal aortic calcification (AAC) - a strong predictor of heart attack and stroke.

The new algorithm can assess thousands of images in under a minute, compared to the five to six minutes it would take a trained clinician to manually score just one image.

NHIRI Research Fellow Dr Cassandra Smith found that 58% of older adults undergoing routine bone density testing had moderate to high AAC, and one in four had no idea they were at high cardiovascular risk.

**“Women are recognised as being under screened and under-treated for cardiovascular disease. This study shows we can use widely available, low-radiation bone density machines to identify women at high risk of cardiovascular disease, which would allow them to seek treatment,” Dr Smith said.**

Using the same algorithm, Associate Professor Marc Sim discovered that patients with moderate to high AAC were also more likely to experience fall-related hospitalisations and fractures.

“The higher the calcification in your arteries, the higher the risk of falls and fracture,” A/Prof Sim said. “Our analysis uncovered that AAC was a very strong contributor to falls risks and was actually more significant than other factors that are clinically identified as falls risk factors.”

By integrating this AI tool into standard bone density scans, clinicians could gain vital insights into vascular health during tests already being performed for osteoporosis, enabling earlier intervention and reducing life-threatening complications.





## Colourful Foods Linked to Longer, Healthier Lives

New research led by Queen’s University Belfast, NHIRI, and the Medical University of Vienna has found that eating a diverse range of flavonoid-rich foods such as tea, berries, apples, citrus and dark chocolate may help lower the risk of major chronic diseases and support longer life.

Published in *Nature Food*, the study followed over 120,000 adults aged 40–70 for more than a decade and is the first to show that diversity of flavonoids offers additional health benefits beyond total intake alone.

NHIRI Research Fellow and study co-lead Dr Benjamin Parmenter said:  
“Flavonoid intakes of around 500 mg a day was associated with a 16% lower risk of all-cause mortality, as well as a ~10% lower risk of CVD, type 2 diabetes, and respiratory disease.”

Study co-lead Professor Aedín Cassidy highlighted that different flavonoids support health in different ways, noting that:

“...this study is significant as the results indicate that consuming a higher quantity and wider diversity has the potential to lead to a greater reduction in ill health than just a single source.”

The findings support dietary guidance encouraging eating a variety of colourful plant foods to support long-term health.



## Leafy Greens Linked to Reduced Risk of Heart Disease

New research from NHIRI, the University of Western Australia, and the Danish Cancer Institute has found that increasing intake of leafy green vegetables may help reduce the risk of atherosclerotic vascular diseases (ASVDs), a leading cause of heart attack and stroke worldwide.

NHIRI's PhD student Ms Montana Dupuy highlighted the urgency of this work, noting that in Australia cardiovascular disease claims one life every 12 minutes.

The research showed that a higher dietary intake of Vitamin K1, found in vegetables such as spinach, kale, and broccoli, may help prevent vascular calcification, a key process in cardiovascular disease.

"...the great news is that these vegetables can be easily incorporated into daily meals," Ms Dupuy said.

This growing body of evidence is now informing innovation at ECU's Future Foods & Digital Gastronomy Lab, where researchers are developing new Vitamin K1-rich foods designed to support cardiovascular and musculoskeletal health.

NHIRI's Associate Professor Marc Sim added that consuming around one and a half cups of these vegetables each day could meaningfully reduce long-term cardiovascular risk.

**"This research found women who consumed approximately 30% higher intakes of Vitamin K1 than currently recommended in the Australian Dietary Guidelines had lower long-term risk of ASVD," he said.**

**"Of importance, when we examined the blood vessels in the neck, those with a higher Vitamin K1 intake also had less thickening of these blood vessels, a marker of atherosclerosis."**

NHIRI's Senior Research Fellow Dr Liezhou Zhong said the findings are now guiding the development of new food products enriched with leafy greens and naturally high in Vitamin K1. These foods are being designed to support the nutritional needs of groups such as aged care residents, where improving vascular and musculoskeletal health can have significant impact.

The team is now translating the broader epidemiological evidence into practical, community-ready solutions that can support healthier ageing and improved population health.



## Improving Oral Health in Early Childhood

Tooth decay in young children remains a significant concern in Australia, with almost half of preschool-aged children affected. Research from NHIRI has shown that limited oral health literacy among caregivers, combined with challenges accessing dental care, is contributing to this preventable health issue.

Senior Lecturer Dr Ruth Wallace explained that untreated cavities can have serious consequences for children, including pain, infection, tooth loss, and impacts on feeding and speech development. Baby teeth play a vital role in early childhood, often remaining in place until the early teenage years, and decay in these teeth can influence the health of permanent teeth and overall wellbeing later in life.

**The research emphasised that establishing strong oral hygiene habits early in life is important, as habits formed in childhood are likely to continue into adulthood, supporting better long-term dental and overall health.**

The research, led by Dr Ruth Wallace and Dr Lesley Andrew, found that inconsistent and unclear messaging about dental care, oral hygiene, and dietary sugars is a major barrier to prevention. While many caregivers recognised the risk of soft drinks, fewer understood that foods such as dried fruit and fruit yogurts in pouches also contribute to tooth decay. The study also revealed that only a small proportion of caregivers are brushing their children's teeth twice daily, and flossing in young children is rarely practiced, despite recommendations to start when two teeth touch.

Dr Ruth Wallace highlighted the importance of helping families access clear, consistent advice and making use of government supports for early childhood dental care. Addressing broader influences such as income, education, and language access will also be crucial in supporting caregivers to build positive oral health practices for their children.

# Advancing Early Detection of Chronic Disease with AI



Researchers at NHIRI have developed a new Artificial Intelligence (AI) system with the potential to transform how serious health conditions are detected and monitored. The system, known as the Supervised Contrastive Ordinal Learning algorithm, uses routine, non-invasive medical images such as bone density scans and ultrasounds to support clinical decision-making in conditions including cardiovascular disease (CVD), diabetic eye disease, and cancer.

NHIRI's researcher Dr Afsah Saleem highlighted the urgent need for accessible screening tools.

**“These chronic diseases are often difficult to detect in the early stages because they lack obvious symptoms. Current diagnostic methods frequently rely on manual assessments of medical scans, which is a time-consuming, expensive, and subjective process,” Dr Saleem said.**

Using this AI system, the research team achieved 85% accuracy and 79% sensitivity in identifying abdominal aortic calcification, an early indicator of cardiovascular disease; 87% accuracy and 84% sensitivity in diagnosing diabetic retinopathy; and 91% accuracy in identifying different stages of breast cancer.

Senior Lecturer Dr Syed Zulqarnain Gilani noted the broader focus of the research program. “The main work of our research group is focused on early intervention and is supported by the Heart Foundation, Raine Medical Research Foundation and WA Department of Health through the Future Health Research and Innovation (FHRI) Fund. Using the least invasive and least costly methods to accurately predict potential medical conditions which could affect the population.”

**By learning the unique differences between healthy and diseased tissue, the algorithm can support earlier diagnosis, better disease staging, and more timely treatment decisions, helping reduce the long-term impact of chronic conditions that affect millions worldwide.**

Dr Saleem presented this work at the Medical Image Computing and Computer Assisted Intervention Conference in Korea.

# Age Is Not a Barrier to Police Recruit Performance



New research from NHIRI has found that body composition, not age, is the stronger predictor of physical performance in police recruit training. The study, led by Master's student Ms Vanessa Sutton, examined the relationships between muscle mass, body fat percentage, bone structure and physical performance in new police recruits.

Police forces require applicants to meet physical and medical standards before entering the 28-week training program, which includes aerobic fitness, agility, strength and power testing. Yet up to one in five recruits still experience time-loss injuries during training, impacting their ability to continue.

The research demonstrated that recruits with higher muscle mass performed better across physical training tasks and highlighted that general measures such as BMI are not effective indicators of readiness.

Ms Sutton explained the motivation behind the research: **“We performed this research to better understand the impact that body composition and other musculoskeletal characteristics like bone density had on performance.”**

She also noted how this research could support more tailored preparation pathways for recruits:

“By identifying ways to help recruits ease into physical training before they officially start, we can better support them in building foundational strength and endurance... the focus can shift to preparing individuals based on their unique physical profiles, which can lead to better outcomes from day one.”

## The Findings

The findings suggest an opportunity for personalised conditioning strategies that build strength and resilience ahead of academy training, helping reduce injury risk and support recruits of all ages and backgrounds to succeed.

# Exercise in Cancer Care: Closing the Gap Between Evidence and Practice



Research from NHIRI shows that while exercise is widely recognised as beneficial for people living with cancer, it is not yet routinely included in treatment plans.

The Clinical Oncology Society of Australia (COSA) advises that exercise should be a standard part of cancer care and recommends that health professionals discuss exercise with patients and refer them to qualified exercise specialists. However, in a survey of 133 oncology healthcare providers, 94% agreed exercise would benefit patients, but only 35% reported routinely applying the COSA guidance. Fewer than 25% said their organisation had updated practices to support this.

Lead researcher Dr Jack Dalla Via said: “There is consistent evidence showing that exercise can help to manage various side effects of cancer treatment, improve physical and mental health, and improve the quality of life of cancer survivors. The next step is to translate this evidence into routine clinical practice, so that all cancer survivors can benefit.”

Postdoctoral Research Fellow Dr Mary Kennedy highlighted the need to address real-world barriers: “These structural issues that are preventing the action of evidence-based guidelines in practice are crucial to explore if we are going to be able to meaningfully integrate exercise into oncology care. Previous research has demonstrated that structured exercise programs can significantly improve survival rates for people diagnosed with cancer.”

The research suggests that progress will require:

- Clear referral pathways to exercise professionals
- Better organisational support and resources
- Practical models that fit into routine oncology care

By supporting implementation, exercise can become a reliable and accessible part of cancer treatment, improving health and quality of life for people living with and beyond cancer.

# Beyond Food Relief: Towards System- Wide Food Security



New research from NHIRI reveals that nearly 13% of Australians experience food insecurity, with rural, regional and remote communities disproportionately affected.

The study found that while many community-led initiatives are innovative, collaborative and responsive to local needs, few are engaged in strategic advocacy with government, a crucial component for long-term change.

Lead researcher Dr Stephanie Godrich highlighted the broader impact of food security: "Beyond individual wellbeing, food security strengthens communities and economies, reducing healthcare costs, supporting local producers, and fostering resilience during crises like droughts, pandemics, or supply chain disruptions," she said.

"Food relief may improve access to food, but it does little to strengthen people's ability to use or influence the food systems around them. Our research highlights the need for a more holistic, system-wide approach, one that recognises food insecurity as a complex issue requiring coordinated, long-term solutions." said Dr Godrich.

Food insecurity is associated with serious physical, mental and social consequences, including increased mortality, rising mental health concerns, and greater pressure on healthcare services. Although food relief and nutrition programs play an important role, they address only a small part of a complex, structural issue.

The research identifies opportunities for government to empower communities by improving access to decision-makers and incorporating community-led solutions into policy.

Dr Godrich emphasised: "Food security initiative leaders should integrate more knowledge about the political, economic and environmental factors that influence food security... Government could incorporate community-led innovations and solutions into policy, which would create localised self-governance, important to equip communities with control over their food security."

A portfolio of policy and community programs including food access and social inclusion initiatives is needed to address the full range of food security determinants.

NHIRI's work underscores the need for long-term, coordinated, system-wide responses that move beyond food relief to build resilient and equitable food systems across Australia.

## Research Highlights

# NHIRI Researchers Develop ur gut®: A New Fibre Supplement to Support IBS Health



Researchers at Edith Cowan University (ECU) have developed ur gut®, a dietary fibre powder designed to help people with irritable bowel syndrome (IBS) maintain a healthy bowel. The product contains a unique blend of fibres selected to support beneficial gut bacteria, with clinical trials showing improvements in both gut and mental health for people living with IBS.

IBS affects nearly 11% of Australians, and while causes remain unclear, triggers may include stress, infection or medication. Research with IBS cohorts revealed a major gap: although restrictive diets can reduce symptoms, they may harm long-term gut health unless individuals transition back to guideline-aligned eating patterns.

**ur gut® was developed to address this need. ECU's first clinical trial demonstrated that the powder improves gut health without worsening IBS symptoms, helping users reach recommended fibre intakes and supporting a healthier microbiome.**

NHIRI's Professor Amanda Devine noted that four teaspoons of ur gut® daily would increase dietary fibre intake and boost gut health. She added that "ur gut® can be added to meals, snacks, and beverages... enhancing your digestion, immune function, and mood by nourishing your gut."

The ur gut® team, Professor Amanda Devine, Associate Professor Claus Christophersen, Dr Jo Rees and Dr Tina Yan, have been refining the product since 2019. ur gut® is now available for purchase, accompanied by an ECU-developed recipe book to help consumers incorporate the tasteless powder into their daily diet.



# Gestational Diabetes Linked to Higher ADHD and Behavioural Symptoms in Children

A major NHIRI study has shown that children born to mothers who experienced gestational diabetes (GDM) are more likely to develop attention-deficit hyperactivity disorder (ADHD) and externalising behaviours.

The research, led by ECU Honorary Researcher Dr Rachelle Pretorius and Professor Rae-Chi Huang, analysed data from 200,000 mother-child pairs across Europe and Australia. Children aged 7–10 years born to mothers with GDM consistently showed higher ADHD symptoms, while those aged 4–6 years displayed more externalising behaviours.

**"Externalising symptoms are behaviours directed outward. Instead of experiencing depression or anxiety, these children often display hyperactivity, impulsivity, defiance, or aggression," Dr Pretorius explained.**

Professor Huang added that these behaviours often appear early:

"At younger ages, children may exhibit more externalising problems and as the child matures, symptoms or behaviour related to ADHD may become more apparent. ADHD does not have biological markers for diagnosis, making ADHD a disorder that is difficult to detect before symptoms manifest."

Although the exact mechanisms remain unclear, the researchers suggest that maternal inflammation during pregnancy may influence brain development in-utero, contributing to neurodevelopmental and behavioural outcomes later in life. Dr Pretorius noted: **"Several studies suggest that the severity of maternal diabetes, associated with maternal obesity and chronic inflammation, have a joint impact on the development of autism spectrum disorder and ADHD in children, which is greater than the impact of either condition alone."**

This large-scale analysis highlights the growing evidence that metabolic conditions during pregnancy can influence a child's long-term developmental and behavioural outcomes, underscoring the importance of maternal health in early life trajectories.

# ECU Research Highlights Potential of Health Ads to Counter Junk Food Marketing in Sport



Despite strict rules on gambling and alcohol advertising, junk food ads in Australia remain largely unregulated. A new ECU study is the first to examine how junk food and anti-junk food advertisements shown during major sporting broadcasts influence people's cravings and intentions to eat junk food.

Led by psychology researcher Dr Ross Hollett, the study analysed 16 AFL and NRL matches and assessed the responses of more than 400 adults after viewing both a junk food ad and an anti-junk food ad.

**"We found that while a single exposure to junk food advertisements did not significantly increase immediate cravings or consumption intentions in adults, anti-junk food advertisements were effective in reducing both cravings and consumption intentions, particularly for healthy BMI participants," Dr Hollett said.**

**The study revealed a striking imbalance in advertising: 10.8% of all ads during AFL and NRL broadcasts promoted junk food, while anti-junk food ads made up just 0.003%.**

"Junk food brands are leveraging the enormous viewership of national sports to bombard audiences with their messages," Dr Hollett said.

"Meanwhile, health promotion ads are barely visible in these spaces, despite their effectiveness." Dr Hollett is calling for increased government investment in health messaging during high-profile sports broadcasts.

"High profile sports broadcasts are a golden opportunity to reach millions of Australians... governments should consider investing in a higher frequency of health messages during broadcasts that are known to readily promote junk food."

The study was published in the Health Promotion Journal of Australia, authored by Dr Ross Hollett, Dr Julia Butt, Dr Brennen Mills and NHIRI's Dr Stephanie Godrich and Professor Amanda Devine.



## Early Brain Changes Detected After ACL Reconstruction May Affect Recovery

ACL injuries are common in Australia, and while ACL reconstruction is a routine treatment, many athletes experience arthrogenic muscle inhibition (AMI), a neurological condition that limits their ability to fully activate the muscles around the knee.

"AMI is essentially a global dysfunction of the muscles around the knee... people who injure their joints, such as ACL injury, or have conditions like osteoarthritis are unable to fully activate muscles near the injured joint," explained NHIRI Masters student and Australasian College of Sport and Exercise Medicine Physicians registrar Dr Colin Sylvester.

Dr Sylvester's research showed that brain pathways become more active as early as two weeks after ACL reconstruction, which may contribute to reduced maximal voluntary activation a key factor influencing how quickly and effectively athletes can return to sport.

Using brain stimulation testing before and after surgery, he examined how the brain communicates with the muscles. "Our research found that the connection from the brain to the muscles wasn't significantly different after surgery, but inhibition and facilitation pathways within the brain that influence that connection were both much more active post-surgery," he said.

"This means that the brain is working a lot harder after surgery than it did pre-surgery, which may be associated with some of the voluntary activation deficit issues we see."

**While these findings are still preliminary, they highlight the importance of targeted rehabilitation. "The general advice is to ensure that you are working with a physiotherapist that has a good understanding of ACL injuries and who understands the progression of recovery," Dr Sylvester said.**



# Flavonoid-Rich Foods Linked to Healthier Ageing, Major International Study Finds

New research from NHIRI, Queen's University Belfast and the Harvard T.H. Chan School of Public Health has found that eating more flavonoid-rich foods such as black tea, berries, citrus fruits and apples, may support healthier ageing.

The study analysed data from over 86,000 adults followed for 24 years and showed that people with the highest flavonoid intakes had markedly lower risks of key aspects of unhealthy ageing.

Among women, higher intake was linked to a 15% lower risk of frailty, a 12% lower risk of impaired physical function, and a 12% lower risk of poor mental health. Men also saw benefits, particularly for mental health.

NHIRI Postdoctoral Research Fellow Dr Nicola Bondonno said the goal of medical research is not just to help people live longer but to ensure they stay healthy for as long as possible. "Our research shows that people who consume more flavonoids tend to age better."

Senior author Professor Aedin Cassidy highlighted why flavonoids matter: "Flavonoids are well known for reducing oxidative stress and inflammation, supporting blood vessel health, and even helping to maintain skeletal muscle mass..."

The researchers found that increasing flavonoid-rich foods by three servings a day was associated with 6–11% lower risks across multiple ageing outcomes in women, and a 15% lower risk of poor mental health in men.

## The Findings

"Overall, these findings underscore the potential for simple dietary modifications to impact overall quality of life and contribute to the optimisation of healthy aging." Professor Eric Rimm, Harvard T.H. Chan School of Public Health.



# Calcium Supplements Not Linked to Increased Dementia Risk, Major Study Confirms

New research from Edith Cowan University (ECU), Curtin University and the University of Western Australia has found no evidence that calcium supplements increase long-term dementia risk, easing previous concerns about their impact on cognitive health in older women.

The study drew on data from a five-year randomised, placebo-controlled trial involving 1,460 women, who were followed for a further 14.5 years. NHIRI PhD student Ms Negar Ghasemifard said calcium supplements are often recommended to prevent or manage osteoporosis.

“...Results from our study provide reassurance to patients and clinicians regarding the safety of calcium supplements in the context of dementia risk for older women.”

NHIRI’s A/Prof Marc Sim noted that the findings remained consistent after adjusting for supplement compliance and lifestyle factors.

**"Previous research suggesting potential links between calcium supplement use and the risk for dementia was purely observational... This study design offers more accurate data on dosage and duration, and we had a long follow-up period of 14.5 years, which strengthens our results." said A/Prof Sim.**

While the results are reassuring for older women, ECU’s Professor Simon Laws emphasised the need for further work to understand how these findings apply more broadly.

"Whether this extrapolates to other demographics, such as men or even women commencing supplementation earlier in life, remains unknown."

Curtin University’s Professor Blossom Stephan highlighted the practical impact of the research:

"Given calcium's critical role in multiple physiological functions, including bone health, these results provide reassurance that long-term calcium supplementation did not increase dementia risk in older women."



# NHIRI Delivers First NBL Injury Report, Revealing Key Risks for Players

The National Basketball League (NBL) has released its first-ever injury report, produced by researchers at Edith Cowan University's Nutrition & Health Innovation Research Institute. The report shows that most NBL time-loss injuries involve muscles, tendons, joints or ligaments at or below the knee, with the knee, calf and ankle accounting for the majority of missed playing time.

Although concussion rates remain relatively low compared to other contact sports, with eight concussions in the 2023/24 season and nine in 2024/25, they are still notable, said ECU Senior Research Fellow Dr Myles Murphy.

**Dr Murphy noted the value of the data for shaping prevention strategies:**

**"If we want to prevent injuries in the NBL, and limit time-loss from injury, our prevention efforts can be targeted towards muscle, tendon and ligament injuries at and below the knee."**

"Our analysis of the data revealed a surprising insight - factors like a player's age, height, weight, or even their position on the court had no significant impact on their risk of injury. This challenges some common assumptions and highlights the need to focus on other potential risk factors, such as training load, recovery practices, and game intensity."

The report also uncovered an unexpected trend related to match exposure.

"The data showed that once a player had accrued over 600 minutes of match exposure, they are essentially bulletproof, with only one injury reported in the entire league across both the seasons to an athlete with more than 600 match minutes," Dr Murphy said.

The NBL injury report will be updated annually, with future editions set to include more detailed information, including injury mechanisms and data from the WNBL.



## New ECU Tool Helps Identify Fear Avoidance After Concussion

Researchers at NHIRI have developed a new screening tool to help clinicians identify fear avoidance behaviour following a concussion, a factor that can delay recovery and contribute to ongoing symptoms such as headaches, poor concentration, sleep issues and low mood.

The Fear Avoidance after Concussion Tool (FACT) is a 28-item questionnaire that can be completed in about five minutes under the supervision of a health care provider. NHIRI Master of Research student Mr Liam Sherwood noted that early recognition of fear-avoidant behaviour is crucial, as timely support and education can help people understand their condition, build confidence in managing their recovery, and reduce the impact of persisting post-concussion symptoms.

Current tools used to assess fear avoidance were originally designed for other types of injuries, making them less suitable for concussion. NHIRI Senior Research Fellow Dr Myles Murphy explained the importance of developing a concussion-specific tool.

**"The FACT was designed with input from people who had concussions from an occupational injury, motor vehicle accident, fall, or from sports... something that not only makes sense to the patient but is also relevant to their injury and recovery." said Dr Murphy**

FACT is now entering broader clinical testing before implementation into routine care, and it is already gaining national recognition, winning the Best Clinical Research Poster Award at the Sports Medicine Australia Conference.



# Community Involvement at NHIRI

Consumer and Community Involvement (CCI) is a core principle of how the Nutrition & Health Innovation Research Institute (NHIRI) designs, conducts, and translates research. Guided by the WA Health Translation Network's CCI Program, NHIRI is committed to ensuring that the voices of people with lived experience meaningfully inform research priorities, study design, implementation, and translation.

Our approach recognises that lived experience strengthens research quality, relevance, and impact. By partnering with consumers, carers, patients, families, and community members, our researchers gain insights that extend beyond data, helping to ensure research outcomes align with real-world needs and expectations.

In 2025, NHIRI continued to strengthen its partnership with the WA Health Translation Network's CCI Program, entering its third year. Reflecting the scale and momentum of this work, NHIRI welcomed Simone Radavelli-Bagatini as CCI Coordinator, marking a significant step in expanding CCI from project-based engagement to a dedicated, institute-wide capability that supports genuine partnership across diverse health and nutrition research.

**NHIRI uses multiple pathways for involvement, including project-specific consumer groups, research buddies, co-design workshops, advisory roles, and community events. This flexible model allows involvement to be tailored to individual projects while remaining grounded in shared values of respect, inclusion, and reciprocity.**

A strong focus in 2025 was building a culture of listening, recognising that meaningful engagement improves research integrity, trust, and translation. Looking ahead, the establishment of a NHIRI Consumer Advisory Group in 2026 will further embed community perspectives in governance and strategic decision-making.

Through sustained commitment to CCI, NHIRI continues to deliver research that is not only excellent, but inclusive, relevant, and impactful for the communities we serve.





# Community Engagement at NHIRI

## Strong and Steady Community Health Presentation

NHIRI is deeply committed to working with communities, policymakers and industry to ensure research delivers real-world impact. In 2025, researchers shared evidence-based insights through community talks, invited presentations, and national and international forums, strengthening links between research, practice, and lived experience.

Community engagement was a major focus. The Strong and Steady community health talk, led by Associate Professor Marc Sim, engaged more than 50 participants in practical discussions on how nutrition, particularly leafy greens and cruciferous vegetables, combined with targeted exercise can reduce falls risk and support healthy ageing.

NHIRI also showcased ECU's research excellence to senior leaders, hosting Western Australia's Chief Scientist, Professor Sharath Sriram, and Lyn Beazley AO. These visits highlighted NHIRI's integrated approach to nutrition, food policy, and community-based interventions for chronic disease prevention.

Beyond local engagement, NHIRI researchers contributed extensively to national and global dialogue, presenting at leading forums across cardiovascular health, food systems, biomechanics, and public health nutrition. Through these activities, NHIRI continues to bridge research, policy and practice, ensuring evidence translates into healthier communities and stronger health systems.



(Above) Associate Professor Marc Sim presenting the Strong and Steady community health talk, engaging over 50 attendees with practical nutrition and exercise strategies to support falls prevention.

## National & Global Reach

- Invited, selected, and peer-reviewed presentations delivered across Europe, Australia, New Zealand, Asia, North America, and international forums.
- Contributions to prominent conferences in cardiovascular health, nutrition, food systems, sustainability, public health, exercise oncology, early childhood nutrition, and biomechanics.

## Policy & Leadership Engagement



Future Foods & Digital Gastronomy Lab team hosted WA Chief Scientist Professor Sharath Sriram



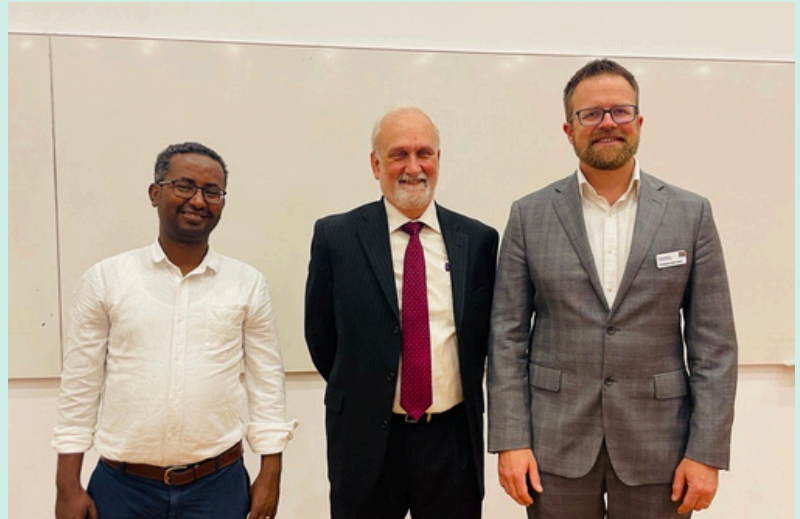
Future Foods & Digital Gastronomy Lab team engagement with Lyn Beazley AO and Connie Da Prato from Lyn Beazley Academy



# Leading the Sector in Internationalisation: ECU Strategic Goal 3



Professor John Schousboe presenting a public a lecture on vascular calcification



Dr Abadi Genre, Professor John Schousboe and Professor Josh Lewis

NHIRI continued to advance ECU’s global engagement and international research priorities by fostering strategic collaborations with leading global health and research organisations, amplifying research impact and strengthening preventive health innovation. In 2025, an ECU Distinguished Visiting Fellowship supported the visit of Dr John Schousboe, a world leader in osteoporotic fractures and clinical densitometry, strengthening international collaboration in cardiovascular and musculoskeletal health.

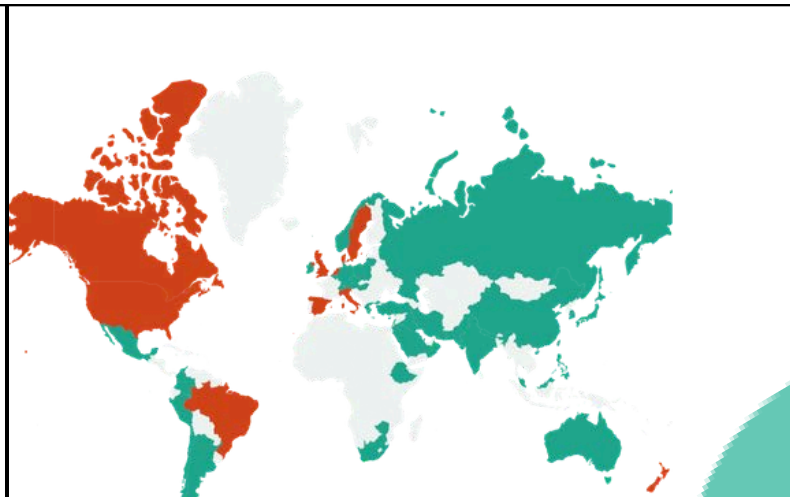
NHIRI’s work in preventive health, particularly the use of artificial intelligence to identify chronic disease risk, also gained international recognition.

NHIRI’s abdominal aortic calcification and machine-learning research was cited by the International Working Group on DXA Best Practices for the updated global guideline, endorsed by internationally respected bodies including the American Society for Bone and Mineral Research (ASBMR), International Osteoporosis Foundation (IOF), Radiological Society of North America (RSNA).

Through partnerships with organisations such as the World Health Organization, International Federation of Musculoskeletal Research Societies, and global nutrition and cardiovascular societies, NHIRI is shaping international clinical standards and reinforcing ECU’s standing as a contributor to global health innovation.



Heatmap of 2025 countries of international collaborations on NHIRI Publications (in teal).  
(Source: SciVal, accessed 02.02.2026)



Heatmap of 2025 top 10 international collaborators on NHIRI Publications in orange.  
(Source: SciVal, accessed 02.02.2026)



# Empowering Talent and Potential: ECU Strategic Goal 4

NHRI empowers talent by fostering a high-performing, inclusive research culture that supports researchers at every career stage. In 2025, NHRI brought together more than 140 researchers and over 50 higher degree by research students, with early and mid-career researchers driving innovation, translation, and growth. Through strong mentorship, leadership development, interdisciplinary collaboration, and real-world research engagement, NHRI equips emerging researchers with the skills to succeed across academia, industry, and health systems. Our commitment to equity, diversity, and inclusion underpins a supportive environment where diverse perspectives strengthen research quality and leadership capacity.

## NHRI Researchers Recognised With Young Tall Poppy Awards

The Young Tall Poppy Science Awards recognise outstanding early-career researchers who combine scientific excellence with strong community and school engagement, helping inspire the next generation of scientists.



**Dr Myles Murphy**  
**2025 Young Tall Poppy Science Award**

Dr Murphy's research in musculoskeletal health and rehabilitation is transforming how lower-limb injuries are assessed and treated worldwide. He developed the Tendinopathy Severity Assessment Achilles, now used in more than 50 countries, pioneered brain-based rehabilitation approaches, and delivered Australia's first National Basketball League Injury Report, partnering with law enforcement and elite sports bodies to reduce injury burden.

**Dr Masoumeh Zargar**  
**2025 Young Tall Poppy Science Award**

Dr Zargar is advancing innovative materials and membrane technologies to address Australia's most pressing environmental challenges. Her work delivers sustainable solutions for removing PFAS, microplastics, and persistent pollutants, strengthening water security across mining, desalination, and resource-recovery sectors, while actively engaging schools, communities, and industry.





# Award Highlights

## Premier's Science Awards

Celebrating Western Australia's Scientific Excellence - The Premier's Science Awards recognise outstanding scientific achievement and impact across Western Australia, highlighting innovators who advance STEM, strengthen industry and policy connections, and contribute to a healthier, more sustainable future.



**Professor Gina Trapp**  
**Finalist - Mid-Career Scientist of the Year**  
**Nutrition & Health Innovation Research**  
**Institute**

Professor Trapp leads nationally influential research on food environments, public health nutrition, and urban planning. As head of a 26-member Food Environments research team, she has pioneered work demonstrating how built environments influence children's diet and physical activity.

Her co-development of the Australian Food Atlas is shaping policy and planning decisions, supporting healthier community design for children and families across Australia.

**Dr Liezhou Zhong**  
**Finalist - Early-Career Scientist of the Year**  
**Nutrition & Health Innovation Research Institute**

Dr Zhong leads the Future Foods & Digital Gastronomy Lab, driving innovation at the intersection of food science and technology.

His work in 3D food printing and texture-modified foods is improving nutrition and food enjoyment in aged care, while advancing research in plant-based foods, food literacy, and AI-enabled nutrition.

His research is redefining how technology can enhance food accessibility, safety, and wellbeing.





# Award Highlights

## NHIRI 2025 Translation Awards

The NHIRI Research Translation Awards recognise researchers who not only generate high-quality evidence but successfully transform that evidence into real-world community, policy, and health outcomes. These awards celebrate the ability to move beyond academic outputs, turning research insights into meaningful change that directly benefits people, services, and systems.

This year, NHIRI proudly highlights two outstanding recipients whose work demonstrates excellence in translation.

### Dr Stephanie Godrich EMCR Award Winner

Dr Stephanie Godrich leads impactful research addressing inequities in food access across rural, regional, and remote Western Australia. Through extensive community engagement, including 19 focus groups and co-creation workshops across eight regions, she has amplified local voices to identify practical, coordinated solutions to longstanding food system challenges.

Her work championed the development of Food Action Groups, now influencing local government commitments, state Inquiry recommendations, and public health planning. With growing philanthropic support and a major grant under consideration, her research is shaping policy and practice to strengthen healthy, equitable food environments for regional communities.



### Ms Montana Dupuy HDR Award Winner

Montana Dupuy's PhD research highlights the cardiovascular value of increasing vitamin K<sub>1</sub> intake from green vegetables, responding to community calls for accessible nutrition education. Her translation activities, ranging from cooking workshops for older adults to co-developing NHIRI's nationally distributed Healthy Recipe Cookbook, have brought evidence-based guidance directly to the public.

Her recent media work reached audiences nationwide, boosting awareness of diet and heart health, while her contributions have informed the development of a novel gelato designed to support bone and cardiovascular wellbeing. Montana's research and outreach together demonstrate innovative, community-focused health translation.





# Award Highlights

## ECU Shines Spotlight on Research Media Excellence

In 2025, ECU announced the winners of the 2024 ECU Media Awards, recognising researchers whose work has reached and influenced audiences around the world.

ECU's annual Media Awards celebrate outstanding contributions to research media campaigns and The Conversation, highlighting the power of research to shape public dialogue and understanding.

Deputy Vice Chancellor (Research), Professor Caroline Finch AO, congratulated the recipients and commended their dedication to impactful contributions to mainstream media throughout 2024.

"Once again, we've seen an extraordinary level of talent and commitment from ECU researchers at all career stages," Professor Finch said.

"In 2024, ECU researchers were mentioned in the media more than 14,000 times, reaching a global audience of over 23 billion.

"What this tells us is that our experts are not only producing high-quality global research but also sharing their knowledge in ways that are accessible, relevant, and far-reaching."

### Research Media Campaign Awards

In partnership with researchers, ECU's Corporate Relations team supported 71 research campaigns in 2024, with 17 achieving a global reach of over 100 million people.

### Highly Commended (NHIRI):

Cruciferous vegetables to lower blood pressure – Dr Lauren Blekkenhorst & PhD Candidate Emma Connolly, School of Medical and Health Sciences

### Honourable Mention (NHIRI):

Drink driver detection tech – Dr Ensiyeh Keshtkaran, supported by Dr Syed Z. Gilani, School of Science

"This recognition highlights the outstanding calibre of ECU's research and the commitment of our researchers to making their work accessible and impactful beyond academia," Professor Finch said. "I'm incredibly proud of how our researchers are engaging with the media to translate complex ideas into knowledge that informs, inspires and benefits the broader community."



L to R: Fangli Hu, Emma Connolly, (Phd candidates), ECU Researchers Giselle Woodley, Dr Yvonne Middlewick, Professor Panizza Allmark and Dr Shane Rogers.



# Award Highlights

## ECU Research Quality Highlighted in Stanford/Elsevier rankings

Fifty-nine ECU researchers have been recognised among the world's top 2 per cent of scientists in the prestigious 2025 Stanford/Elsevier rankings, including five from NHIRI.

The annual study, conducted by Stanford University and published by Elsevier, analyses the research performance of more than 10.9 million scientists worldwide, recognising those whose work is making a significant global impact.

The Stanford/Elsevier rankings are based on a composite score that accounts for citation impact, co-authorship, and career-long influence, providing one of the most comprehensive measures of research excellence globally.

Lists are provided separately for career lifetime citation impact and in the prior 12 months.

NHIRI researchers included in the most recent year

- **Professor Jonathan Hodgson**
- **Professor Wai Lim**
- **Professor Wei Wang**
- **Dr Amanuel Gebremedhin**
- **Dr Carlos Toro-Huamanchumo (NHIRI PhD student)**

## Injury Matters Injury Prevention and Safety Promotion Awards



### Winner - 2025 Outstanding Achievement in Influencing Injury Policy or Research

Congratulations to Dr Kiam Padamsey on winning the Outstanding Achievement in Influencing Injury Policy or Research award!

Edith Cowan University – Workplace Exposures of Wildland Firefighters in Western Australia.



### Finalist - 2025 Outstanding Achievement in Influencing Injury Policy or Research

Congratulations to Professor Gina Trapp, who was part of the Curtin University-led WAVE Project, Alcohol Advertising and Aquatic Environments: Building Evidence for Change, which was recognised as a finalist for Outstanding Achievement in Influencing Injury Policy or Research.



## Professor Jonathan Hodgson

- Institute Director Professor Jonathan Hodgson, a member of the Nutrition Society of Australia (NSA), was appointed a Fellow of the International Union of Nutritional Sciences (IUNS).



## Dr Roslyn Giglia

- Fellow, Dietitians Australia
- This honour is bestowed upon Dietitians Australia members who have demonstrated significant achievement in dietetics and made an outstanding contribution to the profession.



## Assoc Prof Marc Sim

- Nutrition Society of Australia (NSA), Mid-Career Research Award
- International Osteoporosis Foundation & European Society for Clinical and Economic Aspects of Osteoporosis, Osteoarthritis and Musculoskeletal Diseases, Young Investigator Award



## Dr Stephanie Godrich

- Excellence in Health Promotion: Advocacy Award (Food Action Groups project), Australian Health Promotion Association
- SMHS Research Collaboration scheme – Edith Cowan University



## Dr Myles Murphy

- Publication Prize (Raine Medical Research Foundation)
- Best Early Career Researcher Award - Pain Stream (Australian Physiotherapy Association)
- ECU Facilitating Research Collaboration Grant



The Police Recruit Injury Prevention Project Team, led by Dr Myles Murphy who won both the ASICS Oceania Medal for Best Overall Research and the Best Early Career Research Award (Injury Prevention)

## WORK HEALTH SAFETY FOUNDATION AWARDS



Congratulations to Kiam Padamsey who won the Managing Directors Award for outstanding contribution to improving the health and safety of West Australians.

## Staff Promotions

### Promotion to Associate Professor (Level D)

- Associate Professor Marc Sim

### Promotion to Senior Lecturer (Level C)

- Dr Lauren Blekkenhorst
- Dr Liezhou Zhong
- Dr Myles Murphy
- Dr Armaghan Shafaei Darestani
- Dr Jumana Abu-Khalaf



**Dr Afsah Saleem**

- Finalist - Australian Computer Science WA 1962 Medal



**Dr Masoumeh Zargar**

- 2025 ECU Vice-Chancellor's Staff Excellence Award (Excellence in Graduate Research Supervision)



**Dr Marion Mundt**

- 2025 Herbet-Fleisch Workshop (Asia-pacific), Best Clinical Paper



**Dr Benjamin Parmenter**

- Raine KY Wong Memorial Research Prize Medallion (2025, \$5000)



**Dr Simone Radavelli-Bagatini**

- Top three abstract for International Society of Behavioral Nutrition and Physical Activity conference.



**Dr Liezhou Zhong**

- Australian Nutritional Trust Fund (ANTF) Travelling Fellowship (Nutritional Society of Australia)



**Dr Caroline Hill**

- European Atherosclerosis Society Travel Grant
- Australian Atherosclerosis Travel Award



**Dr Lauren Blekkenhorst**

- Springer Nature Editorial Contribution Award, The Springer Nature Editor of Distinction Awards for Nutrition & Metabolism



**Dr Abadi Gebre**

- WACRA Awards 2025, NHMRC Investigator Elevate Award



Dr Bruna Tessarin was awarded the Best Oral Presentation at the inaugural **2025 WA Early to Mid Career Research Symposium**.



# 2025 NHIRI Fellowships

**Prof Josh Lewis**



Improving screening, understanding, prevention and treatment of abdominal aortic calcification, Heart Foundation, NHF - Future Leader Fellowships, 2024 - 2027, **\$792,623**

**Prof Wai Lim**



ECU Vice Chancellor's Professorial Fellowship

**Dr Claire Pulker**



The advertising practices of Australian supermarkets and their influence over population diets, Department of Health WA, WA Near-miss Awards: Emerging Leaders Fellowship, 2025 - 2028, **\$840,964**.

**Dr Masoumeh Zargar**



Peculiar membrane structures for removing microplastics from water, Australian Research Council, Grant - Discovery Early Career Researcher Award, 2022 - 2026, **\$569,947**.

**Dr Mary Kennedy**



Standardising Clinical Oncology Pathways for Exercise (SCOPE), Cancer Council of WA Inc, Postdoctoral Fellowship, 2024 - 2026, **\$520,785**

**Dr Nicola Bondonno**



Variations in flavonoid metabolism as an explanation for inter-individual differences in physiological responses to flavonoid-rich foods, National Health and Medical Research Council, Early Career Fellowship, 2019 - 2026, **\$551,169**

**Dr Marc Sim**



Preventing falls in older Australians: an appetite for change, Department of Health WA, WA Near-miss Awards: Emerging Leaders Program, 2022 - 2025, **\$390,444**

**Dr Annie De Leo**



Exploring the gap in supportive cancer care in rural and remote WA Department of Health WA, Future Health Research and Innovation Fund - Implementation Science Fellowship, 2022 - 2025, **\$731,186**

**Dr Liezhou Zhong**



Emerging technologies and approaches to enhance health for people on texture modified diets, Department of Health WA, WA Near-miss Awards: Emerging Leaders Program, 2023 - 2025, **\$393,090**

## Prof Gina Trapp



Feeding the Future: Improving children's nutritional health and wellbeing through innovative food environment interventions, Stan Perron Charitable Trust, Programs and Partnerships Grant, 2024 - 2028, **\$1,462,532**

ECU Vice Chancellor's Professorial Fellowship

## Dr Cassandra Smith



Better identification, understanding and prevention of advanced blood vessel disease in women, Heart Foundation, NHF - Postdoctoral Fellowships, 2024 - 2025, **\$151,200**

ECU Vice Chancellor's Research Fellowship

## Dr Lauren Blekkenhorst



Stronger evidence for the cardiovascular health benefits of specific vegetables and their bioactive compounds, Heart Foundation, NHF - Postdoctoral Fellowships, 2020 - 2026, **\$60,000**

Vegetable types and their bioactives: Growing the evidence for cardiovascular benefits, National Health and Medical Research Council, Investigator grants, 2020 - 2026, **\$1,028,346**

## Dr Myles Murphy



Harnessing 'brainpower' to reduce the burden of hip-related pain, Raine Medical Research Foundation, Raine Priming Grants, 2024 - 2025, **\$238,852**

Harnessing 'brainpower': using portable, electrical brain stimulation to enhance injury recovery and physical performance via neuroplasticity., Department of Health WA, Future Health Research & Innovation Fund - Innovation Fellowship, 2024 - 2025, **\$119,489**

## Dr Benjamin Parmenter



**Awarded 2025:** Can Higher (Poly)phenol Diversity Keep the Doctor Away?, Raine Medical Research Foundation, Raine Priming Grants, 2026 - 2028, **\$97,500**.

**Awarded 2025:** Can Higher Flavonoid Diversity Keep the Doctor Away?, Heart Foundation, NHF - Postdoctoral Fellowships, 2026 - 2028, **\$312,593**.



# Securing Our Future: ECU Strategic Goal 5

As Edith Cowan University continues to redefine how universities connect with students, industry, and communities, NHIRI plays a central role in translating research into meaningful real-world impact. In 2025, NHIRI advanced ECU's commitment to relevance, collaboration, and innovation by strengthening research partnerships, transforming the research–community interface, and embedding translation at the core of its operating model.

NHIRI researchers are actively reshaping how health research is delivered and experienced by consumers, clinicians, policymakers, and industry partners alike.

Through innovative approaches such as AI-enabled health diagnostics, implementation science, and 3D food printing, NHIRI integrates contemporary technologies into research and learning environments, ensuring discoveries move efficiently from evidence to application.

NHIRI's facilities, including the Future Foods & Digital Gastronomy Lab, act as collaborative hubs where researchers, students, industry, and community partners co-design solutions to emerging health challenges.

These partnerships not only enhance student experience and research collaboration, but also strengthen ECU's contribution to healthier, more resilient communities across metropolitan, regional, and remote settings.

By adopting flexible, impact-driven research models and fostering strong industry and community engagement, NHIRI supports ECU's long-term sustainability while delivering improved health outcomes.

This integrated approach, combining research excellence, innovative delivery, and deep stakeholder connection, positions NHIRI as a key contributor to ECU's transformation agenda and its leadership in health and nutrition innovation.



The Heart Foundation visit at the Future Foods & Digital Gastronomy Lab

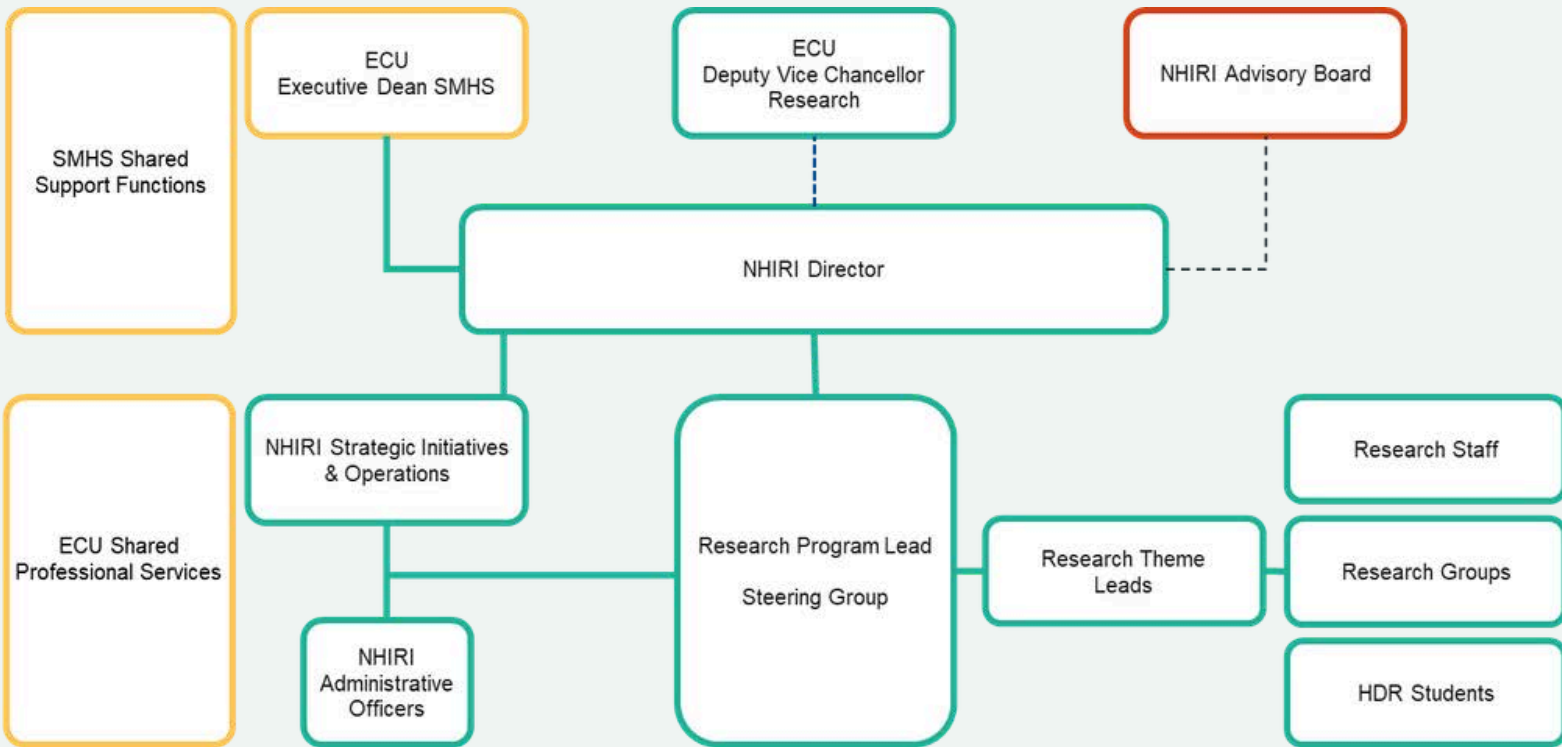


NHIRI-CAIML workshop bringing together researchers, HDR students and international collaborators



# NHIRI Governance

## Organisational Structure





# NHIRI Core Team



**Prof Jonathan  
Hodgson**  
Level E



**Prof Joshua  
Lewis**  
Level E



**Prof Amanda  
Devine**  
Level E



**A/Prof Catherine  
Bondonno**  
Level D



**Dr Lauren  
Blekkenhorst**  
Level C



**Dr Myles  
Murphy**  
Level C



**Prof Gina  
Trapp**  
Level E



**Dr Liezhou  
Zhong**  
Level C



**Prof Wai  
Lim**  
Level E



**A/Prof  
Marc Sim**  
Level D



**A/Prof Therese  
O'Sullivan**  
Level D



**Cheryl  
Croce**  
Professional Staff



**Dr Zulqarnain  
Gilani**  
Level C



**Dr Mary  
Kennedy**  
Level B



**Dr Cassandra  
Smith**  
Level B



**Dr Nicola  
Bondonno**  
Level B



**Prof David  
Suter**  
Level E



**Dr Simone  
Radavelli-Bagatini**  
Level A



**A/Prof Leesa  
Costello**  
Level D



**Dr Benjamin  
Parmenter**  
Level B



**Dr Abadi  
Gebre**  
Level B



**Dr Ros  
Sambell**  
Level C



**Dr Stephanie  
Godrich**  
Level C



**Dr Claire  
Pulker**  
Level C



**Dr Caroline  
Hill**  
Level A



**Dr Nick  
Larkins**  
Level C



**Dr Annie  
De Leo**  
Level A



**Dr Masoumeh  
Zargar**  
Level C



**Bianca  
Lovi**  
Professional Staff



**Danielle  
Earle**  
Professional Staff



# Steering Management Committee



**Prof Jonathan Hodgson**  
Director/Chair



**Prof Joshua Lewis**  
Research Program  
Lead



**A/Prof Claus  
Christophersen**  
Associate Dean (Research)  
SMHS



**Cheryl Croce**  
Strategic Initiatives &  
Operations Manager



**Prof Amanda Devine**  
A sustainable future  
Co-Lead



**Prof Gina Trapp**  
A sustainable future  
Co-Lead



**Dr Marc Sim**  
Discovery and excellence  
Co-Lead



**Dr Lauren Blekkenhorst**  
Discovery and excellence  
Co-Lead



**Dr Liezhou Zhong**  
Technology and innovation  
Co-Lead



**Dr Zulqarnain Gilani**  
Technology and innovation  
Co-Lead



**A/Prof Therese O'Sullivan**  
Real-world impact  
Co-Lead



**Dr Mary Kennedy**  
Real-world impact  
Co-Lead



**Dr Claire Pulker**  
Early Career Researcher



**Dr Benjamin Parmenter**  
Early Career Researcher



**Dr Nicholas Larkins**  
Clinical Representative



**Elena Mantegazza**  
HDR Candidate



# Advisory Board



**Professor Jason Wu (Chair)**  
Program Head, Nutrition Science,  
Food Policy, The George Institute for  
Global Health



**Dr Michael Considine**  
Principal Research Fellow, School of  
Molecular Sciences, The UWA Institute of  
Agriculture, The University of Western  
Australia



**Professor Robin Daly**  
Chair of Exercise and Aging, Institute  
for Physical Activity and Nutrition  
(IPAN) School of Exercise and Nutrition  
Sciences, Deakin University



**Dr Joe Kosterich**  
GP, Health Industry Consultant



**Professor Carl Schultz**  
Consultant Cardiologist, Royal Perth  
Hospital and Associate Dean: Research,  
Medical School, The University of  
Western Australia



**Dr Michael Tieland**  
Associate Professor of Nutrition  
Science, Institute for Physical Activity  
and Nutrition (IPAN) School of Exercise  
and Nutrition Sciences, Deakin  
University



**Rohan Prince**  
Director of Horticulture, Department of  
Primary Industries and Regional  
Development



**Pippa Grant**  
Head of Health Programs, HBF Health



**Janice Marcon**  
Director, LongVue Group Pty Ltd



**Barbara Horgan**  
Consumer Representative



## NHIRI Advisory Board Members



**Prof Jonathan Hodgson**  
Director



**Prof Joshua Lewis**  
Research Program Lead



**Cheryl Croce**  
Strategic Initiatives &  
Operations Manager



**A/Prof Catherine Bondonno**  
Chair of the Professional Development  
Committee (Jan-Jul)



**Dr Marc Sim**  
Representative of the  
Early Career Investigator Research  
Committee (Jan-June)



**Dr Cassandra Smith**  
Representative of the  
Early Career Investigator Research  
Committee (Jul-Dec)



**Dr Nick Larkins**  
Clinical Representative



**Dr Claire Pulker**  
Chair of the Professional Development  
Committee (Aug-Dec)

## **Nutrition & Health Innovation Research Institute**

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**Nutrition and  
Health Innovation  
Research Institute**

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