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## RESEARCH IS CRITICAL FOR AUSTRALIA'S FUTURE

The *2015 Intergenerational Report Australia in 2055*, released by the Commonwealth of Australia in March this year, underscores the need for those of us working in health to develop strategies to prevent chronic diseases and to better manage them.

The report predicts major changes in the ageing of the Australian population. Australians will continue to live longer, with life expectancy projected to be 95.1 years for men and 96.6 years for women in 2054-55.

The number and proportion of Australians aged 65 and over, and those aged 85 and over will also increase. By 2054-55, the number of Australians aged 65 and over is expected to more than double and the number aged 85 and over is expected to reach almost 2 million.

Our ageing population along with the projected increase in Australia's population has significant implications for health and

aged care sectors and services, and will put our already fragile health care system under enormous pressure.

Research will play a critical role informing how to delay or prevent the onset of diseases associated with ageing, and how to support people to continue to live a healthy, active and productive life.

### SUPPORT US

Our research is focused on making a difference to health and quality of life. Your support helps our team of committed and passionate researchers to continue to test new ideas, publish exciting findings and create innovative programs that will improve the health of all Australians. If you are passionate about health and would like to explore opportunities to support us, please email [cpan@deakin.edu.au](mailto:cpan@deakin.edu.au)

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## GROWING HEALTHY APP: FEASIBILITY STUDY

Infant feeding practices, including breastfeeding, best practice formula feeding, age of introduction of solids and diet quality are considered important in affecting healthy weight gain in infancy and later childhood and adulthood.

Children from low socio-economic backgrounds are more likely not to be breastfed, have poorer quality of diets, and higher rates of obesity, making early intervention a priority. One emerging and promising area involves providing support through electronic media such as the Internet or smart phones (m-Health interventions). Such approaches are yet to be tested in the area of child obesity prevention.

The Growing Healthy program ([www.growinghealthy.org.au](http://www.growinghealthy.org.au)) trials a new app, website and online forum targeting families from relatively disadvantaged communities. These resources provide a 'one-stop shop' for trustworthy advice (knowledge, skills, strategies) on infant feeding in the first nine months of life. The aims of the program are to:

- Promote any breastfeeding and prolonged breastfeeding
- Promote best practice formula feeding where relevant
- Delay the introduction of solids to around 6 months
- Promote healthy first foods/appropriate transition to family foods
- Promote healthy infant feeding practices

Parents will receive three app/text messages a week relevant to the age of their baby with links to more information on the app/website. The development of the program has been informed by literature reviews as well as interviews and focus groups with parents and practitioners. The program will be pilot tested amongst 200-300 parents from disadvantaged communities in both Melbourne and NSW.

The study will examine the feasibility of a range of health practitioners referring parents to the program and reinforcing key messages as part of routine baby health checks, and the effectiveness of the program in terms of reach, use, acceptability, cost and impact on key infant nutrition and feeding outcomes.

### Key messages

m-Health (mobile phone based) interventions represent a promising new avenue for the delivery of interventions targeting infant feeding, nutrition and obesity risk, particularly for hard-to-reach families.

This study will provide important new information about the feasibility and effectiveness of a novel m-Health intervention on nutrition and obesity risk in socioeconomically disadvantaged families across the first year of life.

### Funding acknowledgement

The study is part of the Centre for Obesity Management and Prevention Research Excellence in Primary Health Care (COMPARE-PHC, [www.compare-phc.unsw.edu.au](http://www.compare-phc.unsw.edu.au)) funded through the Australian Primary Health Care Research Institute. The study is a collaboration of the following investigators: Dr Rachel Laws, A/Prof Karen Campbell, Prof Kylie Ball, Prof David Crawford (Deakin University), A/Prof Elizabeth Denney-Wilson (UTS), Dr John Lynch (University of Adelaide), A/Prof Rachael Taylor (University of Otago).

**Contact** Dr Rachel Laws  
Telephone: +61 3 9244 5402  
[r.laws@deakin.edu.au](mailto:r.laws@deakin.edu.au)

## UNDERSTANDING THE BIOLOGY OF AGEING MUSCLE FOR A HEALTHIER ELDERLY POPULATION

Skeletal muscle plays a very important role in population health and wellbeing. As we age, we all experience a natural and substantial loss in skeletal muscle mass. This reduces muscle function and contributes to impaired quality of daily living, a loss of independence, reduced social interaction and reduced general wellbeing in the elderly.

In the current environment of global ageing, where it is predicted that by 2051 27% of the population will be over 80 years, the social and economic costs of muscle wasting are constantly increasing. There is therefore an urgent need to understand the biology underlying the age-related decline in skeletal muscle mass and function, and to develop strategies to enable elderly people to remain active, independent and participate within their social setting.

This Australian Research Council (ARC) Discovery Early Career Researcher Award project will investigate a novel and exciting aspect of the biology of ageing muscle. MicroRNAs (miRNAs) are recently discovered small RNA molecules that can regulate skeletal muscle health. This project aims to understand the potential role of miRNAs in the age-related loss of muscle mass. Successful therapeutic interventions targeting miRNAs are already applied in other health areas. Therefore, identifying the miRNAs able to regulate muscle mass may reveal possible targets for therapeutic regulation. Eventually, this may lead to the development of new strategies to improve skeletal muscle mass and function and to enhance the quality of life of our ageing population.

### Key messages

As we age, we naturally experience a reduction in muscle mass and function that contributes to both a decrease in the quality of life of the elderly and to increasing social and economic costs.

This project investigates the role of miRNAs in the age-related loss of muscle mass and function, with the aim to develop new therapeutic strategies to reduce muscle wasting.

### Funding acknowledgement

Dr Severine Lamon is supported by an Australian Research Council, Discovery Early Career Researcher Award DE150100538 "Understanding the role of miRNAs in the biology of ageing muscle".

**Contact** Dr Severine Lamon  
Telephone: +61 3 9244 6882  
[severine.lamon@deakin.edu.au](mailto:severine.lamon@deakin.edu.au)



## A GLOBAL PERSPECTIVE ON URBAN SPACES AND ACTIVE AGEING

The creation of urban environments that support an active lifestyle across mid-to-late adulthood can potentially help offset the burden of disease associated with an ageing population. Using a suite of national and international studies, this Australian Research Council (ARC) funded Fellowship program aims to identify the optimal mix of destinations (facilities and places to visit) for active ageing while taking into account factors that define one's ability and willingness to visit these destinations. By studying the physical activity behaviours of older residents living in different cities across the globe, this research will maximise the diversity of the urban environments studied and provide more robust information to policy makers and urban planners who can translate research into policy and practice. There are lessons to be learnt from examining other countries' environments that we may miss if we limit ourselves to studying our own environments.

Hong Kong is the first study site to be examined within this Fellowship program. Hong Kong is a very "special" case because it is characterised by extremely high levels of residential density, access to amenities and a very efficient public transport network when compared to most Western cities. This type of urban environment has been associated with high levels of walking and low levels of sitting in older adults. Hong Kong healthy older adults with no mobility problems accumulate over 500 weekly minutes of utilitarian walking, which corresponds to three times the amount of utilitarian walking found in Australian adults. Hong Kong elderly living in neighbourhoods with better availability of specific types of services have the highest levels of walking and lowest levels of sitting. Yet, this research also indicates that, to substantially impact on walking and sitting, destination-rich urban areas need to also provide adequate levels of personal safety and a physically-unchallenging pedestrian network.

### References

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2. Cerin E, Lee K, Barnett A, Sit CHP, Cheung M, Chan W, Johnston JM. Walking for transportation in Hong Kong Chinese urban elders: a cross-sectional study on what destinations matter and when. *International Journal of Behavioral Nutrition and Physical Activity* 2013; 10:78.

### Key messages

Aspects of the built neighbourhood environment can impact on active ageing, but the exact combination of neighbourhood characteristics that support active ageing is unknown.

The identification of built environment attributes supporting active ageing needs to be based on data collected in locations providing a large range of variability in the environmental attributes of interest.

Destination-rich areas with good pedestrian infrastructure and adequate levels of safety may have a large-scale, substantial impact on the levels of physical activity of older adults by promoting active transportation.

### Funding acknowledgement

Professor Ester Cerin is supported by an Australian Research Council Future Fellowship FT140100085. Individual studies were supported by the Health and Health Service Research Fund (Hong Kong Government) grant # 04060671.

**Contact** Professor Ester Cerin  
Telephone: +61 3 9244 6763  
ester.cerin@deakin.edu.au

## MODELLING POLICY INTERVENTIONS FOR FOOD SECURITY

Australia's future food security will be challenged by climate change, environmental and resource constraints, and a growing population. There is a need to model the potential impacts of these challenges on Australian food production in order to inform policy interventions to secure a nutritionally adequate and sustainable food supply.

This project is collecting evidence to answer the urgent research question: 'What are the priority policy interventions to help protect Australia's food security in the face of environmental sustainability challenges?' A food systems approach is being used to conceptualise and conduct this critical policy analysis.

The project will make a new and significant contribution to addressing sustainability challenges to Australia's future food security in two ways. Firstly, it will address evidence gaps in understanding the impacts of population growth and emerging climate and environmental challenges on regional and national level food systems, by using an innovative scenario modelling approach. Secondly, it will specify and prioritise policy interventions to help government decision-makers and primary food producers to plan for the future and to adapt to these environmental challenges.

This three year (2013–2015) Australian Research Council (ARC) linkage project is multi-faceted, and is being carried out by a multi-disciplinary team with expertise in nutrition, dietary profiling, scenario development, food systems, stocks and flows modelling, policy analysis and economic evaluation. A Stakeholder Advisory Committee with members from a variety of sectors including government departments, VicHealth and the primary food sector is providing advice throughout the project. The Advisory Committee members have specific roles through participation in processes to identify data sets and priorities for model development, as well as policy and strategic interventions for sustainable and resilient food systems.

### Key messages

The current food system is broken and there is an urgent need for evidence to help prioritise policy interventions to transform the structure and operation of the food system.

This project will help provide that evidence.

### Funding acknowledgement

Lawrence M, Ryan C, Friel, Moodie M, Turner G. 'Modelling policy interventions to protect Australia's food security in the face of environmental sustainability challenges', Australian Research Council Linkage Project LP120100168. Industry funding partners: VicHealth (2013-2015), Health Department Victoria (2013-2015), Department of Primary Industries and Regions South Australia (2013-2014), Department of Health South Australia (2013). Industry partners providing in-kind support: Horticulture Australia Ltd, Dairy Australia.

**Contact** Professor Mark Lawrence  
Telephone: +61 3 9244 3789  
mark.lawrence@deakin.edu.au



# NEWS AND EVENTS

## FUNDING SUCCESS

Congratulations to:

- Dr Severine Lamon awarded an Australian Research Council (ARC) Discovery Early Career Research Award (DECRA)
- Dr Carley Grimes awarded a Heart Foundation Vanguard Grant and a Heart Foundation Collaboration and Exchange Award
- Dr Clinton Bruce and Dr Greg Kowalski each awarded a Diabetes Australia Research Trust Grant
- Alfred Deakin Professor Kylie Ball awarded a Heart Foundation Vanguard Grant

## RESEARCH VISIT

Dr Carley Grimes recently completed a three week visit to the Children's Nutrition Research Center (CNRC) at the Baylor College of Medicine in Houston, Texas. The CNRC is internationally renowned for developing and evaluating multi-media programs that target children's dietary behaviours. Whilst at the CNRC, Dr Grimes learnt about successful components of behavioural change interventions in children that will help inform the development of a future web-based program to lower salt intake in Australian children. In addition, with colleagues at the CNRC she undertook analysis of the US National Health and Nutrition Examination survey to determine dietary sources of important nutrients in US infants and toddlers.



## POLICY SUPPORT

In her capacity as Chair of the Heart Foundation's National Physical Activity Committee, C-PAN's Alfred Deakin Professor Jo Salmon presented on the need for a national physical activity strategy at the Heart Foundation's parliamentary breakfast held in Canberra.



LtoR: Ms Mary Barry (Heart Foundation Chief Executive Officer), Senator the Hon Fiona Nash, Dr Stephen Parnis (Vice President Australian Medical Association), The Hon Catherine King MP, Senator Richard Di Natale, Dr Andrew Rochford, Prof Jo Salmon.

## AWARDS

C-PAN's TransformUs! Program led by Alfred Deakin Professor Jo Salmon, received highly commended in the 2014 Victorian Health Promotion Foundation (VicHealth) awards in the 'Encouraging physical activity' category. TransformUs! was the first program worldwide to test the effectiveness of strategies to reduce children's sitting time and promote their physical activity at school and at home.

Ms Kate Parker (honours student supervised by Dr Helen Brown) and Mr Steven Hamley (honours student supervised by Dr Clinton Bruce) each received a Deakin University Vice-Chancellor's Prize 2014 in the Faculty of Health, for their honours theses.

Ms Carrie Service (Honours student supervised by Dr Carley Grimes) received the Heart Foundation Award for Excellence in Healthy Lifestyles and Ms Ella Ridgeway (Honours student supervised by Professor Mark Lawrence) received the Parks Victoria Healthy Parks Healthy People Award as part of Deakin University's Faculty of Health student awards.

Mr Sisitha Jayasinghe's (PhD student supervised by Dr Anne Turner) journal article titled *Physiological responses to psychological stress: importance of adiposity in men aged 50-70 years* was ranked number 3 in Endocrine Connections 'Best of' list for 2014.

## NEW ASIA PACIFIC FOOD AND NUTRITION COLLABORATION

The rapid pace of economic development in the Asia Pacific Region has led to radical changes in people's dietary and physical activity practices. This has been associated with large rises in the prevalence of obesity and non-communicable diseases. Many countries are now faced with the twin problems of under nutrition (such as stunted growth of children) and over nutrition. This increases the importance of the development of policies and education programs which support family health and wellbeing.

During 2013 and 2014 Professor Tony Worsley worked with colleagues in several countries to design and conduct a survey of household food providers' food practices and attitudes. This led to the formation of a collaboration to foster food and nutrition research in the Asia Pacific Region with particular emphases on food and nutrition education, maternal and child nutrition, food marketing and retailing.

At present the Collaboration includes Mahidol University (Thailand), the Universities of Indonesia, The Philippines, Hong Kong, The Seychelles, and the Jawaharlal Nehru University (India), and the International Medical University, Kuala Lumpur, as well as government departments in China, Singapore and Vietnam. Further links with other institutions will be developed in the near future.

### Contact details

Centre for Physical Activity and Nutrition Research (C-PAN)  
School of Exercise and Nutrition Sciences  
Deakin University  
221 Burwood Hwy, Burwood, VIC, 3125

Telephone +61 3 9244 6613  
cpan@deakin.edu.au  
deakin.edu.au/research/src/cpan

Cricos Provider Code: 00113B

### Our mission

To conduct high quality, multidisciplinary nutrition and physical activity research to actively inform policy and practice to improve health, and build capacity in nutrition and physical activity research in Australia.