**Australian Longitudinal Study on Women’s Health**

Technical Report #43

Appendices

Prepared for the Australian Government Department of Health, November 2020

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# APPENDIX B: Research projects

## Current projects

* + 1. **Chronic conditions**

***ARTHRITIS***

|  |  |
| --- | --- |
| Project: A133D | Incident osteoarthritis in a cohort of ‘baby boomer’ women: Management and outcomes in the Australian community |
| Collaborative Investigators: | * Prof Lynne Parkinson - Health CRN, CQ University Australia * Prof Julie Byles - Research Centre for Generational Health and Ageing, University of Newcastle * Prof Parker Magin - School of Medicine and Public Health, The University of Newcastle * Dr Michelle Cunich - The Boden Institute of Obesity, Nutrition, Exercise and Eating Disorders, The University of Sydney * A/Prof Fiona Blyth - Pain Management & Research Centre, The University of Sydney * Dr Geeske Peeters - Global Brain Health Institute, Trinity College Dublin * Prof Dimity Pond - School of Medicine & Public Health, The University of Newcastle * Dr Gillian Caughey - University of South Australia * A/Prof Satvinder Dhaliwal - Curtin University * A/Prof Rachael Moorin - Curtin Health Innovation Research Institute, Curtin University * Dr Norman Ng - School of Human Movment and Nutrition Studies, The University of Queensland |

Osteoarthritis (OA) is a leading contributor to disability in Australia. As OA is the most common chronic disease reported by older women, there is a critical need to understand the factors that enable women with OA to remain active and independent in the community as they age. The NHMRC endorsed RACGP guidelines for non-surgical management of OA in the Australian health care context emphasise the importance of self management to prevent acute OA episodes, and delay functional limitations and disability. However, we do not know how OA is being managed in the commuty. This project will examine the extent to which RACGP guidelines are being applied among "baby boomer" women with OA by examining onset of OA, immediate and ongoing management, and related health outcomes.

**Research outcomes:**

*Publications:*

* Incident osteoarthritis associated with increased allied health services use in ‘baby boomer’ Australian women. Parkinson L, Moorin R, Peeters G, Byles J, Blyth F, Caughey G, Cunich M, Magin P, March L & Pond D. *Australian and New Zealand Journal of Public Health*, 2016, 40 (4); 356-361.

*Conferences, seminars and workshops:*

* Health services utilization in older women: The impact of incident osteoarthritis. Parkinson L, Moorin R, Peeters G, Caughey G, Byles J, Cunich M, Magin P, Pond D & Blyth F. *International Data Linkage Conference*, Vancouver, Canada, 28 - 30 April 2014.
* Lifestyle changes of women with osteoarthritis in Australia. Ng N, Moorin R, Parkinson L, Brown W & Peeters G. *6th International Conference on Physical Activity and Public Health (ICPAPH*), Bangkok, Thailand, 16-19 November 2016.
* Examples of research into translation of evidence for ageing and health. Parkinson L. *AAG NHMRC Workshop on Research Translation*, Brisbane, Qld, 20th November 2012.

#### CANCER

|  |  |
| --- | --- |
| Project: A468 | Population-level relevance of risk factors for cancer |
| Collaborative Investigators: | * Prof Graham Giles - Cancer Epidemiology Centre, Cancer Council Victoria * A/Prof Claire Vajdic - Centre for Big Data Research in Health, University of New South Wales * A/Prof Dianna Magliano - Baker IDI Heart and Diabetes Institute * A/Prof Jonathan Shaw - Baker IDI Heart and Diabetes Institute * Prof Paul Mitchell - Discipline of Clinical Ophthalmology and Eye Health, University of Sydney * Dr Maarit Laaksonen - Centre for Big Data Research in Health, University of New South Wales * Prof Karen Canfell - Cancer Research Division, Cancer Council NSW * Dr Robert MacInnis - Cancer Council Victoria * Prof Emily Banks - Australian National University * Prof Robert Cumming - University of Sydney * Dr Maria Arriaga - Centre for Big Data Research in Health, University of New South Wales * Dr Vasant Hirani - Concordia Health and Ageing in Men Project (CHAMP), The University of Sydney * Peter Hull - Centre for Big Data Research in Health, University of New South Wales * Dr Tiffany Gill – Adelaide Medical School, The University of Adelaide * Prof Julie Byles – Research Centre for Generational Health and Ageing, The University of Newcastle |

Cancer prevention guidelines should be informed by population-level relevance of the risk factors. Measures such as the Population Attributable Fraction (PAF), which integrate both the strength of association and the prevalence of the risk factors in the population, can estimate that relevance. In this study, the population-level relevance of lifestyle-related risk factors for cancer in Australia will be studied for the first time by applying our recently published PAF measure and program to data from established large-scale Australian cohort studies, including ALSWH, linked to national cancer and death registries (relative risk estimates) and nationally representative health survey (exposure prevalence estimates). A pooled cohort study based on the individual cohorts will also be conducted, by applying our recently demonstrated meta-analysis techniques for PAF, to further enhance the precision of the estimates and to allow the analysis of less common cancers. Knowledge on national cancer burden is essential for targeting cancer interventions.

**Research outcomes:**

*Publications:*

* Cohort Profile: The burden of cancer attributable to modifiable risk factors – the Australian Cancer-PAF Cohort Consortium. Arriaga ME, Vajdic CM, Canfell K, MacInnis R, Hull P, Magliano DJ, Banks E, Giles GG, Cumming RG, Byles JE, Taylor AW, Shaw JE, Price K, Hirani V, Mitchell P, Adelstein B-A & Laaksonen MA. *BMJ Open*, 2017, 7 (6); e016178.
* The future burden of lung cancer attributable to current modifiable behaviours: A pooled study of seven Australian cohorts. Laaksonen MA, Canfell K, MacInnis R, Arriaga ME, Banks E, Magliano DJ, Giles GG Cumming RG, Byles JE, Mitchell P, Gill TK, Hirani V, McCullough S, Shaw JE, Taylor AW, Adelstein B-A & Vajdic CM. *International Journal of Epidemiology*, 2018, 47 (6); 1772-1783.
* The future colorectal cancer burden attributable to modifiable behaviors: A pooled cohort study. Vajdic CM, MacInnis R, Canfell K, Hull P, Arriaga ME, Hirani V, Cumming RG, Mitchell P, Byles JE, Giles GG, Banks E, Taylor AW, Shaw JE, Magliano DJ, Marker J, Adelstein B-A, Gill TK & Laaksonen MA. *JNCI Cancer Spectrum*, 2018, 2 (3); <https://doi.org/10.1093/jncics/pky033>
* The burden of pancreatic cancer in Australia attributable to smoking. Arriaga M, Vajdic CM, MacInnis RJ, Canfell K, Magliano DJ, Shaw JE, Byles JE, Giles FF, Taylor AW, Gill TK, Hirani, Cumming RG, Mitchell P, Banks E, Marker J Adelstein BA Laaksonen M. *Medical Journal of Australia*, 2019, 20(5); . <https://doi.org/10.5694/mja2.12108>
* The preventable burden of breast cancers for premenopausal and postmenopausal women in Australia: A pooled study. Arriaga ME, Vajdic CM, Canfell K, MacInnis R, Banks E, Byles JE, Magliano DJ, Taylor AW, Mitchell P, Giles GG, Shaw JE, Gill TK, Klaes E, Velentzis LS, Cumming RG, Hirani V, Laaksonen MA. *International Journal of Cancer*, 2019, 145(9); 2383-2394.

*Presentations:*

* Population-level relevance of risk factors for cancer in the presence of competing risk of death. Laaksonen M. *Australian Statistical Conference 2014*, Sydney, NSW, 7 - 10 July 2014.
* Population-level relevance of risk factors for cancer: pooled study of seven Australian cohorts. Laaksonen M. *World Cancer Congress*, Melbourne, Victoria, 3 - 6 December 2014.
* Burden of lung cancer attributable to lifestyle risk factors: pooled study of seven Australian cohorts. Laaksonen M et al. *Sydney Cancer Conference 2016*, Sydney, NSW, 22-23 September 2016
* Population-level relevance of lifestyle-related risk factors for pancreatic cancer. Arriaga M et al. *Sydney Cancer Conference 2016*, Sydney, NSW, 22-23 September 2016.
* Burden of lung cancer attributable to modifiable lifestyle-related risk factors. Laaksonen MA, et al. *Annual 45 and Up Study Collaborators’ Meeting*, Sydney, NSW, 6 September 2016.
* Burden of colorectal cancer in Australia attributable to lifestyle-related risk factors. Laaksonen MA, et al. *Clinical Oncology Society of Australia (COSA) 43rd Annual Scientific Meeting*, Gold Coast, Qld, 15 - 17 November 2016.
* Burden of lung cancer in Australia avoidable by modifications to lifestyle-related risk factors. Laaksonen M, Arriaga M, Hull P, Canfell K, MacInnis R, Banks E, Giles G, Mitchell P, Cumming R et al. *American Association for Cancer Research (AACR) Annual Meeting*, Washington, DC, USA, 1-5 April 2017.
* Burden of colorectal cancer attributable to lifestyle-related risk factors: A pooled study of seven Australian cohorts. Vajdic CM, Arriaga M, Hull P, Canfell K, MacInnis R, Banks E, Giles G, Mitchell P, Cumming R et al. *American Association for Cancer Research (AACR) Annual Meeting*, Washington, DC, USA, 1-5 April 2017.
* Population-level relevance of lifestyle-related risk factors for pancreatic cancer in Australia. Arriaga M, Vajdic CM, Hull P, Canfell K, MacInnis R, Banks E, Giles G, Mitchell P, Cumming R et al. *American Association for Cancer Research (AACR) Annual Meeting*, Washington, DC, USA, 1-5 April 2017.
* Premenopausal and postmenopausal breast cancer burden attributable to health behaviours and hormonal factors. Arriaga M, Vajdic CM, Hull P, Canfell K, MacInnis R, Banks E, Giles G, Mitchell P, Cumming R,et al. *Annual Scientific Meeting of the Clinical Oncology Society of Australia (COSA)*, Sydney, NSW, 13-15 November 2017.
* A large linked study to evaluate the burden of cancer in Australia attributable to current modifiable behaviours. Laaksonen M, Arriaga ME, Canfell K, MacInnis R, Hull P, Banks E, Giles G, et al. International Population Data Linkage Conference, Banff, Canada, 12-14 September 2018.
* Future burden of cancer attributable to current modifiable behaviours: A pooled study of seven Australian cohorts. Laaksonen M, Arriaga ME, Canfell K, MacInnis R, Hull P, Banks E, Giles G, et al. Sydney Cancer Conference, Sydney, NSW 12-12 October 2018.
* Future burden of cancer attributable to current modifiable behaviours: A pooled study of seven Australian cohorts. Laaksonen M, Arriaga ME, Canfell K, MacInnis R, Hull P, Banks E, Giles G, et al. World Cancer Congress, Kuala Lumpur, Malaysia, 1-4 October 2018.

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| Project: A721 | What can time allocation tell us about cancer recovery? |
| Collaborative Investigators: | * Ni Gao - Health Economics Unit, University of Aberdeen * Prof Mandy Ryan - Health Economics Unit, University of Aberdeen * Dr Nicolas Krucien - Health Economics Unit, University of Aberdeen * A/Prof Richard Norman – School of Public Health, Curtin University * Dr Suzanne Robinson – School of Public Health, Curtin University |
| ALSWH Liaison | * Prof Annette Dobson – Centre for Longitudinal and Life Course Research, The University of Queensland |

Return to work is considered as a main indicator of cancer recovery. This approach omits that women are main contributors of unpaid work, and they may engage in leisure which is crucial in the recovery journey. Moreover, return to work is considered at a single time point, leaving employment trajectories unknown. To provide a comprehensive picture of cancer recovery, this study will use time allocation to link paid work, unpaid work and leisure activities. The study will investigate:

1. Time allocation across paid work, unpaid work and leisure activities after cancer treatment
2. How time allocation impacts health service usage
3. Dynamic changes in employment after cancer treatment

**Research outcomes:**

*Publications:*

* Paid work, voluntary work, caregiving or physical leisure activity? Time allocation pathways following a cancer diagnosis. (Oral presentation). Gao N, Ryan M, Krucien N, Norman R & Robinson S. *Health Economic Research Unit (HERU) Seminar*, University of Aberdeen, Aberdeen, 5 September 2018.

*Conferences, seminars and workshops:*

* Paid work, voluntary work, caregiving or physical leisure activity? Time allocation pathways following a cancer diagnosis.: Gao N, Ryan M, Krucien N, Norman R & Robinson S. *Health Economic Research Unit (HERU) Seminar*, University of Aberdeen, Aberdeen, UK, 5 September 2018.

#### DIABETES

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| Project: A758 | Carbohydrate restriction and risk of type 2 diabetes in reproductive-aged women with and without a history of gestational diabetes |
| Collaborative Investigators: | * Prof Deborah Loxton - Centre for Generational Health and Ageing, The University of Newcastle * A/Prof Allison Hodge – Cancer Epidemiology Centre, Cancer Council Victoria * Dr Danielle Schoenaker – School of Primary Care, Population Sciences and Medical Education, University of Southhampton * Dr Ellie D’Arcy – Health Intelligence Unit, NSW Health * Dr Elizabeth Neale – University of Wollongong * Sophie Lewandowski – University of Wollongong |

Women diagnosed with gestational diabetes are at increased risk of developing type 2 diabetes immediately after pregnancy. In the general population, type 2 diabetes risk can be influenced by dietary intake. Among women with and without a history of gestational diabetes who participated in the 1946-51 cohort, we found that women who restricted their intake of carbohydrates the most, were at higher risk of developing type 2 diabetes during mid-life. As a follow-up of this study, the current project aims to examine if a diet low in carbohydrates is associated with development of type 2 diabetes in women in the 1973-78 cohort with and without a history of gestational diabetes, to confirm if our previous findings can be extrapolated to development of type 2 diabetes during the reproductive years.

#### RESPIRATORY CONDITIONS

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| Project: A754 | Signs and symptoms as predictors of COPD in women |
| Collaborative Investigators: | * Prof Julie Byles - Research Centre for Generational Health and Ageing, The University of Newcastle * Dr Katie de Luca – Department of Chiropractic, Macquarie University * Dr Roger Engel – Macquarie University * Dr Petra Graham - Macquarie University * A/Prof Subramanyam Vemulpad - Macquarie University * Dr Masoumeh Kaboli Farshchi - Macquarie University |

Chronic obstructive pulmonary disease (COPD) is characterised by progressive loss of lung function. The main symptoms are breathlessness, cough, sputum production, chest tightness and falling exercise capacity. May sufferers are unaware of their condition and attribute the signs to ageing or lack of fitness. Identifying the signs and symptoms that herald the beginning of the disease is essential to improving the prognosis. The Australian Longitudinal Study on Women’s Health (ALSWH) provides an ideal opportunity to study the development of these early signs and symptoms in women who have been diagnosed with COPD.

**Research outcomes**:  
*Publications:*

* Breathing difficulty, chest and back pain predict bronchitis and emphysema in women. Engel RM, de Luca K, Graham P, Kaboli Farshchi M, Bemulpad S & Byles J. 2019 *Respirology*, 24SI:72.

*Presentations:*

* Breathing difficulty, chest and back pain predict bronchitis and emphysema in women. Engel RM, de Luca K, Graham P, Kaboli Farshchi M, Bemulpad S & Byles J. *2019 Thoracic Society of Australia and New Zealand Annual Scientific Meeting,* 29 March – 2 April, Gold Coast, Australia.
* Breathing difficulty, chest and back pain predict bronchitis and emphysema in women: A potential role for chiropractors in chronic respiratory disease management? Engel R, De Luca K,Graham P, Kaboli Farshchi M, Vemulpad S & Byles J. *Chiropractic Australia National Conference*, Gold Coast, QLD, 23 - 25 August 2019.
* A potential role for chiropractors in the early detection and management of women at risk of developing chronic respiratory disease later in life. Engel R, De Luca K, Graham P, Kaboli Farshchi M, Vemulpad S, Byles J. *Australian Chiropractors Association Conference*, Melbourne, VIC, 18 - 20 October 2019.

#### DEMENTIA

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| Project: A546B | Capture-recapture using multiple data sources: Estimating the prevalence of dementia in a cohort of older women. |
| Collaborative Investigators: | * Dr Michael Waller - School of Public Health, The University of Queensland * Prof Annette Dobson - Centre for Longitudinal and Life Course Research, The University of Queensland * Prof Gita Mishra - Centre for Longitudinal and Life Course Research, The University of Queensland |

As Australia’s population ages, the number of people with dementia will also increase. As such the costs and resources required to treat these people is likely to increase considerably. It is important to understand when, and in what setting dementia is diagnosed to inform policy decisions regarding this condition. This analysis aims to estimate the prevalence of dementia in a cohort of older women. The analysis will use multiple data sources, and assess how the prevalence of the condition changes with increasing age. One manuscript has been published, and a second manuscript assessing methods used to assess risk factor for dementia has been developed and submitted to a peer reviewed journal. The focus of this manuscript is a comparison of traditional survival analysis techniques and competing risk models.

**Research outcomes:**

*Publications*

* [Estimating the prevalence of dementia using multiple linked administrative health records and capture–recapture methodology](https://ete-online.biomedcentral.com/articles/10.1186/s12982-017-0057-3). Waller M, Mishra G & Dobson A. *Emerging Themes in Epidemiology, 2017*, *14*(1); 1-9 (open access).

*Conferences, seminars and workshops*

* Using linked data to estimate the prevalence of dementia in Australian women. Waller M, Mishra G & Dobson A.*The Farr Institute 2015 International Conference,*St Andrews, Scotland, 26 - 28 August 2015.
* The Australian Longitudinal Study on Women’s Health (ALSWH): Advantages and challenges of linking longitudinal survey data with medical administrative databases. Waller M, Jones M & Mishra G. *National Centre for Longitudinal Data: Longitudinal Data Conference 2016*, Canberra, ACT, 25 - 27 October 2016.
* The Centre for Longitudinal and Life Course Research Showcase. Dobson A, Mishra G, Chung H-F, Waller M & Jones M. *UQ School of Public Health Seminar Series*, Herston, Qld, 9 May 2017.
* Using linked data to identify dementia records from the Australian Longitudinal Study on Women’s Health. Waller M. *NNIDR Australian Dementia Forum*, Hobart, TAS, 13-14 June 2019.

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| Project: A708A | Association between dietary flavonoid intake and hypertension and dementia in Australian women |
| Supervisors: | * Prof Julie Byles – Research Centre for Generational Health and Ageing, The University of Newcastle * A/Prof Karen Charlton - School of Medicine, University of Wollongong * Vinicius Andre do Rosario - University of Wollongong * Katherine Kent - University of Tasmania * Ezinne Igwe - University of Wollongong * Yasmine Probst - University of Wollongong * Dr Katrina Green - University of Wollongong * Kristina Vingrys - Victoria University * Dr Danielle Schoenaker – School of Primary Care, Population Sciences and Medical Education, University of Southhampton * A/Prof Allison Hodge – Cancer Epidemiology Centre, Cancer Council Victoria |

This study aims to evaluate dietary intake of flavonoids in prevalence and incidence of hypertension among women in different life stages. Secondary outcomes are to evaluate dietary intake of flavonoids in prevalence of mild cognitive impairment (MCI) and Alzheimer`s disease/dementia and investigate association between hypertension and these conditions.

**Research outcomes:**

* Association between flavonoid intake and risk of hypertension among middle-aged Australian women: A longitudinal cohort study. *Nutrition Society of Australia 43rd Annual Scientific Meeting*, Newcastle NSW, 2-5 December 2019.

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| Project: A759 | Is there an association between hearing loss and dementia? |
| Collaborative Investigators: | * Prof Annette Dobson - Centre for Longitudinal and Life Course Research, The University of Queensland * Dr Michael Waller - School of Public Health, The University of Queensland * Xue Ni Nikita Khoo - The University of Queensland |

This project will investigate in detail the association between hearing loss and dementia in a cohort of Australian Women aged 70-75 in 1996. The primary research question is ‘are women with hearing loss at greater risk of developing dementia?’. We will assess changes in hearing loss in the years prior to a diagnosis of dementia, and study how many women living with dementia have hearing loss recorded as a comorbid condition.

#### CARDIOVASCULAR DISEASE/HYPERTENSION

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| Project: A663 | The association between menstrual symptoms and hypertension among young Australian women |
| Collaborative Investigators: | * Prof Gita Mishra - Centre for Longitudinal and Life Course Research, The University of Queensland * Dr Hsin-Fang (Evelyn) Chung - Centre for Longitudinal and Life Course Research, The University of Queensland * Prof Isabel Ferreira de Sousa - The University of Wollongong |

High blood pressure, also known as hypertension, is a major risk factor for cardiovascular disease including stroke, coronary heart disease, and heart failure. Previous studies showed that around 20-40% of young Australian women experience menstrual symptoms including premenstrual syndromes (PMS) and pain, irregularity, and heavy bleeding during menstrual periods. Women with menstrual symptoms are more likely to have elevated levels of inflammatory markers, and chronic inflammation might lead to the development of hypertension. Therefore, this study aims to investigate whether menstrual symptoms are associated with hypertension in young Australian women.

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| Project: A821 | Title: Modifiable risk factors for cardiovascular disease among women with and without a history of hypertensive disorders of pregnancy |
| Collaborative Investigators: | * Dr Melinda Hutchesson - The University of Newcastle * Prof Clare Collins - School of Health Sciences (Nutrition and Dietetics), The University of Newcastle * Dr Vanessa Shrewsbury - The University of Newcaslte * Dr Lisa Vincze - Griffith University * Dr Amanda Patterson - School of Health Sciences (nutrition), The University of Newcastle * Dr Tracy Schumacher - Department of Rural Health, The University of Newcastle * Ker Nee Ding - The University of Newcastle |
| ALSWH Liaison | * Prof Gita Mishra - Centre for Longitudinal and Life Course Research, The University of Queensland |

Women with a history of hypertensive disorders of pregnancy (HDP) (i.e. pre-eclampsia, gestational hypertension and chronic hypertension) are at higher risk of cardiovascular disease (CVD). Little is known about the rates of modifiable risk factors for CVD (i.e. unhealthy diet, physical inactivity/sedentary behaviour, smoking, excessive alcohol intake, excess body weight and poor mental health) following HDP. Our aim is to: a) describe the rates of individual and multiple modifiable risk factors for CVD among women following a HDP. b) compare the odds of individual and multiple modifiable risk factors for CVD between women with and without a history of HDP.

#### OTHER

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| Project: A640B | Progression of chronic diseases and conditions in mid-aged women and beyond: The role of reproductive health over the life course and medication use. |
| Collaborative Investigators: | * Prof Gita Mishra Centre for Longitudinal and Life Course Research, The University of Queensland * Dr Mark Jones - Faculty of Health Sciences & Medicine, Bond Univesity * Dr Xiaolin Xu - School of Public Health, The University of Queensland |

Multi‐morbidity is a growing issue and poses a major challenge to health care systems around the world1,2. A number of gaps in multi‐morbidity research need to be addressed. This study aims to investigate the progression of chronic diseases and conditions in mid‐aged women and beyond from the ALSWH (1946‐51) cohort. We aim to identify factors that are associated with disease progression and outcomes. We are particularly interested in how reproductive variables (e.g. age at menarche/menopause and number of children) influence the progression and outcomes as well as medication use and cost in this progression.

**Research outcomes:**

*Publications:*

* Age at natural menopause and development of chronic conditions and multimorbidity: Results from an Australian prospective cohort. Xu X, Jones M, Mishra GD. *Human Reproduction*,2020; 35(1):203-211.

*Conference, seminars and workshops:*

* Multiple chronic conditions (multimorbidity): From zero to many. Xu Xiaolin. *The Global Health Seminar Series*. Global Health Research Center, Duke Kunshan University, Kunshan, China, 19 Nov 2019. [seminar, URL: <https://dukekunshan.edu.cn/en/global-health/global-health-research-center/events> ]
* Body weight and body weight change and the development of multiple chronic conditions: A 20-year cohort study. Xu Xiaolin. *2019 International Forum for Young Scholars in Health Policy and Management.* Nanjing (Nanjing Medical University), China, 14-16 June 2019.
* A dose-response relationship between social relationships satisfaction and accumulation of chronic conditions: A national cohort study. Xu Xiaolin. *Fourth Westlake Youth Forum*. Hangzhou (Zhejiang University), China , 10-13 June 2019.
* Age at natural menopause and development of chronic conditions and multimorbidity: Results from an Australian prospective cohort. Xu Xiaolin. *2019 Theo Murphy Australian Frontiers of Science-Redefining Healthy Ageing Together* (Australian Academy of Science). Adelaide, Australia, 8-9 April 2019.

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| Project: A793 | Urinary incontinence in women with and without polycystic ovary syndrome (PCOS) |
| Collaborative Investigators: | * Prof Helena Teede - Monash Centre for Health Research and Implementation, Monash University * Dr Chau Thien Tay - Monash Centre for Health Research and Implementation, Monash University * Prof Wendy Brown School of Human Movement and Nutrition Sciences, The University of Queensland |

Urinary incontinence affects up to one in two postmenopausal women and one in three premenopausal women. It causes great embarrassment and reduces quality of life. Reproductive hormones play a role in urinary continence but the mechanisms are not understood. Polycystic ovary syndrome (PCOS) is a complex hormonal disorder characterized by reproductive hormones dysregulation and insulin resistance. Women with PCOS are prone to weight gain and diabetes, both of which are important risk factors for urinary incontinence. We intend to study the association of PCOS with urinary incontinence and how urinary incontinence impacts the mental and physical health of women with PCOS.

We have performed some analysis from the cohort born 1946-51. Among the women, 139 (1.8%) reported PCOS, 7783 (98.2%) did not. PCOS diagnosis criteria were defined in 1990 for NIH, and 2003 for Rotterdam.As these women were 53-58yo at the time of survey (2004, survey 4), we think that PCOS is very under-diagnosed in this population.

Urinary incontinence is only reported by 59 women with PCOS. Unfortunately, given the small number of women with PCOS in this cohort, we don't think it is worthwhile going forward. We are however planning to investigate urinary incontinence using data from the cohort born 1989-1995.

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| Project: A797 | The impact of multiple chronic conditions: Findings from the Australian Longitudinal Study on Women’s Health (Major Report O) |
| Collaborative Investigators: | * Prof Annette Dobson - Centre for Longitudinal and Life Course Research, The University of Queensland * Prof Gita Mishra - Centre for Longitudinal and Life Course Research, The University of Queensland * Prof Julie Byles - Centre for Generational Health and Ageing, The University of Newcastle * Prof Deborah Loxton - Research Centre for Generational Health and Ageing, The University of Newcastle * Dr Amy Anderson - Research Centre for Generational Health and Ageing, The University of Newcastle * A/Prof Leigh Tooth - Centre for Longitudinal and Life Course Research, The University of Queensland * Dr Michael Waller - School of Public Health, The University of Queensland * Peta Forder - School of Medicine & Public Health, The University of Newcastle * Richard Hockey - Centre for Longitudinal and Life Course Research, The University of Queensland * David Fitzgerald - Centre for Longitudinal and Life Course Research, The University of Queensland * Colleen Loos - Centre for Longitudinal and Life Course Research, The University of Queensland * Dominic Cavenagh - Research Centre for Genderational Health & Ageing, The University of Newcastle * Nick Egan - The University of Newcastle * Dr Zhiwei Xu - Centre for Longitudinal and Life Course Research, The University of Queensland |

This EoI is for Major Report O, a deliverable under the main contract for ALSWH with the Australian Department of Health. The report will examine the extent to which ALSWH participants suffer from multimorbidity, that is, the co-occurrence of more than one chronic condition. It will describe the prevalence of multiple conditions across the life course, and their impact on women’s quality of life, use of health and other support services, and the costs. Major Report O was delivered to the Department in May 2020. A manuscript based on this work is under consideration.

**Research outcomes:**

* The impact of multiple chronic conditions: Findings from the Australian Longitudinal Study on Women’s Health. Dobson A, Forder P, Hockey R, Egan N, Cavenagh D, Waller M, Xu Z, Anderson A, Byrnes E, Barnes I, Loxton D, Byles J & Mishra G. Report prepared for the Australian Government Department of Health,May 2020.

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| Project: A811 | Reproductive factors and non‐communicable diseases (NCDs) in women. |
| Collaborative Investigators: | * Prof Gita Mishra - Centre for Longitudinal and Life Course Research, The University of Queensland * Dr Zhiwei Xu - Centre for Longitudinal and Life Course Research, The University of Queensland * Dr Louise Wilson - Centre for Longitudinal and Life Course Research, The University of Queensland * Prof Annette Dobson - Centre for Longitudinal and Life Course Research, The University of Queensland * Prof Martha Hickey - The University of Melbourne * Prof Flavia Cicuttini - Department of Epidemiology and Preventative Medicine, Monash University * Prof Rachel Huxley - Deakin University * Prof Jane Fisher - School of Public Health and Preventive Medicine, Monash University * Prof Jenny Doust - Centre for Longitudinal and Life Course Research, The University of Queensland * A/Prof Leigh Tooth - Centre for Longitudinal and Life Course Research, The University of Queensland * Reshika Chand - Centre for Longitudinal and Life Course Research, The University of Queensland * Dr Mridula Bandyopadhyay - University of Melbourne |

Current knowledge on links between risk factors and reproductive characteristics and increased risk of non‐communicable diseases in women is impeded by the varying quality of existing data and gaps in evidence. This research will investigate associations of established and emerging risk factors at each stage of women’s lives (early life, young adult, main reproductive stage, menopausal transition, and later life) with the incidence of non‐communicable diseases (NCDs). The project is funded by the NHMRC Centre of Research Excellence in Women and Non-communicable Disease (CRE WaND).

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| Project: A817 | Osteoporosis in Australian women: Exploring differences related to age at menopause and location |
| Collaborative Investigators: | * A/Prof Amanda Vincent - Monash University * Dr Alicia Jones - School of Public Health and Preventative Medicine, Monash University * Prof Helena Teede - Monash Centre for Health Research and Implementation, Monash University * Prof Gita Mishra - Centre for Longitudinal and Life Course Research, The University of Queensland * Prof Peter Ebeling - School of Clinical Sciences, Monash University * A/Prof Allison Hodge - Cancer Epidemiology Centre, Cancer Council Victoria * Dr Joanne Enticott - Monash Centre for Health Research and Implementation, Monash University * Prof Robyn Langham - School of Rural Health, Monash University |

Osteoporosis is a significant health concern, leading to fractures, loss of mobility and independence. Over 60% of women over the age of 50 have reduced bone density(1). Younger women with early menopause, breast cancer or other risk factors may also have reduced bone density. Evidence shows higher rates of hip fractures in rural areas of Australia(2), and lower osteoporosis knowledge among women with early menopause in rural areas(3). This study aims to assess differences between investigation and treatment of osteoporosis in (i) early menopause compared to women with expected‐age menopause and (ii) rural compared to metropolitan areas of Australia.

* + 1. **Health service use and systems**

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| Project: A444A | Hospital use of women 85+ |
| Collaborative Investigators: | * Prof Julie Byles – Research Centre for Generational Health and Ageing, The University of Newcastle * Dr Catherine Chojenta - Research Centre for Generational Health and Ageing, The University of Newcastle * Dr Xenia Dolja-Gore - Research Centre for Generational Health and Ageing, The University of Newcastle * Dr Melissa Harris - Research Centre for Generational Health and Ageing, The University of Newcastle * Mitiku Teshome Hambisa - Research Centre for Generational Health and Ageing, The University of Newcastle |

More women than ever are living past the age of 85 in Australia, but little is known about the nature of their hospital service use, hospital experience and hospital outcomes. Increasing age alone is a risk factor for hospitalisation and less optimal outcomes, but other factors such as demographics and comorbidities also contribute to these experiences. As the aging population places increased demand on health services and resources, the importance of understanding the details of their hospital use is paramount. This project will investigate reasons for hospital admission and how age, demographics and comorbidities may influence the risks of hospitalisation, hospital use and hospital outcomes among older women.

**Research outcomes:**

*Publications:*

* Patterns of hospitalization risk for women surviving into very old age: Findings from the Australian Longitudinal Study on Women's Health. Dolja-Gore X, Harris M, Hendig H & Byles JE. *Medical Care*, 2017, 55 (4); 352-361.
* End of life hospitalisations differ for older Australian women according to death trajectory: A longitudinal data linkage study. Harris ML, Dolja-Gore X, Kendig H, Byles JE. *BMC Health Services*, 2016, 16 (1); 484.
* First incident hospitalisation for Australian women aged 70 and beyond: A 10 year examination using competing risks. Harris ML, Dolja-Gore X, Kendig H & Byles JE. *Archives of Gerontology and Geriatrics*, 2016, 64; 29-37.
* Rehabilitation and convalescent hospital stay in New South Wales: An analysis of 3,979 women aged 75+. Chojenta C, Byles J & Nair BK. *Australian and New Zealand Journal of Public Health*, 2018: 42(2): 195-199.

*Conferences, seminars and workshops:*

* Determinants of overnight hospital admissions for Australians aged 85+ in their last year of life. Dolja-Gore X, Harris ML, Kendig H & Byles J. *12th Annual 45 and Up Study Collaborators’ Meeting*, Sydney, NSW, 12 November 2015.
* Balancing health care use over later life: A longitudinal study of ageing, health and health service use by 12,432 Australian women over 19 years. (Abstract). Byles J. *IAGG-Asia/Oceania 2015 Congress,* Chiang Mai, Thailand, 19 October 2015.
* Hospital use at the end of life for older women: moving beyond cancer. Harris L. *Deeble Institute’s Think Tank on preventable hospitalisations*, Melbourne, Vic, 23 May 2017.

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| Project: A594 | The value of continuity of care in Australian general practice |
| Collaborative Investigators: | * Prof Jane Hall – Centre for Health Economic Research and Evaluation, University Technology Sydney * A/Prof Kees Van Gool - Centre for Health Economic Research and Evaluation, University Technology Sydney * Prof Marion Hass - Centre for Health Economic Research and Evaluation, University Technology Sydney * Dr Michael Wright - Centre for Health Economic Research and Evaluation, University Technology Sydney |

Continuity of care is seen as a cornerstone of high quality primary health care. In Australia, most primary health care is delivered in general practices.

The aim of this study is to explore the relationship between continuity of care with a general practitioner (GP) or general practice, and health care quality and health care outcomes. In the first instance, the study will measure levels of continuity of care with a GP and with a general practice in the ALSWH survey population, and identify factors associated with predicting the likelihood of a woman receiving high levels of primary care with a single provider or a single practice.

Secondly, the study will examine whether greater continuity delivers higher quality care and better health outcomes in terms of disease prevention, medication compliance, use of health services, management of (chronic) disease and decreased health costs.

By better understanding the relationship between continuity of care (at provider and practice level), and health outcomes, patients can be encouraged to seek care that maximises health, and policy makers can potentially encourage health maximising and cost effective behaviour.

**Research outcomes:**

* Changing continuity of care for Australian women. Wright M, Hall J, van Gool K & Haas M. *ALSWH Scientific Meeting 2016*, 4 - 5 May 2016, Newcastle, NSW.
* From continuity to fragmentation to integrated Australian general practice. Wright M, Hall J, van Gool K & Haas M. *International Conference on Integrated Care Conference*, 23 - 25 May 2016Barcelona, Spain.
* Continuity of care without patient enrolment. Wright M. *Emerging Health Policy Research Conference*, 13 July 2016, Sydney, NSW.
* Changing continuity of care in Australian general practice. Wright M, Hall J, van Gool K & Haas M. *Australian Health Economics Society Conference*, 27 - 28 September 2016, Fremantle, WA.
* Changing continuity of care in Australian general practice. Wright M, Hall J, van Gool K & Haas M. *GP16- RACGP National Conference*, 29 September - 1 October 2016, Perth, WA.
* The association between continuity of care and mammography rates. Wright M. *Australian Health Economics Society Conference*, 21 September 2017, Sydney, NSW.
* Continuity of care associated with improved preventative care: evidence from an Australian cohort study. Wright M. *GP17- RACGP Annual Scientific Conference*, 26 October 2017, Sydney, NSW.
* The association between continuity of care and mammography rates. Wright M. *Health Services Research Association of Australia and New Zealand Conference*, 1 November 2017, Gold Coast, Qld.
* The association between continuity of care and cancer screening: Australian longitudinal study. Wright M, Hall J, Haas M, van Gool K & Yu S. S*ociety of Academic Primary Care Annual Scientific Meeting*, 11 July 2018, London, England.
* The relationship between continuity of care and cervical cancer screening. Wright M, Hall J, Haas M, van Gool K & Yu S. *Australian Health Economics Society Conference*, 25 September 2018, Hobart, Tas.
* Personal and site continuity of care in Australian general practice. Wright M. *GP18, RACGP National Scientific Conference*, 11 October 2018, Gold Coast, Qld.

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| Project: A676 | Use of GP, other Medicare, and hospital services by people with dementia. |
| Collaborative Investigators: | * Prof Julie Byles - Centre for Generational Health and Ageing, The University of Newcastle * Dr Xenia Dolja-Gore - Research Centre for Generational Health and Ageing, The University of Newcastle * Prof Robert Sanson-Fisher - Hunter Medical Research Institute (HMRI), The University of Newcastle * Prof Colette Browning - Primary and Allied Health Care, Monash University * Dominic Cavenagh - Research Centre for Genderational Health & Ageing, The University of Newcastle * Peta Forder - School of Medicine & Public Health, The University of Newcastle |

The General Practitioner (GP) is the cornerstone of medical care for people with dementia, and central to much of the care for people with dementia. The GP usually knows the person with dementia well, having cared for them for many years, and are often the first clinician to become aware of the person’s concerns about cognitive decline. Subsequent to diagnosis, the ongoing care and medical management of dementia is also principally coordinated and monitored by the GP, in partnership with the person and their family, and with specialist consultation. This study will assist in identifying use of GP consultations and other services eligible for Medicare rebates by women with dementia, and examine use these services, and health outcomes for women with dementia.

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| Project: A646 | Longitudinal analyses of yoga use and health status among Australian women |
| Collaborative Investigators: | * Professor David Sibbritt - Faculty of Health, University Technology Sydney * Dr Holger Cramer - Department of Internal and Integrative Medicine, University of Duisburg-Essen * A/Prof Romy Lauche – National Centre for Naturopathic Medicine, Southern Cross University * Prof Gita Mishra – Centre for Longitudinal and Life Course Research, The University of Queensland |

This project examines the prevalence of yoga use over time, continuity of yoga use and predictors for (dis-)continuation. This project also examines the longitudinal associations of yoga/meditation with health status or well-being among participants with diagnosed mental health or physical conditions such as anxiety, depression, hypertension, arthritis or back pain. Progress has been delayed due to A/Prof Lauche moving institutions, and the current COVID-19 pandemic, but analyses will resume in future. New data from the most recent surveys of the 1973-78 and 1946-51 cohorts has been requested.

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| Project: A671 | When the clock is ticking: Impact of the extended Medicare safety net on the uptake of assisted reproductive technology |
| Collaborative Investigators: | * A/Prof Kees Van Gool - Centre for Health Economics Research and Evaluation, University of Technology Sydney * (Jenny) Chun Yee Wong - Centre for Health Economics Research and Evaluation, University of Technology Sydney * Dr Megan Gu - Centre for Economic Research and Evaluation, Univerity of Techology Sydney * Peta Forder - School of Medicine & Public Health, The University of Newcastle |

This project investigates the trends in Assisted Reproductive Technology (ART) services usage with the introduction of Extended Medicare Safety Net in 2004 which provided greater subsidy for ART services and the subsequent implementation of caps in 2010 which reduced the subsidy. It also examines the determinants for women’s decision to use ART services including sociodemographic characteristics. We utilise a unique resource by linking the survey data from the Australian Longitudinal Study on Women’s Health with national administrative health datasets, Medical Benefits Schedule (MBS) and Pharmaceutical Benefits Schedule (PBS) and then deploying hurdle models to examine the incidence and frequency of ART use among women.The study will shed light on the effect of government policies on ART services in terms of utilisation and will also examine the determinants driving the decision to undertake these services.

**Reseach outcomes:**

* Preliminary results were presented at *UTS Centre for Health Economics Research and Evaluation (CHERE) internal seminar*, 6 June 2018.

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| Project: A712 | Analyses of longitudinal data to investigate populations using MBS after-hours services |
| Collaborative Investigators: | * Prof Annette Dobson - Centre for Longitudinal and Life Course Research, The University of Queensland * Jason Brandrup – Health Analytics Branch, Australian Government Department of Health |

There has been rapid growth in the use of Medicare Benefits Schedule (MBS) urgent after-hours items for several years. Data from the Australian Longitudinal Study on Women’s Health (ALSWH) and the MBS will be used to examine the characteristics of populations using MBS after-hours items and any changes in these characteristics since the 2010-11 financial year. Knowing the users of these services will inform policy and help ensure that the needs of these groups are being met in the most appropriate and cost effective way.

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| Project: A750 | Do access, quality and cost of GP services influence a patient’s decision to visit ED? |
| Collaborative Investigators: | * Prof Gita Mishra - Centre for Longitudinal and Life Course Research, The University of Queensland * Anton Pak - University of Queensland * Prof Brenda Gannon - Centre for Business and Economics of Health, The University of Queensland * Prof Pravin Trivedi - School of Economics, The University of Queensland |

This project addresses a problem—the growing number of avoidable or potentially preventable emergency department (ED) presentations—that has been regarded as an important issue in the public health system. The objective of this applied research project is to investigate whether the access to general practitioners (GP), quality of GP services, and cost of primary care influence a patient’s decision to visit ED. We investigate why patients who are ‘less urgent’ and can potentially be treated in primary care present to ED.

**Research outcomes:**

* This project was presented as part of a webinar: *Economics of Women’s Health*, hosted by Professor Gannon on 2 July, 2020.

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| Project: A773 | Evaluation of the Consumer Directed Care (CDC) initiative in Australia |
| Collaborative Investigators: | * Prof Gita Mishra - Centre for Longitudinal and Life Course Research, The University of Queensland * Prof Brenda Gannon - Centre for Business and Economics of Health, The University of Queensland * Ms Kieu My (Michelle) Tran - School of Economics, The University of Queensland * Prof Stephen Birch - Centre for Business and Economics of Health, The University of Queensland |

Our study evaluates a new aged care policy implemented in Australia since 2013 - Consumer Directed Care (CDC). CDC aims to encourage older people to stay at home longer and be healthier. Despite growing literature on the impact of CDC, existing studies are limited to qualitative studies and randomized control trials where results are sometimes difficult to generalize to a larger population. Existing studies fail to control for individual unobserved heterogeneity (e.g. preferences). We use differences-in-differences (DiD) in a large panel dataset to assess the short and long-term effects of the CDC on health, well-being and health care utilization.

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| Project: A789 | The impact of general practice continuity of care on health service utilisation and costs |
| Collaborative Investigators: | * Prof Deborah Loxton - Research Centre for Generational Health and Ageing, The University of Newcastle * Peta Forder - School of Medicine & Public Health, The University of Newcastle * Dr Amy Anderson - Research Centre for Generational Health and Ageing, The University of Newcastle * Natalie Townsend - Research Centre for Gender, Health and Ageing, The University of Newcastle * Dominic Cavenagh - Research Centre for Genderational Health & Ageing, The University of Newcastle * Isabelle Barnes - Research Centre for Generational Health and Ageing, The University of Newcastle * Emma Byrnes - Research Cenre for Generational Health and Ageing, The University of Newcastle * Nick Egan - The University of Newcastle |

Experiencing violence or abuse can lead to negative health outcomes. There are many forms of violence and abuse that women may experience across their life course, including childhood abuse, intimate partner violence and elder abuse. While some women have never experienced such trauma, others have experienced multiple forms of abuse throughout their lives. This project aims to examine the relationship between different patterns of abuse and health outcomes, and to identify the factors that mitigate or exacerbate the impact of abuse on health.

**Research outcomes:**

* Research for the Department of Social Services: 2017-2019. Loxton D, Forder P & Townsend N. Department of Social Services, Enid Lyons Building, Canberra, 28th November 2019.
* Violence and health across the life course. Loxton D, Forder P &Townsend N. *Australian Longitudinal Study on Women’s Health Policy Symposium Program: Linking data to inform policy*, Australian Government Department of Health, Sirius Building, Canberra, 29th November 2019.

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| Project: A798 | HPV vaccinations and adherence to screening |
| Collaborative Investigators: | * Dr Xenia Dolja-Gore - Research Centre for Generational Health and Ageing, The University of Newcastle * Dr Alexis Hure - School of Medicine and Public Health, The University of Newcastle * Ms Penny Reeves - Hunter Medical Research Institute, The Univesity of Newcastle * Prof Deborah Loxton - Research Centre for Generational Health and Ageing, The University of Newcastle * A/Prof Julila Brotherton - VCS Population Health * Prof David Durrheim - The University of Newcastle |
| ALSWH Liaison | * Prof Deborah Loxton Research Centre for Generational Health and Ageing, The University of Newcastle |

Free HPV vaccinations were introduced for Australian females aged 12-26 years in 2007 with free school based vaccination &nbsp;&nbsp; of 12-13 year old girls ongoing and vaccination of boys introduced in 2013. This government initiative has dramatically decreased the prevalence of HPV in younger men and women(1). However, screening remains important to prevent cervical cancer effectively amongst both vaccinated and unvaccinated women. We aim to determine factors that are associated with women not participating in cervical screening and assess the relationship between HPV vaccination and screening behaviour.

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| Project: A800 | Women’s health services use across life |
| Collaborative Investigators: | * Prof Annette Dobson - Centre for Longitudinal and Life Course Research, The University of Queensland * Prof Jenny Doust - Centre for Longitudinal and Life Course Research, The University of Queensland * Dr Louise Wilson - Centre for Longitudinal and Life Course Research, The University of Queensland * Dr Zhiwei Xu - Centre for Longitudinal and Life Course Research, The University of Queensland * Prof Gita Mishra - Centre for Longitudinal and Life Course Research, The University of Queensland |

Evidence that is more detailed is needed regarding the pattern of women’s health service use across life, and how these patterns may vary by sociodemographic and behavioural factors and reproductive events. This research will conduct a comprehensive assessment of Australian women’s use of health services across life stages and identify key factors influencing distinct patterns of health service use.

### Medications

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| Project: A723 | Are older women prescribed Amiodarone receiving recommended thyroid function tests? |
| Collaborative Investigators: | * Prof Julie Byles - Centre for Generational Health and Ageing, The University of Newcastle * Dr Catherine Chojenta - Research Centre for Generational Health and Ageing, The University of Newcastle * Prof Kichu Nair - School of Medicine and Public Health, The University of Newcastle * Dr Xenia Dolja-Gore - Research Centre for Generational Health and Ageing, The University of Newcastle * Emily Princehorn - Research Centre for Generational Health and Ageing, The University of Newcastle * Daniel Ryan - The University of Newcastle * Samin Uddin - The University of Newcastle |

Amiodarone is one of the most popular antiarrhythmic drugs prescribed in Australia. It is commonly used to treat atrial fibrillation, ventricular tachycardia and prescribed to patients at high risk of cardiac death. Amiodarone however has a number of adverse effects and is therefore only prescribed when necessary. Due to its structural similarities with thyroxine, it is recommended that thyroid function tests be conducted every six months to check for thyroid dysfunction. These guidelines however are not well adhered to by health professionals. Therefore this project will examine the risk factors for non‐adherence to thyroid function testing in older Australian women prescribed Amiodarone.

### Mental health

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| Project: A331A | Emerging adulthood, life transitions, and wellbeing |
| Collaborative Investigators: | * Prof Christina Lee - School of Psychology, The University of Queensland * Dr Robert Ware - School of Public Health, The University of Queensland * Richard Hockey – Centre for Longitudinal and Life Course Research, The University of Queensland * Dr Libby Holden - School of Psychology, The University of Queensland |

The transition from adolescence to adulthood is more protracted and complex today than for previous generations. Young people spend longer in education and training, and the traditional transitions of early adulthood – leaving the family home, adult employment, marriage/relationship, and parenthood – tend to occur later, in a range of sequences, or indeed not at all. This project uses the longitudinal strengths of the ALSWH to describe the transitions and sequences of the 1973-1978 cohort over Surveys 1 to 6, and the relationships between different patterns of transition and several measures of psychological well-being. It also includes analyses of health behaviours, physical health, and health service use.

**Research outcomes:**

*Publications:*

* Longitudinal trajectory patterns of social support: correlates and associated mental health in an Australian national cohort of young women. Holden L, Dobson A, Ware R, Hockey R & Lee C. *Quality of Life Research, 2015, 24* (9); 2075-2086.
* Trajectories of mental health over 16 years amongst young adult women: The Australian Longitudinal Study on Women's Health. Holden L, Ware R & Lee C. *Developmental Psychology, 2016, 52* (1); 164-175.
* Mental health-related quality of life and the timing of motherhood: A 16-year longitudinal study of a national cohort of young Australian women. Holden L, Hockey R, Ware RS & Lee C. *Quality of Life Research, 2018*. DOI: 10.1007/s11136-018-1786-7.
* Predictors of change in depressive symptoms over time: Results from the Australian Longitudinal Study on Women’s Health. Holden L, Harris M, Hockey R, Ferrai A, Lee YY, Dobson AJ & Lee C. *Journal of Affective Disorders, 2019*, 245; 771-778.

*Conference presentations, seminars and workshops:*

* Correlates of depression: Do they change with life stage? Holden L & Lee C.*7th World Conference on the Promotion of Mental Health and the Prevention of Mental and Behavioural Disorders*, Perth, WA, 17-19 October 2012.
* Predicting trajectories of mental health in a national cohort of young Australian women. Holden L, Lee C & Ware R. *5th World Congress on Women's Mental Health,* Lima, Peru, 4 - 7 March 2013.
* The timing of motherhood is associated with poor mental health. Holden L, Lee C & Ware R. *7th Australian Women's Health Conference,* Sydney, NSW, 7 - 10 May 2013.
* Some correlates of depression vary at different life stages during women’s early adulthood. Holden L & Lee C. *Australasian Epidemiological Association Annual Scientific Meeting 2013: Life Course Approach to Health and Wellbeing*, Brisbane, Qld, 20 - 22 October 2013.
* Social stratification and women’s health in Australia. (Keynote Address). Lee C. *The International Conference on Social Stratification*, Tokyo, Japan, 31 August - 1 September 2013.
* Longitudinal relationship trajectories of young Australian women: Are they associated with physical and mental health? Lee C. *30th Conference of the European Health Psychology Society,* Aberdeen, Scotland, 23-27 August 2016.
* Women’s health in context. (Invited Keynote Address). Lee C. *4th International Congress of Behavioral Medicine,* Melbourne, Victoria, 7-12 December 2016.

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| Project: A493B | How does clustering of risk factors relate to indicators of well-being and mental health? |
| Collaborative Investigators: | * Prof Wendy Brown – School of Human Movement and Nutrition Sciences, The University of Queensland * Dr Gregore Mielke - School of Human Movement and Nutrition Sciences, The University of Queensland * Dr Yuta Nemoto – Tokyo Metropolitan Institute of Gerontology |

**Research outcomes:**

* Changes in smoking, drinking, overweight and physical inactivity in young Australian women from 1996 to 2013. Powers J, Dobson A, Anderson A, Loxton D, Hockey R, Mishra GD, Brown WJ. (2017). *Health Promotion Journal of Australia,* 28 (3) 266-266. <https://doi.org/10.1071/HE16085>

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| Project: A617 | The impact of poor mental health on health and health service use outcomes for older women with multimorbidity. |
| Collaborative Investigators: | * Prof Julie Byles – Research Centre for Generational Health and Ageing, The University of Newcastle * Prof Deborah Loxton - Research Centre for Generational Health and Ageing, The University of Newcastle * Dr Melissa Harris - Research Centre for Generational Health and Ageing, The University of Newcastle * Prof John Attia - School of Medicine and Public Health, The University of Newcastle * Peta Forder - School of Medicine & Public Health, The University of Newcastle * Dr Christopher Oldmeadow - Clinical Research Design, Information Technology and Statistical Support (CReDITSS) Unit, Hunter Medical Research Institute |

This project will examine the role of poor mental health in health, and healthcare outcomes for older women with multimorbidity. In particular, we will examine whether poor mental health contributes to poorer physical health outcomes for these women. The project will link data from a range of administrative sources (e.g. the Admitted Patient Data Collection, Medicare Benefits Scheme, Pharmaceutical Benefits Scheme, and National Death) to self-reported survey data for the 1921-1926 and 1946-1951 cohorts.

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| Project: A695 | A longitudinal investigation of the somatisation construct in a nationally representative sample of younger women |
| Collaborative Investigators: | * Dr Natasha Koloski - Office PVC: Health, The University of Newcastle * Dr Melissa Harris - Research Centre for Generational Health and Ageing, The University of Newcastle * Prof Nicholas Talley - Faculty of Health, The University of Newcastle * A/Prof Mike Jones - Psychology Department, Macquarie University * Dr Alissa Beath - Macquarie University * Dr Anastasia Ejova - School of Psychology, University of Adelaide * Prof Marjorie Walker - Hunter Medical Research Institute, The University of Newcastle * Mallory Devlin - Macquarie University |
| ALSWH Liaison: | * Prof Deborah Loxton - Research Centre for Generational Health and Ageing, The University of Newcastle |

Somatisation is classically thought of as the physical expression of psychological distress, yet it is typically measured without reference to distress. Instead, it is measured in terms of whether one is “bothered” “a lot” as opposed to “a little” or “not at all” by each of a set of somatic symptoms (stomach pain, back pain, chest pain, etc.) In assessing somatic-symptom severity on a similar scale at each time point, while also assessing a host of psychological and health indicators, the ALSWH enables the investigation of whether, over time, psychosocial factors do predict somatic-symptom severity over and above health-related factors (e.g., whether one suffers from a serious health condition).

**Research outcomes:**

* Strong evidence somatization measures based on symptom checklists are more reflective of psychological rather than physical health: Important consequences for gastroenterology research and practice (poster). Jones MP. *United European Gastroenterology Week Conference*, Vienna, Austria, 21 October 2018.
* Somatization in the context of IBS. What is it and are we measuring it? Jones MP. *Linköping University Seminar*, Linköping, Sweden, 18 September 2018.
* Longitudinal predictors of somatization in a large-scale population-representative sample of women: Psychological or physiological? Ejova, A. *Quarterly meeting of the Australian Gastrointestinal Alliance*, Newcastle, May, 2018.

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| Project: A715 | Social interactions and loneliness in older Australian women |
| Collaborative Investigators: | * Prof Jane Fisher - School of Public Health and Preventive Medicine, Monash University * Sam Brilleman - Monash University * Dr Thach Tran - School of Public Health and Preventive Medicine, Monash University * Dr Rosanne Freak-Poli - Monash University * Dr Alice Owen - Monash University * Dr Joanne Ryan - Monash University * Dr Joanna McHugh Power - National College of Ireland |
| ALSWH Liaison | * Prof Julie Byles Centre for Generational Health and Ageing, The University of Newcastle |

Social isolation and loneliness increase the risk of depression and death and likely represents a greater public health hazard than obesity. Last year, researchers found that Irish and English older adults who reported being not socially isolated but lonely were more likely to have cognitive decline. This example illustrates the adverse health effects of being “alone in a crowd” and how social interactions should be assessed in combination with loneliness. This proposal outlines several key concepts to progress our understanding of how the combination of social isolation and loneliness affects our health and longevity. A manuscript has been submitted to the *Journal of Personality and Social Psychology*.

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| Project: A722 | Prevention and early intervention for maternal mental illness: A research program that will inform policy and clinical practice. |
| Collaborative Investigators | * Prof Deborah Loxton - Research Centre for Generational Health and Ageing, The University of Newcastle * Dr Xenia Dolja-Gore - Research Centre for Generational Health and Ageing, The University of Newcastle * Dr Nicole Reilly - Research Centre for Generational Health and Ageing, The University of Newcastle * Peta Forder - School of Medicine & Public Health, The University of Newcastle |

In Australia, local, state and national initiatives for maternal mental health, such as the NSW Safe Start initiative and National Perinatal Depression Initiative, have focused on prevention and early intervention for nearly two decades. The aims of this research are to 1) examine changes in mental health service use and psychological wellbeing among women who gave birth in Australia over the previous 20 years, 2) evaluate the impact of key perinatal‐specific mental health initiativeson these outcomes, and 3) examine adherence to best practice guidance for the prevention and management of maternal mental health, and to identify barriers and facilitators to adherence.

**Research outcomes:**

*Publications:*

* A narrative review of studies addressing the clinical effectiveness of perinatal depression screening programs. Reilly N, Kingston D, Loxton D, Talcevska K & Austin M-P. *Women and Birth*, 2020; 33(1):51-59. https://doi.org/[10.1016/j.wombi.2019.03.004](https://doi.org/10.1016/j.wombi.2019.03.004)

*Conferences, seminars and workshops:*

* Prescribing patterns for sodium valproate among Australian women of childbearing age: 2003-2015*.* Reilly N. *St John of God Burwood Hospital Grand Rounds*, Sydney, 20 July 2018.
* Prevention and early intervention programmes for maternal mental health*.* Reilly N, Loxton D. *Emerging Health Policy Research Conference,* Menzies Centre for Health Policy, Sydney, 26 July 2018.

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| Project: A772 | Patterns of long-term antidepressant use |
| Collaborative Investigators: | * Dr Samantha Hollingworth – School of Pharmacy, The University of Queensland * Prof Jayne Lucke – Australian Research Centre in Sex, Health & Society (ARCSHS), La Trobe University * Dr Xenia Dolja-Gore - Research Centre for Generational Health and Ageing, The University of Newcastle * Dr Maria Donald - School of Public Health, The University of Queensland * Prof Mieke van Driel – The University of Queensland * Dr Johanna Lynch – The University of Queensland * Prof Deborah Loxton - Research Centre for Generational Health and Ageing, The University of Newcastle |

Antidepressants are an effective treatment for acute major depressive disorders but they are often also used for mild or moderate depression for which evidence of effectiveness is lacking. An emerging body of research suggests that treatment discontinuation be considered for some long-term users of antidepressants, especially those with mild to moderate depression treated in the community. Australia has the second highest antidepressant prescribing rate in the world and the average duration of treatment is considerably longer than the guideline-recommended six to twelve months. This suggests that attempts to cease antidepressants for a number of patients are either not occurring as frequently as guidance recommends, and/or attempts are unsuccessful. Our study aims to better understand the patterns of long-term antidepressant use.

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| Project: A775 | Mental and physical health trajectories among women in midlife. |
| Collaborative Investigators: | * Prof Jane Fisher - School of Public Health and Preventive Medicine, Monash University * Prof Flavia Cicuttini - Department of Epidemiology and Preventive Medicine, Monash University * Prof Martha Hickey - The University of Melbourne * Dr Thach Tran - School of Public Health and Preventive Medicine, Monash University * Dr Karin Hammarberg - Monash University * Hau Nguyen - Monash University |

Australia’s population is ageing and women over 50 will soon be the largest demographic group. Maintaining and promoting the health of women as they age is vital to the Australian economy and for the maintenance of family and community structures. To inform health policy and health promotion strategies, the aim is to describe the social, situational, financial, physical, and psychological factors that predict physical and mental health and wellbeing in women over age 50 using ALSWH data collected over 20 years from women born between 1946 and 1951 who were aged between 45 and 50 years when they completed the first survey. A manuscript, ‘Trajectories of mental health among women in Australia as they age, and factors associated with each’, is in preparation for submission to *Aging and Mental Health.*

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| Project: A832 | The projected impact of pre-existing mental illness on perinatal mental health, pregnancy and birth among young Australian women (born 1989-95) |
| Collaborative Investigators: | * Prof Deborah Loxton - Research Centre for Generational Health and Ageing, The University of Newcastle * Natalie Townsend - Research Centre for Gender, Health and Ageing, The University of Newcastle * Peta Forder - School of Medicine & Public Health, The University of Newcastle * Dr Catherine Chojenta - Research Centre for Generational Health and Ageing, The University of Newcastle * Dr Nicole Reilly - Research Centre for Generational Health and Ageing, The University of Newcastle * Dr Katrina Moss - School of Public Health, The University of Queensland * Prof Annette Dobson - Centre for Longitudinal and Life Course Research, The University of Queensland |

Previous mental health is a strong predictor of perinatal mental health, such that women with poor mental health before they are pregnant are much more likely to experience mental health issues during and after pregnancy. Analysis of ALSWH data has previously shown the robust link between past mental health and antenatal and postnatal mental health problems among women born 1973-78. A very high proportion of the ALSWH cohort born 1989-95 have reported psychological distress and diagnosed mental health disorders, much higher than the number of women reporting these issues in the cohort born 1973-78. As the 1989-95 cohort enter the childbearing years, it is important to understand the scope of mental health issues that might be experienced by women in this age group, given the high proportion who have a history of mental health problems.

### Ageing and Aged Care

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| Project: A101A | Change in health status and health care use for women who have and have not had health assessments. |
| Collaborative Investigators | * Prof Julie Byles - Centre for Generational Health and Ageing, The University of Newcastle * Dr Catherine Chojenta - Centre for Generational Health and Ageing, The University of Newcastle * Dr Meredith Tavener - Centre for Generational Health and Ageing, The University of Newcastle * Prof Kichu Nair – School of Medicine and Public Health, The University of Newcastle * Dr Xenia Dolja-Gore - Centre for Generational Health and Ageing, The University of Newcastle * Dr Tazeen Majeed - Centre for Generational Health and Ageing, The University of Newcastle |

This project has received NHMRC Project Grant funding to evaluate the uptake, outcomes and costs of the 75+ Health Assessment, part of the Enhanced Primary Care Items introduced to Medicare in November 1999. Data collected via ALSWH linked to Medicare data will be used to examine patterns of use of the 75+ health assessment items, outcomes and associated health care use and costs. Advanced statistical techniques such as propensity score methods will be used to assess health outcomes associated with use of the 75+ items to compare women who do and do not have assessments in terms of health related quality of life, admission to residential aged care and mortality.

A paper titled ‘Estimating the effect of health assessments on mortality, physical functioning and health care utilisation for women aged 75 years and older’ was submitted to *The Gerontologist* in July 2020.

**Research outcomes:**

*Publications:*

* Uptake, prevalence and predictors of ﬁrst-time use for the 75+ Health Assessment Scheme. Dolja-Gore X, Tavener M, Majeed T, Nair BR & Byles JE. *Australian Journal of Primary Health*, 2017, 23 (5); 476-481.
* Patterns of geriatric health assessment use among community dwelling older Australian women over a 14-year period. Majeed T, Tavener M, Dolja-Gore X, Nair B, Chojenta C & Byles J. Journal of Health Services Research, 2019. DOI: [https://doi.org/10.1177/1355819618814561](https://doi.org/10.1177%2F1355819618814561)

*Conferences, seminars and workshops:*

* Estimating the effect of health assessments on physical functioning and mortality for women aged 75 years and older. Dolja-Gore X. *Australasian Epidemiological Association (AEA) 23rd Annual Scientific Meeting,* Canberra, ACT, 14 - 16 September 2016.
* Uptake and effectiveness of preventive health assessments: A study of 11,726 older Australian women. Byles J, Dolja-Gore X, Nair K, Tavener M, Chojenta C & Mishra G. *21st IAGG World Congress of Gerontology and Geriatrics*, San Francisco, United States of America, 23-27 July 2017.
* Integrating prevention in policy (Australian perspective). Byles J. *IAGG 11th Asia/Oceania Regional Congress 2019*, Taipei, Taiwan, 23-27 October 2019.

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| Project: A384A | Salutogenesis and changes in self-rated health |
| Collaborative Investigators | * Prof Julie Byles - Centre for Generational Health and Ageing, The University of Newcastle * Dr Meredith Tavener - Research Centre for Generational Health and Ageing, Health and Ageing, University of Newcastle * Peta Forder - School of Medicine & Public Health, The University of Newcastle * Dr Lucy Leigh - Hunter Medical Research Institute * Alexandra Denham – School of Medicine and Public Health, The University of Newcastle * Ryan Tuckerman - Research Centre for Generational Health and Ageing, The University of Newcastle |

**Research outcomes:**

* Inspired by ageing: Observations from 12,432 women and one researcher (ACH Group Sir Keith Wilson Oration). Byles J. *SA Gerontology Conference 2012: The Ageing Odyssey, It’s All About the Journey*, Adelaide, South Australia, 14 September 2012.
* Applying the salutogenic model for better health outcomes in older Australian women. Tavener M. *47th Australian Association of Gerontology National Conference “50 not out. Aiming for a century”*, Adelaide, SA, 26 - 28 November 2014.
* Exploring salutary factors influencing women's health (Plenary address). Tavener M. *Optimising health: Salutogenic approaches to health practice, policy, research and education.* University of Canberra, Canberra, ACT, 26 - 27 October 2016.
* A salutogenic analysis of health in older women : Using applied inductive thematic analysis. Tavener M. *Priority Research Centre for Generational Health and Ageing Research Methods Workshop*, Newcastle, NSW, 23 July 2015.

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| Project: A586 | Health expectencies of frailty and dementia |
| Collaborative Investigators: | * Prof Gita Mishra - Centre for Longitudinal and Life Course Research, The University of Queensland * Dr Paul Gardiner - Centre for Research in Geriatric Medicine, The University of Queensland * Prof Carol Jagger – Institute of Ageing and Health, Newcastle University (UK) * Prof Annette Dobson – Centre for Longitudinal and Life Course Research, The University of Queensland * Dr Michael Waller - Centre for Longitudinal and Life Course Research, The University of Queensland |

One of the great public health successes of the past century has been the increase in the human lifespan. As the population ages, there is a need to determine not just the quantity of years remaining, but also the quality of those years. Dementia and frailty are two conditions that can have negative consequences on quality of life and the ability to look after oneself. Determining the number of years living with and without those conditions, and the effect of socio‐demographic and lifestyle factors can contribute to the policy debate about healthy ageing.

**Research outcomes:**

* Sarcopenia and frailty in older women: Predictors, patterns and impacts on health service use. Gardiner P. Invited presentation at *The Global Forum on Acute Care Excellence*, Brisbane, Qld, 20-21 February, 2017.
* The impact of physical activity and sitting time on frailty free life expectancy. Gardiner P. *21st IAGG World Congress of Gerontology and Geriatrics*, San Francisco, United States of America, 23-27 July 2017.
* Sarcopenia and frailty in older women: Predictors, patterns and impacts on health service use. Gardiner P. *16th Annual Meeting of the International Society of Behavioral Nutrition and Physical Activity*, Victoria, Canada, 7-10 June 2017.
* The impact of physical activity and sitting time on dementia-free life expectancy. Poster presentation at the *Australia Dementia Forum*, Sydney, June 3-6, 2018.
* The impact of health behaviors and educational attainment on dementia-free life expectancy in older women. Late breaking poster presentation at the *Alzheimer’s Association International Conference*, Chicago, USA, July 20-26, 2018.
* Impact of obesity on dementia free life expectancies in older Australian women. Presentation in the Presidential Symposium “Understanding the impact of obesity on healthy life expectancy through cross-national comparisons at the *21st IAGG World Congress of Gerontology and Geriatrics*, San Francisco, USA, July 23-27 2017.
* The impact of physical activity and sitting time on frailty free life expectancy. Presentation at the *16th Annual Meeting of the International Society of Behavioral Nutrition and Physical Activity*, Victoria, Canada, June 8-10 2017.
* The impact of physical activity and sitting time on mobility disability-free life expectancy. Presentation at the *7th International Society of Physical Activity and Health Conference*, London, UK, October 15-17 2018.
* Risk behaviours and frailty health expectancy in older women. Poster presentation at the 51st *Australian Association of Gerontology Conference*, Melbourne, November 21-23 2018.
* The impact of health behaviours on health expectancy of falls. Oral poster presentation at the *2019 International Association of Gerontology and Geriatrics European Region Congress*, Gothenburg, Sweden, May 23-25 2019.

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| Project: A619 | Antidepressants and falls in older women |
| Collaborative Investigators: | * Prof Annette Dobson – Centre for Longitudinal and Life Course Research, The University of Queensland * Prof Gita Mishra Dobson – Centre for Longitudinal and Life Course Research, The University of Queensland * Dr Geeske Peeters - Global Brain Health Institute, Trinity College Dublin * Dr Paul Gardiner – Centre for Research in Geriatric Medicine, The University of Queensland * A/Prof Dori Rosenberg – Group Health Research Institute, Seattle * Dr Zachary Marcum – University of Washington |

Falls and depressive symptoms are common in older adults and pose a significant burden on the healthcare system and society. While depressive symptoms and use of certain types of antidepressants are associated with falls, falls risk has not been assessed across all classes of antidepressants or using cumulative exposure of antidepressants over time.

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| Project: A623 | Thinking ahead: How healthy do baby boomer women think they will be? |
| Collaborative Investigators | * Dr Meredith Tavener - Research Centre for Generational Health and Ageing, Health and Ageing, The University of Newcastle * Dr Tazeen Majeed - Research Centre for Generational Health and Ageing, The University of Newcastle * Ryan Tuckerman - Research Centre for Gender, Health and Ageing, The University of Newcastle * Liana Green - Research Centre for Gender, Health and Ageing, The University of Newcastle * Prof Julie Byles - Centre for Generational Health and Ageing, The University of Newcastle |

As Australia's life expectancy is lengthening, baby boomers might be wondering whether a longer life will be lived in better or worse health. In 2006, women from the 1946-51 cohort took part in a sub-study on retirement. As part of the sub-study they were also asked about their present health and what they expected of their health in 20 years. It will be 10 years in 2016 (i.e., half way through their expectation), since the women were asked that question, and a good time to see whether they are 'on track' according to their own health expectations.

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| Project: A637 | The STEP consortium: Strategies for Early Prevention of falls in middle-aged adults |
| Collaborative Investigators | * A/Prof Leigh Tooth - School of Public Health, The University of Queensland * Dr Geeske Peeters - Global Brain Health Institute, Trinity College Dublin * Dr Natasja van Schoor - EMGO Institute, VU University Medical Center * Dr Rachel Cooper - MRC Unit for Lifelong Health and Ageing, University College London * Prof Rose Anne Kenny - Trinity College Dublin, The University of Dublin |

Falls are a well‐known cause of injuries among those aged 65 years and older. Approximately 1 in 3 older adults have a fall at least once per year. Most research has focused on falls in older adults (i.e., over the age of 65), however little attention has been given to the increased risk of falls in middle-aged adults, which may guide earlier intervention and subsequently a reduction in falls later in life. The aim is to examine risk factors of falls in middle-aged adults using data from four existing cohort studies from Australia, Ireland, the Netherlands and the United Kingdom. An analysis using data only from the Netherlands cohort is currently in progress. We are still exploring options in other cohorts, including ALSHW. If options fall outside the scope of the current EOI, a separate EOI will be submitted.

**Research outcomes:**

*Publications:*

* Should prevention of falls start earlier? Co-ordinated analyses of harmonised data on falls in middle-aged adults across four population-based cohort studies. Peeters G, van Schoor NM, Cooper R, Tooth L & Kenny RA. *PLoS ONE,* 2018, 13 (8); e0201989.
* A comprehensive assessment of risk factors fro falls in middle-aged adults: Co-ordinated analyses of cohort studies in four countries. Peeters G, Cooper R, Tooth L, van Schoor NM & Kenny RA. *Osteoprosis International*, 2019; 30(10): 2099-2117. <https://doi.org/10.1007/s00198-019-05034-2>

*Presentations:*

* The prevalence of falls in middle-aged adults: Results from co-ordinated analyses of harmonised data from four population-based cohort studies. Peeters G, van Schoor NM, Cooper R, Tooth L, Kenny RA. Falls Frailty Bone Health Conference, Dublin, Ireland, 9 - 10 November 2017.
* The Strategies for Early Prevention of Falls (STEP) consortium. Peeters G. Osteoporosis lunch time seminar series, VU University Medical Centre, Amsterdam, The Netherlands, 13 March 2017.

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| Project: A644 | Health and well being among older Australian women before and after cataract surgery. |
| Collaborative Investigators: | * Dr Melissa Harris - Research Centre for Generational Health and Ageing, The University of Newcastle * Dr Xenia Dolja-Gore - Research Centre for Generational Health and Ageing, The University of Newcastle * Mitiku Teshome Hambisa - Research Centre for Generational Health and Ageing, The University of Newcastle * Prof Julie Byles - Centre for Generational Health and Ageing, The University of Newcastle * Dominic Cavenagh - Centre for Generational Health and Ageing, The University of Newcastle |

This project aims to look at how many mid-aged women and older women have reported cataract and cataract surgery and cross-check this (where possible) against hospital and Medicare records, The investigators also plan to examine the health and wellbeing of women prior to reporting cataract surgery and how this may change before and after cataract surgery. The investigators are particularly interested in how cataracts (and cataract surgery) may influence women’s continued ability to drive and quality of life.

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| Project: A684C | Death certification of elderly women with dementia, and other chronic conditions. |
| Collaborative Investigators | * Prof Annette Dobson – Centre for Longitudinal and Life Course Research, The University of Queensland * Prof Gita Mishra - Centre for Longitudinal and Life Course Research, The University of Queensland * Dr Michael Waller - School of Public Health, The University of Queensland * Richard Hockey - Centre for Longitudinal and Life Course Research, The University of Queensland * Paul McElwee - Centre for Longitudinal and Life Course Research, The University of Queensland * Prof Mohammad Reza Baneshi – Kerman Institute of Medical Sciences, Iran |

Death certification is difficult for elderly people with multiple chronic conditions. As a result doctors may omit to mention some conditions, such as dementia. However the underlying causes of death recorded on death certificates form one of the foundations of the national health statistics produced by the Australian Bureau of Statistics (ABS), and in turn have significant influence on health policy and service provision. The purpose of this project is to improve understanding of the accuracy of death certification and to help ABS develop better methods of collecting and reporting mortality data. Work conducted in this project contributed to the ALSWH 2020 major report on multimorbidity, and will also contribute to an NHMRC Boosting Dementia Research Grant (GNT1171319).

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| Project: A724 | Beyond successful ageing: Longevity and healthy ageing among Australian Women. |
| Collaborative Investigators | * Prof Julie Byles - Centre for Generational Health and Ageing, The University of Newcastle * Prof Deborah Loxton - Research Centre for Generational Health and Ageing, The University of Newcastle * Dr Meredith Tavener - Research Centre for Generational Health and Ageing, Health and Ageing, University of Newcastle * Dr Paul Kowal - Study on global AGEing and adult health (SAGE), World Health Organization * Dr Lucy Leigh - Hunter Medical Research Institute * A/Prof Elizabeth Holliday - Clinical Research Design, Information Technology and Statistical Support (CReDITSS) Unit, The University of Newcastle * Prof Carol Jagger - Institute of Ageing and Health, Newcastle University * Dr John Beard - Department of Ageing and Life Course Health, World Health Organisation * Dr Mijanur Rahman - The University of Newcastle * Befikadu Wubishet – Faculty of Health and Medicine, The University of Newcastle * Emily Princehorn – Centre for Generational Health and Ageing, The University of Newcastle * Linda Smythe - Centre for Generational Health and Ageing, The University of Newcastle |

We will examine changes within cohorts of Australian women born 1921‐26 and 1946‐51 to identify trajectories of Healthy Ageing as defined by WHO, and compare these as to whether or not women can be considered to have achieved Successful Ageing using disease and disability based models of ageing (1). We argue that Healthy Ageing allows for more diversity in ageing trajectories, with interaction between intrinsic capacities and external supports.

**Research outcomes**

*Publications:*

* Successful ageing from old to very old: a longitudinal study of 12,432 women from Australia.: Byles JE, Rahman MM, Princehorn EM, Holliday EG, Leigh L, Loxton D, Beard J, Kowal P & Jagger C. *Age and Ageing*, 2019, 48 (6) 803-810.

*Conferences, seminars and workshops:*

* Prospects for healthy ageing and longevity for future generations of Australian women. *2018 International Centenarian Consortium (ICC) Meeting*. Blue Mountains, NSW, 5-6 August 2018.
* Successful ageing and longevity among Australian women. *2nd International Living to 100 Conference*. ICC Sydney, Darling Harbour, NSW, 7-8 September 2018.
* Longevity and healthy aging among women in Australia. *Healthy ageing – A lifelong process AAG Hunter Chapter Seminar*. HMRI, Newcastle, Australia. 15th March 2019.
* Successful ageing from old to very old: Findings from the Australian Longitudinal Study on Women’s Health. Julie Byles, Md Mijanur Rahman, Emily Princehorn, Elizabeth Holliday, Carol Jagger. *IAGG-ER 9th European Congress of the International Association of Gerontology and Geriatrics,* Gothenburg, Sweden, 23-25 May 2019.
  + 1. **Reproductive health**

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| Project: A222 | Prescribed drug utilisation in women before, during, and after pregnancy |
| Collaborative Investigators: | * Dr Xenia Dolja-Gore - Research Centre for Generational Health and Ageing, The University of Newcastle * A/Prof Mark McEvoy – Centre for Clinical Epidemiology and Biostatistics, The University of Newcastle * Dr Milton Hasnat – School of Medicine and Public Health, The University of Newcastle * Blessing Akombi - The University of Newcastle * Simon McElduff – School of Medicine and Public Health, The University of Newcastle * Prof Deborah Loxton - Research Centre for Generational Health and Ageing, The University of Newcastle |

This study aimed to determine the prevalence and patterns of prescribed medication use before, during and after pregnancy as little is known about the use of prescribed medications among pregnant women. Data from the ALSWH were linked with Pharmaceutical Benefits Scheme (PBS) data to determine patterns of prescribed medications. From the 1973-78 cohort (aged 27-32) 535 women were selected who had given birth to a child in 2005. The project has completed all analysis. A paper has been submitted for peer review to the *Archives of Women’s Mental Health*, and the authors are currently waiting for reviewer comments.

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| Project: A414 | InterLACE: International collaboration for a life course approach to reproductive health and chronic disease events |
| Collaborative Investigators: | * Prof Gita Mishra - Centre for Longitudinal and Life Course Research, The University of Queensland * Prof Annette Dobson - Centre for Longitudinal and Life Course Research, The University of Queensland * Professor Debra Anderson - Menzies Health Institute, Griffith University * Dr Hsin-Fang (Evelyn) Chung - Centre for Longitudinal and Life Course Research, The University of Queensland |

InterLACE provides a unique opportunity to conduct world-leading research in collaboration with key national and international investigators on women’s health studies from six nations. We will undertake cross-cohort research by combining data at the individual level from more than 150 000 participants in eleven existing longitudinal studies (including ALSWH) to investigate the role of reproductive health across life on subsequent CVD events and type 2 Diabetes Mellitus (T2DM). While this poses cross-cohort and cross-cultural research challenges, InterLACE has the capability to address research questions and generate robust evidence that is not possible from any single cohort study.

**Research outcomes:**

*Publications:*

* InterLACE: A new International Collaboration for a Life Course Approach to Women's Reproductive Health and Chronic Disease Events. Mishra G, Anderson D, Schoenaker DAM, Adami H-O, Avis NE, Brown D, Bruinsma F, Brunner E, Cade JE, Crawford SL, Dobson AJ, Elliott J, Giles GG, Gold Ebl, Hayashi K, Kuh D, Lee KA, Lee JS, Melby MK, Mizunuma H & Sievert LL. *Maturitas*, 2013; 74 (3): 235-240.
* Socioeconomic position, lifestyle factors and age at natural menopause: A systematic review and meta-analyses of studies across six continents. Schoenaker D, Jackson CA, Rowlands J & Mishra G. *International Journal of Epidemiology*, 2014; 1-21.
* The InterLACE study: Design, data harmonization and characteristics across 20 studies on women's health. Mishra G, Chung H, Pandeya N, Dobson A, Jones L, Avis NE, Crawford SL, Gold EB, Brown D, Sievert LL, Brunner E, Cade J, Burley VJ, Greenwood DC, Giles GG, Bruinsma F, Goodman A, Hayashi K, Lee JS, Mizunuma H, Kuh D, Cooper R, Hardy R, Obermeyer CM, Lee KA, Simonsen MK, Yoshizawa T, Woods NF, Mitchell ES, Hamer M, Demakakos P, Sandin S, Adami H-O, Weiderpas E & Anderson D. *Maturitas*, 2016; 92: 176-185.
* Early menarche, nulliparity, and the risk for premature and early natural menopause. Mishra GD, Pandeya N, Dobson AJ, Chung HF, Anderson D, Kuh D, Sandin S, Giles GG, Bruinsma F, Hayashi K, Lee JS, Mizunuma H, Cade JE, Burley V, Greenwood DC, Goodman A, Simonsen MK, Adami HO, Demakakos P & Weiderpass E. *Human Reproduction*, 2017; 32 (3): 679–686.
* The role of sleep difficulties in vasomotor menopausal symptoms and depressed mood relationships: An international pooled analysis of eight studies in the InterLACE consortium. Chung HF, Pandeya N, Dobson AJ, Kuh D, Brunner EJ, Crawford SL, Avis NE, Gold EB, Mitchell ES, Woods NF, Bromberger JT, Thurston RC, Joffe H, Yoshizawa T, Anderson D & Mishra GD.*Psychological Medicine*, 2018; 12:1-12. doi: 10.1017/S0033291718000168.
* Relationships between intensity, duration, cumulative dose, and timing of smoking with age at menopause: A pooled analysis of individual data from 17 observational studies. Zhu D, Chung HF, Pandeya N, Dobson A, Cade J, Greenwood D et al. *PLOS Medicine,* 2018, 15 (11); e1002704
* Female reproductive history and risk of type 2 diabetes: A prospective analysis of 126 721 women. Pandeya N, Huxley RR, Chung HF, Dobson AJ, Kuh D, Hardy R, Cade JE, Greenwood DC, Giles GG, Bruinsma F, Demakakos P, Simonsen MK, Adami HO, Weiderpass E & Mishra GD. *Diabetes, Obesity and Metabolism*, 2018, 20 (9); 2103-2112.
* Body mass index and age at natural menopause: an international pooled analysis of 11 prospective studies. Zhu D, Chung HF, Pandeya N, et al. *European Journal of Epidemiology*, 2018, 33 (8); 699-710.
* Premenopausal cardiovascular disease and age at natural menopause: a pooled analysis of over 170,000 women. Zhu D, Chung HF, Pandeya N, Dobson AJ, Hardy R, Kuh D, Brunner EJ, Bruinsma F, Giles GG, Demakakos P, Lee JS, Mizunuma H, Hayashi K, Adami HO, Weiderpass E, Mishra GD. *European Journal of Epidemiology,* 2019; 34(3):235-246.
* Soy intake and vasomotor menopausal symptoms among midlife women: a pooled analysis of five studies from the InterLACE consortium. Dunneram Y, Chung HF, Cade JE, Greenwood DC, Dobson AJ, Mitchell ES, Woods NF, Brunner EJ, Yoshizawa T, Anderson D, Mishra GD. *European Journal of Clinical Nutrition*, 2019. doi: 10.1038/s41430-019-0398-9
* Variations in reproductive events across life: A pooled analysis of data from 505,147 women across ten countries.  Mishra GD, Chung HF, Pandeya N, Kuh D, Hayashi K, Lee JS, Mizunuma H, Crawford SL, Avis NE, Gold EB, Mitchell ES, Woods NF, Anderson D, Brown DE, Sievert LL, Brunner EJ, Demakakos P, Cade JE, Greenwood DC, Giles GG, Bruinsma F, Cooper R, Hardy R, Tillin T,  Obermeyer CM, Simonsen MK, Canonico M, Ancelin ML, Schoenaker DAJM, Adami HO, Weiderpass E, & Dobson AJ. *Human Reproduction*, 2019. doi: 10.1093/humrep/dez015
* The association between reproductive lifespan and incident cardiovascular disease: a pooled analysis of individual patient data from 12 studies. Mishra SR, Chung HF, Waller M, Dobson AJ, Greenwood DC, Cade JE, Giles GG, Bruinsma F, Simonsen MK, Hardy R, Kuh D, Gold EB, Crawford SL, Derby CA, Matthews KA, Demakakos P, Lee JS, Mizunuma H, Hayashi K, Sievert LL, Brown DE, Sandin S, Weiderpass E, Mishra GD. *JAMA Cardiology* (accepted).
* Age at menarche and risk of vasomotor menopausal symptoms: a pooled analysis of six studies. Chung HF, Zhu D, Dobson A, Kuh D, Gold EB, Crawford SL, Avis NE, Mitchell ES, Woods NF, Anderson DJ, Mishra GD. *BJOG: An International Journal of Obstetrics & Gynaecology;* Epub ahead of print.
* Vasomotor menopausal symptoms and risk of cardiovascular disease: a pooled analysis of six prospective studies. Zhu D, Chung HF, Dobson AJ, Pandeya N, Anderson DJ, Kuh D, Hardy R, Brunner EJ, Avis NE, Gold EB, Crawford SL, Mishra GD. *American Journal of Obstetrics and Gynecology* ; Epub ahead of print.
* Type of menopause, age of menopause and variations in the risk of incident cardiovascular disease: Pooled analysis of individual data from 10 international studies. Zhu D, Chung HF, Dobson AJ, Pandeya N, Brunner EJ, Kuh D, Greenwood DC, Hardy R, Cade JE, Giles GG, Bruinsma F, Demakakos P, Simonsen MK, Sandin S, Weiderpass E, Mishra GD. *Human Reproduction*; Epub ahead of print.

*Conference presentations:*

* InterLACE: An international collaborative study of reproductive health in mid life. Mishra G. *ICOWHI 19th International Congress on "Women's Health 2012: Partnering for a Brighter Global Future"*, Bangkok, Thailand, 14-16 November 2012.
* Inter LACE: International collaboration on Life course approach to reproductive health and Chronic disease Events. Mishra G. *The Fifth Scientific Meeting of the Asia Pacific Menopause Federation*, Tokyo, Japan, 18 - 20 October 2013.
* Reproductive health across the life course and chronic disease events: Results from over 230 000 women across 10 countries. Mishra G. *RCOG World Congress 2015*, Brisbane, Qld, 12-15 April 2015.
* Cross-cultural perspectives on menopause: Findings from the InterLACE collaboration. Mishra G. *UN Commission for the Status of Women,* New York, USA, 17 March 2015.
* Overview of InterLACE: International Collaboration for a Life Course Approach to Women’s Reproductive Health and Chronic Disease Events. Mishra GD, Chung HF, Pandeya N & Anderson D. *International Council on Women’s Health Issues (ICOWHI) Congress*, Baltimore, Maryland, USA, 6 - 9 November 2016.
* Obesity and vasomotor symptoms during menopause: Results from a pooled analysis. Anderson D, Chung HF, Seib C & Mishra GD. *International Council on Women’s Health Issues (ICOWHI) Congress*, Baltimore, Maryland, USA, 6 - 9 November 2016.
* Vasomotor symptoms and psychological symptoms of depression during menopause: Results from a pooled analysis. Chung HF, Pandeya N, Anderson D & Mishra GD. *International Council on Women’s Health Issues (ICOWHI) Congress*, Baltimore, Maryland, USA, 6 - 9 November 2016.
* Vasomotor symptoms and psychological symptoms of depression during menopause: Results from a pooled analysis. Chung HF, Pandeya N & Mishra GD. *ALSWH Scientific Meeting 2016*, Newcastle, NSW, 4 - 5 May 2016.
* Expanding women’s and adolescents’ health: Integrating noncommunicable diseases through a lifecourse approach. Mishra G (panellist). *The 61st Commission on the Status of Women. United Nations*, New York, USA, 21 March 2017.
* InterLACE: International collaboration for a life course approach to reproductive health and chronic disease events. Mishra G. *Nightingale Initiatives for Global Health Symposium*, New York, USA, 17 March 2017.
* Cigarette smoking and risk of premature and early menopause. Chung HF. *Australasian Epidemiological Association (AEA) Annual Scientific Meeting 2017*, Sydney, NSW, 28 - 30 September 2017.
* Body mass and menopause: Pooled analyses of 11 prospective studies. Zhu D. *Australasian Epidemiological Association (AEA) Annual Scientific Meeting 2018*, Fremantle, WA, 22-24 October 2018.
* Smoking and menopause age: Pooled analysis of over 200,000 women. Zhu D. Australasian Epidemiological Association (AEA) Annual Scientific Meeting 2018, Fremantle, WA, 22-24 October 2018.
* Female reproductive history and risk of type 2 diabetes. Chung H-F. Australasian Epidemiological Association (AEA) Annual Scientific Meeting 2018, Fremantle, WA, 22-24 October 2018.
* Smoking and age at natural menopause: Pooled analysis of over 200,000 women. Zhu D. *2018 Clinical and Public Health Postgraduate Symposium,* Herston, Qld, 22 - 23 November 2018.
* Life course approach to women’s health: Findings from the InterLACE consortium. Mishra G. *Public lecture, Gunma University*, Gunma, Japan, 28 June 2017.
* InterLACE Data Harmonisation. Mishra G. Invited talk, *Collaborative Health Studies Coordinating Center.* University of Washington, Seattle, USA, 2 June 2017.
* Smoking and women’s health across the life course. (Keynote address). Mishra G. *83rd conference of the Japanese Society of Health and Human Ecology,* Gunma, Japan 20-25 November 2018.
* Causes and consequences of premature and early menopause: Results from the InterLACE consortium. Mishra G. *European Menopause and Andropause Society*, Berlin, Germany,15 May 2019.
* Plenary address. Mishra G. *2019 International Conference for Intelligence and Big Health*, Zhejiang University & the Second Affliliated Hospital of Zhejiang University School of Medicine, Hangzhou, China, 5 – 8 December 2019.
* Keynote speaker. Mishra G. *Jean Hailes Women’s Health Symposium*, Canberra, 22nd -23rd October.
* Long term health outcomes after hysterectomy. Mishra G. *Royal Australian and New Zealand College of Obstetricians and Gynaecologists (RANZCOG) Annual Scientific Meeting*,, Melbourne, 13 -16 October.
* Type of menopause, age at menopause and variations in the risk of incident cardiovascular disease. Mishra G. *Grand Round sessions for Medical Education*, Redcliffe Hospital Brisbane (Virtual), 20 August 2020.

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| Project: A609A | The impact of poor mental health on health care costs in the perinatal period. |
| Collaborative Investigators: | * Prof Julie Byles – Research Centre for Generational Health and Ageing, The University of Newcastle * Prof Deborah Loxton - Research Centre for Generational Health and Ageing, The University of Newcastle * Prof Clare Collins - School of Health Sciences (Nutrition and Dietetics), The University of Newcastle * Prof Michael Martin - School of Finance, Australian National University * Dr Jananie William - School of Finance, Australian National University * Dr Melinda Hutchesson - The University of Newcastle * Dr Megan Rollo - The University of Newcastle |

This project will examine the health care costs for women in the perinatal period, and in particular examine whether a history of poor mental health increases these costs. The project will link data from a range of sources including Perinatal Data Collection, Admitted Patient Data Collection, Medicare Benefits Scheme, Pharmaceutical Benefits Scheme along with self-reported survey data. Both public and private health care systems will be examined.

**Research outcomes:**

*Publications:*

* The impact of a history of poor mental health on health care costs in the perinatal period. Chojenta C, William J, Martin M, Byles J & Loxton D. *Archives of Women's Mental Health,* 2019, 22(4); 467-473.

*Presentations:*

* The impact of a history of poor mental health on health care costs in the perinatal period. Chojenta C. *TMU-UON Joint Symposium of Recent Advances in Women’s Health*, Taipai, Taiwan, 13-14 April 2018.
* The impact of poor mental health on health care costs in the perinatal period. Chojenta C. *International Marce Society Conference*, Melbourne, Vic, 27-29 September 2016.

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| Project: A515 | Is preconception perceived stress a risk factor for low birth weight? |
| Collaborative Investigators: | * Dr Catherine Chojenta - Research Centre for Generational Health and Ageing, The University of Newcastle * Prof Deborah Loxton - Research Centre for Generational Health and Ageing, The University of Newcastle * Dr Alexis Hure - School of Medicine and Public Health, The University of Newcastle * Dr Melissa Harris - Research Centre for Generational Health and Ageing, The University of Newcastle * Peta Forder - School of Medicine & Public Health, The University of Newcastle * Dr Amy Anderson - Research Centre for Generational Health and Ageing, The University of Newcastle * Dr Liz Holliday - Clinical Research Design, Information Technology and Statistical Support (CReDITSS) Unit, The University of Newcastle |

This study examines the relationship between preconception levels of perceived stress and low birth weight for first time mothers using population-based data. Low birth weight puts an infant at risk of adverse outcomes including neonatal death, growth retardation and behavioural problems. While a number of modifiable risk factors for low birth weight have been identified (including smoking and poor nutrition), recent evidence suggests that stress may play a role in poor obstetric outcomes. Perceived stress experienced during pregnancy has been associated with very low birth weight; however little is known about the impact of perceived stress levels experienced prior to pregnancy on low birth weight. The findings will inform the development of future intervention and prevention strategies. A manuscript has been submitted for publication, and is currently under review..

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| Project: A639 | Characteristics of young women with pregnancy intentions and aspirations for future children before and during pregnancy. |
| Collaborative Investigators: | * Prof Gita Mishra – Centre for Longitudinal and Life Course Research, The University of Queensland * Prof Helena Teede - Monash Centre for Health Research and Implementation, Monash University * A/Prof Lisa Moran - Monash Centre for Health Research and Implementation, Monash University * Dr Briony Hill - Monash Centre for Health Research and Implementation, Monash University * Prof Helen Skouteris - Monash Centre for Health Research and Implementation, Monash University * Dr Mathew Ling - School of Psychology, Deakin University * Dr Lauren Bruce - Monash Centre for Health Research and Implementation, Monash University * Momaru Awoke - Monash Centre for Health Research and Implementation, Monash University |

Comprehensive explorations of the characteristics of preconception women have not been conducted in Australian cohorts. This study aims to describe a range of factors that are associated with women's pregnancy intentions and desire to have children in the future using the Young (1973-78) ALSWH cohort. Specifically, we will investigatedemographics, body mass index, psychosocial factors, lifestyle behaviours, and comorbidities of poor lifestyle behaviours (specifically polycystic ovary syndrome) among women intending to get pregnant or who desire to have children in the future. The analyses have now been conducted for research question 3. We are currently up to write up phase for research question 3, which has been delayed due to Covid-19.

**Research outcomes**

*Publications:*

* Lifestyle and psychological factors associated with pregnancy intentions: Findings from a longitudinal cohort study of Australian women. Hill B, Ling M, Mishra G, Moran LJ, Teede HJ, Bruce L & Skouteris H. *International Journal of Environmental Research and Public Health*, 2019, 16 (24) 5094.

*Conferences, seminars and workshops:*

* Lifestyle and psychological characteristics of women with pregnancy intentions (Poster presentation). Hill B, Ling B, Skouteris H, Bruce L, Moran L, Teede H & Mishra G. *Australasian Society of Lifestyle Medicine Conference*, Auckland, New Zealand, 7-9 June 2019.
* Associations between future parenthood aspirations and lifestyle and psychological characteristics in women (oral presentation, poster). Hill B, Ling B, Skouteris H, Bruce L, Moran L, Teede H & Mishra G. *Australasian Society of Lifestyle Medicine Conference*, Auckland, New Zealand 7-9 June 2019.

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| Project: A672 | Life course approach to preconception health |
| Collaborative Investigators: | * Prof Gita Mishra - Centre for Longitudinal and Life Course Research, The University of Queensland * Richard Hockey - Women's Health Australia, University of Queensland * Dr Danielle Schoenaker - School of Primary Care, Population Sciences and Medical Education, University of Southhampton |

Improving lifestyle and health before pregnancy may provide an opportunity to help prevent complications during pregnancy. Previous projects in the ALSWH have shown that an unhealthy diet and weight gain in the years leading up to pregnancy were associated with a higher risk of developing gestational diabetes and hypertension. By taking a life course approach to prepregnancy lifestyle and health, this project aims to describe the prevalence of prepregnancy lifestyle and health-related factors, and to examine whether these factors - and their timing and duration - are associated with adverse outcome in future pregnancies. These findings in Australian women form part of a larger project, and will be compared with prepregnancy lifestyle and health-related factors in study populations from the UK. Results from this project have contributed to an 2020 NHMRC ideas grant application: *Rethinking preconception health.*

**Research outcomes:**

*Publications:*

* Before the beginning: Nutrition and lifestyle in the preconception period and its importance for future health. Stephenson J, Heslehurst N, Hall J, Schoenaker DAJM, Hutchinson J, Cade J, Poston L, Barrett G, Crozier SR, Barker M, Kumaran K, Yajnik CS, Baird J & Mishra GD. *Lancet*, 2018; 391 (10132): 1830–1841.

*Conferences, seminars and workshops:*

* A life course approach to preconception health and pregnancy planning. Mishra G. *9th International Conference on Birth Defects and Disabilities in the Developing World*. March of Dimes with support from US-CDC, Colombo, Sri Lanka, 23 -26 February 2020.

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| Project: A690 | The direct and indirect costs associated with endometriosis in Australia |
| Collaborative Investigators: | * Prof Gita Mishra - Australian Longitudinal Study on Women's Health * A/Prof Leigh Tooth - Centre for Longitudinal and Life Course Research, The University of Queensland * Richard Hockey - Centre for Longitudinal and Life Course Research, The University of Queensland * Dr Ingrid Rowlands - Centre for Longitudinal and Life Course Research, The University of Queensland * Dr Lisa Hall – School of Public Health, The University of Queensland * Dr Judith Reddrop - Women's Wellbeing * Prof Grant Montgomery - Institute for Moecular Biosciences, The University of Queensland * A/Prof Tracy Comans – The University of Queensland |

This study aims to match women’s self-reported doctor diagnosis of endometriosis with Commonwealth Medical Benefits Schedule (GP, Specialist visits) and state-based Admitted Patients Collections to provide evidence on the direct economic impacts of endometriosis in Australia from 1996 to 2016. It will also examine lost/reduced work productivity of women with endometriosis in terms of hours in paid work and unemployment (indirect economic impacts). The prevalence and incidence of endometriosis have been calculated, and costing is now being investigated in detail.

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| Project: A696A | Unintended pregnancy and contraceptive use in women with chronic disease: Providing an evidence-base for Australia |
| Collaborative Investigators: | * Dr Melissa Harris - Research Centre for Generational Health and Ageing, The University of Newcastle * Prof Jayne Lucke - School of Public Health, The University of Queensland * Prof Deborah Loxton - Research Centre for Generational Health and Ageing, The University of Newcastle * A/Prof Deborah Bateson - Family Planning NSW * Peta Forder - School of Medicine & Public Health, The University of Newcastle * Prof Julie Byles - Centre for Generational Health and Ageing, The University of Newcastle * Nick Egan - Centre for Generational Health and Ageing, The University of Newcastle |

Unintended pregnancy remains high in developed countries despite access to high quality sexual and reproductive services. Some evidence exists that women with chronic diseases experience unintended pregnancy at significantly higher rates than women without chronic disease. For these women, unintended pregnancies are associated with serious adverse maternal and perinatal outcomes, including congenital abnormalities, pre‐term labour, spontaneous abortion, and foetal death. Optimised preconception care and reproductive life planning is critical to the prevention of unintended pregnancies and reduction in pregnancy‐related complications in women with chronic diseases. Little information exists in the Australian context. This projects aims to fill this knowledge gap. The physical and mental health chronic conditions have been ascertained and analysis has begun on meeting the objectives of the EOI.

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| Project: A726 | Assessing patterns of change in lifestyle behaviours following birth |
| Collaborative Investigators: | * A/Prof Allison Hodge - Cancer Epidemiology Centre, Cancer Council Victoria * Assoc. Prof. Arul Earnest - Department of Epidemiology and Preventive Medicine, Monash University * Prof Helena Teede - Monash Centre for Health Research and Implementation, Monash University * A/Prof Lisa Moran - Monash Centre for Health Research and Implementation, Monash University * Sanjeeva Ranasinha - Monash Centre for Health Research and Implementation, Monash University * Dr Jacqueline Boyle - Monash Centre for Health Research and Implementation, Monash University * Dr Briony Hill - Monash Centre for Health Research and Implementation, Monash University * Prof Helen Skouteris - Monash Centre for Health Research and Implementation, Monash University * Dr Siew Lim - Monash Centre for Health Research and Implementation (MCHRI), Monash University * Maureen Makama - Monash Centre for Health Research and Implementation (MCHRI), Monash University |

Up to 1 in 2 Australian women are overweight and obese which can be worsened by excessive weight gain during pregnancy and after childbirth. Postpartum weight retention is common and fewer than 50% of women are estimated to returnto their pre-pregnancy weight. Changes in diet and physical activity after childbirth can contribute to parity-related weight gain. However, it is not known if specific groups of women (eg based on factors such as age, health status, education, income, occupation and ethnicity) have particular difficulties in following healthy lifestyle behaviours, that may in turn be associated with greater parity-related weight gain.

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| Project: A737A | The association of lifestyle factors with longitudinal weight gain in women with and without polycystic ovary syndrome |
| Collaborative Investigators: | * A/Prof Lisa Moran - Monash Centre for Health Research and Implementation, Monash University * Mamaru Awoke - Monash Centre for Health Research and Implementation, Monash University * Prof Helena Teede - Monash Centre for Health Research and Implementation, Monash University * Dr Anju Joham - Monash Centre for Health Research and Implementation, Monash University * Dr Cate Bailey - Monash Centre for Health, Research and Implementation, Monash University * A/Prof Allison Hodge - Cancer Epidemiology Centre, Cancer Council Victoria * Assoc. Prof. Arul Earnest - Department of Epidemiology and Preventive Medicine, Monash University |

Polycystic ovary syndrome is a condition affecting up to 1 in 5 reproductive-aged women associated with reproductive, metabolic and psychological complications. Obesity worsens the prevalence and features of PCOS, and women with PCOS have been shown to have a higher prevalence of obesity and greater weight gain over time compared to women without PCOS. Women with PCOS have also been shown to have higher energy intake, be less physically active and sit for longer, however it is not known how much these differences in lifestyle factors contribute to the differences in obesity.

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| Project: A780 | Endometriosis in Australia: Prevalence, health outcomes and health service use. |
| Collaborative Investigators: | * Prof Annette Dobson - Centre for Longitudinal and Life Course Research, The University of Queensland * Richard Hockey Centre for Longitudinal and Life Course Research, The University of Queensland * Dr Ingrid Rowlands - Centre for Longitudinal and Life Course Research, The University of Queensland * Prof Grant Montgomery - Institute for Moecular Biosciences, The University of Queensland * Dr Darsy Darssan - School of Public Health, The University of Queensland * Prof Jason Abbott - University of New South Wales * Prof Peter Rogers - The University of Melbourne * A/Prof Tracy Comans – The University of Queensland |

Based on international data, endometriosis is clinically diagnosed in 10‐13% of women. However, there are no current national,Australian estimates. This study estimates the prevalence of endometriosis (self‐reported and surgically confirmed) in two cohorts of young women and describes women’s long‐term health outcomes and health service use. Data from women’s self reported doctor diagnoses of endometriosis from the ALSWH surveys will be combined with surgery data from Medicare Benefits Schedule and the statebased Admitted Patients Data collections to provide national estimates and examine outcomes.

**Research outcomes:**

*Publications:*

* Prevalence and incidence of endometriosis in Australian women: A data linkage cohort study. Rowlands IJ, Abbott JA, Montgomery GW, Hockey R, Rogers P & Mishra GD. *British Journal of Obstetrics and Gynaecology*. (In press).

*Conferences, seminars and workshops:*

* The epidemiology of endometriosis. Rowlands IJ. 2019. *Australian Longitudinal Study on Women’s Health Symposium for Department of Health*. Canberra, Australia.
* The epidemiology of endometriosis. Rowlands IJ. 2019. *Jean Hailes for Women’s Health Symposium.* Canberra, Australia.
* Endometriosis. Rowlands IJ. 2019. *Faculty of Medicine Research Expo*. SPH Mid-career researcher. Oral presentation, TRI Auditorium, Brisbane, Australia.
* Endometriosis. Rowlands IJ. 2019. *SPH Alumni Event – Women’s health: From cradle to grave*. UQ Oral Health Centre Auditorium, Brisbane, Australia.

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| Project: A706 | Impact of a PCOS diagnosis on health-related behaviour, lifestyle choices and psychosocial wellbeing. |
| Collaborative Investigators: | * Tessa Copp – School of Public Health, The University of Sydney * Dr Jesse Jansen – School of Public Health, The University of Sydney * Dr Jolyn Hersch – The University of Sydney * Prof Kirsten McCaffery – School of Public Health, The University of Sydney * Prof Jenny Doust – Centre for Research in Evidence Based Practice, Bond University * Dr Erin Cvejic – School of Medicine, The University of Sydney * Prof Gita Mishra – Centre for Longitudinal and Life Course Research, The University of Queensland |

Polycystic Ovary Syndrome (PCOS) is a common endrocine disorder affecting women of reproductive age and is associated with adverse reproductive, metabolic, cardiovascular and psychosocial outcomes. Using data from the 1989-95 cohort, this project focuses on women who report a new diagnosis of PCOS (i.e., not reported in Survey 1 but in subsequent surveys) and examines whether the diagnosis is associated with changes in BMI, lifestyle (physical activity, diet, smoking, alcohol use, contraceptive use) and psychosocial wellbeing (self-harm, disordered eating, distress). These women will be compared to women without PCOS, and women who initially report a diagnosis of PCOS but do not re-report. A manuscript has been published in *Human Reproduction*.

**Research outcomes:**

*Publications:*

* Impact of a diagnosis of polycystic ovary syndrome on diet, physical activity and contraceptive use in young women: Findings from the Australian Longitudinal Study of Women’s Health. Copp T, Cvejic E, McCaffery K, Hersch J, Doust J, Mol BW, Dokras A, Mishra G & Jansen J *Human Reproduction*, 2020; 35(2):394-403. https://doi.org/[10.1093/humrep/dez274](https://doi.org/10.1093/humrep/dez274)

*Conferences, seminars and presentations:*

* “I wonder whether it would have been better not to know” Polycystic Ovary Syndrome (PCOS) and the potential for overdiagnosis. Copp T. *Preventing Overdiagnosis 2019*, Sydney, NSW, 5-7 December 2019.

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| Project: A738 | Sleep disturbances in women with and without polycystic ovary syndrome and their association with lifestyle factors (diet, physical activity and sitting time). |
| Collaborative Investigators: | * A/Prof Allison Hodge – Cancer Epidemiology Centre, Cancer Council Victoria * Prof Helena Teede - Monash Centre for Health Research and Implementation, Monash University * A/Prof Lisa Moran - Monash Centre for Health Research and Implementation, Monash University * Dr Michelle Blumfield - Faculty of Medicine, Nursing & Health Sciences, Monash University * Dr Anju Joham - Monash Centre for Health Research and Implementation, Monash University * Sanjeeva Ranasinha - Monash Centre for Health Research and Implementation, Monash University * Dr Sean Cain - Monash University * Christie Bennett - School of Clinical Sciences, Monash University * Dr Darren Mansfield - Monash Health * Dr Lin Mo - Monash Health |
| ALSWH Liaison | * Prof Deborah Loxton – Research Centre for Generational Health and Ageing, The University of Newcastle |

Polycystic ovary syndrome is a condition affecting up to 1 in 5 reproductive-aged women associated with reproductive, metabolic and psychological complications. There is emerging evidence that women with PCOS may experience sleep disturbances. However, this is generally studied with regards to clinical conditions such as obstructive sleep apnoea and there is limited research examining more subtle sleep disturbances in women with and without PCOS. There is also emerging evidence that sleep disturbances can affect lifestyle factors such as diet and physical activity which could have adverse impacts on obesity and related conditions. However, the relationship between PCOS, sleep and lifestyle factors is unknown. Two papers are planned from this EOI. The first paper has been published and the second paper submitted..

**Research outcomes**:

*Publications:*

* Sleep disturbances in women with and without polycystic ovary syndrome in an Australian national cohort. Mo L, Mansfield DR, Joham A, Cain SW, Bennett C, Blumfield M, Teede H & Moran LJ. *Clinical Endocrinology*, 2019; 90(4); 570-578.

*Conferences, seminars and workshops:*

* Sleep disturbances in women with and without polycystic ovary syndrome (PCOS) and their association with lifestyle factors (diet, physical activity and sitting time). Bennett C, Mansfield DR, Mo L, Hodge A, Joham A, Cain SW, Blumfield M, Teede H, Moran LJ. *Nutrition Society of Australia Annual Scientific Meeting*. 2-5 December 2019, Newcastle.

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| Project: A739 | Examining the use of infertility treatment in women who self-report PCOS. |
| Collaborative Investigators: | * A/Prof Lisa Moran - Monash Centre for Health Research and Implementation, Monash University * Dr Anju Joham - Monash Centre for Health Research and Implementation, Monash University * Dr Jacqueline Boyle - Monash Centre for Health Research and Implementation, Monash University * Dr Renae Fernandez – Paediatrics and Reproductive Health, The University of Adelaide * Dr Alice Rumbold – South Australian Health and Medical Reseach Institute * Prof Vivienne Moore – School of Public Health, The University of Adelaide * A/Prof Michael Stark – Paediatrics and Reproductive Health, The University of Adelaide * Prof Michael Davies – Robinson Research Institute, The University of Adelaide * Prof Deborah Loxton – Research Centre for Generational Health and Ageing, The University of Newcastle |

This project will use data from medical insurance claims to quantify the extent of use of fertility services among women who self-report PCOS. This will provide a much more complete picture of the current reproductive health and economic burden of PCOS among Australian women. This will inform women’s expectations about their future reproductive health needs after diagnosis, and identify gaps in current management practices. Progress has been limited due to maternity leave absences for Dr Fernandez and A/Prof Moran, and the COVID-19 crisis and associated travel restrictions. Some preliminary data analysis occurred in 2018 when Dr Fernandez visited the University of Newcastle to accress the linked data. The research team have now applied to access linked data through the SURE facility in 2020/21.

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| Project: A742 | Examining the use of chronic disease management plans and allied health services in women who self-report PCOS. |
| Collaborative Investigators: | * A/Prof Lisa Moran - Monash Centre for Health Research and Implementation, Monash University * Dr Anju Joham - Monash Centre for Health Research and Implementation, Monash University * Dr Jacqueline Boyle - Monash Centre for Health Research and Implementation, Monash University * Dr Renae Fernandez – Paediatrics and Reproductive Health, The University of Adelaide * Dr Alice Rumbold – South Australian Health and Medical Reseach Institute * Prof Vivienne Moore – School of Public Health, The University of Adelaide * Prof Michael Davies – Robinson Research Institute, The University of Adelaide * Anthea Hutchison – Robinson Research Institute, The University of Adelaide * Prof Deborah Loxton – Research Centre for Generational Health and Ageing, The University of Newcastle |

This project will use data from medical insurance claims to quantify the extent of use of medical and allied health services for lifestyle and mental health complications among women who self-report PCOS. This will provide a much more complete picture of the current health and economic burden of PCOS among Australian women. If the use of chronic disease management plans and government subsidised allied health services is found to be low among women with PCOS, this would provide robust evidence to support more targeted awareness campaigns for health care providers regarding the need for multidisciplinary care of this condition. An application to access linked data through the SURE platform has been made.

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| Project: A745 | Associations of menstrual problems and endometriosis with adverse pregnancy outcomes. |
| Supervisors: | * Prof Gita Mishra – Centre for Longitudinal and Life Course Research, The University of Queensland * A/Prof Leigh Tooth – Centre for Longitudinal and Life Course Research, The University of Queensland * Dr Ingrid Rowlands - Centre for Longitudinal and Life Course Research, The University of Queensland * Richard Hockey - Centre for Longitudinal and Life Course Research, The University of Queensland |

Endometriosis affects 2-17% women of reproductive age with severe period pain, often leading to infertility. Adverse pregnancy events like miscarriage, gestational diabetes, hypertension during pregnancy, preterm birth and low birth weight are seen in women with endometriosis after they become pregnant. Similar situation exists in women with menstrual problems. This project will explore the role of menstrual problems and endometriosis on adverse pregnancy outcomes. It will also investigate whether endometriosis mediates the association between menstrual problems and adverse pregnancy outcomes.

**Research outcomes:**

*Publications:*

* History of premenstrual syndrome and development of postpartum depression: A systematic review and meta-analysis. Cao S, Jones M, Tooth L & Mishra G. *Journal of Psychiatric Research*, 2020; 121:82-90. <https://doi.org/10.1016/j.jpsychires.2019.11.010>

*Conferences, seminars and workshops:*

* The effect of premenstrual syndrome on postpartum depression: A systematic review and meta-analysis. Cao S. *2018 Clinical and Public Health Postgraduate Symposium*, University of Queensland, Herston, Qld. 22-23 November 2018.
* History of premenstrual syndrome and postpartum depression: a systematic review and meta-analysis. Cao S. *2019 Australasian Epidemiological Association Annual Scientific Meeting*, Brisbane Convention & Exhibition Centre, 23-25 October 2019.
* Does premenstrual syndrome before pregnancy increase the risk of postpartum depression? Findings from the Australian Longitudinal Study on Women’s Health (ALSWH). Cao S. *2020 Preventive Health Conference (virtual),* 13-15 May 2020.

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| Project: A748 | Assessment of incidence and predictors of hypertension in pregnancy in women with PCOS |
| Collaborative Investigators: | * Assoc. Prof. Arul Earnest - Department of Epidemiology and Preventive Medicine, Monash University * Prof Helena Teede - Monash Centre for Health Research and Implementation, Monash University * A/Prof Lisa Moran - Monash Centre for Health Research and Implementation, Monash University * Dr Anju Joham - Monash Centre for Health Research and Implementation, Monash University * Mr Sanjeeva Ranasinha - Monash Centre for Health Research and Implementation, Monash University * Ms Mahnaz Bahri Khomami - Monash Centre for Health Research and Implementation, Monash University * Prof Deborah Loxton – Research Centre for Generational Health and Ageing, The University of Newcastle |

Polycystic Ovary Syndrome (PCOS) is a common disorder that affects women who are of childbearing age. It is associated with many complications including infertility, but also carries increases risk of pregnancy related complications. In this research project, we will compare women with PCOS to those without PCOS over time to try and understand if women with PCOS have increased rates of high blood pressure in pregnancy and the key contributing factors, in particular to study the effect of body weight. A manuscript has been submitted to *Hypertension*.

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| Project: A751A | The association of lifestyle factors with inflammatory conditions in women with and without polycystic ovary syndrome |
| Collaborative Investigators: | * A/Prof Allison Hodge - Cancer Epidemiology Centre, Cancer Council Victoria * Prof Helena Teede - Monash Centre for Health Research and Implementation, Monash University * A/Prof Lisa Moran - Monash Centre for Health Research and Implementation, Monash University * Dr Anju Joham - Monash Centre for Health Research and Implementation, Monash University * Professor James Hebert - Cancer Prevention and Control Program, University of South Carolina * Dr Nitin Shivappa - University of South Carolina * Dr Jessica Grieger - School of Paediatrics and Reproductive Health, The University of Adelaide * Dr Cate Bailey - Monash Centre for Health, Research and Implementation, Monash University * Dr Aya Mousa - Monash University * Amreen Naqash - University of Kashmir * Prof Gita Mishra - Centre for Longitudinal and Life Course Research, The University of Queensland |

Two paper are planned from this data. The first paper is published (PCOS, diet and asthma). For the second paper (depression), the lead author (Dr Aya Mousa) has just returned from maternity leave. Preliminary analysis of the data is completed. While this paper is anticipated to be completed within 9 months, this time frame may change depending on her availability.

**Research outcomes:**

* The association between dietary intake, asthma, and PCOS in women from the Australian Longitudinal Study on Women’s Health. Grieger JA, Hodge A, Mishra G, Joham AE & Moran LJ*. Journal of Clinical Medicine*, 2020; 9(1): 233. <https://doi.org/10.3390/jcm9010233>

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| Project: A778 | Parity and mode of birth and their relationship to general and gynaecological health |
| Collaborative Investigators: | * Prof Wendy Brown - Centre for Longitudinal and Life Course Research, The University of Queensland * Prof Deborah Davis, University of Canberra * Ellen Nohr – University of Southern Denmark * Chunsen Wu – University of Southern Denmark |

As 32.3 percent of all deliveries in Australia are caesarean setions, it is important to address the long term consequences of this procedure. This project will compare self‐perceived general health, emotional wellbeing and different gynaecological complications such as irregular periods, severe period pain, heavy periods, urinary incon􀆟nence, and surgery for hysterectomy, prolapse of vagina, bladder and bowel in groups of Australian women that have delivered vaginally, by caesarean section or not at all. A manuscript, ‘Parity and mode of birth and their relationship to general health’ is in preparation.

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| Project: A782 | Stillbirth: prevalence, menstrual problems, and future health outcomes. |
| Collaborative Investigators: | * Prof Gita Mishra - Centre for Longitudinal and Life Course Research, The University of Queensland * A/Prof Leigh Tooth - School of Public Health, The University of Queensland * Prof Vicki Clifton - Mothers and Babies Theme, Mater Medical Research Institute, The University of Queensland * Prof Vicki Flenady - Mater Research Institute, The University of Queensland * Alexis Dennehy – The University of Queensland * Prof Mohammad Baneshi – Karman Medical Institute, Iran |

In Australia, the rate of stillbirth is 6.7 per 1000 births. This is equivalent to 2,107 stillborn babies each year. Established risk factors include maternal health (hypertension, diabetes), primiparity, pregnancy complications (fetal growth restriction, prolonged pregnancy), smoking, overweight and obesity, and history of stillbirth. It is already known that women who experience pregnancy complications are more likely to report a cardiovascular disease related event, such as angina, heart attack, and arrhythmia, suggesting a link between adverse pregnancy events such as stillbirth and future health (Friebert et al., 2011). Lykke et al. reported that women who experience a pregnancy complication including a stillbirth in their first pregnancy are twice as likely to die prematurely.

In a Danish study, women with irregular menstrual cycles had an increased risk of preeclampsia, preterm birth, and prolonged pregnancy. Therefore, the characteristics of the preconception menstrual cycles may be a marker of both pregnancy outcomes and post-pregnancy health. Limited studies are available on the associations between preconception menstrual patterns and stillbirth. Similarly, there is a lack of information on changes in the physical and mental health of women who have had stillbirth, or on their GP use.

We hypothesize that menstrual problems might be early indicators of increased risk of stillbirth and poorer health in the future.

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| Project: A799 | Pregnancy planning and risk of adverse pregnancy and birth outcomes. |
| Collaborative Investigators: | * Dr Danielle Schoenaker - School of Primary Care, Population Sciences and Medical Education, University of Southhamptom * Dr Amie Steel - Health Services Research, University of Technology Sydney * Dr Ellie D'Arcy - Health Intelligence Unit, NSW Health |
| ALSWH Liaison | * Prof Deborah Loxton Research Centre for Generational Health and Ageing, The University of Newcastle |

Preconception care addresses health and lifestyle behaviours of women prior to pregnancy, and is increasingly recognised as an essential health service to achieve healthy outcomes for women and their children. While previous studies have shown that better health and lifestyle prior to pregnancy are associated with better health outcomes during and after pregnancy, there remain gaps in our knowledge on the benefits and implementation of preconception care. To better inform the design of future preconception interventions, this study aims to examine the proportion of women planning a pregnancy, their preconception health and lifestyle behaviours, and the relationships of these with subsequent pregnancy and birth outcomes.

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| Project: A804 | Ascertainment of parity in the ALSWH/MatCH cohorts using linked perinatal records. |
| Collaborative Investigators: | * Colleen Loos - Centre for Longitudinal and Life Course Research, The University of Queensland * Prof Annette Dobson – Centre for Longitudinal and Life Course Research, The University of Queensland * David Fitzgerald - Centre for Longitudinal and Life Course Research, The University of Queensland |
| ALSWH Liaison | * Prof Gita Mishra - Centre for Longitudinal and Life Course Research, The University of Queensland |

In 2016-17, the Mothers and their Children’s Health (MatCH) study asked the 1973-78 ALSWH cohort about the health of their children (then aged under 13 years). Over 3,000 mothers (of 14,247 women originally enrolled in the ALSWH cohort in 1996) took part, reporting on 5,799 children. This project uses linked perinatal records for the whole 1973-78 cohort; and published data for same-aged women in the Australian Population; to assess the representative of both MatCH and ALSWH, in terms of the number and ages of birth children.

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| Project: A809 | Patterns of contraceptive use among Australian women with mental health conditions |
| Collaborative Investigators: | * Dr Natalie Amos - Monash University * Prof Danielle Mazza - Department of General Practice, Monash University * Dr Melissa Harris - Research Centre for Generational Health and Ageing, The University of Newcastle * Prof Jayne Lucke - School of Public Health, The University of Queensland * Dr Kevin McGeechan - School of Public Health, The University of Sydney * Prof Jeffrey Peipert - Indiana University |

The project will examine the associations between mental health disorders and patterns of contraceptive and emergency contraceptive use among young women in Australia. Using data from surveys 1 to 5 of the 1989-95 cohort we aim to understand patterns of contraceptive use among women with depression or anxiety, specifically the methods of contraceptive chosen, frequency of contraceptive use or non-use, occurrences of emergency contraceptive use and changes in contraceptive use over time.

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| Project: A810 | Incidence and predictors of Neonatal Near Miss, and its impact on parenting and child health outcomes in Australia |
| Collaborative Investigators: | * Prof Deborah Loxton - Research Centre for Generational Health and Ageing, The University of Newcastle * Dr Catherine Chojenta - Research Centre for Generational Health and Ageing, The University of Newcastle * Peta Forder - School of Medicine & Public Health, The University of Newcastle * Tahir Ahmen Hassen - Research Centre for Generational Health and Ageing, The University of Newcastle * A/Prof Koert de Waal - Department of Neonatology John Hunter Children’s Hospital * Nick Egan - The University of Newcastle |

The concept of neonatal near miss (NNM), a condition where a newborn has nearly died but survived, has been proposed as a tool for assessment of quality of care in neonates who suffered any life‐threatening condition[1]. Research from other settings indicates that different factors contribute to the incidence of NNM and children with NNM history are at risk of encountering various health and health related problems during their course of life. Research also has indicated that having a high risk infant poses significant family, societal and economic impacts; although this relationship is yet to be investigated with NNM[2]. This project will align these areas of research by investigating the incidence and predictors of NNM, and its impact on parenting and child health outcomes.

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| Project: A814 | Menstrual irregularity as a predictor of metabolic disease and adverse reproductive health outcomes |
| Collaborative Investigators: | * Dr Anju Joham - Monash Centre for Health Research and Implementation, Monash University * Prof Helena Teede - Monash Centre for Health Research and Implementation, Monash University * Assoc. Prof. Arul Earnest - Department of Epidemiology and Preventive Medicine, Monash University * Sylvia Kiconco - Monash University |
| ALSWH Liaison | * Prof Deborah Loxton Research Centre for Generational Health and Ageing, The University of Newcastle |

Given that menstrual irregularity underpins polycystic ovary syndrome (PCOS) and its diagnosis[2], it may be anearly indicator for not only PCOS, but also metabolic syndrome, infertility, adverse pregnancy outcomes and early menopause. However, the link between menstrual irregularities and metabolic or adverse reproductive health outcomes remains unclear especially in the Australian population.

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| Project: A816 | Menopausal hormone therapy use and the risk of melanoma. |
| Collaborative Investigators: | * Dr Edoardo Botteri - Cancer Registry Norway * Dr Nathalie C Stoer - Cancer Registry of Norway * Dr Elisabete Weiderpass - International Agency for Research on Cancer (IARC) * Prof Gita Mishra - Centre for Longitudinal and Life Course Research, The University of Queensland * Dr Zhiwei Xu - School of Public Health, The University of Queensland |

The association between use of menopausal hormone therapy and risk of cutaneous melanoma is highly debated. We investigated the association in different European cohorts, showing a detrimental effect of estrogens on melanoma risk. Moreover, our findings suggest a possible protective effect of progestins. We would like to evaluate this association in the ALSWH. The present study will focus on the 1946–1951 cohort, because in that cohort we have the information on HRT use from both the questionnaires and the Pharmaceutical Benefits Scheme. Information on hysterectomy and menopausal status will be used, together with other possible confounders.

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| Project: A819 | Lifetime reproduction outcomes in women with polycystic ovary syndrome. |
| Collaborative Investigators: | * Dr Anju Joham - Monash Centre for Health Research and Implementation, Monash University * Prof Helena Teede - Monash Centre for Health Research and Implementation, Monash University * Dr Chau Thien Tay - Monash Centre for Health Research and Implementation, Monash University * A/Prof Lisa Moran - Monash Centre for Health Research and Implementation, Monash University |
| ALSWH Liaison | * Prof Deborah Loxton Research Centre for Generational Health and Ageing, The University of Newcastle |

Polycystic ovary syndrome (PCOS) is a complex hormonal disorder common affecting one in five women and one in four Australian Indigenous women. It is one of the most common cause of infertility and more than two‐thirds of women with PCOS required fertility treatment to conceive. Family planning in women with PCOS are therefore extremely important as the success of fertility treatment are highly dependent on age. We intend to examine throughout the women’s reproductive life, their fertility outcomes including the mean age of first delivery, use of fertility treatment, and final family size.

* + 1. **Methodology**

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| Project: A058A | Use of ALSWH data to develop and illustrate methodology for analysing longitudinal data |
| Collaborative Investigators: | * Prof Annette Dobson - Centre for Longitudinal and Life Course Research, The University of Queensland * Prof Gita Mishra - Centre for Longitudinal and Life Course Research, The University of Queensland * Dr Michael Waller - Centre for Longitudinal and Life Course Research, The University of Queensland * Dr Darcy Darssan - School of Public Health, The University of Queensland * Dr Louise Wilson - Centre for Longitudinal and Life Course Research, The University of Queensland * Dr Zhiwei Xu - Centre for Longitudinal and Life Course Research, The University of Queensland |

This project uses ALSWH data to develop and illustrate methodological issues. The data is used for methodology research and teaching. The data is not used to investigate substantive issues. If any of the work were to develop into manuscripts for submission to journals, it would be submitted for review by the Data Access Committee in the usual manner.

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| Project: A678 | Retention of participants over 21 years for three age cohorts. |
| Collaborative Investigators: | * Prof Julie Byles – Research Centre for Generational Health and Ageing, The University of Newcastle * Prof Gita Mishra - Centre for Longitudinal and Life Course Research, The University of Queensland * A/Prof Leigh Tooth - Centre for Longitudinal and Life Course Research, The University of Queensland * Prof Deborah Loxton - Research Centre for Generational Health and Ageing, The University of Newcastle * Dr Xenia Dolja-Gore - Research Centre for Generational Health and Ageing, The University of Newcastle * Dr Melissa Harris - Research Centre for Generational Health and Ageing, The University of Newcastle * Peta Forder – School of Medicine & Public Health, The University of Newcastle * Dr Amy Anderson - Research Centre for Generational Health and Ageing, The University of Newcastle * Isabelle Barnes - Research Centre for Generational Health and Ageing, The University of Newcastle |

Effective participant retention is a challenge for longitudinal cohort studies. Over the past 21 years ALSWH has retained participants in three cohorts who were aged 18-23, 45-50 and 70-75 when the study first collected data in 1996. Women leave the study for a variety of reasons and these differ by cohort. This project examines the predictors of attrition and retention across the original three ALSWH cohorts and examines the effectiveness of various retention methods.

* + 1. **Tobacco, alcohol and other drugs**

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| Project: A705 | Patterns of alcohol consumption over time and their relationship to mortality and breast cancer risk |
| Collaborative Investigators: | * A/Prof Allison Hodge - Cancer Epidemiology Centre, Cancer Council Victoria * Yi Yang - The University of Melbourne * Prof Dallas English - The University of Melbourne * Dr Brigid Lynch - Cancer Council Victoria * Dr Pierre-Antoine Dugue - Cancer Council Victoria * Dr Harindra Jayasekara - Cancer Council Victoria * Prof Gita Mishra – Centre for Longitudinal and Life Course Research, The University of Queensland |

Alcohol consumption is an important modifable risk factor of mortality and breast cancer risk. How alcohol consumption over time affects mortality and risk of breast cancer remains unclear. Our aims are to study the risk of death and incidence of breast cancer in relation to changes in pattern of consumption over time. This will offer a better understanding of how different long‐term drinking profiles from mid‐life onwards are related to subsequent risk of mortality and breast cancer risk.

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| Project: A826 | Changes in body-mass index and smoking status between pregnancies and risk of miscarriage: the Australian Longitudinal Study on Women’s health |
| Collaborative Investigators: | * Dr Maria Christine Magnus - Centre for Fertility and Health, Norwegian Institute of Public Health * Prof Gita Mishra - Centre for Longitudinal and Life Course Research, The University of Queensland * Richard Hockey - Centre for Longitudinal and Life Course Research, The University of Queensland |

In this project, we will examine whether women who smoke or are obese before pregnancy have an increased risk of miscarriage. We will also look at whether changes in smoking habits or weight between pregnancies might influence the risk of miscarriage in the later pregnancy. The information from this project will therefore help clinicians in providing women with recommendations regarding their lifestyle to reduce their risk of miscarriage.

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| Project: A831 | The effects of substance use in Australian women (born 1989-1995; and 1973-1978) on health, wellbeing and mental health. |
| Collaborative Investigators: | * Dr Kylie Bailey - School of Medicine and Public Health, University of Newcastle * Dr Julia Dray - The University of Newcastle * Dr Tazeen Majeed - Research Centre for Gender, Health and Ageing, University of Newcastle * Dr Eliza Skelton - The University of Newcastle * Dr Beth Mah - Hunter New England Area Health * Natalile Sinclair - Macquarie Drug and Alcohol Service, Mid North Coast Area Health |
| ALSWH Liaison | * Peta Forder School of Medicine & Public Health, The University of Newcastle |

Understanding the prevalence of substance use in women as well as changes in use across the generations, will assist health workers and policy makers to provide substance use treatments that are more appropriate for women.This project has three studies that explore self-reported substance use in Australian women in the 1973-1978 and 1989-1995 cohorts. The first study is a longitudinal study and will investigate substance use. The second study will compare substance use between the 73-78 and the 89-95 cohorts. The third study will explore the impacts of substance use on women’s health, wellbeing and mental health. A complete draft of one paper is expected by September 2020.

* + 1. **Weight, nutrition and physical activity**

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| Project: A335A | Rates of weight gain in young adult women: Who is most at risk? |
| Collaborative Investigators: | * Prof Wendy Brown - School of Human Movement and Nutrition Sciences, The University of Queensland * Dr Gregore Mielke – School of Human Movement and Nutritions Sciences, The University of Queensland * Thanya Flores – Federal University of Pelotas, Brazil |

After two decades’ work on obesity prevention, it is important to know whether programs have been effective, by examining the current weight problems of young Australian women. This project aims to compare the differences in annual rate of weight gain of two cohorts of women aged 18-23 in 1996 and 2012/13. It also aims to examine the differences in sociodemographic and health determinants of high weight gain in the two cohorts, to understand whether the determinants have remained consistent from 1996 to 2012/13.

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| Project: A335B | Australia in Balance – factors predicting energy imbalance and weight gain and health costs of these. |
| Collaborative Investigators: | * Prof Annette Dobson - Centre for Longitudinal and Life Course Research, The University of Queensland * Prof Wendy Brown - School of Human Movement and Nutrition Sciences, The University of Queensland * Dr Asad Khan - School of Health & Rehabilitation Sciences, The University of Queensland * Richard Hockey - Centre for Longitudinal and Life Course Research, The University of Queensland * Dr Nicola Burton - School of Applied Psychology, Griffith University * David Fitzgerald - Centre for Longitudinal and Life Course Research, The University of Queensland * Dr Geeske Peeters - Global Brain Health Institute, Trinity College Dublin * Dr Toby Pavey - School of Exercise and Nutrition Sciences, Queensland University of Technology * Dr Bronwyn Clark - School of Human Movement Studies, The University of Queensland * Dr Enamul Kabir - University of Southern Queensland * Dr Sjaan Gomersall - The University of Queensland * Dr Isabella Zhao - Faculty of Health, QUT * Dr Gregore Mielke - School of Human Movement and Nutrition Sciences, The University of Queensland. |

This research investigates the determinants and health outcomes of weight gain. Improved understanding of the determinants of weight gain will inform the development of strategies for weight gain prevention. This is important because weight gain is a precursor of most of the chronic health problems experiences by women in mid-age and beyond.

**Research outcomes:**

*Publications*:

* Weight gain, overweight and obesity: Determinants and health outcomes from the Australian Longitudinal Study on Women’s Health. Gomersall SR, Dobson A & Brown WJ. (2014). Current Obesity Reports, 3, 46-53.
* Cluster analysis of behavioural weight management strategies and associations with weight change in young women: A longitudinal analysis. Madigan CD, Daley AJ, Kabir, E, Aveyard P & Brown W. *International Journal of Obesity*, 2015, 39 (11); 1601-1606.
* Maintaining a healthy BMI: Data From a 16-year study of young Australian women. Brown WJ, Kabir E, Clark B & Gomersall S. *American Journal of Preventive Medicine*, 2016, 51 (6); e165-e178.

*Presentations:*

* Physical activity and weight across the lifespan in women: Lessons for obesity prevention from the Australian Longitudinal Study on Women's Health. Brown WJ. *2015 Conference on Obesity Control in China*, Beijing, China, November 2015.
* BMI transitions in Australian women: Amount and causes of weight change associated with progression from healthy to unhealthy BMI over 16 years. Brown WJ, Kabir E, Gomersall S & Clark B. *ECO2017 - 24th European Congress on Obesity*, Porto, Portugal, 17-20 May 2017.
* What factors should we focus on to prevent progression from healthy to unhealthy BMI in Australian women? Brown WJ, Kabir E, Clark B & Gomersall S. *6th International Conference on Physical Activity and Public Health (ICPAPH),* Bangkok, Thailand, 16-19 November 2016.
* Weight gain and physical activity across the adult life span. Perceptions and paradox in Australian women. (Keynote presentation). Brown WJ. *35th FIMS World Congress of Sports Medicine*, Rio de Janeiro, Brazil, 12 -15 September 2018.
* Sitting less or moving more. What is the best buy for Public Health? (Keynote presentation). Brown WJ. *Science on the Swan 2018: Science Health and Community, From mechanisms to models of care.* Fremantle, WA, 1 - 3 May 2018.

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| Project: A397 | Differential contribution of fruit and vegetable intake to general health in the ALSWH |
| Collaborative Investigators: | * A/Prof Seema Mihrshahi - School of Public Health, The University of Sydney * Putu Novi Arfirsta Dharmayani, School of Public Health, The University of Sydney |
| ALSWH Liaison | * Prof Gita Mishra - Centre for Longitudinal and Life Course Research, The University of Queensland |

The broad objective of this project is to evaluate the differential effects of fruit and vegetables on health status. So far we have done analysis on the contribution of fruit and vegetable intake to development of depression and Type 2 diabetes in mid age women. Future plans include analysis of association with other NCD's and using data from the young cohort. A Masters student (Public Health) began work on this project in 2020.

**Research outcomes**:

*Publications:*

* Challenges and opportunities with communicating the results of studies related to fruit and vegetable consumption for general wellbeing and mental health. Mihrshahi S & Mishra GD. *Australian Epidemiologist,* 2014, 21(2); 8-11.
* Fruit and vegetable consumption and prevalence and incidence of depressive symptoms in mid-age women: Results from the Australian Longitudinal Study on Women's Health. Mihrshahi S, Dobson A & Mishra G. *European Journal of Clinical Nutrition,* 2015, 69 (5) 585-91.

*Presentations:*

* Fruit consumption is associated with a lower risk of depression in mid age women. Mihrshahi S*. 20th International Congress of Nutrition*, Granada, Spain, 15 - 20 September 2013.
* Are depressive symptoms associated with low fruit and vegetable intake in Australian women? Mihrshahi S. *AEA Annual Scientific Meeting 2013: Life Course Approach to Health and Wellbeing,* Brisbane, Qld, 20 - 22 October 2013.

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| Project: A425A | Longitudinal changes in maternal diet |
| Collaborative Investigators: | * Prof Julie Byles – Research Centre for Generational Health and Ageing, The University of Newcastle * Prof Gita Mishra – Centre for Longitudinal and Life Course Research, The University of Queensland * Prof Clare Collins - School of Health Sciences (Nutrition and Dietetics), The University of Newcastle * A/Prof Allison Hodge - Cancer Epidemiology Centre, Cancer Council Victoria * Dr Alexis Hure - School of Medicine and Public Health, The University of Newcastle * Dr Lucy Leigh - Hunter Medical Research Institute * Dr Ellie D’Arcy - Health Intelligence Unit, NSW Health * Dr Christopher Oldmeadow - Clinical Research Design, Information Technology and Statistical Support (CReDITSS) Unit, Hunter Medical Research Institute * Prof Deborah Loxton - Research Centre for Generational Health and Ageing, The University of Newcastle |

This project seeks to evaluate dietary changes that occur longitudinally in women. The project uses self-reported dietary data from ALSWH’s 1973 ‐78 cohort, over two mailed surveys in 2003 and 2009. Women will be classified as preconception, pregnant or not pregnant at each time point and their diets compared to observe the changes that occur as a woman ages or becomes pregnant. Overall, this project will examine the trends in dietary intake during childbearing years. Analyses have begun, and are continuing.

**Research outcomes:**

* The longitudinal association between diet and pregnancy status among Australian women of reproductive age. Gresham E. *10th Asia Pacific Conference on Clinical Nutrition*, Adelaide, SA, 26-29 November 2017.

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| Project: A429 | Disordered eating in adolescence and young adulthood and its consequences forBMI trajectory in midlife |
| Collaborative Investigators: | * Prof Gita Mishra Dobson – Centre for Longitudinal and Life Course Research, The University of Queensland * A/Prof Leigh Tooth – Centre for Longitudinal and Life Course Research, The University of Queensland * Prof Ilona Koupil – Stockholm University & Karolinska Insitutet * Prof Mohammad Baneshi – Centre for Longitudinal and Life Course Research, The University of Queensland |

Disordered eating (binge eating) and dieting is common among young women. It has been shown that clinically diagnosed eating disorders often have very serious health complications but it is not known what the long term consequences of the more prevalent, milder forms of disordered eating are. We will study how disordered eating in childhood, adolescence and young adult age is related to women’s later body size, underweight, overweight, obesity and body satisfaction.

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| Project: A489A | The relationship between obesity and back pain |
| Collaborative Investigators: | * Prof Helena Teede - Monash Centre for Health Research and Implementation, Monash University * Sanjeeva Ranasinha - Monash Centre for Health Research and Implementation, Monash University * Prof Flavia Cicuttini - Department of Epidemiology and Preventative Medicine, Monash University * Dr Donna Urquhart - Department of Epidemiology and Peventative Medicine, Monash University * Dr Yuanyuan Wang - Department of Epidemiology and Peventative Medicine, Monash University * Dr Monira Hussain - Department of Epidemiology and Peventative Medicine, Monash University * Dr Baki Billah - School of Public Health and Preventative Medicine, Monash University * Dr Sharmayne Brady - Monash University * A/Prof Stephane Heritier - Monash University |
| ALSWH Liaison: | * Prof Wendy Brown, School of Human Movement and Nutrition Sciences, The University of Queensland |

The recent Global Burden of Disease study ranked low back pain second only to cancer as the leading cause of disability in Australasia. Moreover, musculoskeletal disease, of which low back pain is the most prevalent and costly, is the 7th National Health Priority Area in Australia. There is increasing evidence that obesity, which is in epidemic proportions, is a risk factor for low back pain. Understanding the inter-relationships and consequences of both low back pain and obesity is likely to help in improving prevention and management of these conditions.

Research outcomes:

*Publications:*

* Predictors of back pain in middle aged women: Data from the Australian Longitudinal Study on Women's Health. (2017). Brady S, Hussain S, Brown W, Heriter S, Wany Y, Teede H, Urquhart D & Cicuttini. *Arthritis Care and Research*, *69*(5); 709-716.
* Relationships between weight, physical activity, and back pain in young adult women. (2016). Brady SR, Hussain SM, Brown WJ, Heritier S, Billah B, Wang Y, Teede H, Urquhart DM & Cicuttini FM. *Medicine*, *95*(19); e3368.
* Course and contributors to back pain in middle-aged women over 9 years: Data from the Australian Longitudinal Study on Women's Health. (2018). Brady SRE, Hussain SM, Brown WJ, Heritier, S, Wang Y, Teede H, Urquhart DM, Cicuttini FM. *Spine*, *43*(23); 1648-1656.

*Presentations, seminars and workshops:*

* Dietary supplement use during preconception and pregnancy: The Australian Longitudinal Study on Women’s Health. McKenna E.*10th Asia Pacific Conference on Clinical Nutrition*, Adelaide, SA, 26-29 November 2017.
* Relationships between weight, physical activity and back pain in young adult women. Brady S, Hussain S, Brown W, Heritier S, Billah B, Wang Y, Teede H, Urquhart D & Cicuttini F. *2015 ACR/ARHP Annual Meeting*, San Francisco, USA, 6-11 November 2015.
* Relationships between weight, physical activity and back pain in young adult women. Brady S, Hussain S, Brown W, Heritier S, Billah B, Wang Y, Teede H, Urquhart D & Cicuttini F. *Osteoarthritis Research Society International (OARSI) 2016 World Congress*, Amsterdam, Netherlands, 31 March - 03 April 2016.
* Relationships between weight, physical activity and back pain in young adult women (poster presentation). Brady S, Hussain S, Brown W, Heritier S, Billah B, Wang Y, Teede H, Urquhart D & Cicuttini F. *Australian Rheumatology Association Annual Scientific Meeting*, Darwin, NT, 30 April - 3 May 2016.
* Relationships between weight, physical activity and back pain in young adult women (poster presentation). Brady S, Hussain S, Brown W, Heritier S, Billah B, Wang Y, Teede H, Urquhart D & Cicuttini F. *European League Against Rheumatism (EULAR) London 2016*, London, UK, 8-11 June 2016.
* Predictors of back pain in middle aged women: Data from the Australian Longitudinal Study on Women’s Health (poster presentation). Brady S, Hussain S, Brown W, Heritier S, Billah B, Wang Y, Teede H, Urquhart D & Cicuttini F. *Osteoarthritis Research Society International (OARSI) 2016 World Congress*, Amsterdam, Netherlands, 31 March - 03 April 2016.
* Predictors of back pain in middle aged women: Data from the Australian Longitudinal Study on Women’s Health (poster presentation). Brady S, Hussain S, Brown W, Heritier S, Billah B, Wang Y, Teede H, Urquhart D & Cicuttini F. *Australian Rheumatology Association Annual Scientific Meeting*, Darwin, NT, 30 April - 3 May 2016.
* Predictors of back pain in middle aged women: Data from the Australian Longitudinal Study on Women’s Health (poster presentation). Brady S, Hussain S, Brown W, Heritier S, Wang Y, Teede H, Urquhart D & Cicuttini F. *European League Against Rheumatism (EULAR) London 2016*, London, UK, 8-11 June 2016.
* The course and contributors to back pain in middle-aged women over nine years: Data from the Australian Longitudinal Study of Womens Health. Brady S. 5th *World Congress on Controversies, Debates & Consensus in Bone, Muscle & Joint Diseases*, Gold Coast, Qld, 31 August-03 September 2017.

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| Project: A489B | The use of radiology in back pain |
| Collaborative Investigators: | * Prof Helena Teede - Monash Centre for Health Research and Implementation, Monash University * Dr Geeske Peeters – Global Brain Health Institute, Trinit College Dublin * Prof Flavia Cicuttini - Department of Epidemiology and Preventative Medicine, Monash University * Dr Donna Urquhart - Department of Epidemiology and Peventative Medicine, Monash University * Dr Yuanyuan Wang - Department of Epidemiology and Peventative Medicine, Monash University * Dr Monira Hussain - Department of Epidemiology and Peventative Medicine, Monash University * Dr Sharmayne Brady - Monash University * A/Prof Stephane Heritier - Monash University |
| ALSWH Liaison: | * Prof Wendy Brown, School of Human Movement and Nutrition Sciences, The University of Queensland |

While it is clear there is an urgent need for innovative and cost-effective interventions for low back pain, these are currently limited and there is widespread concern that radiological investigations are being used excessively with associated high costs. The musculoskeletal bone and joint group of the NHMRC Translation Faculty have identified this as an important area to investigate. The aim of this study is to examine the use of radiological investigation in those with back pain and to explore the determinants of imaging use including age, weight and psychosocial factors.

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| Project: A489D | The use of narcotics in back pain |
| Collaborative Investigators: | * Prof Helena Teede - Monash Centre for Health Research and Implementation, Monash University * Dr Geeske Peeters – Global Brain Health Institute, Trinity College Dublin * Prof Flavia Cicuttini - Department of Epidemiology and Preventative Medicine, Monash University * Dr Donna Urquhart - Department of Epidemiology and Peventative Medicine, Monash University * Dr Yuanyuan Wang - Department of Epidemiology and Peventative Medicine, Monash University * Dr Monira Hussain - Department of Epidemiology and Preventative Medicine, Monash University * Dr Sharmayne Brady - Monash University * A/Prof Stephane Heritier - Monash University |
| ALSWH Liaison: | * Prof Wendy Brown, School of Human Movement and Nutrition Sciences, The University of Queensland |

While it is clear there is an urgent need for innovative and cost-effective interventions for low back pain, these are currently limited and there is widespread concern regarding the increasing use of narcotics to manage back pain. This is associated with significant side effects, including deaths. The aim of this study is to examine the use of narcotics in those with back pain and to explore the determinants of narcotic use including age, weight and psychosocial factors.

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| Project: A505A | Dietary iron and haem iron intakes among women of reproductive age from the Australian Longitudinal Study on Women's Health |
| Collaborative Investigators: | * Dr Amanda Patterson – School of Health Sciences (Nutrition), The University of Newcastle * Dr Alexis Hure - School of Medicine and Public Health, The University of Newcastle * Dr Ellie D’Arcy – Health Intelligence Unit, NSW Health * Dr Liz Holliday – Clinical Research Design, Information Technology and Statistical Support (CReDITSS) Unit, The University of Newcastle * Simon Chiu – Hunter Medical Research Institute * Prof Anthony Perkins – Griffith University * Elle McKenna – Griffith University * Prof Deborah Loxton - Research Centre for Generational Health and Ageing, The University of Newcastle |

Iron is an essential transitional metal and micronutrient; however, deficient and excess levels are associated with adverse outcomes. During pregnancy iron deficiency is associated with preterm birth and low birth weight and elevated iron stores with increased risk of gestational diabetes and preeclampsia. This record-linkage study uses a longitudinal survey to assess low and high levels of dietary iron and haem iron intakes and risk of adverse pregnancy and birth outcomes. We will examine dietary intakes from the 1973-78 ALSWH cohort in 2003 and 2009 and obstetric data from the ALSWH surveys and linked Perinatal Data Collection and Admitted Patients Data Collection in NSW, QLD, WA and ACT.

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| Project: A521A | Dietary intake of women with disordered eating compared to those without disordered eating |
| Collaborative Investigators: | * Prof Gita Mishra Dobson – Centre for Longitudinal and Life Course Research, The University of Queensland * Prof Clare Collins - School of Health Sciences (Nutrition and Dietetics), The University of Newcastle * Dr Alexis Hure - School of Medicine and Public Health, The University of Newcastle * Dr Michelle Blumfield - Faculty of Medicine, Nursing & Health Sciences, Monash University * Dr Leanne Brown - The University of Newcastle * Mrs Deanne Harris - Hunter New England Health * Dr Miriam Grotowski - Department of Rural Health, The University of Newcastle * Jia Yin Ooi - The University of Newcastle |

This study will investigate the dietary intakes of women with disordered eating from the 1973-78 cohort of the ALSWH. A cross-sectional analysis of food frequency data from the 1973-78 cohort at survey 3 in 2003 will compare dietary intakes for those with and without disordered eating. Macro and micronutrient intakes will be compared to the Nutrient Reference Values for Australia and New Zealand. This study will also determine if there are differences in dietary intakes in urban compared to non-urban women with disordered eating. Data has been analysed and a manuscript is now being finalised for publication.

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| Project: A521C | Dietary intake of women with disordered eating compared to those without disordered eating – longitudinal data |
| Collaborative Investigators: | * Prof Gita Mishra Dobson – Centre for Longitudinal and Life Course Research, The University of Queensland * Dr Alexis Hure - School of Medicine and Public Health, The University of Newcastle * Dr Leanne Brown - The University of Newcastle * Deanne Harris - Hunter New England Health * Dr Miriam Grotowski - Department of Rural Health, The University of Newcastle * Chelsea Carle – School of Health Sciences, The University of Newcastle * Dr Jennifer Baldwin - School of Health Sciences, The University of Newcastle * Prof Clare Collins - School of Health Sciences (Nutrition and Dietetics), The University of Newcastle * Dr Michelle Blumfield - Faculty of Medicine, Nursing & Health Sciences, Monash University |

This study will investigate the dietary intakes of women with disordered eating from the 1973‐78 cohort of the ALSWH. A cross‐sectional analysis of food frequency data from the 1973‐78 cohort at survey 3 in 2003 will be compared to dietary intakes for those with and without disordered eating with data from survey 5 in 2009. Macro and micronutrient intakes will be compared to the Nutrient Reference Values for Australia and New Zealand. This study will also determine if there are differences in dietary intakes in urban compared to non‐urban women with disordered eating.

**Research outcomes:**

* A six-year follow-up of women with restrictive eating in the Australian Longitudinal Study on Women’s Health (poster presentation). Carle C, Brown L, Mishra G, Grotowski M & Hure A. *University of Newcastle, School of Health Sciences Research Day*, Newcastle, NSW, 30 June 2017.
* A six-year follow-up of women with restrictive eating in the Australian Longitudinal Study on Women’s Health. Carle C, Brown L, Misrha G, Grotowski M & Hure A. *Australian Society for Medical Research Newcastle Satellite Scientific Meeting*, Newcastle, NSW, 2 June 2017.

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| Project: A525 | Causal inference of smoking, nutrition, alcohol and physical activity on weight: A sibling analysis |
| Collaborative Investigators: | * Prof Julie Byles - Centre for Generational Health and Ageing, The University of Newcastle * Jennifer Powers - Research Centre for Generational Health and Ageing, The University of Newcastle * Dr Catherine Chojenta - Research Centre for Generational Health and Ageing, The University of Newcastle * Prof Deborah Loxton - Research Centre for Generational Health and Ageing, The University of Newcastle * Dr Alexis Hure - School of Medicine and Public Health, The University of Newcastle * Dr Melissa Harris - Research Centre for Generational Health and Ageing, The University of Newcastle * Peta Forder - School of Medicine & Public Health, The University of Newcastle * Dr Amy Anderson - Research Centre for Generational Health and Ageing, The University of Newcastle * Dr Ellie D'Arcy - Health Intelligence Unit, NSW Health * Dr Liz Holliday - Clinical Research Design, Information Technology and Statistical Support (CReDITSS) Unit, The University of Newcastle |

Residual confounding is a major problem in observational studies, meaning that results must be interpreted with caution. Data from siblings provides the opportunity to better control for family characteristics, thereby reducing residual confounding and increasing causal inference. Sibling analysis allows for a separation of within-family effects from between-family effects and simultaneous estimation of both. We will apply sibling analysis to birth weight data from the state-based Perinatal Data Collections linked to the 1973-1978 ALSWH cohort. We intend to focus on the role of four key modifiable lifestyle factors: smoking; nutrition (diet and weight); alcohol; and physical activity, on birth weight.

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| Project: A655 | Association between insomnia and total energy intake and diet quality |
| Collaborative Investigators: | * Dr Elizabeth Stojanovski - School of Mathematical & Physical Sciences, University of Newcastle * A/Prof Mark McEvoy - Centre for Clinical Epidemiology & Biostatistics, The University of Newcastle * Dr Amani Hamad Alhazmi - King Khalid University * Dr Jency Thomas – La Trobe University * Prof Deborah Loxton - Research Centre for Generational Health and Ageing, The University of Newcastle |

In this project the quantitative survey data will be interrogated to examine whether women (1946-51 cohort) with insomnia symptoms had greater energy intake and/or a lower diet quality as assessed with the use of diet quality score.

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| Project: A689 | Supplement intake for women of reproductive age (preconception or pregnant) from the Australian Longitudinal Study on Women’s Health. |
| Collaborative Investigators: | * Dr Alexis Hure - School of Medicine and Public Health, The University of Newcastle * Dr Lucy Leigh - Hunter Medical Research Institute * Dr Ellie D’Arcy - Health Intelligence Unit, NSW Health * Prof Anthony Perkins - Griffith University * Elle McKenna - Griffith University * Prof Deborah Loxton - Research Centre for Generational Health and Ageing, The University of Newcastle |

During pregnancy, there is an increased requirement for specific micronutrients to support foetal growth and development as well as maternal metabolism. Suboptimal nutrition during this time, may lead to impaired foetal growth and an increased risk of adverse outcomes. The proposed project seeks to evaluate and explore the trends in nutrient supplement intake in women of reproductive age, across their childbearing years and assess the benefits and harms on pregnancy and birth outcomes. The project will use self-reported medication data from the 1973-78 ALSWH cohort, reported over three surveys in 2009 (Survey 5), 2012 (Survey 6) and 2015 (Survey 7). Women will be classified as preconception, pregnant or not pregnant at each time point. A follow-up manuscript is in preparation.

**Research outcomes:**

*Publications:*

* Dietary supplement use during preconception: The Australian Longitudinal Study on Women’s Health, McKenna E, Perkins A, Hure J, Gresham E. *Nutrients, 2017,* 9(10); E1119.

*Presentations, seminars and workshops:*

* Dietary supplement use during preconception and pregnancy: The Australian Longitudinal Study on Women’s Health. McKenna E.*10th Asia Pacific Conference on Clinical Nutrition*, Adelaide, SA, 26-29 November 2017.

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| Project: A709 | Does diet quality predict Body Mass Index (BMI) and weight gain in women of reproductive age? |
| Collaborative Investigators: | * Prof Julie Byles – Research Centre for Generational Health and Ageing, The University of Newcastle * Prof Clare Collins - School of Health Sciences (Nutrition and Dietetics), The University of Newcastle * A/Prof Allison Hodge - Cancer Epidemiology Centre, Cancer Council Victoria * Dr Alexis Hure - School of Medicine and Public Health, The University of Newcastle * Dr Lucy Leigh - Hunter Medical Research Institute * Dr Ellie Gresham - Health Intelligence Unit, NSW Health * Dr Christopher Oldmeadow - Clinical Research Design, Information Technology and Statistical Support (CReDITSS) Unit, Hunter Medical Research Institute * Prof Gita Mishra - Centre for Longitudinal and Life Course Research, The University of Queensland |

The proposed project seeks to evaluate dietary changes that occur longitudinally in women as a predictor of BMI and weight gain. The project will use self‐reported dietary data from ALSWH’s young cohort (1973‐78), over two mailed surveys in 2003 and 2009. Women will be classifed according to BMI (underweight, healthy, overweight, and obese) at each time point and their diets compared to observe the changes that occur overtime. Preliminary analyses are complete and the project team are now updating demographic details for the cohort prior to beginning manuscript preparation.

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| Project: A718 | How are different patterns of physical activity, sleep and diet related to health status and do these relationships differ by socio‐demographics? |
| Collaborative Investigators: | * A/Prof Mitch Duncan - School of Medicine and Public Health, The University of Newcastle * Prof Wendy Brown - School of Human Movement and Nutrition Sciences, The University of Queensland |

Physical activity, sleep and dietary behaviours are related to various health outcomes including diabetes, cardiovascular disease, and quality of life. Little is known however about the combined patterns of these behaviours, how the patterns differ between different population groups or influence risk of ill health. This study will identify the different patterns of these behaviours in middle aged women, examine how these behaviours change over time and how the patterns influence risk of diabetes, cardiovascular disease, poor quality of life and all cause mortality. The study will also examine if the relatoionship between behaviour patterns and health outcomes differ family structure (married, caring responsibilities) occupation (e.g., shift work, employment level, ASCO category), education, socio‐economic status (e.g., income, financial stress), and residential location (e.g., metropolitan, regional, remote). Findings will help to better understand how these complex behaviours influence health and enable health promotion efforts to be directed to those in greatest need.

**Research outcomes:**

* Physical activity, sitting, sleep and health (symposium presentation). *Sleep Down Under Conference* *2018*, Brisbane.
* Improving the understanding of sleep, physical activity and diet as CVD risk factors (invited presentation). Duncan M. *2019* *Cardiac Society of Australian and New Zealand*, Adelaide August 2019..

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| Project: A735 | Obesity-related behaviours of children with and without a family history of lifestyle diseases |
| Collaborative Investigators: | * Prof Gita Mishra - Centre for Longitudinal and Life Course Research, The University of Queensland * A/Prof Kylie Hesketh - School of Exercise and Nutrition Sciences, Deakin University * Dr Katherine Downing - Institute for Physical Activity and Nutrition (IPAN), Deakin University * Prof Jo Salmon - Institute for Physical Activity and Nutrition (IPAN), Deakin University * Prof Anna Timperio - Institute for Physical Activity and Nutrition (IPAN), Deakin University |

Physical inactivity, sedentary behaviour and poor sleep are independently associated with cardiovascular disease and type 2 diabetes, and contribute substantially to the global burden of chronic disease. However, little is known about whether the profile of children’s obesity-related behaviours (physical activity, sedentary behaviour and sleep is different for children with and without family history of these diseases. This study aims to assess differences in BMI and obesity-related behaviours of children with and without a family history of lifestyle diseases (type 2 diabetes, heart disease and hypertension).

**Research outcomes:**

* Differences in BMI and obesity-related movement behaviours of children with and without a family history of lifestyle diseases. Downing KL, Mishra GD, Salmon J, Timperio A & Hesketh KD. *2019 International Society of Behavioral Nutrition and Physical Activity (ISBNPA) Annual Meeting*, Prague, Czech Republic, 4 - 7 June 2019.

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| Project: A760 | The effects of vigorous intensity exercise during pregnancy and postpartum on maternal and infant outcomes |
| Collaborative Investigators: | * Dr Gregore Mielke - School of Human Movement and Nutrition Sciences, The University of Queensland. * Dr Emma Beckman - School of Human Movement and Nutrition Studies, The University of Queensland * Dr Kassia Beetham - Australian Catholic University * Dr Jemima Spathis - School of Exercise Science, Australian Catholic University * Dr Samantha Hoffmann - Centre for Sport Research, School of Exercise and Nutrition Sciences, Deakin University * Prof Vicki Clifton - Mothers and Babies Theme, Mater Medical Research Institute, The University of Queensland |

The role of exercise and patterns of exercise, (particularly vigorous intensity exercise), during pregnancy and postpartum are not well understood. Previous research has indicated the importance of exercise in this population, yet there is little research investigating the relationship between exercise patterns, and maternal and infant outcomes. The aim of this study is to evaluate the rates and intensity of physical activity during pregnancy, and the implications on health and birth outcomes. A secondary outcome is to review the role of exercise participation on breastfeeding duration.

All data has been analysed and a manuscript is in the final stages of construction. Submission to a journal is expected by the end of the year.

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| Project: A792 | Physical activity, sitting time and BMI: relationships with health care services, medicines, and health costs over 20 years in young and mid‐age Australian women |
| Collaborative Investigators: | * Dr Gregore Mielke - School of Human Movement and Nutrition Sciences, The University of Queensland. * Prof Grace Gomes - The University of Queensland * Dr Jamile Sanches Codogno - Sao Paulo State University |
| ALSWH Liaison | * Prof Wendy Brown - School of Human Movement and Nutrition Sciences, The University of Queensland |

Several ALSWH analyses have already examined associations between physical activity, siting time and BMI with overall health care costs, both cross‐sectionally and over shorter time periods. In this work we would like to examine the CUMULATIVE effects of these variables from 1996 to 2015/2016, and their JOINT associations with indicators of health service use, medicines and costs, in the 1973‐78 and 1946‐51 cohorts). (For example, we know that costs are higher for women with high BMI; by how much does physical activity attenuate this effect? We suspect that sitting time may also be associated with higher costs, but is this relationship exacerbated by high BMI or attenuated by high physical activity?). Instead of focussing only on overall costs, in this work we would like to examine the linked data to assess relationships with actual use of health services (in broad groups, for example, annual number of GP visits, specialist visits, use of allied health services), PBS medicines (including examination of the top twenty most frequently used by each cohort), and hospital services. This study will analyse how patterns of physical activity, siting time and BMI over 15‐16 years are associated with use of health services and costs in the last 3‐4 years (depending on availability of linked data). In other words, we want to see whether patterns of behaviours in the earlier years predict later use of health services, medicines, and costs in the young (73‐78) and mid‐age (46‐51) cohorts. The results will inform the development of prevention and promotion strategies which may reduce health care costs in the long term.

**Research outcomes:**

* Twelve year trajectories of physical activity and health costs in mid-age Australian women. Gomes GA, Brown WJ, Codogno JS & Mielke GI. *International Journal of Behavioral Nutrition and Physical Activity*, 17:Article No: 101 (2020). <https://doi.org/10.1186/s12966-020-01006-6>

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| Project: A806 | The role of healthy and unhealthy dietary patterns on depression in Australian women. |
| Collaborative Investigators: | * Megan Lee - Southern Cross University * Dr Joanne Bradbury - Southern Cross University * A/Prof Jacqui Yoxall - Southern Cross University * A/Prof Sally Sargeant - Southern Cross University * A/Prof Allison Hodge - Cancer Epidemiology Centre, Cancer Council Victoria |
| ALSWH Liaison | * Prof Gita Mishra - Centre for Longitudinal and Life Course Research, The University of Queensland |

The role of nutrition in chronic lifestyle diseases such as cardiovascular disease and diabetes is well known. However, the role of nutrition in mental health is lesser known. In Australia, over 3 million people live with the symptoms of depression, with more women experiencing symptoms than men. Research suggests that dietary patterns rich in fresh fruit, vegetables, wholegrains, nuts, seeds, legumes, lean meat and water may protect against depressive symptoms and that dietary patterns high in processed, refined and sugary foods could contribute to the symptoms of depression. This project aims to examine the relationship between Australian womens dietary patterns and depression.

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| Project: A038B | Relationship between Body Mass Index, diet quality, physical activity and health service utilisation: An updated analysis |
| Collaborative Investigators: | * Prof Clare Collins - School of Health Sciences (Nutrition and Dietetics), The University of Newcastle * Dr Amanda Patterson – School of Health Sciences (Nutrition and Dietetics), The University of Newcastle * Dr Alexis Hure - School of Medicine and Public Health, The University of Newcastle * Dr Tracy Burrows – School of Health Sciences, The University of Newcastle * Dr Jennifer Baldwin - School of Health Sciences, The University of Newcastle * Dr Rebecca Haslem - The University of Newcastle * Peta Forder - School of Medicine & Public Health, The University of Newcastle * Dr Lee Ashton – Priority Research Centre for Physical Activity and Nutrition, The University of Newcastle |
| ALSWH Liaison | * Prof Deborah Loxton – Research Centre for Generational Health & Ageing, The University of Newcastle |

This project is about evaluating whether healthy eating is associated with reduced health care costs. So far we have shown consuming a greater variety of vegetables to be predictive of lower 10-year cumulative Medicare Charges, Benefit, Gap and fewer Claims. We wish to check whether this relationship is strengthening over time, or not and to describe the relationship for those who improve their diet quality (or worsen) over time. This research may help to identify appropriate dietary targets associated with reduced health care costs. Further evaluations in other studies are needed so that modelling of potential future cost savings can be conducted. The results will inform a policy brief related to diet quality and healthcare costs over time.

**Research outcomes:**

*Publications:*

* Change in diet quality over 12 years in the 1946–1951 cohort of the Australian Longitudinal Study on Women’s Health. Baldwin JN, Forder PM, Haslam RL, et al. *Nutrients*, 2020; 12 (1) 147.

*Presentations*:

* Change in diet quality and 15-year healthcare costs in the mid-age cohort of the Australian Longitudinal Study on Women’s Health. Baldwin JN\*, Forder P, Haslam R, Hure A, Loxton DJ, Patterson AJ & Collins CE. *International Society for Behavioral Nutrition and Physical Activity(ISBNPA) XChange June 2020* (conducted online). Awarded best oral presentation for the Aging SIG
* Diet quality and 15-year healthcare costs: Results from the Australian Longitudinal Study on Women's Health. Baldwin JN\*, Forder P, Haslam R, Hure A, Loxton DJ, Patterson AJ & Collins CE. Dietitians Australia Conference Conference abstract (online). August 2020). Note – this will be published in a conference journal supplement later this year.
  + 1. **Social factors in health and well being**

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| Project: A436 | Longitudinal analysis of time stress in younger and mid-aged Australian women. |
| Collaborative Investigators: | * Prof Julie Byles - Centre for Generational Health and Ageing, The University of Newcastle * Prof Deborah Loxton - Research Centre for Generational Health and Ageing, The University of Newcastle * Dr Meredith Tavener - Research Centre for Generational Health and Ageing, The University of Newcastle * Peta Forder - School of Medicine & Public Health, The University of Newcastle * Dr Tazeen Majeed - Research Centre for Gender, Health and Ageing, University of Newcastle * Dr Steffen Otterbach - University of Hohenheim |

Time is an important issue for most people. How often have we tried to ‘save time’, wished for ‘more time’, and feel we ‘never have enough time’. Increasing work pressures and family demands means that people can feel that they are ‘running out of time’ more and more. Framed against productive ageing and role theory, this work will compare women from the younger and mid-aged cohorts across five survey points, involving: (1) latent class analysis and structural equation modelling to identify the social and health related determinants of time stress, and (2) analysis of qualitative data to help interpret differences in the younger and mid-aged women over time.

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| Project: A638 | Young Australian mothers perceptions of life and learning. |
| Collaborative Investigators: | * Dr Catherine Chojenta - Research Centre for Generational Health and Ageing, The University of Newcastle * Prof Deborah Loxton - Research Centre for Generational Health and Ageing, The University of Newcastle * Christine Sefton - The University of Newcastle |

The project will explore individual perceptions, feelings and behaviour of young mothers (<25 years of age) with respect to salient life experiences. Of particular interest is the perspective of young mothers with respect to the perceived opportunities for learning either through traditional formal education or informal education and the importance of these for well-being. An exploration of qualitative data will identify, describe and compare thematic patterns between mothers of different ages, generations and socioeconomic indicators. A manuscript has been submitted to *Social Science and Medicine* and is under review.

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| Project: A697A | Sexual fluidity amongst Australian women over the life course. |
| Collaborative Investigators: | * Alice Campbell – Institute for Social Science Research, The University of Queensland * Dr Francisco Perales – Institute for Social Science Research, The University of Queensland * Prof Janeen Baxter – Institute for Social Science Research, The University of Queensland * Prof Gita Mishra – Centre for Longitudinal and Life Course Research, The University of Queensland |

In the past, it was assumed that a person’s sexual orientation stayed the same throughout their life. However, it has recently been documented that a significant number of men and (particularly) women report changes to their sexual orientation over time. The aim of this project is to provide first‐time, systematic Australian evidence on how common changes in sexual orientation are, what factors make these more and less likely to occur, their timing and their impact on women’s life outcomes.

**Research outcomes**:

*Publications:*

* Campbell A, Perales F & Baxter J. (2020). Sexual Minority women in longitudinal survey research: Is attrition a problem? *Archives of Sexual Behavior*, 49, 1443–1461. <https://doi.org/10.1007/s10508-020-01669-z>

*Conference, seminars and workshops:*

* Leveraging large-scale panel data to study sexual orientation: Two case studies. Campbell A, Perales F & Baxter J. *Society for Longitudinal and Life Course Studies Conference*, Milan, Italy, 9-11 July 2018.
* Sexual-identity fluidity and depression in a national cohort of young Australian women. Campbell A. *Australian Public Health Conference 2019*, Adelaide, SA, 17 September 2019.
* Patterns and prevalence of sexual identity change: Evidence from two cohorts of Australian women. Alice Campbell, Francisco Perales, & Janeen Baxter. *International Academy of Sex Researchers 2020 Virtual Meeting,* 29 July 2020.

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| Project: A736 | Screen time in Australian children: Socioeconomic, maternal, parenting, time use and family environment factors associated with meeting screen time guidelines (Analysis of data from the MatCH study). |
| Collaborative Investigators: | * Prof Gita Mishra - Centre for Longitudinal and Life Course Research, The University of Queensland * A/Prof Leigh Tooth - School of Public Health, The University of Queensland * Richard Hockey - Women's Health Australia, University of Queensland * Dr Katrina Moss - School of Public Health, The University of Queensland |

Recently released guidelines from the Australian Government recommends maximum daily screen time for children aged 0 - 1, 1 - 2, 3 - 5 and 5 - 12 years. Previous Australian research has linked screen time in children with socioeconomic factors in their parents (for example years of education) as well as with parenting style and home environment, however the majority of this research has investigated this issue in older children, has not linked long standing maternal factors and has not examined associations between and within families. This research aims to determine the associations between children’s screen time and sleep, diet, physical activity, physical and cognitive development, quality of life, behaviour, maternal factors, parenting styles and the home environment.

**Research outcomes:**

*Publications:*

* Adherence to screen time recommendations for Australian children aged 0–12 years. Tooth L, Moss K, Hockey R & Mishra G. *Medical Journal of Australia*, 2019; 211(4): 181-182. <https://doi.org/10.5694/mja2.50286>.

*Presentations:*

* How adherence to Australian screen time guidelines differs by age in Australian children aged 0 to 12 years. Tooth L. *Australasian Epidemiological Association (AEA) Annual Scientific Meeting 2019*, Brisbane, QLD, 23-25 October 2019.

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| Project: A755 | Generational differences in mental, sexual, reproductive, maternal and child health among Australian sexual minority women (lesbian, bisexual, mostly heterosexual). |
| Collaborative Investigators: | * A/Prof Ruth McNair - Dept of General Practice, University of Melbourne * Prof Jayne Lucke - Australian Research Centre in Sex, Health & Society (ARCSHS), La Trobe University * Prof Tonda Hughes - College of Nursing, University of Illinois * A/Prof Leah East - University of New England * A/Prof Bethany Everett - University of Utah * Dr Cindy Woods - University of New England * Dr Helena Menih – University of New England * Dr Suzie Cosh – University of New England * Prof Debra Jackson – University of Technology Sydney |

This project aims to examine generational differences in mental, sexual, reproductive, maternal and child health between heterosexual and sexual minority women (lesbian, bisexual, mostly heterosexual; SMW). Previous analysis indicates that SMW are more likely than heterosexual women to have poorer mental health, higher substance use, lower satisfaction with healthcare and are at an increased risk of experiencing STIs andunintended pregnancy. Sexual minority status is also associated with preconception risk behaviours that can have a negative impact on maternal, infant and child outcomes. This project will examine if these riskbehaviours and health disparities continue to exist and impact on maternal and child health outcomes through comparing differences among three cohorts of women. The team has experienced increased delays in completing this project as a result of employment changes, increased university responsisbility and COVID 19.

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| Project: A785 | Reproductive events and workforce participation across the life course. |
| Collaborative Investigators: | * Prof Gita Mishra - Centre for Longitudinal and Life Course Research, The University of Queensland * A/Prof Leigh Tooth - School of Public Health, The University of Queensland * Dr Ingrid Rowlands - School of Public Health, The University of Queensland * Prof Mohammad Baneshi – Karman Medical Institute, Iran |

In Australia, women’s workforce participation is lower than men’s. Despite a narrowing of the gap in recent years, more men than women are in the workforce from age 20 onwards. For example, in 2016-17, 45% of employed women worked part time compared with 16% of employed men. This research aims to examine the role of gender specific health issues affecting women, such as reproductive events including child-birth,adverse pregnancy outcomes (miscarriage, stillbirth, preterm birth, low birth weight), disorders such as polycystic ovary syndrome,endometriosis, or symptoms including severe period pain, heavy menstrual bleeding or irregularity, and menopause (menopausal transitions and symptoms) on workforce participation at different stages of, and over, the life course.

* + 1. **Oral health**

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| Project: A670 | Oral Health - Findings from the Australian Longitudinal Study of Women's Health |
| Collaborative Investigators: | * A/Prof Ratilal Lalloo - School of Dentistry, The University of Queensland * Chris Sexton - School of Dentistry, The University of Queensland * Prof Gita Mishra - Centre for Longitudinal and Life Course Research, The University of Queensland |

Oral health studies are generally cross-sectional and seldom report longitudinal follow-up of study participants. The Australian Longitudinal Study of Women's Health offers an opportunity to measure the oral health across a number of surveys, where the same/similar questions were asked; to assess changes in self-reported oral health status and relationships between surveys and potential determinants of oral health, such as socioeconomic status, private health insurance, location, smoking and menopause.

With calls to expand Medicare to include dental services and the noted fiscal costs associated with such an expansion, it is important to understand what the outcomes might be. The addition of the Chronic Disease Dental Scheme (CDDS) on Medicare between 2007 and 2012/2013 represented an expansion of public health insurance to cover dental services for those with a chronic disease. This study will seek to identify the drivers of program participation and whether the CDDS increased the utilisation of dental services for the intended population.

**Research outcomes:**

* Considerations for the analysis of longitudinal data. Sexton C, Lalloo R & Mishra G.*International Association for Dental Research Asia Pacific Region (IADR-APR) 2019*, Brisbane, QLD, 28 - 30 November 2019.
  + 1. **Abuse**

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| Project: A237A | The long term implications of intimate partner violence for health and social support among mid-older Australian women |
| Collaborative Investigators: | * Prof Deborah Loxton - Research Centre for Generational Health and Ageing, The University of Newcastle * Peta Forder – School of Medicine and Public Health, The University of Newcastle * Dominic Cavenagh - Research Centre for Generational Health and Ageing, The University of Newcastle * Dr Amy Anderson - Research Centre for Generational Health and Ageing, The University of Newcastle |

Experiences of intimate partner violence (IPV) have a significant impact on women’s physical, mental and emotional health. These poorer health outcomes have been shown to continue long after the violence has ceased. Therefore, the cessation of violence alone may not rectify the health impact of experiences of violence. It is unknown whether time alone can heal the physical, psychological and emotional impact of IPV, or if increased social support or other demographic factors may assist in reducing poor health outcomes after IPV. This project will examine health outcomes of the 1946-51 and 1973-78 cohorts of women after the cessation of IPV, factors associated with these outcomes over time and whether social support plays a significant role in reducing the ongoing adverse health outcomes after the cessation of IPV.

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| Project: A607B | Adverse childhood experiences among Australian women. |
| Collaborative Investigators: | * Prof Deborah Loxton - Research Centre for Generational Health and Ageing, The University of Newcastle * Dr Xenia Dolja-Gore - Research Centre for Generational Health and Ageing, The University of Newcastle * Peta Forder - School of Medicine & Public Health, The University of Newcastle * A/Prof Jan Coles - Department of General Practice, Monash University * Natalie Townsend - Research Centre for Gender, Health and Ageing, The University of Newcastle * Dominic Cavenagh - Research Centre for Genderational Health & Ageing, The University of Newcastle |

The Adverse Childhood Experiences (ACE) scale has been widely used in the U.S. population. Findings have indicated that adults who have experienced adversity in childhood have poorer overall health and are more likely to use tobacco, illicit drugs and use alcohol at risky levels. The ACE scale was pilot tested with the 1989-1995 cohort in 2014 and was rolled out to the main 1989-1995 cohort in 2015. This current project will examine the endorsement and validity of the ACE scale among the 1989-1995 cohort participants, with further examination of the prevalence of childhood abuse and trauma and its correlates. The examination of the prevalence of childhood abuse and trauma and its correlates will also be extended to the 1973-78 cohort and 1946-51 cohort. Medicare data will also be used to examine the costs of healthcare as they relate to experiences of childhood adversity.

**Research outcomes:**

*Publications:*

* Adverse childhood experiences and healthcare costs in adult life. Loxton D, Townsend N, Dolja-Gore X, Forder P, Coles J. *Journal of Child Sexual Abuse*, 2019, 28(5); 511-525.
* Family, Domestic, and Sexual violence: Compendium of infographics – Findings from the Australian Longitudinal Study on Women’s Health. Loxton D, Townsend N, Barnes I, Forder P. Report prepared for the Australian Government of Social Services, September 2019.
* Family, Domestic and Sexual Violence: Interactive layered maps - Findings from the Australian Longitudinal Study on Women’s Health.Loxton D, Tegegne TK, Forder P, Townsend N, Graves A. Report prepared for the Australian Government Department of Social Services, September 2019.
* Family, Domestic and Sexual Violence: Compendium of maps - Findings from the Australian Longitudinal Study on Women’s Health.Loxton D, Tegegne TK, Forder P, Townsend N, Graves A. Report prepared for the Australian Government Department of Social Services, September 2019.
* Family, Domestic and Sexual Violence: Mini report of infographics - Findings from the Australian Longitudinal Study on Women’s Health. Loxton D, Townsend N, Barnes I, Forder P. Report prepared for the Australian Government Department of Social Services, September 2019.

*Presentations:*

* Adverse Childhood Experiences: Findings from the Australian Longitudinal Study on Women’s Health. Loxton D. *16th Annual Hawai’i International Summit on Preventing, Assessing and Treating Trauma Across the Lifespan.* Hawaii Convention Centre, Honolulu, April 23-26 2019.
* Adversity. Loxton D. *Research Centre for Generational Health and Ageing Research Expo*. Hunter Medical Research Institute, Newcastle, November 2017.
* The long-term health and wellbeing consequences of violence against women. Loxton D. *Research Centre for Generational Health and Ageing Violence against Women Seminar and Workshop*, Newcastle, September 2018.
* Women and violence across the life course. Loxton, D. Invited talk*, Australian Institute of Health and Welfare*. Canberra. February 2019.
* Women and violence across the life course. Loxton D. Invited talk, *Inequality and Health Group*, Hunter Medical Research Institute, Newcastle, June 2019.
* Violence and health across the life course. Loxton D, Forder P, Townsend N. *Australian Longitudinal Study on Women’s Health Policy Symposium Program: Linking data to inform policy*, Australian Government Department of Health, Sirius Building, Canberra, 29 November 2019.
* Research for the Department of Social Services: 2017-2019. Loxton D, Forder P, Townsend N. Department of Social Services, Enid Lyons Building, Canberra, 28 November 2019.

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| Project: A717A | The impact of historical intimate partner violence on mental health outcomes and elder abuse in older women |
| Collaborative Investigators: | * DMonica Cations - Flinders University * Dr Kate Laver - Flinders University * A/Prof Hannah Keage – School of Psychology, Social Work and Social Policy, University of South Australia * Prof Deborah Loxton - Research Centre for Generational Health and Ageing, The University of Newcastle |

Intimate partner violence (IPV) negatively affects the physical and mental wellbeing of victims even many years after the abuse has ended. However, it is not known whether the impacts of IPV at any time over the life course continue into older age, and put older women at risk for psychological illness or elder abuse. This analysis will explore the effect of historical IPV on risk for psychological illness and elder abuse over 15 years in older women.

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| Project: A770 | Markers of cognitive decline in the written language of older Australian women / The terminology of elder abuse among older Australian women, living with and without dementia, in the context of VASS identified risk factors and experience of abuse: A mixed methods study. |
| Collaborative Investigators: | * Prof Julie Byles - Centre for Generational Health and Ageing, The University of Newcastle * Prof Deborah Loxton - Research Centre for Generational Health and Ageing, The University of Newcastle * Kim Colyvas – School of Mathematical & Physical Sciences, The University of Newcastle * Dr Elizabeth Spencer - School of Humanities & Social Sciences, The University of Newcastle * Dominic Cavenagh - Research Centre for Genderational Health & Ageing, The University of Newcastle * Stephanie Lithgow - The University of Newcastle |

*Study 1* (Markers of cognitive decline in the written language of older Australian women) Synopsis: Women living with dementia may lose capacity to control life choices: living arrangements, activities, medical treatments, and management of assets. With an increasing focus on abuse of the human rights of older people, suggested protective solutions include documented planning for future decisions. This study examines the written language of older women at various stages of cognitive functioning (no/pre-decline, early decline, later decline), to identify linguistic markers of cognitive decline. This new knowledge may lead to the development of more sensitive assessment tools and earlier detection of dementia, which will allow for proactive medical intervention as well as protective life planning.

*Study 2* (The terminology of elder abuse among older Australian women, living with and without dementia in the context of VASS identified risk factors and experience of abuse: A mixed methods study) Synopsis: Accurate detection is fundamental to addressing elder abuse. Globally, women have a higher likelihood of experiencing elder abuse than men, and are more likely to report it, but they may not use words like “abuse”. Dementia, a risk factor for abuse, may further inhibit women from overtly reporting. This study will qualitatively examine the terminology of abuse among older women, including those living with dementia. Additionally, risk factors (asd identified by the VASS items) will be examined alongside the qualitative data to give additional context to the terminology used by women. Additional contextual characteristics will be included (historical abuse, family/marriage contexts and reporting of physical and sexual abuse in the last 3 years). Findings will contribute to the evaluation of current methods of elder abuse detection for older women living with and without dementia, and inform possible education programs for health professionals and others working with older women.

**Research outcomes**

* Elder abuse: An exploration of the terminology of abuse among older Australian women from the Australian Longitudinal study on women’s health (ALSWH). Lithgow S. *17th National Conference of Emerging Researchers in Ageing*, Caulfield, VIC, 19 - 20 November 2018.
* Markers of cognitive decline in the written language of older Australian women. Lithgow S. *18th National Conference of Emerging Researchers in Ageing*, UNSW Randwick Campus, NSW, 4-5 November 2019

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| Project: A774A | The impact of maternal adverse childhood experiences and violence in adulthood on women’s health, parenting, and child outcomes. |
| Collaborative Investigators: | * Dr Catherine Chojenta - Research Centre for Generational Health and Ageing, The University of Newcastle * Prof Deborah Loxton - Research Centre for Generational Health and Ageing, The University of Newcastle * Dr Nicole Reilly - Research Centre for Generational Health and Ageing, The University of Newcastle * Peta Forder - School of Medicine & Public Health, The University of Newcastle * Isabelle Barnes - Research Centre for Generational Health and Ageing, The University of Newcastle * Tahir Ahmen Hassen - Research Centre for Generational Health and Ageing, The University of Newcastle * Nick Egan - Research Centre for Generational Health and Ageing, The University of Newcastle |

Research has shown that intimate partner violence adversely impacts on the physical and mental health of women over the life course and can have deleterious effects on outcomes for children exposed to this violence. Studies have also demonstrated a generational effect on offspring of mothers who experienced adverse childhood experiences (ACES) while growing up. This project will align these fields of research by examining the potential cumulative impact of maternal exposure to adverse childhood experiences and violence across the life course on outcomes for women in the 1973-1978 cohort and their children.

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| Project: A647 | The longitudinal impact of intimate partner violence on Australian women's mental health, employment, health service use and personal interactions |
| Collaborative Investigators: | * A/Prof Reinie Cordier - Faculty of Health Sciences, Curtin University * Dr Yu-Wei Chen - Faculty of Health Sciences, The University of Sydney * Prof Donna Chung - School of Occupational Therapy and Social Work, Curtin University * Prof Deborah Loxton - Research Centre for Generational Health and Ageing, The University of Newcastle |

This project aims to investigate the long-term impact of intimate partner violence on women in the following domains: 1. Women's mental health and wellbeing 2. Women's ability to work 3. Women's utilisation of health services 4. Women's personal/social interactions The dependant variable that will be used for the study is the question about abuse that was asked in waves 2 and 3 in the young cohort and the partner abuse question (community composite abuse scale) waves 4-6 in the young cohort. We also aim to investigate the psychometric properties of the community composite abuse scale using Rasch analysis.

**Research outcomes:**

* The influence of intimate partner violence on young women’s ability to work. Cordier R, Chen Y-W, Chung D & Loxton D. *World Federation of Occupational Therapy Congress,* Cape Town, South Africa, 2018.

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| Project: A757A | The health system costs of women who experience domestic violence |
| Collaborative Investigators: | * Prof Deborah Loxton - Research Centre for Generational Health and Ageing, The University of Newcastle * Peta Forder - School of Medicine & Public Health, The University of Newcastle * Dr Jananie William – School of Finance, Australian National University * Dr Bronwyn Loong – Australian National University * Dr Dana Hanna – Research School of Economics, Australian National University |

Our project investigates the health services used by women who experience domestic violence and the corresponding health system costs of these services. The health system costs refer to government-funded expenditure through Medicare and relate to both in-patient hospital and out-of-hospital care (such as general practitioner visits). We will also consider costs through the Pharmaceutical Benefits Scheme. The results will be used to inform health policy and domestic violence services to ultimately better support affected women.

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| Project: AA787 | Intimate partner violence, reproductive outcomes and contraceptive use in the 1973‐1978 and 1989‐95 cohorts |
| Collaborative Investigators: | * Prof Deborah Loxton - Research Centre for Generational Health and Ageing, The University of Newcastle * Dr Melissa Harris - Research Centre for Generational Health and Ageing, The University of Newcastle * Peta Forder - School of Medicine & Public Health, The University of Newcastle * Natalie Townsend - Research Centre for Gender, Health and Ageing, The University of Newcastle * Dr Jacqueline Coombe - Melbourne School of Population and Global Health, The University of Melbourne * Nick Egan - The University of Newcastle |

Women are disproportionally at greater risk of family, domestic and sexual violence (FDSV), which is typically perpetrated by a current or previous partner, and usually takes place in their home. Women experiencing FDSV are less likely to have a planned pregnancy, or be able to make autonomous decisions about their contraceptive use. Using data from the 1973‐78 and 1989‐93 cohorts, we aim to examine the patterns of contraceptive use, and reproductive outcomes (including accidental pregnancy, miscarriage, termination and birth) for women who report experiencing intimate partner violence (IPV), versus those women who have not.

Data for this project are currently being analysed using latent transition analysis. While the research plan complies with the original EOI we will examine aim 2 in two steps: (1) by examining patterns of contraception and factors associated with these patterns; and then (2) examining whether contraceptive practices of women who report intimate partner violence are different to those who have never reported violence (controlling for factors that are associated with contraceptive use reported in step 1)

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| Project: A805 | Sexual violence and its impact on psychosocial wellbeing in women: A longitudinal analysis |
| Collaborative Investigators: | * Dr Robyn Brunton - Charles Sturt University * A/Prof Rachel Dryer - Australian Catholic University |
| ALSWH Liaison | * Peta Forder School of Medicine & Public Health, The University of Newcastle |

This study will examine the relationship between the experience of sexual violence (SV) and psycho-social well-being for the 1973-78 cohort. Groups of women will be examined in relation to their SV experience against reported health, well-being and health-related behaviours. The study aims to track the groups across time according to SV experience, examining psychological outcomes and health behaviours. We also aim to examine psychosocial well-being before/after SV. Additionally, we will track the women in regards to the risk of re-victimization of SV as well as the occurrence of reported partner abuse. The mediating role of social support will also be explored (for the second and third aims) between SV, well-being and adverse outcomes.

* + 1. **Caregiving**

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| Project: A719 | A qualitative investigation into women’s caring responsibilities |
| Collaborative Investigators: | * Prof Julie Byles - Centre for Generational Health and Ageing, The University of Newcastle * A/Prof Leigh Tooth – Centre for Longitudinal and Life Course Research, The University of Queensland * Prof Deborah Loxton - Research Centre for Generational Health and Ageing, The University of Newcastle * Dr Melissa Harris - Research Centre for Generational Health and Ageing, The University of Newcastle * Ryan Tuckerman - Research Centre for Gender, Health and Ageing, University of Newcastle * Dominic Cavenagh - Research Centre for Generational Health & Ageing, The University of Newcastle * Jacqueline Coombe - Research Centre for Generational Health and Ageing, The University of Newcastle |

This project will explore the experiences of women providing care and support to others. Specifically, this project will examine the experiences of women who are providing care for their children and other adults simultaneously, the experiences of women who both provide and require care from others, and the experiences of women returning to paid work after having children. This project will use comments provided by ALSWH participants to examine these experiences.

**Research outcomes:**

* “I can be a mum or a professional, but not both”: What women say about their experiences of juggling paid employment with motherhood. Coombe J, Loxton D, Tooth L & Byles J. *Journal of Family Studies,* 2019; 54(3): 305-322. <https://doi.org/10.1002/ajs4.76>
  + 1. **Formal and informal work patterns and work/life balance**

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| Project: A299 | Coping with motherhood and work: Predicting positive wellbeing among young Australian women |
| Collaborative Investigators: | * Prof Christina Lee - School of Psychology, The University of Queensland * Dr Melissa Johnstone - Institute for Social Science Research, The University of Queensland * A/Prof Belinda Hewitt - School of Social and Political Sciences, The University of Melbourne |
| ALSWH Liaison | * Prof Jayne Lucke – School of Public Health, The University of Queensland |

Successfully managing work and family is a major issue for most Australians that impacts strongly on employed women, who continue to also undertake most of the domestic tasks. As one way to balance paid work and family, many Australian women shift to part-time hours or casual employment after having children. This project aims to investigate the work-family trajectories of a new generation of Australian women. We will also investigate who is coping well during this transition, and the extent to which women’s different work-family pathways reflect their earlier-stated aspirations.

A paper has been published in the peer-reviewed journal, *Community, Work and Family*, and another submitted for review to the *Journal of Family Issues*.

**Research outcomes:**

* Life transitions and women’s desired number of children: The impact of motherhood, relationships and employment. Johnstone M, Lucke J & Hewitt B. *Community, Work and Family*, 1-20. <https://doi.org/10.1080/13668803.2020.1744526>

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| Project: A791 | Modifiable lifestyle behaviour differences between women who do shift work and those who do not |
| Collaborative Investigators: | * A/Prof Allison Hodge - Cancer Epidemiology Centre, Cancer Council Victoria * Dr Michelle Blumfield - Faculty of Medicine, Nursing & Health Sciences, Monash University * Dr Sean Cain - Monash University * Ms Christie Bennett - School of Clinical Sciences, Monash University * Dr Parisa Vidafar - Monash Institute of Cognitive and Clinical Neurosciences, Monash University * A/Prof Clare Anderson - Monash Institute of Cognitive and Clinical Neurosciences, Monash University * Dr Andrew Phillips - Monash Institute of Cognitive and Clinical Neurosciences, Monash University * Dr Ari Shechter - Department of Medicine, Columbia University |
| ALSWH Liaison | * Prof Gita Mishra – Centre for Longitudinal and Life Course Research, The University of Queensland |

Circadian misalignment can influence metabolism of nutrients. Therefore, shift-workers have a higher prevalence of metabolic diseases. Women working shift work are also more susceptible&nbsp;to sleep disruption and metabolic outcomes associated with shiftwork. However, it is unclear if this is simply due to biological responses to shift-work, or whether there are behavioural risk factors associated with shift work.&nbsp;This study will aim to investigate the following:&nbsp;i) Do women working shift work have higher prevalence of metabolic outcomes (BMI and recently diagnosed non-insulin dependent T2DM, hypertension and heart disease) compared to those not working shift work?ii) Do women working shift work have poorer lifestyle behaviours compared to those not working shift work?iii) Do lifestyle behaviours mediate the relationship of metabolic outcomes&nbsp;(BMI and recently diagnosed non-insulin dependent T2DM, hypertension and heart disease) in women working shiftwork?Hiv) Does menopausal status influence the risk of lifestyle behaviours and metabolic outcomes (BMI and recently diagnosed non-insulin dependent T2DM, hypertension and heart disease) in women working shift work?

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| Project: A768 | Consultations with naturopaths/herbalists and use of supplements/herbal medicines amongst Australian women, 2006-2016 |
| Collaborative Investigators: | * Prof Gita Mishra - Centre for Longitudinal and Life Course Research, The University of Queensland * Prof Jon Adams - School of Public Health, University of Technology Sydney * Professor David Sibbritt - Faculty of Health, University of Technology Sydney * Dr Amie Steel - Health Services Research, University of Technology Sydney * Dr WenBo (Penny) Peng - Faculty of Health, University of Technology Sydney |

The naturopathy and herbalist professions have been going through numerous changes over recent years. In addition, supplements and herbal medicines have doubled over the last 10 years, and women are the top consumers of such products in Australia. It is worth noting that there has been an increased ability of consumers to purchase these products beyond practitioners, such as online shopping, health food stores, and pharmacies. As such, this longitudinal study aims to examine the changes over time in consultations with naturopaths/herbalists and use of vitamin/minerals and herbal medicines amongst Australian women.

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| Project: A803 | Influence of shift work on menopausal vasomotor symptoms, an analysis of the Australian Longitudinal Study of Women’s Health |
| Collaborative Investigators: | * Dr Qunyan Xu - University of South Australia * Prof Adrian Esterman - University of South Australia * A/Prof Jane Warland - University of South Australia * Prof Gita Mishra - Centre for Longitudinal and Life Course Research, The University of Queensland * Dr Dotoetha Dumuid - Alliance for Research in Exercise, Nutrition and Activity (ARENA), University of South Australia. |

With the ageing workforce, many women are and will find themselves managing menopause transition during their employment. As a frequent complaint of menopausal transition, vasomotor symptoms including hot flushes and night sweats pose challenges to various aspects of women’s life such as sleep disturbance and social inconvenience. Shift work is a well-recognised occupational risk with wide implications on individuals’ health. Although much attention has been paid to understanding its impact on reproductive health outcomes including spontaneous pregnancy loss and menstrual disturbance, little is known about whether and how much shift work affects menopausal vasomotor symptoms in middle aged women. A manuscript has been prepared and is expected to be submitted for publication by September 2020.

* 1. **Completed research projects**

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| Project: A133B | Arthritis impact over time: A longitudinal exploration of burden of illness, comorbities (particularly depression), management, and health care costs in older Australian women |
| Collaborative Investigators: | * Prof Lynne Parkinson - Health CRN, CQ University Australia * Dr Michelle Cunich - The Boden Institute of Obesity, Nutrition and Exercise and Eating Disorders, The University of Sydney * Prof Isabel Higgins - Research Centre for Generational Health and Ageing, The University of Newcastle * A/Prof Fiona Blyth - Pain Management & Research Centre, The University of Sydney * Dr Geeske Peeters - Global Brain Health Institute, Trinity College Dublin * Dr Thomas Lo - University of Alberta * Dr Katie de Luca - Department of Chiropractic, Macquarie University * Prof Gillian Hawker - University of Toronto and Institute for Clinical Evaluative Sciences, Canada * Prof Lyn March - Medicine, Northern Clinical School, The University of Sydney * Ang Li – The University of Sydney |

Arthritis is the most common cause of activity limitation and disability among older Australian women. In 2002, arthritis and musculoskeletal conditions were established as a National Health Priority Area, in recognition of the major health and economic burden these conditions place on our community. The broad aim of this project is to investigate the effect of Arthritis, and comorbidities associated with arthritis, on health and quality of life for older Australian women. The combination of extensive demographic, psychosocial and health survey data linked with Medicare and hospitalisations data means that the burden and economic costs of Arthritis in Australia can be examined more rigorously than in any previous work.

**Research outcomes:**

*Publications:*

* Older women and arthritis: Tracking impact over time. Parkinson L, Gibson R, Robinson I & Byles J., *Australasian Journal on Ageing*, 2010, 29 (4); 155-160.
* Contemporaneous severity of symptoms and functioning reflected by variations in reporting doctor-diagnosed osteoarthritis. Peeters G, Parkinson L, Badley E, Jones M, Brown W, Dobson A & Mishra G. *Arthritis Care & Research*, 2013, 65 (6); 945-953.
* Systematic review of the impact of osteoarthritis on health outcomes for comorbid disease in older people. Parkinson L, Waters DL & Franck L. *Osteoarthritis & Cartilage*, 2017, 25 (11); 1751-1770.

*Conferences, seminars and workshops:*

* Arthritis and older Australian women: Findings from the Australian Longitudinal Study on Women's Health. Parkinson L. *ICES/CEU Conjoint Evaluative Sciences Rounds*. Toronto, Canada, 25 January 2011.
* Out-of-hospital medical services use by older Australian women with arthritis. Parkinson L, Cunich M, Dolja-Gore X & Byles J. *Ninth Asia/Oceania Regional Congress Gerontology and Geriatrics*, Melbourne, Victoria, 23-27 October 2011.
* Out-of-hospital medical services use by older Australian women with arthritis. Parkinson L, Byles J, Dolja-Gore X & Cunich M. *Health Services Research Association Australia and New Zealand Biennial Conference*, Adelaide, SA, 5 - 7 December 2011.
* Longitudinal variations in reporting doctor-diagnosed arthritis reflect contemporaneous severity of symptoms disability. Peeters G, Parkinson L, Badley E, Brown W, Dobson A & Mishra G. *The European League Against Rheumatism*, Berlin, Germany, 6 - 9 June 2012.
* Arthritis in older women - Impacts on participation. Parkinson L. *New Zealand Association of Gerontology: Ageing and Diversity Conference 2012*, Auckland, New Zealand, 13 - 15 September 2012
* Arthritis and comorbidities: Interplay and impact on management(symposium contribution). Parkinson L. *The 20th IAGG World Congress of Gerontology and Geriatrics*, Seoul, Korea, 23 - 27 June 2013.
* Arthritis and older Australian women: Findings from Australian Longitudinal Study on Women’s Health. Parkinson L. *LiVWELL Research Group Seminar Series*, Simon Fraser University, Vancouver, Canada, 25 April 2014.
* Arthritis and older Australian women: Findings from the Australian Longitudinal Study on Women's Health. Parkinson L. *Association of Independent Retirees*, Newcastle, NSW, 3 June 2011.

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| Project: A133C | The profile of arthritis pain in older women |
| Collaborative Investigators: | * Prof Lynne Parkinson - Health CRN, CQ University Australia * Prof Julie Byles - Research Centre for Generational Health and Ageing, University of Newcastle * Dr Sharyn Hunter - Research Centre for Generational Health and Ageing, University of Newcastle * Prof Isabel Higgins - Research Centre for Generational Health and Ageing, The University of Newcastle * A/Prof Fiona Blyth - Pain Management & Research Centre, The University of Sydney * Dr Thomas Lo - University of Alberta * Dr Katie de Luca - Department of Chiropractic, Macquarie University * Prof Gillian Hawker - University of Toronto and Institute for Clinical Evaluative Sciences, Canada * A/Prof Henry Pollard - Faculty of Health Science, Australian Catholic University, Strathfield * Prof Lyn March - Medicine, Northern Clinical School, The University of Sydney * Dr Chris Hayes - Hunter Integrated Pain Service, Hunter New England Health * Aron Downie – George Institute of Musculoskeletal Health * Scott Haldeman – University of California * Matthew Fernandez – The University of Sydney * Chibueze ‘George’ Amaefula – School of Nursing and Midwifery, The University of Newcastle * Olubanke Ramon - School of Nursing and Midwifery, The University of Newcastle * Prof Jan Hartvigsen – Department of Sports Medicine and Clinical Biomechanics, University of Southern Denmark * A/Prof Arnold Wong – Department of Rehabilitation Sciences, The Hong Kong Polytechnic University * Dr Andreas Eklund – Department of Institute of Environmental Medicine, Karolinska Institut * Ricardo Maldonado - PowerStats |

Arthritis covers a diverse group of diseases commonly involving degeneration and inflammation of the joints. It is very common, estimated to affect 18.5% of the Australian population, or approximately 3.9 million people. Although pain is the most prevalent presenting symptom in the very debilitating condition of arthritis, it has been insufficiently researched and therefore is not well understood, nor well managed in clinical practice. Traditionally, pain in arthritis has been attributed to peripheral, local tissue injury and the mechanism of nociceptive pain. However, the understanding of the experience of pain in arthritis is being increasingly broadened to include the complex interactions between nociceptive and neuropathic mechanisms. Recently, the Osteoarthritis Research Society International (OARSI) and the US Food and Drug Administration (FDA) have called for research to define the disease state of arthritis, and this includes the identification and evaluation of different types of pain in arthritis. The aim of this study was to explore the experience and impact of pain in arthritis. Specifically, it focuses on the multi-dimensional nature of the experience of pain in older women with arthritis. Four papers have arisen from this research: Paper 1 is a systematic review of the literature on how the experience of pain is measured in older, community dwelling people with osteoarthritis. This paper concluded that the most commonly used measures of pain do not effectively assess the multi-dimensional nature of the experience of pain in osteoarthritis, nor have the majority of epidemiological studies in arthritis captured the multi-dimensional nature of the experience of pain in osteoarthritis. In acknowledging the findings from Paper 1, the *Profile of Pain in Older Women with Arthritis Study* was undertaken to better assess the multi-dimensional nature of the experience of pain in arthritis. Paper 2 outlines the study protocol for the *Profile of Pain in Older Women with Arthritis Study* and discusses the appropriateness of eleven measures of health, pain and arthritis used to explore the experience and impact of pain in arthritis. Paper 3 used data generated from the *Profile of Pain in Older Women with Arthritis Study* (Paper 2). Paper 3 reports that neuropathic-like pain in arthritis is common and is associated with greater disability and poorer quality of life. Furthermore, women who have arthritis and neuropathic-like pain have significantly more severe pain, a heightened pain experience and more fatigue. Abnormal sensory changes, higher pain catastrophizing and using more medications are significantly associated with neuropathic-like pain. Paper 4 identified three subgroups of older, community dwelling women with arthritis with very different, very distinct profiles of pain. Profiles consisted of 39.5% of women having uni-dimensional pain, 38.6% of women having moderate multi-dimensional pain and 21.9% of women having severe multi-dimensional pain. Once profiles were identified, women with moderate and severe multi-dimensional pain profiles were at a significantly greater risk of poorer physical and mental health related quality of life. This area of research has great promise to improve pain management and decrease the significant socio-economic burden associated with arthritis.

**Research outcomes:**

*Publications:*

* How is the experience of pain measured in older, community dwelling people with osteoarthritis? A systematic review of the literature. de Luca K, Parkinson L, Pollard H, Byles J & Blyth F. *Rheumatology International*, 2015, 35(9); 1461-1472.
* The prevalence and cross-sectional associations of neuropathic-like pain among older, community-dwelling women with arthritis. de Luca K, Parkinson L, Byles J, Lo TKT, Pollard H & Blyth F. *Pain Medicine*, 2016, 17(7); 1308-1316.
* Three subgroups of pain profiles identified in 277 women with arthritis: A latent class analysis. de Luca K, Parkinson L, Downie A, Blyth F, Byles J. *Clinical Rheumatology*, 2017, 36 (3); 625-634.
* The relationship between spinal pain and comorbidity: A cross-sectional analysis of 579 community-dwelling, older, Australian women. de Luca K, Parkinson L, Haldeman S, Byles J, Blyth F. *Journal of Manipulative and Physiological Therapeutics*, 2017, 40 (7); 459-466.
* Qualitative insights into the experience of pain in older Australian women with arthritis. De Luca K, Hunter S, Byles J & Parkinson L. *Australasian Journal on Ageing,* 2018: 37(3): 210-216.
* Multisite joint pain in older Australian women is associated with poorer psychosocial health and greater medication use. de Luca K, Wong A, Eklund A, Fernandez M, Byles J, Parkinson L, Ferreira M, Hartvigsen J. *Chiropractic & Manual Therapies* 2019;27:8 doi.org/10.1186/s12998-018-0224-9

*Conferences, seminars and workshops*

* How is the experience of pain measured in older, community dwelling people with osteoarthritis – A systematic review of the literature (poster presentation). de Luca K, Parkinson L, Byles J, Blyth F & Pollard H. *Chiropractic and Osteopathic College of Australasia National Conference - The Ageing Spine,* Sydney, NSW, 13 - 14 October 2012.
* How is the experience of pain measured in older, community dwelling people with osteoarthritis – A systematic review of the literature (poster presentation). de Luca K, Parkinson L, Byles J, Blyth F & Pollard H.*11th National Conference of Emerging Researchers in Ageing - Making an Impact*, Brisbane, Qld, 19 - 20 November 2012.
* Discovering three distinct profiles of pain in 227 older women with arthritis (poster presentation). de Luca K, Parkinson L, Byles J, Blyth F & Pollard H. *World Federation of Chiropractic 12th Biennial Conference*, Athens, Greece, 13-16 May 2015.
* The prevalence and impact of neuropathic pain in older women with arthritis (poster presentation). de Luca K, Parkinson L, Byles J, Blyth F & Pollard H. *World Federation of Chiropractic 12th Biennial Conference*, Athens, Greece, 13-16 May 2015.
* Three subgroups of pain phenotypes in 227 older, community-dwelling women with arthritis: A cross-sectional study. de Luca K, Parkinson L, Downie A & Byles J. *Chiropractic Association of Australia National Conference*, Melbourne, Vic, 13-15 October 2015.
* Is spinal pain associated with comorbidity? A cross-sectional analysis of the relationship between spinal pain and lifestyle diseases. de Luca K, Parkinson L & Haldeman S & Byles J. *Chiropractic Association of Australia National Conference*, Melbourne, Vic, 13-15 October 2015.
* Mild, moderate or severe pain? How 227 older women living with arthritis have different profiles of the multi-dimensional experience of pain and the impact of profile membership on their health. de Luca K, Parkinson L, Downie A & Byles J. *CAA NSW Research Symposium*, Sydney, NSW, 12 September 2015.
* Three subgroups of pain phenotypes in 227 older, community-dwelling women with arthritis: A cross-sectional study. de Luca K, Parkinson L, Downie A, Blyth F, Byles J. *ALSWH Scientific Meeting 2016*, Newcastle, NSW, 4 - 5 May 2016.
* Is spinal pain associated with comorbidity? A cross-sectional analysis of the relationship between spinal pain and lifestyle diseases. de Luca K, Parkinson L, Haldeman S, Byles J. *CAA NSW Scientific Symposium*, Sydney, NSW, 10 September 2016.

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| Project: A240C | PCOS in Australian women: A chronic illness with psychological, reproductive and metabolic features |
| Collaborative Investigators: | * Dr Sarah McNaughton - School of Exercise and Nutrition Sciences, Deakin University * Assoc. Prof. Arul Earnest - Department of Epidemiology and Preventive Medicine, Monash University * Prof Helena Teede - Monash Centre for Health Research and Implementation, Monash University * Eldho Paul - Department of Epidemiology and Preventive Medicine, Faculty of Medicine * A/Prof Lisa Moran - Monash Centre for Health Research and Implementation, Monash University * Melanie Gibson-Helm - Monash Centre for Health Research and Implementation, Monash University * Dr Michelle Blumfield - Faculty of Medicine, Nursing & Health Sciences, Monash University * Dr Anju Joham - Monash Centre for Health Research and Implementation, Monash University * Sanjeeva Ranasinha - Monash Centre for Health Research and Implementation, Monash University * Dr Jacqueline Boyle - Monash Centre for Health Research and Implementation, Monash University * A/Prof Sophia Zoungas - Faculty of Medicine, Monash University * Dr Jessica Grieger - School of Paediatrics and Reproductive Health, The University of Adelaide * A/Prof Barbora de Courten - Monash Centre for Health Research and Implementation, Monash University * Estifanos Baye - Monash Centre for Health Research and Implementation, Monash University * Dr Sean Cain - Monash University * Christie Bennett - School of Clinical Sciences, Monash University * Dr Nadira Kakoly - Monash Centre for Health Research and Implementation, Monash University * Ms Mahnaz Bahri Khomami - Monash Centre for Health Research and Implementation, Monash University * Dr Darren Mansfield - Monash Health * Dr Lin Mo - Monash Health * Prof Deborah Loxton – Research Centre for Generational Health and Ageing, The University of Newcastle |

Polycystic Ovary Syndrome (PCOS) is a common disorder that affects women who are of childbearing age. It is associated with many complications including infertility, but also carries long-term complications such as diabetes, high blood pressure and mood disorders. In this research project, we will compare women with PCOS to those without PCOS over time to try and understand what the key contributing factors are to the development of PCOS, the long-term complications of PCOS and in particular to study the effect of body weight. We will also study the relationship between PCOS status and lifestyle factors and health outcomes at different lifestages including before pregnancy, during pregnancy and post-partum.

**Research outcomes:**

*Publications:*

* Longitudinal weight gain in women identified with Polycystic Ovary Syndrome: Results of an observational study in young women. Teede H, Joham, A, Paul E, Moran L, Loxton D, Jolley D & Lombard C. *Obesity (Silver Spring)*, 2013, 21(8); 1526-1532.
* The contribution of diet, physical activity and sedentary behaviour to body mass index in women with and without polycystic ovary syndrome. Moran LJ, Ranasinha S, Zoungas S, McNaughton SA, Brown WJ & Teede HJ. *Human Reproduction,* 2013, *28*(8); 2276-2283.
* Gestational diabetes and Type 2 diabetes in reproductive-aged women with Polycystic Ovary Syndrome. Joham A, Ranasinha S, Zoungas S, Moran L & Teede H. *Journal of Clinical Endocrinology and Metabolism,* 2014, 99(3); E447-E452.
* Contraception use and pregnancy outcomes in women with polycystic ovary syndrome: Data from the Australian Longitudinal Study on Women's Health. Joham A, Boyle J, Ranasinha S, Zoungas S & Teede H. *Human Reproduction,* 2014, 29(4); 802-808.
* Prevalence of infertility and use of fertility treatment in women with Polycystic Ovary Syndrome: data from a large community-based cohort study. Joham A, Teede H, Ranasinha S, Zoungas S & Boyle J. *Journal of Women’s Health,* 2015, 24(4); 299-307.
* Hypertension in reproductive-aged women with polycystic ovary syndrome and association with obesity. Joham A, Boyle J, Zoungas S & Teede H. *American Journal of Hypertension,* 2015, 28(7); 847-851.
* Obesity, polycystic ovary syndrome and breastfeeding: An observational study. Joham A, Nanayakkara N, Ranasinha S, Zoungas S, Boyle J, Harrison C, Forder P, Loxton D, Vanky E & Teede H. *Acta Obstetricia et Gynecologica Scandinavica,* 2016, 95(4); 458-466.
* The association of a Mediterranean-style diet pattern with polycystic ovary syndrome status in a community cohort study. Moran LJ, Grieger JA, Mishra G &Teede H. *Nutrients,* 2015, 7(10); 8553-8564.
* Weight management practices associated with Polycystic Ovary Syndrome and their relationships with diet and physical activity. Moran LJ, Brown WJ, McNaughton SA, Joham AE & Teede HJ. *Human Reproduction,* 2017, 32(3); 669-678.
* Asthma in reproductive-aged women with polycystic ovary syndrome and association with obesity. Htet TD, Teede HJ, de Courten B, Loxton D, Real FG, Moran LJ, et al. *European Respiratory Journal,* 2017, 49(5); 1-8.
* Group-based developmental BMI trajectories, polycystic ovary syndrome, and gestational diabetes: A community-based longitudinal study. Sultana N, Earnest A, Moran LJ, Teede HJ & Joham AE. *BMC Medicine,* 2017, 15(1); 195.
* Sleep disturbances in women with and without polycystic ovarian syndrome in an Australian National Cohort. Mo L, Teede HJ, Joham AE, Cain SW, Bennett C, Blumfield M, Loxton D, Mansfield DR, Moran LJ*. Clinical Endocrinology*, 2019; 90(4):570-578.

*Conferences, seminars and workshops:*

* Body Mass Index as a predictor of Polycystic Ovary Syndrome risk: Results of a longitudinal cohort study. Teede H. *Endo 2010: The 92nd Annual Meeting and Expo*, San Diego, USA, 19 - 22 June 2010
* Fertility, ovulation induction and in-vitro fertilisation and use in Polycystic Ovary Syndrome: New results from the Australian Longitudinal Study on Women’s Health. Joham A, Ranasinha S, Zoungas S, Loxton D & Teede H. *Endocrine Society of Australia Annual Scientific Meeting*, Sydney, NSW, 28 - 31 August 2011.
* Hypertension in Polycystic Ovary Syndrome: New results from the Australian Longitudinal Study on Women’s Health. Joham A, Ranasinha S, Zoungas S, Loxton D & Teede H. *Endocrine Society of Australia Annual Scientific Meeting*, Sydney, NSW, 28 - 31 August 2011.
* The need for a new name for PCOS. Teede H. *15th International Congress of Endocrinology*, Florence, Italy, 5 - 9 May 2012.
* Infertility and assisted reproductive technology use in women with polycystic ovary syndrome: Data from the Australian Longitudinal Women's Health Study (poster presentation). Joham A, Teede H, Ranasinha S, Zounga S & Boyle J. *The Endocrine Society's 95th Annual Meeting & Expo*, San Francisco, USA, 15 - 18 June 2013.
* Contraception use and pregnancy outcome in women with Polycystic Ovary Syndrome: Data from the Australian Longitudinal Women's Health Study (poster). Joham A, Boyle J, Ranasinha S, Zoungas S & Teede H. *Endocrine Society of Australia Annual Scientific Meeting*, Sydney, NSW, 25 - 28 August 2013.
* The contribution of diet, physical activity and sedentary behaviour to body mass index in women with and without Polycystic Ovary Syndrome (poster). Moran L, Ranasinha S, Zoungas S, McNaughton S, Brown W & Teede H. *American Society for Reproductive Medicine Conference*, Boston, USA, 12 - 17 October 2013.
* Breastfeeding in women with Polycystic Ovary Syndrome: Data from the Australian Longitudinal Women’s Health Study. Nanayakkara N, Joham A, Zoungas S, Loxton D & Teede H. *Endocrine Society of Australia Annual Scientific Meeting*, Sydney, NSW, 25 - 28 August 2013.
* Gestational diabetes and Type 2 diabetes in reproductive-aged women with Polycystic Ovary Syndrome (poster presentation). Joham A, Ranasinha S, Zoungas S, Moran L & Teede H. *World Diabetes Congress*, Melbourne, Vic, 2 - 6 December 2013.
* Hypertension and hypertension in oregnancy in reproductive-aged women with Polycystic Ovary Syndrome (poster presentation). Joham A, Boyle J, Zoungas S & Teede H. *Monash Health Research Week 2013*, Clayton, Vic, 25 - 29 November 2013.
* Longitudinal risk of Type 2 diabetes in reproductive-aged women with Polycystic Ovary Syndrome. Joham A, Ranasinha S, Zoungas S & Teede H. *The Endocrine Society Annual Meeting 2014*, Chicago, USA, 21 - 24 June 2014.
* PCOS prevalence, relationship to obesity and management. Teede HJ. *Women's Health Update*, Melbourne, Vic, 24 October 2015.
* PCOS prevalence, relationship to obesity and management. Teede HJ. *Endocrine Society of Australia Seminar*, Sydney, NSW, 1-3 May 2015.
* US PCOS and obesity (symposium). Teede HJ. *Endocrine Society Meeting*, San Diego, USA, 5 - 8 March 2015.
* Prevalence of asthma in reproductive-aged women with Polycystic Ovary Syndrome: New results from the Australian Longitudinal Study on Women’s Health. Joham A. *The Endocrine Society Annual Meeting*, Boston, USA, 1-4 April 2016.
* Prevalence of asthma in reproductive-aged women with Polycystic Ovary Syndrome: New results from the Australian Longitudinal Study on Women’s Health. Htet T, Teede HJ, de Courten B, Loxton D, Real FG, Moran L & Joham AE. *The Endocrine Society of Australia Annual Scientific Meeting*, Gold Coast, QLD, 21 - 24 August 2016.
* Longitudinal BMI trajectories and gestational diabetes: Relationships in women with and without Polycystic Ovary Syndrome. Sultana NK, Earnest A, Moran LJ, Loxton D, Teede HJ & Joham AE. *Androgen Excess and PCOS Society Annual Meeting*, Lorne, VIC, 10 -12 November 2016.
* Role of obesity in the development of gestational diabetes mellitus in women with and without Polycystic Ovary Syndrome. Sultana NK, Earnest A, Moran LJ, Loxton D, Teede HJ, Joham AE. *Joint Scientific Meeting of The Australian and New Zealand Obesity Society National Conference*, Brisbane, Qld, 19 - 21 October 2016.
* Longitudinal BMI trajectories and gestational diabetes: Relationships in women with and without Polycystic Ovary Syndrome. Sultana NK, Earnest A, Moran LJ, Loxton D, Teede HJ & Joham AE. *Australian Diabetes in Pregnancy Society Annual Scientific Meeting*, Gold Coast, Qld, 26 - 27 August 2016.
* Longitudinal BMI trajectories and gestational diabetes: Relationships in women with and without PCOS. Joham A. *2nd Annual Meeting of the Centre for Research Excellence in Polycystic Ovary Syndrome*, Lorne, VIC, 9 - 10 November 2016.
* Weight management practices associated with Polycystic Ovary Syndrome and their relationships with diet and physical activity. Moran LJ, Brown WJ, McNaughton SA, Joham AE & Teede HJ. *Nutrition Society of Australia Annual Scientific Meeting*, Melbourne, Vic, 29 November - 2 December 2016.
* Weight management practices associated with Polycystic Ovary Syndrome and their relationships with diet and physical activity. Moran LJ, Brown WJ, McNaughton SA, Joham AE & Teede HJ. *Joint Scientific Meeting of The Australian and New Zealand Obesity Society National Conference*, Brisbane, Qld, 19 - 21 October 2016.
* Weight management practices associated with Polycystic Ovary Syndrome and their relationships with diet and physical activity. Moran LJ, Brown WJ, McNaughton SA, Joham AE & Teede HJ. *The Endocrine Society of Australia Annual Scientific Meeting*, Gold Coast, QLD, 21 - 24 August 2016.
* Weight management practices associated with Polycystic Ovary Syndrome and their relationships with diet and physical activity. Moran L. *15th World Congress on Public Health*, Melbourne, Vic, 3-7 April 2017.
* The impact of obesity on the incidence of type 2 diabetes mellitus among women with polycystic ovary syndrome. Kakoly NS, Earnest A, Teede HJ, Moran LJ, Loxton D, Joham AE. *American Diabetes Association Scientific Sessions,* Orlando, Florida USA, June 22 - 26, 2018.
* Sleeping behaviour in women with and without polycystic ovary syndrome (PCOS) and their association with lifestyle factors (diet, physical activity and sitting time). Bennet CJ, Mansfield D, Mo L, Hodge A, Joham J Cain S, Blumfield M, Teede H & Moran L.*Nutrition Society of Australia 43rd Annual Scientific Meeting*, Newcastle, NSW, 3 December 2019.
* Sleeping behaviour in women with and without polycystic ovary syndrome (PCOS) and their association with lifestyle factors (diet, physical activity and sitting time). Poster presentation. Bennet CJ, Mansfield D, Mo L, Hodge A, Joham J Cain S, Blumfield M, Teede H & Moran L.*ENDO 2020*, San Francisco, USA, 28-31 March 2020.
* Weight management practices associated with polycystic ovary syndrome and their relationships with diet and physical activity. Moran LJ, Brown WJ, McNaughton S, Joham AE & Teede HJ.*ANZOS-ASLM-ICCR 2019*, Sydney, NSW, 16-18 October 2019.

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| Project: A372 | Patterns of physical activity, BMI, weight and waist circumference, and sitting time in the young, mid and older cohorts from 1996 to 2010. |
| Collaborative Investigators: | * Prof Annette Dobson - Centre for Longitudinal and Life Course Research, The University of Queensland * Prof Wendy Brown - School of Human Movement and Nutrition Sciences, The University of Queensland * Richard Hockey - Centre for Longitudinal and Life Course Research, The University of Queensland * Dr Toby Pavey - School of Exercise and Nutrition Sciences, Queensland University of Technology * Dr Bronwyn Clark - School of Human Movement Studies, The University of Queensland * Dr Sjaan Gomersall - The University of Queensland |

**Research outcomes:**

*Publications:*

* Determinants of physical activity in a cohort of young adult women. Who is at risk of inactive behaviour? Uijtdewilligen L, Peeters G, van Uffelen J, Twisk J, Singh A & Brown W, *Journal of Science and Medicine in Sport*, 2015, 18 1 49-55
* Sitting-time and 9-year all-cause mortality in older women. Pavey T, Peeters G & Brown W., *British Journal of Sports Medicine*. 2015, 49 (2) 95-99.
* Comparing population attributable risks for heart disease across the adult lifespan in women. Brown W, Pavey T & Bauman A. *British Journal of Sports Medicine,* 2015, 49 (16) 1069-1076.
* Physical activity in mid-age and older women: Lessons from the Australian Longitudinal Study on Women’s Health. Brown W & Pavey T. *Kinesiology Review*, 2016, 5 (1) 87-97.
* Does physical activity attenuate, or even eliminate the detrimental association of sitting time with mortality? A harmonised meta-analysis of data from more than one million men and women. Ekelund U, Steene-Johannessen J, Brown W J, Fagerland M W, Owen N, Powell K E, Bauman A, Lee I-M, for the Lancet Physical Activity Series Working Group and the Lancet Sedentary Behaviour Working Group. *The Lancet*, 2016, 388 (10051) 1302-1310.
* Do the associations of sedentary behaviour with cardiovascular disease mortality and cancer mortality differ by physical activity level? A systematic review and harmonised meta-analysis of data from 850 060 participants. Ekelund U, Brown WJ, Steene-Johannessen J, Wang Fangerland M, Owen N, Powell KE, Bauman A & Lee I-M. British Journal of Sports Medicine, 2019, 53 (14) 886-894.
* Sitting time and depression in young women over 12-years: The effect of physical activity. Pavey T & Brown WJ. *Journal of Science and Medicine in Sport*, 2019, 22 (10) 1125-1131.

*Presentations, seminars and workshops:*

* Weight gain and physical activity across the adult life span. Perceptions and paradox in Australian women. Keynote presentation. Brown WJ,35th *FIMS World Congress of Sports Medicine*, Rio de Janeiro, Brazil,, 12 -15 September 2018.
* Changing patterns of Physical Activity and sitting time in mid-age and older women: Implications for health and function. Brown W. *85th Annual Meeting of the National Academy of Kinesiology*, Philadelphia, USA,, 17-19 September 2015.
* Physical activity and weight across the lifespan in women: Lessons for obesity prevention from the Australian Longitudinal Study on Women's Health. Brown WJ. *2015 Conference on Obesity Control in China*, Beijing, China,, November 2015.
* Changing patterns of physical activity and sitting time, and implications for healthy ageing in Australian women. Brown WJ. *World Active Ageing Conference*, Melbourne, VIC,, 28 June - 1 July 2016.
* Through the looking glass: And what ALSWH found there. Plenary Lecture. Brown WJ. *ALSWH Scientific Meeting 2016*, Newcastle, NSW, 4 - 5 May 2016.
* Illustrating changes in levels of physical activity across the adult lifespan: Spaghetti or lasagna? Brown WJ, Pavey T, Hockey R & Dobson A. *6th International Conference on Physical Activity and Public Health (ICPAPH)*, Bangkok, Thailand, 16-19 November 2016.

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| Project: A457 | Longitudinal data analysis in the presence of non-ignorable missing responses and covariates: An application assessing sleeping pattern data in the old and mid cohort. |
| Collaborative Investigators: | * Prof Julie Byles - Centre for Generational Health and Ageing, The University of Newcastle * Dr Lucy Leigh - Hunter Medical Research Institute * Prof Irene Hudson - The University of Newcastle * Dr Silvia Liverani – Queen Mary University of London |

This project aims to explore the patterns of sleep in women, and how they correlate with mortality and comorbidity.

**Research outcomes:**

*Publications:*

* Sleeping difficulty, disease and mortality in older women: A latent class analysis and distal survival analysis. Leigh L, Hudson I & Byles J. *Journal of Sleep Research*, 2015, 24 (6); 648-657.
* Sleep difficulty and disease in a cohort of very old women. Leigh L, Hudson I & Byles J. *Journal of Aging and Health*, 2016, 28 (6); 1090-1104.
* Joint modelling of the relationship between sleep, disease and mortality, exclusively in a cohort of older Australian women (aged 70-75 years at baseline). Leigh L, Hudson I & Byles J. *Journal of Statistics: Advances in Theory and Applications*, 2016, 16 (2); 185-254.

*Presentations:*

* ‘Latent class methods in the investigation of sleep in a cohort of older women: Data from the Australian Longitudinal study in Women’s Health. Leigh L, Hudson I & Byles. *Brunel University Seminar*, London, England, 21 October 2014.
* A novel extension of Bayesian Profile Regression: Application to the analysis of longitudinal sleep patterns and survival for high dimensional data. Leigh L, Hudson I & Byles J. *JB Douglas Awards,Statistical Society of Australia Inc*, Sydney, NSW, 25 November 2014.
* Invited speaker, nominated by Professor Irene Hudson, and Head of Discipline Associate Professor Eric Beh, as representative for University of Newcastle. Leigh L, Hudson IL, Byles JE, Liverani S. *JB Douglas Awards*, Sydney, NSW, 25 November 2014.

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| Project: A495C | Comparison of violence among 18-23 year old women in 1996 and 2012-2013 |
| Collaborative Investigators: | * Jennifer Powers - Research Centre for Generational Health and Ageing, The University of Newcastle * Prof Deborah Loxton - Research Centre for Generational Health and Ageing, The University of Newcastle * Dr Ingrid Rowlands - Centre for Longitudinal and Life Course Research, The University of Queensland * Prof Kelsey Hegarty - Department of General Practice, Faculty of Medicine * Peta Forder - School of Medicine & Public Health, The University of Newcastle * Dr Amy Anderson - Research Centre for Generational Health and Ageing, The University of Newcastle * Carl Holder – Clinical Research Design & Statistics, Hunter Medical Research Institute |

This project will look at the prevalence of violence among women aged 18-23 in 2012-13, compare the proportion of 18-23 year old women who have experienced violence in 1996 with those experiencing violence in 2012-13, and describe the sociodemographic characteristics of those 18-23 year old women in 1996 and 2012-13 who experienced violence.

**Research outcomes**

*Publications:*

* Consistency and inconsistency of young women’s reporting of intimate partner violence in a population-based study. Rowlands IJ, Holder C, Forder P, Hegarty K, Dobson AJ & Loxton D. *Violence Against Women*, 2020. [https://doi.org/10.1177/1077801220908324](https://doi.org/10.1177%2F1077801220908324)

*Conferences, seminars and workshops:*

* Domestic violence and health across the life-course: Results from the Australian Longitudinal Study of Women’s Health. Loxton D. *2015 Australian STOP Domestic Violence Conference*, Canberra, ACT, 7 - 9 December 2015.
* Violence (Session Chair). Loxton D. *ALSWH Scientific Meeting 2016*, Newcastle, NSW, 4 - 5 May 2016.

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| Project: A518 | The influence of perceived stress on the onset of type 2 diabetes in women. |
| Collaborative Investigators: | * Prof Deborah Loxton - Research Centre for Generational Health and Ageing, The University of Newcastle * Dr Alexis Hure - School of Medicine and Public Health, The University of Newcastle * Prof John Attia – School of Medicine & Public Health, The University of Newcastle * Dr Judy Luu – John Hunter Hospital * Dr Christopher Oldmeadow - Clinical Research Design, Information Technology and Statistical Support (CReDITSS) Unit, Hunter Medical Research Institute |

This study will examine the role of perceived stress in type 2 diabetes (T2D) onset in women using large population-based data. T2D accounts for 96% of diabetes cases and can result in significant health problems including cardiovascular disease, impaired vision, renal failure, amputations and even death. Half of T2D disease risk has been attributed to factors that are potentially modifiable such as obesity. New research suggests that perceived stress is a risk factor for some chronic conditions, however little is known about its role in T2D onset. The findings have the potential to influence new T2D prevention and detection strategies, thereby reducing the incidence and impact of T2D.

**Research outcomes:**

*Publications*

* Stress increases the risk of type 2 diabetes onset in women: A 12-year longitudinal study using causal modelling. Harris M, Oldmeadow C, Hure A, Luu J, Loxton D & Attia J. *PLoS ONE*, 2017, 12 (2) 1-13.

*Conferences, seminars and workshops:*

* Increased risk of type 2 diabetes in women: Does perceived stress hold the key? Harris ML, Oldmeadow C, Hure A, Loxton D, Luu J & Attia J. *Society for Longitudinal and Life Course Studies Conference*, Dublin, Ireland, 18-21 October 2015.

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| Project: A529 | Who maintains their BMI? Characteristics fo women whose BMI does not change over 15 years/ |
| Collaborative Investigators: | * Prof Wendy Brown - School of Human Movement and Nutrition Sciences, The University of Queensland * Dr Bronwyn Clark - School of Human Movement Studies, The University of Queensland * Dr Enamul Kabir - University of Southern Queensland * Dr Sjaan Gomersall - The University of Queensland |

Weight gain is an important issue as the number of obese and overweight adults in Australia continues to increase, despite current government efforts to address this issue. Rates of weight change are not the same in all body mass index (BMI) categories (underweight, acceptable weight, overweight and obese) over a period of time. In this research we will examine socio-demographic and behavioural characteristics, and annual rates of weight change in women who remain in the same weight category over a period of 15 years. Understanding the characteristics of women who do not gain weight may shed light on potential strategies for the prevention of weight gain.

**Research outcomes**:

* Maintaining a healthy BMI: Data from a 16-year study of young Australian women.: Brown WJ, Kabir E, Clark B & Gomersall S. *American Journal of Preventive Medicine*, 2016, 51 (6) e165-e178.

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| Project: A551 | Chronic pain and behavioural outcomes for Australian women with a history of trauma-pilot study |
| Collaborative Investigators: | * Prof Deborah Loxton - Research Centre for Generational Health and Ageing, The University of Newcastle * Dr Melissa Harris - Research Centre for Generational Health and Ageing, The University of Newcastle * Sam Brilleman - Monash University * A/Prof Jan Coles - Department of General Practice, Monash University * Dr Alison Flehr - Department of General Practice, Monash University * Prof. Stephen Gibson - Medicine - Royal Melbourne Hospital, The University of Melbourne. * Prof John Dixon - Baker IDI Heart and Diabetes Institute |

The purpose of this study is to utilize the ‘young’ cohort ALSWH data to comprehensively examine the link between traumatic experience, physical or psychological and the development of chronic pain. This will include further investigation of this link within an expanded ‘trauma experience’ criteria, and the associated health, behavioural and socioeconomic factors. In addition, this study aims to demonstrate the interaction and relationship between behavioural factors and the emergence of chronic pain, across the six ALSWH ‘young’ cohort survey collection points from 1996-2012.

**Research outcomes:**

* Epidemiology of trauma history and pain outcomes: A retrospective cohort study of community based Australian women. Flehr A. *2017 Australian Pain Society 37th Annual Scientific Meeting – Expanding Horizons*, Adelaide, SA, 9-12 April 2017.
* A psychobiological model of persistent pain: A mixed-methods investigation into the relationship of traumatic experience with persistent pain, the underlying psychobiological functional mechanisms to persistent pain, and the benefits of mind-body integrative therapies for the treatment of persistent pain. Flehr A. *Monash University Mid-Candidature Review*. Clayton, Vic, 10 May 2016.

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| Project: A567 | Family formation and the demand for private health insurance |
| Collaborative Investigators: | * Prof Denise Doiron - School of Economics, University of New South Wales * Dr Nathan Kettlewell - School of Economics, The University of Sydney |
| ALSWH Liaison | * A/Prof Leigh Tooth School of Public Health, The University of Queensland |

We studied how demand for health insurance responds to family formation using a unique panel of young Australian women. Our data allowed us to simultaneously control for the influence of state dependence and unobserved heterogeneity and detailed information on children and child aspirations. We found evidence that women purchase insurance in preparation for pregnancy, but then transition out of insurance once they have finished family building. Children have a large, negative impact on demand for insurance, although this effect is smaller for those on higher incomes. We also found that state dependence has a large impact on insurance demand. Theresults are robust to a variety of alternative modelling strategies.

**Research outcomes:**

*Publications:*

* Doiron, D. & Kettlewell, N. (2020). Family formation and the demand for health insurance, *Health Economics*, 29(4): 523-533.

*Conferences, seminars and workshops:*

* Family formation and demand for health insurance. Kettlewell N. *The 37th Annual Australian Health Economics Society Conference*, Brisbane, Queensland, 1-2 October 2015.

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| Project: A567 | Language and ageing in Australian women: An exploration of the effects of ageing on language |
| Collaborative Investigators: | * Prof Julie Byles - Centre for Generational Health and Ageing, The University of Newcastle * Prof Deborah Loxton - Research Centre for Generational Health and Ageing, The University of Newcastle * Kim Colyvas - School of Mathematical & Physical Sciences, University of Newcastle * Dr Elizabeth Spencer - School of Humanities & Social Sciences, The University of Newcastle * Peta Forder - School of Medicine & Public Health, The University of Newcastle * Patricia Webb - The University of Newcastle * Dr Lucy Bryant - Graduate School of Health, University of Technology Sydney |

This project investigated the effects of ageing on language. We were interested in determining if language changes as a process of healthy ageing, and, if so, how does language change and are there any general patterns in this change?

**Research outcomes:**

*Publications:*

* Minimising variability in language sampling analysis: A practical way to calculate text length and time variability and measure reliable change when assessing clients. Spencer, E., Bryant, L. & Colyvas, K. *Topics in Language Disorders*, 2020; 40 (2), 166-181.

*Conferences, seminars and workshops:*

* Language and ageing in healthy late-age adults: What can longitudinal computerised analysis tell us about discourse skills over time? Spencer E. *16th International Clinical Linguistics and Phonetics Conference*, Halifax, Canada, 15-18 June 2016.
* Computerised analysis of written language in healthy ageing women. Webb P, Bryant L & Spencer E. *Speech Pathology Australia 2018 National Conference*, Adelaide, South Australia,, 27 - 30 May 2018

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| Project: A629 | The associations between herbal medicine use and health behaviour – results of a national cross sectional survey of Australian women. |
| Collaborative Investigators: | * Professor Jon Adams – School of Public Health, University Technology Sydney * Professor David Sibbritt - Faculty of Health, University Technology Sydney * Dr Holger Cramer - Department of Internal and Integrative Medicine, University of Duisburg-Essen * Dr Romy Lauche - Australian Research Centre in Complementary and Integrative Medicine, University Technology Sydney * Stefania Tiveron – Appleby Total Health * Rebecca Reid – Endeavour College of Natural Health * Prof Gita Mishra – Centre for Longitudinal and Life Course Research, The University of Queensland |

This analysis aimed to determine whether herbal medicine use is associated with a variety of health behaviours (e.g., use of alcohol, smoking, drugs, vegetarian diet, vegan diet, exercise).

**Research outcomes:**

* Do women with herbal medicine consultation or utilization live a healthy lifestyle? Results of a national survey of Australian women. Peng W. *15th World Congress on Public Health*, Melbourne, Vic, 3-7 April 2017.

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| Project: A643 | Profiling women's workforce participation and child care usage |
| Collaborative Investigators: | * Dr Tazeen Majeed - Research Centre for Gender, Health and Ageing, University of Newcastle * Dr Mary Welsh - Department of Education and Training * Dr Eliza Ahmed - Department of Education and Training * Mike Power - Department of Education and Training |
| ALSWH Liaison | * Prof Deborah Loxton Research Centre for Generational Health and Ageing, The University of Newcastle |

This project aimed to provide insights into women's workforce participation and their use of child care using seven waves of the ALSWH 1973-78 cohort data.

A manuscript, *Child care and maternal employment: An analysis of the Australian Longitudinal Study on Women’s Health 1973-78 cohort* has been prepared and is awaiting approval from the Department of Education, Skills and Employment.

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| Project: A658 | The role of dietary indices in depression: a meta-analysis |
| Collaborative Investigators: | * Prof Gita Mishra - Centre for Longitudinal and Life Course Research, The University of Queensland * Liset Elstgeest - Department of Health, VU University Amsterdam * Dr Danielle Schoenaker - Cancer Council Victoria * Dr Mary Nicolaou - Department of Public Health, University of Amsterdam |

An increasing number of studies indicate that a healthy diet may lower the risk of depression. However, critical reviews of the literature have failed to find consistent associations across studies. To clarify the potential relationship between diet and depression, further research is needed that uses standardised methods. Therefore, the aim of this study is to examine the association between dietary patterns and depression in the mid-age cohort of ALSWH, and to combine these results with findings from comparable studies to determine the consistency of the association between diet and depression across different populations.

**Research outcomes:**

*Publications:*

* A meta-analysis of the role of a priori dietary indices in depression among 7 cohorts: The MooDFOOD project. Nicolaou M, Vermeulen E, Elstgeest L, Knuppel A, Colpo M, Schoenaker D, Gibson-Smith D et al. *Annals of Nutrition and Metabolism*, 2017: 71(S2): 985.

*Presentations:*

* A meta-analysis of the role of a priori dietary indices in depression among 7 cohorts: The MooDFOOD project. Nicolaou M, Vermeulen E, Elstgeest L, Knuppel A, Colpo M, Schoenaker D, Gibson-Smith D et al. *The IUNS 21st International Congress of Nutrition (ICN),* Buenos Aires, Argentina, 15-20 October 2017.

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| Project: A667 | Yoga and optimism: The associations between mental health measures and yoga use |
| Collaborative Investigators: | * Prof Jon Adams - School of Public Health, University Technology Sydney * Prof David Sibbritt - Faculty of Health, University Technology Sydney * Dr Holger Cramer - Department of Internal and Integrative Medicine, University of Duisburg-Essen * A/Prof Romy Lauche – National Centre for Naturopathic Medicine, Southern Cross University * Dennis Anheyer - Department of Internal and Integrative Medicine, University of Duisburg-Essen * Dr Jan Boehnke - School of Nursing and Health Sciences, University of Dundee * Prof Timothy Croudace - School of Nursing and Health Sciences, University of Dundee * Dr Lisa Uebelacker, Brown University * Prof Gita Mishra – Centre for Longitudinal and Life Course Research, The University of Queensland |

There is promising evidence that yoga might be beneficial for coping with negative life events. We will determine the associations of yoga use with optimism and perceived control in life, psychological well-being (incl. anxiety, depression, and stress), and satisfaction among mid-aged Australian women. We will further determine whether yoga mediates the associations between traumatic life events and mental health. A manuscript has been prepared for submission *to Applied Psychologie: Health and Well-being*.

**Research outcomes:**

* How do yoga and meditation influence the relationship between negative life events and depression? A cross sectional analysis of 8009 women. Lauche R, Anheyer D, Sibbritt D, Adams J, Cramer H. *Meeting of the European Health Psychology Society*, Galway Ireland, 21-25 August 2018.
* Do yoga and meditation moderate the association between negative life events and depression? A cross sectional analysis of 8009 women. Lauche R, Anheyer D, Sibbritt D, Adams J, Cramer H. *International Conference on Integrative Medicine and Health*, Baltimore, USA, 8-12 May 2018.

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| Project: A669A | Association between vasomotor symptoms of menopause and cardiovascular disease. |
| Collaborative Investigators: | * Prof Annette Dobson - Centre for Longitudinal and Life Course Research, The University of Queensland * Prof Gita Mishra - Centre for Longitudinal and Life Course Research, The University of Queensland * Prof Yvonne Van der Schouw - University of Utrecht * Veerle Dam - Julius Centre, University Medical Center Utrecht * Dr Charlotte Onland-Moret - Julius Centre, University Medical Center Utrecht |

Cardiovascular disease is still the leading cause of death in the Western world. It has been suggested that menopause might influence cardiovascular disease, for example through vasomotor symptoms like hot flushes and night sweats. Several recent studies showed that women with vasomotor symptoms have a worse cardiovascular profile (higher LDL‐cholesterol, higher blood pressure etc.) compared with women without vasomotor symptoms. However, only three studies investigated the association between vasomotor symptoms and cardiovascular disease, showing opposite results. Therefore, this study wants to further investigate the association between vasomotor symptoms and cardiovascular disease. A manuscript has been prepared for submission to *Maturitas*.

**Research outcomes:**

* Vasomotor menopausal symptoms and cardiovascular disease risk in midlife: A longitudinal study. Dam V, Dobson AJ, Onland-Moret NC, van der Schouw YT & Mishra GD. *Maturitas*, 2020, 133 32-41.

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| Project: A684A | Health service use by women with dementia in the last two years of life. |
| Collaborative Investigators | * Prof Annette Dobson – Centre for Longitudinal and Life Course Research, The University of Queensland * Prof Julie Byles - Centre for Generational Health and Ageing, The University of Newcastle * Prof Gita Mishra - Centre for Longitudinal and Life Course Research, The University of Queensland * Dr Michael Waller - School of Public Health, The University of Queensland * Peta Forder - Centre for Generational Health and Ageing, The University of Newcastle * Richard Hockey - Centre for Longitudinal and Life Course Research, The University of Queensland |

This study will examine the use of health and aged care services by women with dementia during their last two years of life, compared with two matched groups of women, one with dementia who are alive when the index case dies and lives at least 2 years longer, and the other group are women without dementia.

**Research outcomes:**

*Publications:*

* Dobson AJ, Waller MJ, Hockey R, Dolja-Gore X,Forder PM & Byles JE. Impact of dementia on health service use in the last 2 years of life for women with other chronic conditions. *Journal of the American Medical Directors Association*; <http://dx.doi.org/10.1016/j.jamda.2020.02.018> (in press).

*Conferences, seminars and workshops:*

* A poster was presented at the *Australian Dementia Forum* 2018.

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| Project: A702 | History of maternal stress and depression and relationship with child development |
| Collaborative Investigators: | * Prof Gita Mishra - Centre for Longitudinal and Life Course Research, The University of Queensland * Prof Annette Dobson - Centre for Longitudinal and Life Course Research, The University of Queensland * Prof Deborah Loxton - Research Centre for Generational Health and Ageing, The University of Newcastle * Richard Hockey - Centre for Longitudinal and Life Course Research, The University of Queensland * Prof Virginia Slaughter - School of Psychology, The University of Queensland * Dr Katrina Moss - Centre for Longitudinal and Life Course Research, The University of Queensland |

One of the key founding purposes of the MatCH substudy is to investigate the history of maternal health and its link with child outcomes. These analyses investigated the history of maternal depression and related characteristics and how this predicts child development. It combined data from ALSWH along with new data collected on the children of the 1973-1978 cohort, along with linked data from the AEDC and NAPLAN. Findings were presented at the *Developmental Origins of Health and Disease Conference* in Melbourne in 2019, and published in *Archives of Women's Mental Health*. They received media coverage through radio interviews with ABC Rockhampton, Humm FM New Zealand, and a print article in the Sunday Mail. Estimated to have reached an audience of 7,222.

**Research outcomes:**

*Publications:*

* Testing competing mediators of the association between pre-conception maternal depression and child health-related quality of life: The MatCH study. Moss KM, Loxton D, Dobson AJ, Slaughter V & Mishra GD. *Archives of Women's Mental Health*, 2019, 1-10. DOI: https://doi.org/10.1007/s00737-019-0941-7

*Presentations:*

* Is pregnancy a sensitive period? Testing competing explanations of the association between maternal depression and child behaviour and development. Moss K, Dobson A & Mishra G. *Developmental Origins of Health and Disease Conference*, Melbourne, Australia, October 20-23 2019.

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| Project: A717 | The impact of historical intimate partner violence on survival and risk for chronic illness in older women |
| Collaborative Investigators: | * Prof Julie Byles - Centre for Generational Health and Ageing, The University of Newcastle * Monica Cations - Flinders University * Dr Kate Laver - Flinders University * A/Prof Hannah Keage – School of Psychology, Social Work and Social Policy, University of South Australia * Prof Deborah Loxton - Research Centre for Generational Health and Ageing, The University of Newcastle |

Intimate partner violence (IPV) negatively affects the physical and mental wellbeing of victims even many years after the abuse has ended. However, it is not known whether IPV at some time in life puts older women at risk for chronic health conditions such as dementia, diabetes, and heart disease, or whether it shortens their lifespan. This analysis explored the effect of historical IPV on risk for death and serious illness over 15 years in older women. A manuscript has been submitted to the *Journal of Interpersonal Violence.*

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| Project: A729 | Prevalence and predictors of alcohol risk behaviours |
| Collaborative Investigators: | * Prof Julie Byles - Centre for Generational Health and Ageing, The University of Newcastle * Dominic Cavenagh - Research Centre for Generational Health & Ageing, The University of Newcastle * Peta Forder - School of Medicine & Public Health, The University of Newcastle * Prof Deborah Loxton - Research Centre for Generational Health and Ageing, The University of Newcastle * Dr Amy Anderson - Research Centre for Generational Health and Ageing, The University of Newcastle * Kirsty Nitschke – Faculty of Health and Medicine, The University of Newcastle |

To get a more accurate understanding of the health risks associated with alcohol consumption amongst the ALSWH’s 1989-95 cohort, a set of questions examining the risk behaviours that occurred because of alcohol consumption were devised and used in the 2015 survey of this cohort. The questions asked about the frequency of pre-drinking, vomiting, forgetting things, self-injury and seeking medical attention because of drinking. This project will examine the following; the prevalence and predictors of these alcohol risk behaviours; how these behaviours relate to self-reported alcohol intake and binge drinking frequency; the role of pre-drinking in alcohol related risk behaviours and injury; and how alcohol risk behaviours relate to changes in alcohol consumption patterns as women move from their teens to their 20’s.

**Research outcomes:**

* Alcohol-related risk from pre-loading and heavy episodic drinking (HED) among a cohort of young Australian women: A cross-sectional analysis. Anderson AE, Cavenagh D, Forder P, Loxton D, Byles J. (In press: Accepted 11 June 2020). *Australian and New Zealand Journal of Public Health*; <https://doi.org/10.1111/1753-6405.13018>

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| Project: A753 | Patterns of contraception use in 1989-95 cohort |
| Collaborative Investigators: | * Dr Ingrid Rowlands - School of Public Health, The University of Queensland * Prof Jayne Lucke - School of Public Health, The University of Queensland * Prof Gita Mishra Centre for Longitudinal and Life Course Research, The University of Queensland |

The landscape of contraception is constantly evolving. Although women have a range of contraceptive options, women’s ‘choices’ are influenced by a range of individual, social and lifestyle factors. Patterns of contraception also change over the life course but are particularly variable among young women. This project will examine contemporary patterns of contraceptive use among young Australian women and will identify sexual, reproductive and lifestyle factors that explain trajectories of contraceptive use.

**Research outcomes:**

* Association between young women’s physical and mental health and their method of contraception in a longitudinal population based study. Rowlands IJ, Mishra GD & Lucke JC, *BMJ Sexual & Reproductive Health*, 2020; https://doi.org/[10.1136/bmjsrh-2019-200479](https://doi.org/10.1136/bmjsrh-2019-200479)

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| A764A | Psychological impacts of polycystic ovary syndrome (PCOS) in Australian women |
| Collaborative Investigators: | * Dr Anju Joham - Monash Centre for Health Research and Implementation, Monash University * Prof Helena Teede - Monash Centre for Health Research and Implementation, Monash University * A/Prof Lisa Moran - Monash Centre for Health Research and Implementation, Monash University * A/Prof Arul Earnest – Department of Epidemiology and Preventive Medicine, Monash University * Sanjeeva Ranasinha - Monash Centre for Health Research and Implementation, Monash University * Dr Chau Thien Tay - Monash Centre for Health Research and Implementation, Monash University * Prof Deborah Loxton – Research Centre for Generational Health and Ageing, The University of Newcastle |
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Polycystic ovary syndrome (PCOS) is a complex hormonal disorder common affecting one in five women and one in four Australian Indigenous women. PCOS is associated with many health complications. Women with PCOS are reported to have higher anxiety or depression scores, lower quality of life, and more eating disorders than women without PCOS. We intend to study the impact of PCOS and the effect of body weight on the psychological outcomes in Australian women with PCOS.

**Research outcomes:**

*Publications:*

* Increased prevalence of eating disorders, low self-esteem, and psychological distress in women with polycystic ovary syndrome: A community-based cohort study. Tay CT, Teede HJ, Hill B, Loxton D & Joham AE. *Fertility and Sterility*, 2019, 112(2): 353-361.
* Psychiatric comorbidities and adverse childhood experiences in women with self-reported polycystic ovary syndrome: An Australian population-based study. Tay CT, Teede HJ, Loxton D, Kulkarni j, Joham AE. *Psychoneuroendocrinology*, 2020; 116. <https://doi.org/10.1016/j.psyneuen.2020.104678>
* Perinatal mental health in women with polycystic ovary syndrome: a cross-sectional analysis of an Australian population-based cohort. Tay CT, Teede HJ, Boyle JA, Kulkarni J, Loxton D, Joham AE. *Journal of Clinical Medicine*, 2019; 8(12). https://doi.org/[10.3390/jcm8122070](https://dx.doi.org/10.3390%2Fjcm8122070)

*Conferences, seminars and workshops:*

* Perinatal mental health in women with PCOS. Tay CT, Teede HK, Boyle JA, Kulkarni J, Loxton D, Joham AE. *Joint Annual Scientific Meetings of the Endocrine Society of Australia and the Society for Reproductive Biology 2019* (Poster presentation).
* Psychiatric comorbidities in women with PCOS. Tay CT, Teede HJ, Kulkarni J, Loxton D, Joham AE. *Joint Annual Scientific Meetings of the Endocrine Society of Australia and the Society for Reproductive Biology 2019*. (Poster presentation).

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| Project: A765 | Financial wellbeing after relationship breakdown among mid-aged women from the Australian Longitudinal Study on Women’s Health |
| Collaborative Investigators: | * Prof Deborah Loxton - Research Centre for Generational Health and Ageing, The University of Newcastle * Prof Jayne Lucke - Australian Research Centre in Sex, Health & Society (ARCSHS), La Trobe University * Prof Bronwen Lichtenstein - University of Alabama * Reed Farnsworth - University of Alabama |

Relationship breakdown, separation and divorce can have significant financial consequences for women. Studies show that women have a higher risk of poverty than men following a relationship breakup, and divorce in mid-life can place women at higher risk of poverty in old age. Little is known about women’s views about their financial wellbeing following relationship breakdown. This study focuses on women’s perceptions of their financial wellbeing following divorce, separation or long-term relationship breakdown using the free-text comments of the women in the 1946-51 cohort of the Australian Longitudinal Study on Women’s Health. A longitudinal narrative analysis will be used to examine how women describe their financial circumstances following relationship breakdown with particular attention to the role of domestic violence.

A manuscript, ‘Women and divorce: Financial coping from mid-life to older age’, has been submitted to the *Journal of Women and Ageing*.

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| Project: A776 | Habitual lifestyle of Australian women with PCOS. |
| Collaborative Investigators: | * A/Prof Lisa Moran - Monash Centre for Health Research and Implementation, Monash University * Prof Helena Teede - Monash Centre for Health Research and Implementation, Monash University * Dr Anju Joham - Monash Centre for Health Research and Implementation, Monash University * Dr Chau Thien Tay -- Monash Centre for Health Research and Implementation, Monash University * Prof Wendy Brown – School of Human Movement and Nutrition Science, The University of Queensland * Prof Deborah Loxton – Research Centre for Generational Health and Ageing, The University of Newcastle |

Polycystic ovary syndrome (PCOS) is a complex hormonal disorder common affecting one in five women and one in four Australian Indigenous women. PCOS is associated with many health complications including reproductive, metabolic and psychologic. Women with PCOS are prone to weight gain and excess weight exacerbates the clinic features of PCOS. Lifestyle management is the recommended first-line treatment for women with PCOS. We intend to study the habitual lifestyle of Australian women with PCOS and examine potential barriers to healthy lifestyle. A draft manuscript has been produced, but data now needs to be re-analyses, and the paper revised accordingly.

**Research outcomes**:

* Physical activity and sedentary behaviour in women with and without polycystic ovary syndrome: An Australian population-based cross-sectional study. Tay CT, Moran LJ, Harrison CL, Brown WJ & Joham AE. *Clinical Endocrinology*, 2020; 93(2): 154-162. <https://doi.org/10.1111/cen.14205>

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| Project: A777 | Women’s health across the lifespan: A person-centered approach. |
| Collaborative Investigators: | * Dr Catherine Chojenta - Research Centre for Generational Health and Ageing, The University of Newcastle * Prof Michael Hendryx - School of Public Health, University of Indiana * Prof Juhua Luo - School of Public Health, University of Indiana * Prof Julie Byles – Research Centre for Generational Health and Ageing, The University of Newcastle |

Health outcomes often do not result from a single variable or cause, but rather result from the combined effects of many variables. This project will use a statistical approach called person-centered modelling to examine co-occurring effects of social, economic, behavioural, and environmental variables on women’s health across the lifespan. Health outcomes to be investigated include incidence of diabetes, cardiovascular disease and birth outcomes.

**Research outcomes:**

* Latent class analysis of low birth weight and preterm delivery among Australian women. Hendryx M, Chojenta C & Byles JE. *The Journal of Pediatrics*, 2020; <https://doi.org/10.1016/j.jpeds.2019.11.007>
* Air pollution emissions and risk of incident Chronic Obstructive Pulmonary Disease (COPD) and asthma. Hendryx M, Chojenta C & Byles JE. *Environmental Research*, 2019; Art. No. 108783. <https://doi.org/10.1016/j.envres.2019.108783>
* Obesity risk among young Australian women: A prospective latent class analysis. Hendryx M, Chojenta C, Luo J, Byles J. *Obesity*, 2019; 28(1): 154-160. <https://doi.org/10.1002/oby.22646>
* Air pollution increases depression risk among young women: possible natural world resiliencies. Hendryx M, Luo J, Chojenta C, Byles JE. *Ecopsychology,* 2020 (in press).
* Exposure to heavy metals from point pollution sources and risk of incident type 2 diabetes among women: A prospective cohort analysis. Hendryx M, Luo J, Chojenta C, Byles JE. *International Journal of Environmental Health Research*, 2019; https://doi.org/ 10.1080/09603123.2019.1668545

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| Project: A786 | Spatial analysis of family, domestic and sexual violence (FDSV) and childhood trauma among Australian women |
| Collaborative Investigators: | * Prof Deborah Loxton - Research Centre for Generational Health and Ageing, The University of Newcastle * Peta Forder - School of Medicine & Public Health, The University of Newcastle * Dr Amy Anderson - Research Centre for Gender, Health and Ageing, The University of Newcastle * Natalie Townsend - Research Centre for Gender, Health and Ageing, The University of Newcastle * Teketo Kassaw Tegegne - The University of Newcastle * Emma Byrnes - Research Centre for Gender, Health and Ageing, The University of Newcastle |

This project examines hotspots of violence among Australian women with respect to domestic violence, sexual violence, abuse and adversity in childhood, and any form of violence, summarising the spatial distribution and hotspots of violence across Australia.

**Research outcomes:**

*Publications:*

* Family, Domestic, and Sexual violence: Compendium of infographics – Findings from the Australian Longitudinal Study on Women’s Health. Loxton D, Townsend N, Barnes I, Forder P Report prepared for the Australian Government of Social Services, September 2019.
* Family, Domestic and Sexual Violence: Interactive layered maps - Findings from the Australian Longitudinal Study on Women’s Health. Loxton D, Tegegne TK, Forder P, Townsend N, Graves A. Report prepared for the Australian Government Department of Social Services, September 2019.
* Family, Domestic and Sexual Violence: Compendium of maps - Findings from the Australian Longitudinal Study on Women’s Health. Loxton D, Tegegne TK, Forder P, Townsend N, Graves A. Report prepared for the Australian Government Department of Social Services, September 2019.
* Family, Domestic and Sexual Violence: Mini report of infographics - Findings from the Australian Longitudinal Study on Women’s Health. Loxton D, Townsend N, Barnes I, Forder P. Report prepared for the Australian Government Department of Social Services, September 2019.

*Conferences, seminars and workshops:*

* Research for the Department of Social Services: 2017-2019. Loxton D, Forder P, Townsend N. Presented for the Department of Social Services, Enid Lyons Building, Canberra, 28th November 2019.
* Violence and health across the life course. Loxton D, Forder P, Townsend N. *Australian Longitudinal Study on Women’s Health Policy Symposium Program: Linking data to inform policy,* Australian Government Department of Health, Sirius Building, Canberra, 29th November 2019.

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| Project: A801 | Perinatal mental health screening: progress over time and who is missing out |
| Collaborative Investigators: | * Dr Katrina Moss - Centre for Longitudinal and Life Course Research, The University of Queensland * Prof Annette Dobson - Centre for Longitudinal and Life Course Research, The University of Queensland * A/Prof Leigh Tooth - Centre for Longitudinal and Life Course Research, The University of Queensland * Prof Deborah Loxton - Research Centre for Generational Health and Ageing, The University of Newcastle * Dr Nicole Reilly - Research Centre for Generational Health and Ageing, The University of Newcastle * Prof Gita Mishra Centre for Longitudinal and Life Course Research, The University of Queensland |

Maternal mental health issues are common in the perinatal period (during pregnancy and the first postnatal year), with up to 20% of women reporting anxiety, depression or stress. Poor maternal mental health is associated with poorer birth outcomes and poorer child development due to effects on parenting practices, impaired attachment between mother and child, and reduced physical care. Screening for perinatal mental health issues is the first critical step in a pathway of care. Australian clinical practice guidelines recommend routine mental health screening during pregnancy and after birth, but current screening rates and changes over time are unknown.

**Research outcomes:**

*Publications:*

* How rates of perinatal mental health screening in Australia have changed over time and which women are missing out. Moss KM, Reilly N, Dobson AJ, Loxton D, Tooth L & Mishra, GD. *Australian and New Zealand Journal of Public Health,* 2020*;* <https://doi.org/10.1111/1753-6405.12999>
* 20% of pregnant Australian women don’t receive the recommended mental health screening. Moss KM, Reilly N & Mishra GD. *The Conversation*, <https://theconversation.com/20-of-pregnant-australian-women-dont-receive-the-recommended-mental-health-screening-139979>(June 9, 2020).

*Conferences, seminars and workshops:*

* Changes in perinatal screening in Australia (2000-2017), and which women are missing out. Moss KM, Reilly N, Dobson AJ, Loxton D, Tooth L & Mishra, GD. *The International Marce Society for Perinatal Mental Health Biennial Meeting*, October 5-8, 2020, Iowa City, Iowa. (To be conducted online).

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| Project: A802 | Breastfeeding practices, child behaviour and development. |
| Collaborative Investigators: | * Dr Katrina Moss - Centre for Longitudinal and Life Course Research, The University of Queensland * Prof Annette Dobson - Centre for Longitudinal and Life Course Research, The University of Queensland * A/Prof Leigh Tooth - Centre for Longitudinal and Life Course Research, The University of Queensland * Prof Gita Mishra Centre for Longitudinal and Life Course Research, The University of Queensland |

Infant feeding guidelines around the world recommend that babies are exclusively breastfed until approximately 6 months of age. However, in most countries this does not occur: breastfeeding is stopped before 6 months, or solids are introduced before 6 months (or both). This study aimed to understand which women don’t breastfeed exclusively to 6 months and why; whether infant feeding practices are related to child behaviour and development; and whether a woman’s experiences feeding her first child influence how she feeds her second child. Findings will help us to identify women who may benefit from extra support, and may inform development of future policy initiatives such as the Australian National Breastfeeding Strategy for 2018 and Beyond. Findings have been published in two journal articles, which have received extensive media coverage (print and television), estimated to have reached an audience of over 360,000 people.

**Research outcomes:**

*Publications:*

* Which Australian women do not exclusively breastfeed to 6 months, and why? Moss KM, Dobson AJ, Tooth L & Mishra, GD. *Journal of Human Lactation*. DOI: 10. 1177/ 0890 3344 20929993
* Associations between feeding practices in infancy and fruit and vegetable consumption in childhood. Moss KM, Dobson AJ, Tooth L & Mishra, GD. *British Journal of Nutrition.* DOI 10.1017/S000711452000238X

*Conferences, seminars and workshops:*

* Which women don’t exclusively breastfeed to 6 months, and why? Moss KM, Reilly N, Dobson AJ, Loxton D, Tooth L & Mishra, GD. *The International Marce Society for Perinatal Mental Health Biennial Meeting*, October 5-8, 2020, Iowa City, Iowa. (To be conducted online).

1. **APPENDIX B: Substudies**

* 1. **Current substudies**

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| Project: W091 | Mother's and their Children's Health (MatCH) study - Phase I |
| Collaborative Investigators: | * Prof Gita Mishra - Centre for Longitudinal and Life Course Research, The University of Queensland * Prof Annette Dobson - Centre for Longitudinal and Life Course Research, The University of Queensland * A/Prof Leigh Tooth - Centre for Longitudinal and Life Course Research, The University of Queensland * Prof Deborah Loxton - Research Centre for Generational Health and Ageing, The University of Newcastle * Richard Hockey - Centre for Longitudinal and Life Course Research, The University of Queensland * Prof Ilona Koupil - Stockholm University & Karolinska Institute * Prof Peter Davies - Centre for Children's Health Research, The University of Queensland * Prof Virginia Slaughter - School of Psychology, The University of Queensland * A/Prof Kylie Hesketh - School of Exercise and Nutrition Sciences, Deakin University * Prof Carol Bower - Telethon Institute for Child Health Research (TICHR), University of Western Australia * Prof Peter Sly - Centre for Children's Health Research, The University of Queensland * Colleen Loos - Centre for Longitudinal and Life Course Research, The University of Queensland * Dr Hsiu-Wen Chan - Centre for Longitudinal and Life Course Research, The University of Queensland * Dr Akilew Adane – Telethon Kids Research Institute * Dr Katrina Moss - Centre for Longitudinal and Life Course Research, The University of Queensland * Sifan Cao - Centre for Longitudinal and Life Course Research, The University of Queensland |

The MatCH study aims to take a family-centred approach to advance understanding of child health and development in terms of all the children in a family unit, by investigating factors with regard to a) the history of maternal and family characteristics and b) their effects on the health and development of all the children in the family. The study combines detailed data from a national cohort of women with new survey data on their children to paint a picture of family health and health service use that is unparalleled, supporting a more integrated and targeted approach to the delivery of preventative and primary health care for all Australian families.

The baseline survey was conducted from August 2016 to May 2017. 3,063 mothers provided data on 5,780 children. Data analysis continues, and preparation of applications for funding to conduct Wave 2 of data collection is also underway.

**Research outcomes:**

* Mishra GD, Moss K, Loos C, Dobson AJ, Davies PSW, Loxton D, Hesketh KD, Koupil I, Bower C, Sly P, & Tooth L. [MatCH (Mothers and their Children’s Health) Profile: Offspring of the 1973-78 cohort of the Australian Longitudinal Study on Women’s Health](http://www.llcsjournal.org/index.php/llcs/article/view/491). *Longitudinal and Life Course Studies:International Journal*, 2018, 9(3): 351-375.
* Adane A, Dobson A, Tooth L & Mishra G. Maternal preconception weight trajectories are associated with offsprings’ childhood obesity. *International Journal of Obesity*, 2018, 42(7); 1265-1274.
* Adane A, Mishra G & Tooth L. Maternal preconception weight trajectories, pregnancy complications and offspring’s childhood physical and cognitive development. *Journal of Developmental Origins of Health and Disease,* 2018.
* Adane AA, Tooth L & Mishra G. The role of offspring’s birthweight on the association between pre-pregnancy obesity and offspring’s childhood anthropometrics: A mediation analysis. *Journal of Developmental Origins of Health and Disease*, 2018.
* Moss KM, Loxton D, Dobson AJ, Slaughter V & Mishra GD. Testing competing mediators of the association between pre-conception maternal depression and child health-related quality of life: the MatCH study. *Archives of Women's Mental Health*, 2019.
* Tooth L, Moss K, Hockey R, Mishra GD. Adherence to screen time recommendations for Australian children aged 0-12 years. *Medical Journal of Australia*, 2019. doi: 10.5694/mja2.50286. [Epub ahead of print] No abstract available.
* Moss KM, Dobson AJ, Tooth L & Mishra GD. (2020). Which Australian women do not exclusively breastfeed to 6 months, and why? *Journal of Human Lactation*. [https://doi.org/10.1177/0890334420929993](https://doi.org/10.1177%2F0890334420929993)
* Moss KM, Dobson AJ, Edwards KL, Hesketh KD, Chang Y-T & Mishra GD. (2019). Journal of Physical Activity and Health; 16(11): 945-951. <https://doi.org/10.1123/jpah.2019-0075>

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| Project: W097 | Chronic disease management and outcomes for women with diabetes. |
| Collaborative Investigators: | * Prof Julie Byles - Research Centre for Generational Health and Ageing, The University of Newcastle * Prof Gita Mishra - Centre for Longitudinal and Life Course Research, The University of Queensland * A/Prof Julia Lowe – Sunnybrook Health Science Centre * Dr Xenia Dolja-Gore - Research Centre for Generational Health and Ageing, Health and Ageing, University of Newcastle * Dr Alexis Hure – School of Medicine and Public Health, The University of Newcastle * Dr Melissa Harris - Research Centre for Generational Health and Ageing, The University of Newcastle * Prof John Attia – School of Medicine and Public Health, The University of Newcastle * A/Prof Huy Tran – Pathology North, New South Wales Health   Pathology   * Dr Margaret Lynch – Research Innovation and Partnerships, Hunter New England Local Health District |

Diabetes is a global health issue. If not well managed, it can result in severe complications, increased hospitalisations and premature death. Tight glucose control is a primary goal for diabetes management. This project aims to understand the predictors of good glucose control for Australian women (particularly older women). Self-report survey data will be linked to administrative sources (MBS, PBS, hospital), and newly collected biological data. By understanding the collective impact, it will inform better management of this common chronic condition in older age. Data collection has been completed, and the project is currently on hold, prior to anaylsis beginning.

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| Project: W100 | Reliability of Intimate Partner Violence measures: A qualitative investigation. |
| Collaborative Investigators: | * Prof Deborah Loxton - Research Centre for Generational Health and Ageing, The University of Newcastle * Natalie Townsend - Research Centre for Generational Health and Ageing, The University of Newcastle * Liana Green - School of Medicine & Public Health, The University of Newcastle * Dr Jaqueline Coombe – Melbourne School fo Population and Global Health, The University of Melbourne |

Intimate Partner Violence (IPV; domestic violence) is under reported to medical and legal practitioners and in research. Researchers have noted that information about IPV is sometimes reported inconsistently across ALSWH surveys. For example, some women have indicated that they have experienced violence from a partner or spouse at one survey but later responded that they have never had this experience. By speaking with women who have responded inconsistently to questions that ask about violence, we aim to explain underreporting of IPV and make recommendations that will facilitate more accurate measurement of IPV. More broadly, insights gained from this research may assist practitioners in facilitating disclosures of IPV.

**Research outcomes:**

* Adversity. Loxton D. *Research Centre for Generational Health and Ageing Research Expo*. Hunter Medical Research Institute, Newcastle, November 2017.
* The long-term health and wellbeing consequences of violence against women. Loxton D. *Research Centre for Generational Health and Ageing Violence against Women Seminar and Workshop*, Newcastle, September 2018.
* Women and violence across the life course. Loxton, D. Invited talk*, Australian Institute of Health and Welfare*. Canberra. February 2019.
* Women and violence across the life course. Loxton D. Invited talk, *Inequality and Health Group*, Hunter Medical Research Institute, Newcastle, June 2019.
* Research for the Department of Social Services: 2017-2019. Loxton D, Forder P & Townsend N. Department of Social Services, Enid Lyons Building, Canberra, 28 November 2019.

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| Project: W102 | Living beyond expectations: How older women demonstrate successful and healthy ageing. |
| Collaborative Investigators: | * Prof Julie Byles - Research Centre for Generational Health and Ageing, The University of Newcastle * Professor Deborah Loxton - Research Centre for Generational Health and Ageing, The University of Newcastle * Dr Meredith Tavener - Research Centre for Generational Health and Ageing, Health and Ageing, University of Newcastle * Jenny Helman - Research Centre for Generational Health and Ageing, The University of Newcastle * Emily Princehorn - Research Centre for Generational Health and Ageing, The University of Newcastle |

Centenarians are a “model of ageing well”, having lived long and delayed the onset of disease and disability until much later in life. With increasing longevity, larger numbers of people will live to 100. However, little is known about the experiences of people at this extreme old age, as few studies have included very old people and most do not have data from earlier life to put these late life experiences into a life course context. Current participants of the Australian Longitudinal Study on Women’s Health (ALSWH) include an elite group of over 1400 women who are already past their mid‐90s, and who are likely to live to 100. In‐depth interviews with a sample of these women will provide a rare opportunity to gain insights into the experience of extreme old age, and to contrast their current and retrospective views with the trajectories and circumstances presented by the quantitative and qualitative data collected by ALSWH since 1996, when the women were in their 70s. The interviews will be framed by the new WHO healthy ageing framework, and will focus on women’s ability to do the things they want to do, and the balance between intrinsic capacity and functional support.

Fifty-three interviews have been completed, and two more are scheduled. Data analysis is underway and approval has been received to extend interviews to include women from the 1946-51 cohort.

**Research outcomes:**

* Healthy Ageing: A multi-dimensional perspective contrasting measures of older people’s abilities against their own experiences. Byles J. *Center for Excellence in Population Ageing Research (CEPAR)*. University of New South Wales Business School. Sydney. 28 January 2020.

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| Project: W103 | M-PreM study: Reproductive factors, from menarche to pre-menopause, and the risk of cardiometabolic and respiratory conditions before menopause. |
| Collaborative Investigators: | * Prof Annette Dobson - Centre for Longitudinal and Life Course Research, The University of Queensland * Prof Gita Mishra - Centre for Longitudinal and Life Course Research, The University of Queensland * Prof Deborah Loxton - Research Centre for Generational Health and Ageing, The University of Newcastle * Prof Rachel Huxley - Deakin University * Professor Debra Anderson - Faculty of Health, University of Technology Sydney * Dr Hsiu-Wen Chan - Centre for Longitudinal and Life Course Research, The University of Queensland * Dr Hsin-Fang (Evelyn) Chung - School of Public Health, The University of Queensland * Prof Isabel Ferreira - School of Public Medicine, University of Wollongong * Prof Grant Montgomery - Institute for Moecular Biosciences, The University of Queensland * Prof Jenny Doust - Centre for Longitudinal and Life Course Research, The University of Queensland * A/Prof Jenny Visser - Erasmus University Medical Centre * Prof Harold (David) McIntyre - Mater Clinical Unit, The University of Queensland * Prof Emmanuel Stamatakis - Charles Perkins Centre, The University of Sydney * Prof Bu Yeap - Faculty of Health and Medical Sciences, The University of Western Australia * Prof David Handelsman - ANZAC Research Centre |

Chronic conditions and poor health show marked sex differences in their prevalence and severity across the life course. Previous studies have typically focussed on risk factors for these conditions among postmenopausal women. This study will map the pathways between female reproductive factors, from the first period through to pregnancy and subfertility, and the risks of cardiometabolic and respiratory conditions and poor health among premenopausal women. The M-PreM study involves women visiting a clinic for a range of biomedical tests (body size measurements, cognitive test, handgrip strength, lung function), fitting of a physical activity monitor, and collection of a blood sample to measure cardiometabolic and hormone markers and for biobanking. Women unable to attend a clinic are offered the opportunity to participate through a specialized ‘at home’ data collection kit sent through the post.

Data collection began in Brisbane in July 2019, and in Melbourne in October 2019. All data collection was suspended in March 2020 due to the COVID-19 pandemic. At home data collection resumed in September, and if approvals are granted, clinic visits are expected to resume in late 2020. To date, over 300 women have attended clinics, and over 400 at home kits have been completed and returned.

* 1. **Completed substudies**

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| Project: W076 | The profile of arthritis pain in older women. |
| Collaborative Investigators: | * Prof Julie Byles - Centre for Generational Health and Ageing, The University of Newcastle * Prof Lynne Parkinson - Health CRN, CQ University Australia * Prof Isabel Higgins - Research Centre for Generational Health and Ageing, The University of Newcastle * Dr Sharyn Hunter - Research Centre for Generational Health and Ageing, The University of Newcastle * A/Prof Fiona Blyth - Pain Management & Research Centre, The University of Sydney * Dr Thomas Lo - University of Alberta * Dr Katie de Luca - The University of Newcastle * Prof Gillian Hawker - University of Toronto and Institute for Clinical Evaluative Sciences, Canada * A/Prof Henry Pollard - Faculty of Health Science, Australian Catholic University, Strathfield * Prof Lyn March - Medicine, Northern Clinical School, The University of Sydney * Dr Chris Hayes - Hunter Integrated Pain Service, Hunter New England Health * Aron Downie - George Institute of Musculoskeletal Health * Scott Haldeman - University of California * Matthew Fernandez - The University of Sydney |

This substudy, the profile of pain in older women, is a cross-sectional survey administered to 700 women from the mid-aged (born 1946-51) cohort. It will ask women about their health, experience of pain and arthritis condition. The aims of the research are to describe the profiles of pain experienced by a community sample of women aged in their 60’s; to compare the profiles of pain for women with and without arthritis; and to investigate the impact of arthritis on health.

**Research outcomes:**

*Publications:*

* A study protocol for the profile of pain in older women: Assessing the multi dimensional nature of the experience of pain in arthritis. de Luca K, Parkinson L & Byles J. *Chiropractic & Manual Therapies*, 2014; 22-28.
* Three subgroups of pain profiles identified in 277 women with arthritis: A latent class analysis. de Luca K, Parkinson L, Downie A, Blyth F, Byles J. *Clinical Rheumatology*, 2017, 36 (3); 625-634.
* The relationship between spinal pain and comorbidity: A cross-sectional analysis of 579 community-dwelling, older, Australia women. de Luca K, Parkinson L, Haldeman S, Byles J, Blyth F. *Journal of Manipulative and Physiological Therapeutics*, 2017, 40 (7); 459-466.
* Qualitative insights into the experience of pain in older Australian women with arthritis. De Luca K, Hunter S, Byles J & Parkinson L*. Australasian Journal on Ageing*, 2018; 37(3): 210-216.

*Conferences, seminars and workshops:*

* A cross sectional survey of pain in older women with arthritis: Study protocol. de Luca K, Parkinson L, Byles J, Blyth F & Pollard H. *11th National Conference of Emerging Researchers in Ageing - Making an Impact*, Brisbane, Qld, 19 - 20 November 2012.
* Development and pilot of a survey instrument for measuring pain in older women with arthritis (poster presentation). de Luca K, Parkinson L, Byles J, Blyth F & Pollard H. *Chiropractic and Osteopathic College of Australasia National Conference - The Ageing Spine*, Sydney, NSW, 13 - 14 October 2012.
* A cross sectional survey of pain in older women with arthritis: A study protocol (poster presentation). de Luca K, Parkinson L, Byles J, Blyth F & Pollard H. *Chiropractic and Osteopathic College of Australasia National Conference - The Ageing Spine*, Sydney, NSW, 13 - 14 October 2012.
* Development and pilot of a survey instrument for measuring pain in older women with arthritis (poster presentation). de Luca K, Parkinson L, Byles J, Blyth F & Pollard H. *11th National Conference of Emerging Researchers in Ageing - Making an Impact*, Brisbane, Qld, 19 - 20 November 2012.
* Pain and the older woman: Results from a cross-sectional survey. de Luca K, Parkinson L, Byles J, Blyth F & Pollard H. *2014 AAG & ACS Regional Conference*. *Sharing Care for Older Australians: Working Together,* Port Macquarie, NSW, 5 - 7 March 2014.
* How catastrophic are different types of pain in women with arthritis (poster presentation). de Luca K, Parkinson L, Byles J, Blyth F & Pollard H.*7th World Congress*, World Institute of Pain , Maastricht, Netherlands, 7 - 10 May 2014.
* How is the experience of pain measured in older, community dwelling women with osteoarthritis – A systematic review of the literature (poster presentation). de Luca K, Parkinson L, Byles J, Blyth F & Pollard H. *7th World Congress, World Institute of Pain*, Maastricht, Netherlands, 7 - 10 May 2014.
* How does neuropathic pain affect quality if life in women with arthritis. de Luca K, Parkinson L, Byles J, Blyth F & Pollard H. *7th World Congress, World Institute of Pain*, Maastricht, Netherland , 7 - 10 May 2014.
* How catastrophic are different types of pain in women with arthritis. de Luca K, Parkinson L, Byles J, Blyth F & Pollard H. *142nd APHA Annual Meeting and Exposition*, New Orleans, USA, 15 - 19 November 2014.
* How does neuropathic pain affect quality of life in women with arthritis. de Luca K, Parkinson L, Byles J, Blyth F & Pollard H. *Chiropractic and Osteopathic College of Australia (COCA) Biennial Conference*, Sydney, NSW, 10 - 12 October 2014.
* How does neuropathic pain affect quality of life in women with arthritis. de Luca K, Parkinson L, Byles J, Blyth F & Pollard H. *CAANSW Inaugural Research Symposium*, Sydney, NSW, 13 - 14 September 2014.

1. **APPENDIX C: Student projects**
   1. **Current projects**

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| Project: A413 | Oestrogen exposure index (OEI) for post-menopausal women. |
| PhD candidate: | * Shiva Mishra – The University of Queensland |
| Supervisors: | * Prof Gita Mishra - Centre for Longitudinal and Life Course Research, The University of Queensland * Dr Michael Waller - School of Public Health, The University of Queensland * Dr Hsin-Fang (Evelyn) Chung - School of Public Health, The University of Queensland |

Lifetime exposure to reproductive hormones may protect post-menopausal women from chronic disease and poor mental health. During their reproductive lives, many women are exposed to natural oestrogen during pregnancy, and synthetic oestrogen in the form of oral contraception. The use of hormone replacement therapy by peri-menopausal women can provide additional exposure to synthetic oestrogen. The aim of this project is to develop an oestrogen exposure index (OEI) for post-menopausal women (i.e., the 1946-51 cohort), of whom 92% have had at least one pregnancy, and examine the relationship between women’s OEI and their post-menopausal risk of chronic disease, cognition, and well-being.

**Research outcomes:**

* Oestrogen-exposure and cardiovascular disease events, all-cause and cardiovascular mortality: A systematic review. Mishra SR. *Australasian Epidemiological Association (AEA) Annual Scientific Meeting 2019*, Brisbane, QLD, 23-25 October 2019.
* Oestrogen exposure indices and risk of stroke in post-menopausal women: 20-year cohort study. Mishra SR. *Faculty of Medicine RHD Student Conference*, (Poster presentation). Brisbane, Australia, 20 November 2019.
* Oestrogen exposure indices and incident stroke in post-menopausal women: Insights from Australian Longitudinal Study on Women’s Health. Mishra SR. (Poster presentation at the spotlight section on cardiology). *The American College of Cardiology’s 69th Scientific Session with WHF’s World Congress of Cardiology* (ACC.20/WCC), Chicago, USA. 28-30 March 2020.

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| Project: A492B | The experience of breastfeeding for women with chronic health conditions. |
| Honours students: | * Annie Smith - The University of Newcastle * Shannon Boschuetz - The University of Newcastle * Janelle Murphy - The University of Newcastle |
| Supervisors: | * Dr Catherine Chojenta - Research Centre for Generational Health and Ageing, The University of Newcastle * Prof Deborah Loxton - Research Centre for Generational Health and Ageing, The University of Newcastle * Dr Alexis Hure - School of Medicine and Public Health, The University of Newcastle * Dr Melissa Harris - Research Centre for Generational Health and Ageing, The University of Newcastle * Peta Forder - School of Medicine & Public Health, The University of Newcastle * Dr Karen Mate - School of Biomedical Sciences and Pharmacy (Human Physiology), The University of Newcastle * Befikadu Wubishet – Faculty of Health and Medicine, The University of Newcastle |

Characterised by long-term development and persistent symptomatology, chronic conditions impact on healthcare expenditure and burden of disease. Women with chronic conditions may require specialised care and advice during postpartum to ensure optimal health for mother and baby. Existing evidence suggests that women with chronic conditions are less likely to breastfeed, although there is increasing evidence that breastfeeding is generally optimal for women with chronic conditions and their infants. Despite this, there are no specific guidelines to direct clinicians and patients in these situations. The aim of this project is to examine breastfeeding initiation and duration among women with chronic conditions and assess the impact of medication use.

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| Project: A537 | The prevalence and characteristics of consultation with a massage therapist among young and middle aged women. |
| PhD Candidate: | * Suzy Ladanyi, University Technology Sydney |
| Supervisors: | * Prof Jon Adams - School of Public Health, University Technology Sydney * Prof David Sibbritt – Faculty of Health, University Technology Sydney |
| ALSWH Liaison | * Prof Jayne Lucke – School of Public Health, The University of Queensland |

Massage is a popular form of Complementary and Alternative Medicine (CAM). It has become increasingly popular among women and used for a variety of physical and psychological conditions (Adams et al. 2011; Cambron et al. 2007; Listing et al. 2009; Meurk et al. 2013). However, there has been no critical analysis on the prevalence of massage use or the characteristics of massage users as a single treatment modality for women in Australia. The proposed study will determine the prevalence of young and mid aged women, and analyse the use of massage in relation to demographic data, physical and mental health status and health services factors among this population.

**Research outcomes:**

* Healthcare practitioner utilisation for back pain, neck pain and/or pelvic pain during pregnancy: An analysis of 1,835 pregnant women in Australia. Sibbritt D, Ladanyi S & Adams J. *International Journal of Clinical Practice*, 2016, 70 (10); 825-831.
* Massage therapy utilisation by Australian women: Prevalence and determinants. Ladanyi S, Sibbritt D, Adams J. *Journal of Bodywork and Movement Therapies*, 2020, 24(3): 29-37.

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| Project: A666 | The association between diet quality and work transitions in reproductive aged women. |
| PhD Candidate: | * Julie Martin, Monash University |
| Supervisors: | * Prof Helena Teede - Monash Centre for Health Research and Implementation, Monash University * A/Prof Lisa Moran - Monash Centre for Health Research and Implementation, Monash University |
| Other collaborators: | * Dr Anju Joham - Monash Centre for Health Research and Implementation, Monash University * Sanjeeva Ranasinha - Monash Centre for Health Research and Implementation, Monash University * Prof Wendy Brown - School of Human Movement and Nutrition Sciences, The University of Queensland * Maureen Makama - Monash Centre for Health Research and Implementation, Monash University * Dr Siew Liem - Monash Centre for Health Research and Implementation, Monash University |
| ALSWH liaison: | * Prof Gita Mishra - Centre for Longitudinal and Life Course Research, The University of Queensland |

Young women are increasingly challenged with balancing their family and work-life. The association between diet quality and women’s work transitions before and after the birth of their child is poorly understood. This study will investigate diet quality as measured by the Dietary Guideline Index (DGI) using dietary data from the food frequency questionnaires completed by postpartum women who had given birth from the Young (1973-78) cohort at Survey 5. Specifically, we will investigate the association between diet quality and paid and unpaid maternity leave arrangements, duration of maternity leave, and working arrangements (full time, part time, casual) after childbirth.

Two papers are planned from this EOI, one is already published and for the second analysis is nearly completed and the paper is anticipated to be submitted by January 2021.

**Research outcomes:**

* Postpartum diet quality: A cross-sectional analysis from the Australian Longitudinal Study on Women’s Health. Martin JC, Joham AE, Mishra GD, Hodge AM, Moran LJ, Harrison CL. *Journal of Clinical Medicine;* 2020, 9(2):446.

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| Project: A677 | Health care utilisation and health economics of diabetes among Australian women |
| PhD candidate: | * Befikadu Wubishet, The University of Newcastle |
| Supervisors/collaborators: | * Dr Xenia Dolja-Gore - Research Centre for Generational Health and Ageing, The University of Newcastle * Dr Melissa Harris - Research Centre for Generational Health and Ageing, The University of Newcastle * Peta Forder - School of Medicine & Public Health, The University of Newcastle * Dr Shamasunder Acharya - General Medicine / Endocrinology, John Hunter Hospital * Danielle Lang - School of Medicine and Public Health, The University of Newcastle |

Diabetes is one of the primary chronic conditions contributing to morbidity, mortality and economic burden in Australia. More accurate information on health care utilization patterns and associated costs in the whole spectrum of the diabetic population as well as specific groups such as patients at their end of life is important for future planning of healthcare services, particularly as diabetes incidence continues to rise. In addition, information on clinical practice-based cost effectiveness of antidiabetic medications aids decision-making and resource use optimization for diabetes patients. The project, primarily, aims to assess health care utilization of women with and without diabetes and the incremental costs incurred by the government and patients (out-of-pocket) due to diabetes and its complications. ALSWH self-reported data will be linked to administrative databases (Medicare Benefits Scheme, Pharmaceutical Benefits Schedule, hospital data and national death index).

**Research outcomes:**

*Publications:*

* Predictors of 15-year survival among Australian women with diabetes from age 76–81. Wubishet BL, Harris ML, Forder PM, Acharya SH & Byles JE. *Diabetes Research and Clinical Practice,* 2019, 150; 48-56.
* Impact of diabetes on life and healthy life expectancy among older women. Wubishet BL, Byles JE, Harris ML, Jagger C. *Journal of Gerontology: Medical Sciences*. 2020 (in press).
* Age and cohort rise in diabetes prevalence among older Australian women: Case ascertainment using survey and healthcare administrative data. Wubishet BL, Harris ML, Forder PM, Byles JE. *PLOS One*. 2020;15:e0234812.

*Presentations:*

* Costs of major complications of type 2 diabetes: A systematic review. Wubishet BL, Harris M, Abbas SS, Lang D, Acharya S & Byles J.*16th National Conference of Emerging Researchers in Ageing*, Perth, Australia,November 2017.
* Rising diabetes prevalence among older Australian women. (oral presentation). Wubishet B, Harris M, Lang D, Acharya S & Byles J.  51st Australian Association of Gerontology, Melbourne, November 2018.
* Rising diabetes prevalence among older Australian women. (oral presentation).Wubishet B, Harris M, Lang D, Acharya S & Byles J.  *Emerging Health Policy Research Conference*, Sydney, July 2018.
* End of life health care costs among older Australian women with diabetes. (oral presentation). Wubishet B, Harris M, Lang D, Acharya S & Byles J. *Fellowship by Training Program – Annual Colloquium at Australia’s Premier Digital Health, Health Informatics and E-Health Conference,* Sydney, July 2018.
* Taking Steps to Save Legs and Dollars. *UoN Faculty of Health and Medicine Three Minute Thesis (3MT) competetion*. July 2018.
* End of life health care utilisation patterns and associated costs among Australian women with diabetes. RCGHA Centre Expo, November 2017.
* Impact of diabetes on life and healthy life expectancy among older women. Wubishet BL, Byles JE, Harris ML& Jagger C. *18th National Conference of Emerging Researchers in Ageing*, Sydney, NSW, 4-5 November 2019 (oral presentation).

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| Project: A679 | Pattern of medication use in women with dementia |
| PhD Candidate: | * Kailash Thapaliya – The University of Newcastle |
| Supervisors: | * Prof Julie Byles – Research Centre for Generational Health and Ageing, The University of Newcastle * Dr Melissa Harris - Research Centre for Generational Health and Ageing, The University of Newcastle * Peta Forder – School of Medicine & Public Health, The University of Newcastle |

Dementia is a prevalent condition among older adults that particularly affects women. Dementia and its complications have wider ranging impacts on the individual including reduced quality of life. The way in which medication is used contributes to health outcomes for women with dementia (including disease onset) is critical. This research project will utilize data from Australian Longitudinal Study on Women’s Health (ALSWH) 1921-26 cohort todetermine association between medications used by women with dementia.

**Research outcomes:**

*Publications:*

* .Use of medication reviews among older women with dementia, 2003-2015: A longitudinal cohort study. Thapaliya K, Harris ML & Byles JB *Australasian Journal on Ageing*, 2020; <https://doi.org/10.1111/ajag.12836>

*Conference, seminars and workshops:*

* Pattern of medication use in women with dementia. Thapaliya K, Harris LM & Byles J. 16th National Conference of Emerging Researchers in Ageing (ERA 2017), Perth, WA, 6-7 November 2017.
* Antipsychotics use status among women with dementia in Australia. (Poster presentation). Thapaliya K. 51st AAG Conference, Melbourne, Vic, 21 - 23 November 2018.
* Use of medications reviews among older women with dementia in Australia, 200-2015: A longitudinal cohort study. Thapaliya K. Accepted for oral presentation at the Australian Dementia Forum 2020 (The Forum did not proceed due to COVID-19).

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| Project: A692A | Mental health and bone quality in Australian women |
| PhD Candidate: | * Dr Abhijit Chowdhury - Centre for Clinical Epidemiology and Biostatistics, The University of Newcastle |
| Collaborative Investigators: | * A/Prof Mark McEvoy - Centre for Clinical Epidemiology & Biostatistics, The University of Newcastle * Dr Tazeen Majeed - Research Centre for Gender, Health and Ageing, University of Newcastle * Dr Liz Holliday - Clinical Research Design, Information Technology and Statistical Support (CReDITSS) Unit, The University of Newcastle |
| ALSWH Liaison | * Prof Deborah Loxton Research Centre for Generational Health and Ageing, The University of Newcastle |

The project focuses on evaluating the impact of long‐term depression and anxiety on new onset osteoporosis and low‐trauma fractures among mid‐aged Australian women over 20 years. People with long‐term depression and anxiety have been shown to have a higher risk of osteoporosis and low‐trauma fractures in epidemiological studies, but the exact association and biological interplay among these factors are long‐debated and mostly underexplored. Alongside the ALSWH survey data, this project will be using linked data for better understanding of this relationship.

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| Project: A783 | Effect of medication reviews on patient and health outcomes among older women. |
| PhD candidate: | * Kaeshaelya Thiruchelvam - The University of Newcastle |
| Supervisors | * Prof Julie Byles - Centre for Generational Health and Ageing, The University of Newcastle * Dr Syed Hasan - University of Huddersfield * Dr Pei Se Wong - International Medical University |
| Collaborative Investigators: | * A/Prof Therese Kairuz - The University of Newcastle * Peta Forder - School of Medicine & Public Health, The University of Newcastle * Dominic Cavenagh - Research Centre for Genderational Health & Ageing, The University of Newcastle |

**Research outcomes:**

* Poster (title: Uptake of medication reviews among older women in the ALSWH) presentation at the *52nd Australian Association of Gerontology Conference*, Sydney, New South Wales, 6-8 November, 2019.

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| Project: A796 | Dental health in Australia – assessing the participatory, utilisation and health outcomes of the Chronic Disease Dental Scheme. |
| PhD Candidate: | * Siobhan Dickinson - Centre for Health Economics Research and Evaluation, University of Technology Sydney |
| Collaborative Investigators: | * Prof Jane Hall - Centre for Health Economic Research and Evaluation, University of Technology Sydney * Prof Kees Van Gool - Centre for Health Economics Research and Evaluation, University of Technology Sydney * Dr Maryam Naghsh Nejad - Centre for Health Economics Research and Evaluation, University of Technology Sydney |
|  | * Peta Forder – School of Medicine & Public Health, The University of Queensland |

With calls to expand Medicare to include dental services and the noted fiscal costs associated with such an expansion, it is important to understand what the outcomes might be. The addition of the Chronic Disease Dental Scheme (CDDS) on Medicare between 2007 and 2012/2013 represented an expansion of public health insurance to cover dental services for those with a chronic disease. This study will seek to identify the drivers of program participation and whether the CDDS increased the utilisation of dental services for the intended population.

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| Project: A685 | Using epidemiological evidence to aid tailored joint decision making in areas of Clinical uncertainty in the management of cardiovascular diseases (CVD) in later life. |
| PhD Candidate: | * Dr Shazia Abbas, The University of Newcastle |
| Supervisors: | * Prof Julie Byles - Centre for Generational Health and Ageing, The University of Newcastle * Prof Kichu Nair - School of Medicine and Public Health, The University of Newcastle * Dr Tazeen Majeed - Research Centre for Gender, Health and Ageing, University of Newcastle |
| ALSWH Liaison | * Prof Deborah Loxton - Research Centre for Generational Health and Ageing, The University of Newcastle * Peta Forder - School of Medicine & Public Health, The University of Newcastle * Dr Natasha Weaver - School of Medicine & Public Health, The University of Newcastle |

The project aims to develop a decision making tool to quantitatively assess the probabilities of all outcomes associated with atrial fibrillation; integrating patient profile and patient preferences for each outcome to help clinicians and patients make informed decisions in choosing the anticoagulant regimens/treatment to the balance the risk of stroke, bleeding and death in patients with atrial fibrillation.

**Research outcomes:**

*Publications:*

* Abbas SS, Majeed T, Nair BR, Forder P, Weaver N & Byles J. (2020). Burden of atrial fibrillation and stroke risk among octa‐and nonagenarian women in Australia*. Annals of Epidemiology*. 44(2020) 31-37.
* Abbas SS, Majeed T, Nair BR, Forder P, Weaver N & Byles J. (2020). Patterns of medications for atrial fibrillation among older women: Results from the Australian Longitudinal Study on Women’s Health. *Journal of Cardiovascular Pharmacology and Therapeutics*; . [https://doi.org/10.1177/1074248420947278](https://doi.org/10.1177%2F1074248420947278)

*Conferences, seminars and workshops:*

* Using epidemiological evidence to aid tailored joint decision making in areas of clinical uncertainty in the management of cardiovascular diseases (CVD) in later life. Abbas S. *16th National Conference of Emerging Researchers in Ageing (ERA 2017)*, Perth, WA, 6-7 November 2017.
* Decisions for life – Better Quality of Life. Abbas S. *The University of Newcastle, Research Centre for Generational Health and Ageing Expo*, Newcastle, NSW, 27 November 2017.
* Every decision counts. Abbas S. *Faculty of Medicine and Health 3 Minute Thesis (3MT) Competition*, Newcastle, NSW, 4 July 2018.
* Use of medications for Atrial Fibrillation among Australian women. Abbas S.S. *51st Australian Association of Gerontoogy (AAG 2018)*, Melbourne Australia, 21-23 November 2018.
* Matters of the Heart – Medications for Atrial Fibrillation. Abbas S S. *The Australian Society for Medical Research (ASMR) 6th Annual Newcastle Satellite scientific meeting*, Newcastle, June 03, 2019.
* Atrial fibrillation - Medication patterns in older women in Australia. *52nd Australian Association of Gerontology Conference*, Sydney, NSW, November 6-8, 2019.

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| Project: A687 | Investigating the association between depressive symptoms and hypertension in the young ALSWH cohort. |
| Student: | * Regina Prigge, The University of Edinburgh |
| Other collaborators: | * Dr Caroline Jackson - School of Molecular, Genetic and Population Health Sciences, The University of Edinburgh * Prof Sarah Wild - The University of Edinburgh * Prof Gita Mishra - Centre for Longitudinal and Life Course Research, The University of Queensland |

Depression might lead to an increased risk of hypertension. However, findings of published studies are conflicting and many have methodological limitations. We aim to investigate the association between time‐varying depressive symptoms and hypertension among the young ALSWH cohort, to assess whether the association varies by distinct depressive symptom subgroups, and to investigate factors that might mediate this increased risk. For example, a previous study using the mid‐aged ALSWH cohort found that depressive symptoms were associated with increased risk of hypertension. This association markedly attenuated following adjustment for body mass index (BMI), suggesting that BMI may confound and/or mediate the association.

Some of the planned analyses of the data, identifying depression trajectories and related cardiovascular risk profiles have been completed, and Regina Prigge was awarded her PhD thesis on 9/3/2020. Dr Prigge is currently on maternity leave – work will continue on developing a manuscript for publication on her return.

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| Project: A701A | Electronic cigarette and conventional cigarette smoking among Australian women |
| PhD Candidate: | * Alemu Sufa Melka, The University of Newcastle |
| Supervisors: | * Prof Deb Loxton - Centre for Generational Health and Ageing, The University of Newcastle * Dr Cath Chojenta - Research Centre for Generational Health and Ageing, The University of Newcastle * Dr Liz Holliday – Clinical Research Design, Information Technology and Statistical Support (CReDITSS) Unit, The University of Newcastle |
| Other collaborators | * Peta Forder - Research Centre for Generational Health and Ageing, The University of Newcastle |

The dramatic physical, psychological and emotional changes that occur during late adolescence predisposes young people to problematic substance use. Tobacco smoking is a leading risk factor for many of chronic diseases that include cancer, cardiovascular disease, chronic obstructive pulmonary disease and many others. Although smoking rates have declined globally over time, as of 2015 the annual global tobacco-related death rate is as high as 6 million. Australia is one of the countries on track in decreasing the prevalence of tobacco smoking over time. However, given population growth, the burden of disease associated with smoking is still high. The current study intends to examine electronic cigarette use and cigarette smoking using data collected from the 1989-95 cohort of the Australian Longitudinal Study on Women’s Health (ALSWH).

**Research outcomes:**

*Publications:*

* Predictors of E-cigarette use among young Australian women. Melka AS, Chojenta CL, Holliday EG, Loxton DJ. *American Journal of Preventive Medicine*, 2019, 56(2); 293-9. DOI: [10.1016/j.amepre.2018.09.019](https://doi.org/10.1016/j.amepre.2018.09.019)
* Adverse childhood experiences and electronic cigarette use among young Australian women. Melka A, Chojenta C, Holliday E, Loxton D. *Preventive Medicine*. 2019. (In press). DOI: [10.1016/j.ypmed.2019.105759](https://doi.org/10.1016/j.ypmed.2019.105759)
* Melka AS, Chojenta CL, Holliday EG & Loxton DJ. E-cigarette use and cigarette smoking initiation among Australian women who have never smoked. *Drug and Alcohol Review*; <https://dor.org/10.1111/dar.13131>

*Conferences, seminars and workshops:*

* Adverse childhood experiences and electronic cigarette use among young Australian women. (Poster presentation). Melka A, Chojenta C, Holliday E & Loxton D. *Australian Society of Behavioural Health and Medicine (ASBHM*), Sydney, NSW, Australia. 5-7 February, 2020.

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| Project: A713 | Understanding Australian women’s hospital use dynamics in later life: The Australian Longitudinal Study on Women’s Health. |
| PhD Candidate: | * Dinberu Shebeshi, The University of Newcastle |
| Supervisors: | * Prof Julie Byles - Centre for Generational Health and Ageing, The University of Newcastle * Dr Xenia Dolja-Gore - Research Centre for Generational Health and Ageing, The University of Newcastle * Prof Jimmy T Efird - The University of Newcastle |

The project aims to characterise multiple hospital admission patterns among older Australian women. While frequent hospital admissions over time are very common in older patients, most studies have identifed trends in hospitalisation, time to first hospitalisation, or factors associated with first hospitalisation. This ignores the existence of subsequent hospitalisation and correlations between different admissions. Our study will examine multiple events including factors associated with each event, and the relationship between events. The study will also provide evidences regarding older women hospital use for policy makers.

**Research outcomes:**

*Publications:*

* Unplanned readmission within 28 days of hospital discharge in a longitudinal population-based cohort of older Australian women. Shebeshi DS, Dolja-Gore X & Byles J. *International Journal of Environmental Research Public Health*, 2020; 17(9), 3136.
* Estimating unplanned and planned hospitalisation incidents among older Australian women aged 75 years and over: The presence of death as a competing risk. Shebeshi DS, Dolja-Gore X & Byles J. *International Journal of Health Planning and Management* (accepted for publication).

*Presentations:*

* Modelling unplanned and planned hospitalisation incident (2001-2016) in older Australian women aged 75 years and above: In the presence of death as a competing event. Oral presention at the *6th African International Conference on Statistics*, 27-30 May, Adama, Ethiopia.
* Unplanned readmission within 28 days of hospital discharge in a longitudinal population-based cohort of older Australian women. *18th National Conference of Emerging Researchers in Ageing. Theme: Equity and Diversity*, 4 – 5 November 2019, in UNSW, Sydney, New South Wales, Australia
* Unplanned readmission within 28 days of hospital discharge in a longitudinal population-based cohort of older Australian women. Australasian Epidemiological Association Annual Scientific Meeting 2019, 24-25 October 2019, in Brisbane, Queensland, Australia
* Writing a systematic review following. Cochrane methods workshop, 5 July – 7 July 2017, Cochrane Australia, 553 St Kilda Road, Monash University, Melbourne VIC 3004, Australia.
* Advanced survival analysis in medical research. Joint International Society for Clinical Biostatistics and Australian Statistical Conference 2018. 26-30 August, Melbourne, Australia.
* Advanced Longitudinal Data Analysis in Ageing Research, 9 - 12 December 2019, in UNSW, Sydney, New South Wales , Australia.

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| Project: A714 | Lifestyle behaviours in cancer survivors: Measuring the teachable moment of cancer diagnosis. |
| PhD Candidate: | * Daniel Tollosa, The University of Newcastle |
| Supervisors/collaborators: | * Dr Meredith Tavener - Research Centre for Generational Health and Ageing, Health and Ageing, University of Newcastle * A/Prof Erica James - School of Medicine and Public Health, The Univesity of Newcastle * Dr Alexis Hure - School of Medicine and Public Health, The University of Newcastle * A/Prof Elizabeth Holiday - Clinical Research Design, IT and Statistical Support (CReDTSS), Hunter Medical Research Institute (HMRI) * Prof Julie Byles - Research Centre for Generational Health and Ageing, Health and Ageing, University of Newcastle |

Given advances in early detection, treatment, and survivorship care, the number of cancer survivors has been steadily increasing over the past few decades. However, recurrence and co‐morbidities are still a major concern for cancer survivors. Lifestyle factors such as healthy diet, physical activity and maintaining a healthy weight can reduce cancer‐related consequences and improve overall survival in the aftermath of a cancer diagnosis. It has also been suggested that the diagnosis of cancer may provide a “teachable moment” when survivors may be more receptive to health recommendations and more likely to make lifeestyle changes. However, despite the existence of lifestyle recommendations, and the potential for a teachable moment, the lifestyle behaviours of cancer survivors remain similar to those without a cancer history. The aim of this series of studies is, therefore: i) to examine the practice of multiple health behaviours, ii) to assess if there is evidence of a teachable moment where cancer survivors improve compliance with lifestyle recommendations following a cancer diagnosis (compared to age‐matched controls), and iii) to assess if any change in behaviours are maintained over time.

**Research outcomes**:

*Publications:*

* Compliance with multiple health behaviour recommendations: A cross-sectional comparison between female cancer survivors and those with no cancer history. Tollosa DN, Tavener M, Hure A, James EL. *International Journal of Environmental Research and Public Health*, 2019, 16(8); <https://www.mdpi.com/1660-4601/16/8/1345>
* Multiple health behaviors before and after a cancer diagnosis among women: A repeated cross-sectional analysis over 15 years.: Tollosa DN, Holliday E, Hure A, Tavener M, James EL.Cancer Med. 2020. 9(9): 3224-3233. Doi: 10.1002/cam4.2924.
* A 15-year follow-up study on long-term adherence to health behaviour recommendations in women diagnosed with breast cancer. Tollosa DN, Holliday E, Hure A, Tavener M, James EL. Breast Cancer Res Treat 2020. 182(3): 727-738. DOI: [10.1007/s10549-020-05704-4](https://doi.org/10.1007/s10549-020-05704-4)

*Conferences, seminars and workshops:*

* A 15-year follow-up study on long-term adherence to health behaviour recommendations in women diagnosed with breast cancer. ISBNPA\*, Auckland, New Zealand, June 17-20, 2020.

\*Conference cancelled due to COVID19; all accepted abstracts released online: <https://venuewest.eventsair.com/QuickEventWebsitePortal/isbnpa2020annualmeeting/eventinfo/Agenda/AgendaItemDetail?id=2be6426d-3c89-4c46-b959-9e8e0692aa88>

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| Project: A728 | Understanding the relationships between weight gain, physical activity and indicators of women's reproductive health. |
| PhD candidate: | Gabriela Mena - School of Human Movement and Nutrition Sciences, The University of Queensland |
| Supervisors: | * Prof Wendy Brown - School of Human Movement and Nutrition Sciences, The University of Queensland * Dr Gregore Mielke - School of Human Movement and Nutrition Sciences, The University of Queensland. |

The purpose of this research is to better understand the relationships between weight gain, physical activity and aspects of young women's reproductive health, with a focus on the potential effects of physical activity and menstrual irregularities on weight-reproductive health relationships.We will examine relationships between weight gain and indicators of reproductive health&nbsp;in young women (ability to have children, use of in vitro fertilisation (IVF), use of fertility hormones, PCOS, endometriosis etc). As women gain weight, they may develop menstrual irregularities that are precursors to infertility. However, physical activity may modify the relationship between weight gain and these health outcomes. The results will inform the development of practices which may help to establish better reproductive health in young women. A presentation by Gabriela Mena at the 2019 Sports Medicine Australia Conference was awarded the ‘Wendy Ely’ award for research relating to women’s participation in sport/exercise/physical activity, and a paper has been submitted to *Human Reproduction*.

**Research outcomes:**

*Publications:*

* Do physical activity, sitting time, and body mass index affect fertility over a 15 year period in women? Data from a large population-based cohort study. Mena GP, Mielke GI & Brown WJ., *Human Reproduction*, 2020; 35(3): 676-683. <https://doi.org/10.1093/humrep/dez300>
* Mena G, Mielke G & Brown W. (2019). Do physical activity and sitting time affect associations between BMI and fertility in women? Data from a large population-based cohort study. *Journal of Science and Medicine in Sport*, 22, S54. <https://doi.org/10.1016/j.jsams.2019.08.245>

*Conferences, seminars and workshops:*

* Do physical activity and sitting time affect associations between BMI and fertility in women? Data from a large population-based cohort study. Mena G, Mielke G & Brown W. 2019 ASICS Sports Medicine Australia (SMA) Conference, Sunshine Coast, Qld, 23 – 26 October 2019.
* Do physical activity and sitting time affect associations between BMI and fertility in women? Data from a large population-based cohort study. Mena GP, Mielke GI & Brown WJ. *People, Partnership, Performance HMNS Postgraduate Conference*, The University of Queensland, Brisbane. October 2019.

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| Project: A743 | Adverse pregnancy outcomes among women in Australia. |
| PhD candidate: | * Habtamu Bizuayehu – The University of Newcastle |
| Supervisors/collaborators: | * Dr Catherine Chojenta - Research Centre for Generational Health and Ageing, The University of Newcastle * Dr Melissa Harris - Research Centre for Generational Health and Ageing, The University of Newcastle * Peta Forder - School of Medicine & Public Health, The University of Newcastle * Prof Deborah Loxton - Research Centre for Generational Health and Ageing, The University of Newcastle * Dominic Cavenagh - Research Centre for Generational Health and Ageing, The University of Newcastle |

Adverse pregnancy outcomes have been associated with various socio-demographic factors, life events, and health conditions, such as hypertension, diabetes, and asthma. About a quarter (25.8%) (11) of pregnancies in Australia end with any adverse pregnancy outcomes, including preterm birth (8.7%), low birth weight (6.5%), caesarean section (33%), labour induction (29%), and instrumental delivery (11% - 12%) (2), macrosomia (9.1% in gestational diabetic and 11.9% non-diabetic pregnancies)(12) . This study will generate evidence about the occurrence, recurrence, trajectory and geospatial distribution of adverse pregnancy outcomes among women in Australia. This study will assist with resource planning, clinical decision-making, explaining geographic distribution and momentum/course of adverse pregnancy outcomes during the reproductively active years. A manuscript, ‘What influences the occurrence and recurrence of preterm singleton births? Findings from a perspective cohort of Australian women’ has been submitted to a peer reviewed journal, and is under review.

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| Project: A744 | The relationships between menstrual problems and endometriosis over time. |
| PhD candidate: | * Sifan Cao – School of Public Health, The University of Queensland |
| Supervisors: | * Prof Gita Mishra – Centre for Longitudinal and Life Course Research, The University of Queensland * Dr Mark Jones – Faculty of Health Sciences & Medicine, Bond University * A/Prof Leigh Tooth – Centre for Longitudinal and Life Course Research, The University of Queensland |

Menstrual problems, such as severe period pain (dysmenorrhea), premenstrual syndrome (PMS), irregular periods and heavy menstrual bleeding, affect more than 20% women of reproductive age. They are clinical manifestations of some gynaecological conditions. Endometriosis is one of these conditions that affects 2-17% childbearing women with severe period pain. Few studies have explored the associations between menstrual problems and endometriosis in life course. This project aims to fill this gap by investigating the relationships between menstrual problems and endometriosis over time.

**Research outcomes:**

* The effect of premenstrual syndrome on postpartum depression: a systematic review and meta-analysis. Cao S. *2018 Clinical and Public Health Postgraduate Symposium*, Herston, Qld, 22 - 23 November 2018.

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| Project: A747 | Assessment of incidence and predictors of long-term metabolic complications of PCOS |
| PhD candidate: | * Dr Nadira Kakoly – Monash Centre for Health Research and Implementation, Monash University |
| Supervisors: | * Assoc. Prof. Arul Earnest - Department of Epidemiology and Preventive Medicine, Monash University * Prof Helena Teede - Monash Centre for Health Research and Implementation, Monash University * Eldho Paul - Department of Epidemiology and Preventive Medicine, Faculty of Medicine * A/Prof Lisa Moran - Monash Centre for Health Research and Implementation, Monash University * Dr Anju Joham - Monash Centre for Health Research and Implementation, Monash University * Sanjeeva Ranasinha - Monash Centre for Health Research and Implementation, Monash University * Mahnaz Bahri Khomami - Monash Centre for Health Research and Implementation, Monash University |

Polycystic Ovary Syndrome (PCOS) is a common disorder that affects women who are of childbearing age. It is associated with many complications including infertility, but also carries long-term complications such as excess weight, diabetes and high blood pressure. In this research project, we will compare women with PCOS to those without PCOS over time to try and understand what the key contributing factors are to the development of PCOS, the long-term metabolic complications of PCOS and in particular to study the effect of body weight.

**Research outcomes**

*Publications:*

* The impact of obesity on the incidence of type 2 diabetes among women with polycystic ovary syndrome. Kakoly NS, Earnest A, Teede HJ, Moran LJ & oham AE. (2019). *Diabetes Care* 42(4); 560.
* Group-based developmental BMI trajectories, polycystic ovary syndrome and gestational diabetes: A community- based longitudinal study. Kakoly NS, Earnest A, Moran LJ, Teede HJ, Joham AE. *BMC Medicine,* 2017,15;195.

*Presentations:*

* The impact of obesity on the incidence of type 2 diabetes mellitus among women with polycystic ovary syndrome. Kakoly NS, Earnest A, Teede HJ, Moran LJ & Joham AE. *American Diabetes Association*, Orlando, Florida, USA, 22 - 26 June 2018.
* Gestational Diabetes Mellitus among young adult women with PCOS: Association with BMI trajectories over 13 years. Kakoly NS, Earnest A, Moran LJ, Teede HJ, Joham AE. *The 2016 Annual Scientific Meeting for the Australian and New Zealand Obesity Society (ANZOS),* Australia, 14-17 October 2016.
* Changing BMI over time and development of gestational diabetes mellitus in women with and without polycystic ovary syndrome. Kakoly NS, Earnest A, Moran LJ, Loxton D, Teede HJ, Joham AE. *14th Annual Meeting of the Androgen Excess and PCOS Society,* Lorne Victoria, 9 - 10 November 2016.

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| Project: A756 | Maternal diets before pregnancy and its effects on birth outcomes and child health and well-being |
| PhD candidate: | * Dereje Gedle Gete – School of Public Health, The University of Queensland |
| Supervisors: | * Prof Gita Mishra – Centre for Longitudinal and Life Course Research, The University of Queensland * Dr Michael Waller – School of Public Health, The University of Queensland |

Maternal diet has a significant role in ensuring successful pregnancy outcomes for the mother and her newborn. Nutrition requirements are generally higher in pregnancy to maintain maternal adaptations and the delivery of nutrients to the fetus. In addition, preconception diet is also important for an ideal onset and development of pregnancy since early pregnancy is a critical period for placental and fetal tissue developments. Therefore, maternal diets before pregnancy could have a profound effect on birth and child outcomes.

**Research outcomes:**

*Publications:*

* Effects of maternal diets on preterm birth and low birth weight: a systematic review. Gete DG, Waller M, Mishra GD. *British Journal of Nutrition*, 2019;1-37.
* Prepregnancy dietary patterns and risk of preterm birth and low birth weight: Findings from the Australian Longitudinal Study on Women's Health. Gete DG, Waller M, Mishra GD. *American Journal of Clinical Nutrition*, 2020;111:1048-58.
* Pre-pregnancy diet quality and its association with offspring behavioral problems. Gete DG, Waller M, Mishra GD. *European Journal of Nutrition*, 2020; <https://doi.org/10.1007/s00394-020-02264-7>

*Conferences, seminars and workshops:*

* Effects of maternal diets on preterm birth and low birth weight: A systematic review. Gete D, Waller M, Mishra G. Poster presentation: *The 11th DOHaD 2019 World Congress*, October 20 – 23, 2019, Melbourne, Australia.
* Pre-pregnancy diet quality and its association with offspring behavioral problems. Gete D, Waller M, Mishra G. Online poster and 10 minute audio presentation: *Nutrition 2020*, Seattle, USA, May 30 – June 2, 2020.
* Poster presentation: *The School of Public Health RHD Student Conference*, November 2019, Brisbane, Australia.

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| Project: A784 | Fast food consumption and allergy in children aged 5-12 years in Australia: Findings from the Mothers and their Children’s Health (MatCH) study |
| PhD candidate: | * Leticia Watanabe Ribeiro – School of Public Health, The University of Queensland |
| Supervisors: | * Prof Gita Mishra – Centre for Longitudinal and Life Course Research, The University of Queensland * Dr Katrina Moss – Centre for Longitudinal and Life Course Research, The University of Queensland |

Asthma and allergic diseases are an emerging health issue among Australian children. Currently, there is no cure for such atopic conditions, and the evidence around risk and protective factors is still limited. The Westernisation of lifestyle is likely to be favouring the rise of allergies and this includes changes in diet, particularly an increasing consumption of fast foods. This study aims to build on the evidence of the association between fast food intake and the outcomes of asthma and allergies in a representative sample of Australian children, who participated in the Mothers and their Children’s Health (MatCH) study.

**Research outcomes:**

* Dietary patterns and allergy in children aged 5-12 years in Australia: Findings from the Mothers and their Children’s Health study. Ribeiro LW, Moss KM & Mishra GD. *Allergology International,* 2020; https://doi.org/10.1016/j.alit.2020.04.012

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| Project: A815 | The interface between Residential Aged Care Facilities (RACF) and Acute Hospital Care for Australian women living in RACF, and possible variables that influence the interface. |
| PhD candidate: | Sarwoko Andi Pramono - University of Newcastle |
| Supervisors: | * Prof Julie Byles - Centre for Generational Health and Ageing, The University of Newcastle * Dr Xenia Dolja-Gore - Research Centre for Generational Health and Ageing, The University of Newcastle |

The aim of this study is to investigate the interface between Residential Aged Care (RAC) and acute health care facilities among Australian women living in RAC. The study also aims to identify factors that may influence the interface and any possible reduction of unnecessary transfers from RAC to hospital. The study will examine longitudinal data from ALSWH which is linked to external data. This research will provide important evidence based information that may assist in quality improvement activities, planning and policy development. It will identify opportunities to reduce unnecessary transfers which may consequently reduce potential adverse impact of transfers that may influence health care related cost such as transfer, hospitalization, medication and treatment costs.

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| Project: A822 | The association between maternal and childhood NO2 and PM2.5 exposure and health and development of Australian children. |
| PhD candidate: | Salma Mohamed Ahmed - School of Public Health, The University of Queensland |
| Supervisors: | * Dr Luke Knibbs - School of Public Health, The University of Queensland * Prof Ian Yang - Faculty of Medicine, The University of Queensland |
| ALSWH Liaison | * Prof Gita Mishra – Centre for Longitudinal and Life Course Research, The University of Queensland |

In 2016/2017, mothers from the 1973-78 ALSWH cohort were invited to participate in MatCH to complete a survey about their children (aged under 13 years). Recently, air pollution exposure estimates (nitrogen dioxide and fine particulate matter) have been linked to geocoded residential addresses of ALSWH participants. Therefore, the purpose of this project is to understand the health impact of decade long air pollution exposures experienced first-hand by mothers on the generation that follows as well as how environment contributes to disease risk in their children.

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| Project: A823 | Impact of residential greenspace on the mental health of Australian women |
| PhD candidate: | Tafzila Aketer Mouly - School of Public Health, The University of Queensland |
| Supervisors: | * Dr Luke Knibbs - School of Public Health, The University of Queensland * Prof Mark Nieuwenhuijsen – IS Global, Barcelona Institute for Global Health * Prof Gita Mishra – Centre for Longitudinal and Life Course Research, The University of Queensland |

This project will examine the effects of neighborhood greenspace on the mental health of Australian women. Research on greenspace and mental health has been driven by an emerging interest in the last decade. However, most of the evidence came from cross-sectional studies. Moreover, several studies used historical environmental exposure data, which are not always spatially and temporally well-aligned with a participant’s residential address(es). ALSWH has mental health data collected by regular surveys as well as geocoded residential addresses. These data will allow investigation of the longitudinal association between spatially and temporally aligned residential greenspace and mental health in a large, national cohort of Australian women.

* 1. **Completed student projects**

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| Project: A704A | Investigating the relationship between sleep behaviour during pregnancy and adverse pregnancy related outcomes. |
| PhD Candidate | Christie Bennett - School of Clinical Sciences, Monash University |
| Supervisors: | * Dr Michelle Blumfield - Faculty of Medicine, Nursing & Health Sciences, Monash University * Dr Sean Cain - Monash University |
| ALSWH Liaison | * Dr Melissa Harris – Research Centre for Generational Health and Ageing, The University of Newcastle |

The majority of women will experience sleep disturbances in pregnancy, even if they have never experienced adverse sleep symptoms before. In non‐pregnant populations, sleep disturbances has been linked to poorer dietary intakes, reduced glucose tolerance and a greater risk of obesity. However, research examining this relationship in pregnancy is limited. This research aims to investigate the relationship between sleeping behaviour in pregnancy and diet and pregnancy, birth and postnatal outcomes (Child Data).

**Research outcomes:**

* Sleep during pregnancy: A novel opportunity to change the health of two generations. Bennett C. Thesis submitted for Doctor of Philosophy, Monash University, Melbourne, 2019.

*Conference presentations:*

* Is there a relationship between dietary intake and sleep in pregnancy? *The Nutrition Society Summer Conference 2018*, Leeds UK.
* Dietary monounsaturated fat intake may be protective for sleep during pregnancy. Bennet C, Cain S & Blumfield M. *11th DOHaD World Congress*, Melbourne, Vic, 20-23 October 2019.
* Monounsaturated fat intake may protect against poor quality sleep during pregnancy. Bennet C, Cain S & Blumfield M. *Nutrition Society of Australia 43rd Annual Scientific Meeting*, Newcastle, NSW, 3 December 2019.
* Sleeping behaviour during pregnancy increases the risk of adverse birth and postpartum outcomes. Bennet C, Cain S & Blumfield M. *11th DOHaD World Congress*, Melbourne, Vic, 20-23 October 2019.

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| Project: A654 | Investigating the association between weight status, weight change, and headache in young Australian women. |
| Masters student: | Sonja Kubik, Griffith University |
| Supervisors: | * Prof Wendy Brown - School of Human Movement and Nutrition Sciences, The University of Queensland * A/Prof Grant Devilly - School of Applied Psychology, Griffith University * A/Prof Frances O'Callaghan - School of Applied Psychology, Griffith University |

Pervasive evidence has emerged suggesting an association exists between primary headaches (namely migraine) and obesity. However, only a very limited number of studies are prospective in nature and/or incorporated lifestyle and psychological factors into the model when investigating the migraine-obesity association. In this research, we will use cross-sectional data to explore what (if any) lifestyle and/or psychological factors known to correlate with both conditions have the greatest impact, and create a multivariate model that will show how these factors work together to predict headache in a nationally representative population of reproductive Australian women, aged 18-23 years. We will also use prospective data to examine the association between changes in women’s weight status and self-reported headache frequency.

**Research outcomes:**

* Investigating the relationship between deviations in body weight (overweight and underweight), and migraines. Kubik S. Thesis submitted for Master of Clinical Psychology, Griffith Univesrity, October 2019.