



IMPACT

CENTRE FOR INNOVATION IN
MENTAL AND PHYSICAL HEALTH
AND CLINICAL TREATMENT

ANNUAL REPORT 2016



DEAKIN
UNIVERSITY

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The IMPACT SRC team

Forewords

Deakin University's global reputation has continued its impressive climb. Deakin jumped 183 places in just one year to come in at 214 in the world, and Deakin University's School of Medicine has taken just eight years of teaching and research to enter the top 150 in the world, according to the prestigious Academic Ranking of World Universities (ARWU). Similarly, according to the Times Higher Education (THE) Rankings, Deakin joined the 251–300 bracket, jumping up from last year's position in the 301–350 tier. This excellent result is the first time Deakin has entered the THE top 300, and places Deakin solidly among the top 2% of universities worldwide. Because this is largely a research ranking, this leap is testament to the work of Deakin's researchers, and the IMPACT SRC is one group that has made a major contribution to this rise in Deakin's rankings based on their productivity, grant success and international rankings including being included in the 2016 Thomson Reuters annual listing of researchers most cited in academic journals, ranking in the top one per cent of researchers in their field.

Professor Peter Hodgson

Deputy Vice Chancellor, Research
Deakin University



IMPACT SRC continues to be a leading research centre in Geelong's health precinct, attracting recognition both nationally and internationally. The team's research contributes significantly to improvements in the global health sector's understanding of chronic disease patterns, risk factors and novel therapies. These improvements are forging connections and grow the breadth and reach of research being undertaken, ultimately building healthier lives.

Under the guidance and leadership of Professor Berk and Professor Pasco, the IMPACT SRC team has taken Barwon's research to the world stage; recognised in international publications and at prestigious conferences. Their research has put a spotlight on Geelong and is contributing to its transformation to become a smart city.

I congratulate the IMPACT SRC team for an excellent year and I look forward to further development and success.

Professor Belinda Moyes

Chief Executive Officer
Barwon Health



Care | Education | Research

We have had another wonderful year at IMPACT with substantial achievement in research, particularly regarding lifestyle and mental illness. Our annual review with the Advisory Board demonstrated the advances and opportunity for more projects that will lead to a greater understanding of these illnesses and their treatment. The Advisory Board continues to develop plans for funding of research, outside of the NHMRC.

We are fortunate to have as our Director, Professor Michael Berk, and he has, with his team, international standing, in a regional setting.

Trevor M Clark OAM

Director Autism Co-operative Research Centre
Chair, IMPACT SRC Advisory Board



Introduction by Professor Michael Berk



Professor Michael Berk

The IMPACT SRC remains committed to the generation of results that make a direct contribution to the health of the community. This was a particularly good year for our clinical trial team. Specifically, Dr Olivia Dean had a positive result in the Minocycline Unipolar Depression trial (MINO UD trial), Professor Felice Jacka had a positive outcome in her Diet for Depression trial (Smiles trial) and the MoodSwings team had a positive result for their study in treating bipolar disorder using web based therapy. We completed the first trial of nutraceutical agents that boost mitochondrial energy generation to treat bipolar depression.

IMPACT had some grant success. Olivia Dean was awarded a NHMRC project grant for mangosteen pericarp for the treatment of bipolar disorder. Team members were on six other successful NHMRC project grants as Chief or Associate Investigators. Felice Jacka was awarded a NHMRC Career Development Fellowship for "Diet and mental health: translating new knowledge into innovative prevention and treatment strategies". We also succeeded with an Avant award and a Harry Windsor award.

2016 heralded important strategic developments which included the launch of the next phase of data collection for the male cohort for the 23-year longitudinal Geelong Osteoporosis Study (GOS) and the launch of collaborative research centre "The Food and Mood Centre". There were some individual awards; Michael Berk was listed as one of Thomson Reuters most cited researchers in 2016, and ranked #3 in the world in bipolar disorder and #11 in depression by the website Expertscape. Sarah Hosking received a Young Investigator Award from the International Osteoporosis Foundation for her work on the role of health literacy in osteoporosis. Melanie Ashton received an Australasian Society for Bipolar and Depressive Disorders/Lundbeck and an Ian Parker Bipolar Research Fund Scholarship in 2016. Natalie Hyde was awarded the Rotary Past District Governor Geoff Betts 2016 Early Mental Health Researcher Award for her project on mental health and vitamin D in pregnancy. Kara Holloway and Brisa Fernandes were appointed Alfred Deakin Postdoctoral Research Fellows. Felice Jacka was promoted to full Professor and Lana Williams to Associate Professor.

The Epi-Centre for Healthy Ageing - Professor Julie Pasco



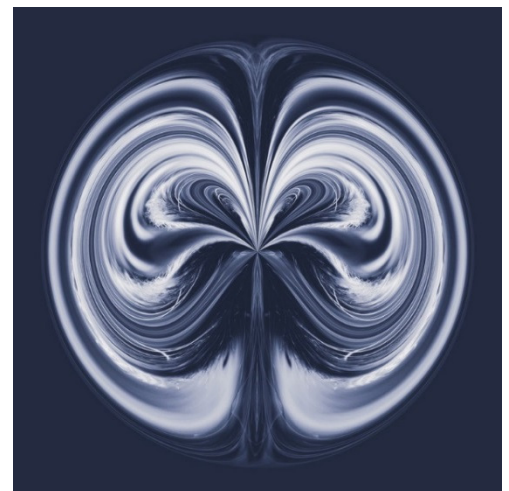
Professor Julie Pasco

Professor Julie Pasco heads the Epi-Centre for Healthy Ageing and is the Deputy Director of the IMPACT SRC. Her research interests focus on identifying modifiable factors that influence the trajectory of healthy ageing and in discovering ways to slow the onset of frailty and maintain autonomy in the elderly.

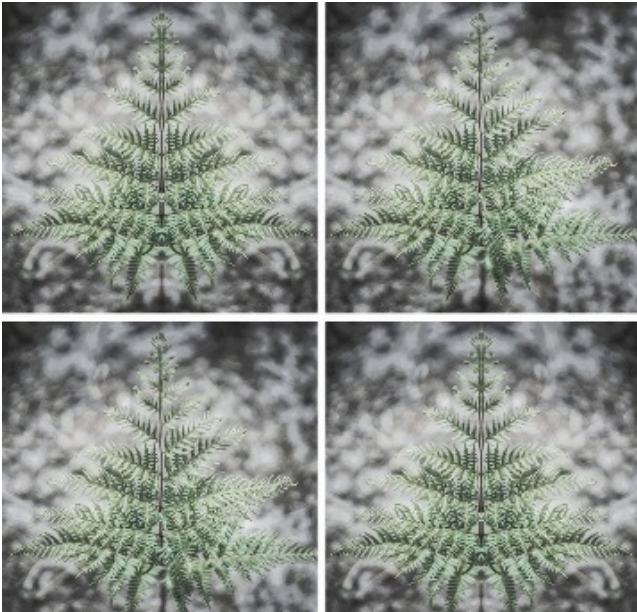
The Epi-Centre for Healthy Ageing conducts long-term population-based research that is centred on the internationally recognised Geelong Osteoporosis Study (GOS), the Geelong Fracture Grid, the Vitamin D in Pregnancy (VIP) study and the Ageing, Chronic Disease and Injury (ACDI) study. This distinctive program of research seeks to understand the progression of chronic meta-bolic and musculoskeletal disorders including obesity, cardiovascular disease, osteoporosis and sarcopenia, cognitive decline, and the nexus between physical and mental health. An important component of this program of epidemiological research is to facilitate knowledge-transfer from research into clinical practice and into the community.

The range of projects underway in the Epi-Centre for Healthy Ageing include a world-first large-scale testing of a new device for assessing bone material properties using bone microindentation, understanding the role of health literacy in the prevention of osteoporosis, assessing the contribution of systemic inflammation to the association between frailty and musculoskeletal health, development of a frailty risk score, dysglycemia in men and women in association with musculoskeletal health, the progression of pre-diabetes to diabetes mellitus, acute health service utilisation in diabetes mellitus, the interplay between muscle power and brain power, maternal vitamin D levels during pregnancy and offspring growth and development, serotonin and bone, bipolar disorder and bone.

We also work collaboratively with the Aspirin in Reducing Events in the Elderly (ASPREE) fracture study to identify a role for low dose aspirin in preventing falls and fractures. In addition to this, GOS data are pooled with other leading prospective cohort studies such as the Australian and New Zealand Diabetes and Cancer Collaboration (ANZDCC) and the International Consortium of Obesity and Diabetes – a study on obesity and risk of diabetes. This study aims to determine the extent to which diabetes and the metabolic syndrome are associated with the risk for cancer, and with international groups to identify the association between fracture risk and the body mass index, and trabecular bone score in fracture risk prediction.



Bipolar disorder research



Mood disorders, particularly bipolar disorder, remains a primary focus of the IMPACT SRC.

We completed a study exploring which potential mood stabilising agents have the best neuroprotective properties after a first-episode of mania. In the study, individuals who had a first-episode of mania were randomised to receive either lithium or quetiapine and were followed up for a year using brain imaging and neuropsychology. Lithium was superior on measures of clinical symptoms, neurocognition and brain imaging, reinforcing its primary role in the disorder. We have been successful in gaining NHMRC support to explore the value of N-acetyl-cysteine as a neuroprotective agent after a first episode of psychosis, including people with psychotic bipolar disorder, which will commence in 2017.

A further focus is on carer-burden in bipolar disorder and depression. We developed a website offering caregiver support and information to carers of people with bipolar disorder, bipolarcaregivers.org and this resource is widely used.

We have just completed a large NHMRC and CRC funded project to definitively study the efficacy of NAC in bipolar depression, as well as a cocktail of mitochondrially active agents. The latter study is a proof of concept trial of the notion that there is a primary abnormality in mitochondrial energy generation in bipolar disorder. These data will be available in 2017.

Together with Dr Sue Tye from the Mayo Clinic, we are developing a novel animal model of bipolar disorder using deep brain stimulation, to examine changes in energy generation in models of both depression and mania. This is in partnership with Professor Abbas Kouzani from Science, Engineering and Built Environment who leads the development of novel deep brain stimulation and optogenetic devices for preclinical study, a critical element in this program of research.

Professor Ken Walder from the Centre for Molecular and Medical Research (MMR) has developed a drug discovery program for diabetes by looking at the gene expression signature of existing agents, and finding new potential treatments that target this gene expression signature. We have developed an NHMRC supported analogous drug discovery program for bipolar disorder in partnership with Professor Walder, and have started to identify novel potential treatment options. We are extending this method of drug discovery to discover new agents for the treatment of schizophrenia.

Lastly, we had surprising success in a pilot clinical trial of *Garcinia mangostana* Linn (mangosteen) in the treatment of schizophrenia. We are replicating this finding schizophrenia in a more definitive Stanley Medical Research Institute-funded grant with John McGrath from Queensland and commenced a study of mangosteen for the treatment of depression in bipolar disorder. We are exploring the chemistry mangosteen in a collaboration with the Centre for Chemistry and Biotechnology at Deakin University.

Drug safety



*Associate Professor Seetal
Dodd*

The large range of medications available for the treatment of mental illness have helped improve the lives of thousands, perhaps even millions of people. These agents have helped people manage their illnesses, prevented or reduced the recurrence of illness and controlled symptoms of illness. Although people with mental health difficulties have benefited greatly from modern drug treatments, these treatments are also known to have risks. Researchers at IMPACT SRC work to understand and reduce the risks and to improve the risk-to-benefit ratios for drug treatment of mental illness.

Central to our work in drug safety, we investigated treatment emergent adverse events in clinical trial data and in other databases. Using adverse event data from clinical trials we previously investigated the complexity of the placebo and nocebo effects as important confounders of adverse events. Further work is currently underway using clinical trial data from studies of olanzapine and lurasidone for bipolar disorder.

We are also conducting studies evaluating the neuroprotective properties of conventional and novel treatments. These studies may provide a new treatment objective for people with mental illness, preventing the worsening course of the illness rather than simply reacting to the symptoms of the illness. This new approach to treatment in mental health may ultimately lead to both better mental health and better drug safety outcomes. Chronic, treatment-resistant stages of illness are typically associated with higher doses of treatment and drug combinations. If this can be averted through our neuroprotective strategies then drug safety will be improved.

We have been involved in the publication of guidelines, which assist clinicians to make well-informed and balanced treatment decisions. These include publications regarding the safe use of drugs for the evidence-based treatment of various mental illnesses as well as publications about safe treatments in special populations, such as pregnant and breast-feeding women. A major international collaboration to produce antidepressant safety guidelines has been drafted and is currently being edited by co-authors.

Highlighting our role in this drug safety, Associate Professor Seetal Dodd currently holds the position of Editor-in-Chief of the scientific journal *Current Drug Safety*, which he has held since 2009.



IMPACT TRIALS

The IMPACT SRC has a newly established division, IMPACT TRIALS. Directed by Dr Olivia Dean, IMPACT TRIALS stands for IMPACT Biological Clinical Trials and reflects the novel therapies program being undertaken at IMPACT.

There is a great need for new therapies for people with mental health disorders. IMPACT TRIALS currently focuses on evidence-based, adjunctive pharmacotherapies to provide greater recovery for individuals with a variety of psychiatric disorders. The central program of IMPACT TRIALS explores the repurposing of existing agents to reduce the symptoms experienced by those with psychiatric disorders. In an iterative approach, IMPACT TRIALS incorporates biological sampling (blood samples) and preclinical investigations to both identify relevant mechanisms of action for therapeutic targets and better understand the underlying pathophysiology of the illnesses.



Dr Olivia Dean

Inflammation, as well as oxidative biology, neurogenesis and mitochondrial dysfunction are all factors that are believed to be important in the pathology of many psychiatric illnesses. A current focus is on adjunctive therapies that are anti-inflammatory. Minocycline is an example. We recently completed a world-first study of minocycline as an adjunct for depression showing promising results. The study was completed in Victoria, Australia and Bangkok, Thailand in collaboration with Chulalongkorn University (Prof Buranee Kanchanatawan and Prof Michael Maes).

We also embarked on a new study of mangosteen pericarp as an adjunctive treatment for bipolar depression. The study is being run in conjunction with the Bipolar Disorders Research program (led by Professor Michael Berk) and in collaboration with the University of Melbourne. Melanie Ashton, a PhD candidate, is leading the study under the supervision of Dr Dean, Professor Berk, Professor Malcolm Hopwood (Albert Road Clinic) and Professor Chee Ng (The Melbourne Clinic). We have recently been awarded an NHMRC project grant to support this work.

IMPACT TRIALS is involved in a multitude of collaborative trials including; N-acetylcysteine (NAC) as a treatment for post-operative cognitive decline (in collaboration with Barwon Health), NAC for clozapine-treated schizophrenia (in collaboration with Swinburne University and the University of Melbourne), Youth Depression Alleviation – Anti-inflammatory trial (YoDA-A) which is being led by Professor Michael Berk in collaboration with Dr Dean at Deakin, and involves sites at Orygen Youth Health Research Centre, NAC for obsessive-compulsive disorder (in collaboration with Dr Jerome Sarris, University of Melbourne).

We have ongoing collaborations with Professor Ken Walder and Dr Laura Gray (Deakin University) through which we are exploring the biological samples to determine markers that may be relevant to the clinical improvements. We are also exploring anti-inflammatory and redox active markers in our samples from trials of NAC for depression, bipolar depression and in conjunction with the Bipolar Disorders Research program, the biological changes in the mitochondrial agents for bipolar disorder trial. The biological samples program will continue into 2017 and we are in the process of establishing an international biological psychiatry collaboration that includes Lausanne University Hospital, University of Paris-EST, University of Lisbon, Deakin University, Chulalongkorn University, Mental Health Services Esbjerg and The University of Melbourne.

IMPACT TRIALS continued...

Dr Alyna Turner, postdoctoral fellow at IMPACT TRIALS, is currently coordinating two ongoing clinical trials, NAC for bipolar depression and Mangosteen for Schizophrenia. She is also CI on the two new NHMRC trials commencing in 2017, Mangosteen for Bipolar Disorder and the N-ICE trial.



Dr Alyna Turner

Dr Turner also has an interest in cardiovascular disease. She has recently completed an investigation of depression and anxiety rates amongst people who have had a transient ischemic attack (TIA), in conjunction with the Australia Centre for Heart Health, in collaboration with the neurosciences unit of the Royal Melbourne Hospital. Dr Turner has recently established a collaboration with neurology and stroke clinicians at the University Hospital Geelong, and in 2017 the group will be working with the Stroke Association of Victoria on a project targeting maintaining employment after a stroke, funded by AMP. She will also be working with University of Newcastle researchers as a CI on a newly funded NHMRC trial, Prevent Second Stroke, which will evaluate the impact of an online secondary prevention health behaviour change program targeting stroke survivors.

IMPACT TRIALS currently has a register open to anyone who has a psychiatric disorder and would be interested in taking part in our studies. If you would like more information regarding the register, please contact Dr Olivia Dean on (03) 4215-3300.

Genetically guided antidepressants



Associate Professor
Ajeet B Singh, MD

Genetically guided prescribing (precision medicine) may help sooner match patients to effective tolerable medication. Precision medicine has been identified as a priority area of medical research globally given its potential for improved patient outcomes and reduced costs of care. Exponential cost reductions in genotyping via automation have seen genotyping prices drop from tens of thousands of dollars to (for some gene panels) under AUD\$100 in just the last few years. Should clinical utility be demonstrated for superiority of genetically guided prescribing over traditional trial and error prescribing, it's likely the technology will see rapid clinical uptake.

Stemming from an international multi-centre candidate gene association study (CGAS) examining the role of polymorphisms of the blood brain barrier (BBB) efflux pump P-glycoprotein (ABCB1) for remission predictive utility (n=113); a post-doctoral study has been conducted, led by Dr Singh (results in analysis). It supports the earlier finding that the dose of antidepressant needed to remit from major depression correlates with ABCB1 genotype. Additionally, it seems another BBB transporter ABCC1 may also be relevant to antidepressant dosing.

Dr Singh hopes to elucidate the pharmacogenetic keys to the BBB. His inspiration comes from seeing the reality of trial and error prescribing in clinical practice, with hopes to reduce this process and speed patient recovery through precision medicine. Dr Singh is an advisor to both government and industry groups on precision medicine, and hopes to help spearhead translation of the technology into the real world.

Food and Mood Centre



Professor Felice Jacka

Professor Felice Jacka leads the Food & Mood Centre within the IMPACT SRC. This new centre is committed to conducting high quality research that helps us to learn about how we might reduce risk, prevent and treat mental disorders through diet and nutrition. This centre is unique as it is the only centre specifically focusing on Nutritional Psychiatry research. Centre members carry out cutting edge research that aims to identify new and effective approaches to the prevention and treatment of mental and brain disorders using nutritional approaches. It is also set up to provide a resource for the public, researchers and clinicians, where they can access clear and easy to understand information on nutrition and mental health. The website can be found at: www.foodandmoodcentre.com.au.

Professor Jacka is also the president of the International Society for Nutritional Psychiatry Research (ISNPR). In 2016, Professor Jacka led a half-day satellite symposium for the ISNPR in Amsterdam, and is planning for the first large, international conference of the ISNPR, to be held in Washington in 2017.

Among others in 2016 Professor Jacka also published several key papers focused on gut microbiota, diet and mental health. This is an increasingly important research focus for Professor Jacka and the new Food & Mood Centre and many new studies were launched in 2016. These include the Healthy Parents, Healthy Kids study, which is being conducted at the Royal Children's Hospital in collaboration with the Murdoch Children's Research Centre. This study aims to help pregnant women improve the quality of their diets and will study various health outcomes, including gut microbiota, in these women and their infants. A new animal study, conducted in collaboration with the Metabolic Research Unit at Deakin, aims to investigate the possible differential impact of different types of dietary fats on metabolic health, gut microbiota and behaviour. Two other observational studies are also underway with a focus on gut microbiota: MICRO-'SCOPE, which comprises collaboration with the Department of Surgery at Geelong Hospital and the new Epworth Hospital; and GOS Microbiome, involving the large, ongoing Geelong Osteoporosis Study.

Finally, the results of the world's first trial that aims to answer the important question "If I improve my diet, will my mental health improve?" were submitted for publication. There is much interest in the results of this key study, so watch this space!



Psychiatric disorders and co-morbidity

Associate Professor Williams Heads the Division of Psychiatric Epidemiology within IMPACT and GOS Mental Health, one of the largest and most comprehensive psychiatric epidemiological studies in Australia.

Over several years, Associate Professor Williams has been developing a program of research investigating medical, lifestyle and social outcomes associated with mood, anxiety and personality disorders. This work is supported by strong collaborative ties with the University Hospital Geelong, University of Eastern Finland and the Norwegian University of Science and Technology, as well as extensive collaboration within Deakin University and other groups located through Europe, Canada and the UK.

To date this research has revealed associations between mood, anxiety and personality disorder and a range of medical conditions including osteoporosis, irritable bowel syndrome, atopic disorders, pain and cardiovascular diseases. Associations between mood and anxiety disorders and lifestyle factors, such as smoking and physical activity, and social factors such as area based socioeconomic status and quality of life have also been explored. A wide range of social, psychological and biological factors such as the presence of inflammation and/or oxidative stress are being investigated, which may explain these associations. Complementing this work is a case-control study designed to investigate lifestyle and physical co morbidities associated with bipolar disorder, which is currently funded by the NHMRC. Lastly, 2016 saw the introduction of a host of studies in the field of psycho-oncology following the commencement of a new PhD student to the team.

Cornerstone to this program is our work investigating the interplay between psychiatric disorders, the medications used to treat these disorders and bone health, which has attracted extensive project funding and personal awards. This project engages experts from the fields of psychiatry, bone biology, epidemiology and translation worldwide to provide a comprehensive understanding of this clinically important but neglected issue. To date, we have found depression to be associated with reduced bone mineral density, affect bone quality and increase the risk of fracture by over 60%. We were also one of the first to show that the SSRI group of antidepressants may increase the risk for osteoporosis and that these agents, *in vitro*, have marked intra class differences in their effects on bone. The effects of psychoactive drugs on physical health is under further review in a study known as PROFRAC and these relationships are being investigated at the cellular level with collaborators in the laboratories at Barwon Biomedical Research and Deakin University. We welcomed a further two PhD students during 2016 to the team working on projects within this domain.

The epidemiological resources and collaborations that form the foundation of this program of work are an invaluable resource for collaborative studies and student projects, generating knowledge able to be transferred into clinical practice, service planning, and policy development.



*Associate Professor
Lana Williams. NHMRC
Career Development
Fellow and Head of
Psychiatry
Epidemiology*

Risk factors for musculoskeletal disorders



Dr Kara Holloway

Dr Kara Holloway, Postdoctoral Research Fellow, joined the IMPACT SRC, School of Medicine at Deakin University in July 2013. She completed a Postdoctoral qualification at The University of Adelaide in May 2013 on the history of tuberculosis, with a focus on skeletal and epidemiological methodologies. She is also an Editorial Associate for the Journal of Comparative Human Biology.

Kara is currently working on assessing epidemiology and risk factors of musculoskeletal disorders using data from a number of projects. These include the GOS, Geelong Osteoporosis Fracture Grid and the new Ageing, Chronic Disease and Injury Study (ACDI). Her aims are to determine the risk factors associated with morbidity and mortality of musculoskeletal disorders (such as fracture or joint replacement) as well as to provide important and useful outcomes for prevention and treatment.

To date, Kara has published thirteen first-author manuscripts in good quality, peer-reviewed journals such as Calcified Tissue International, Osteoporosis International, Bone and Archives of Osteoporosis. This year she has also had an article accepted into the Journal of Affective Disorders. She has another two manuscripts in the process of publication. This year, Kara's work has been presented at many conferences, both national and international including Warrnambool, Gold Coast, the United States, Spain and Singapore.

Biomarkers in bipolar disorder and schizophrenia

Bipolar disorder, major depressive disorder and schizophrenia are severe and prevalent disorders, and the burden that they impose on individuals and the society is enormous, together being responsible for 50% of the global burden due to mental illnesses. One of the major reasons for that is that their pathophysiology remains relatively unknown. Lately, the search for blood markers — or biomarkers — in psychiatry has been recognised as a major endeavour in the development of a personalised approach in mental illness. Some of the primary goals of personalised medicine include establishing accurate diagnosis and predicting response to treatment.



Dr Brisa Fernandes

Dr Brisa Fernandes' main research field concerns the discovery and application of such biomarkers. She recently has demonstrated that C-reactive protein is a biomarker in bipolar disorder capable of assessing the severity of manic symptoms. This is being done with the ultimate goal of developing a personalised medicine for these common mental disorders.

It is anticipated that the implementation of validated biomarker tests will not only improve the diagnosis and more effective treatment of persons with mental illnesses but ultimately improve prognosis and disease outcome. For continuing the pursuit of her goals, Dr Fernandes was awarded the 2015 Alfred Deakin Research Fellowship from Deakin University for two years.

Social equity, chronic disease and healthcare utilisation

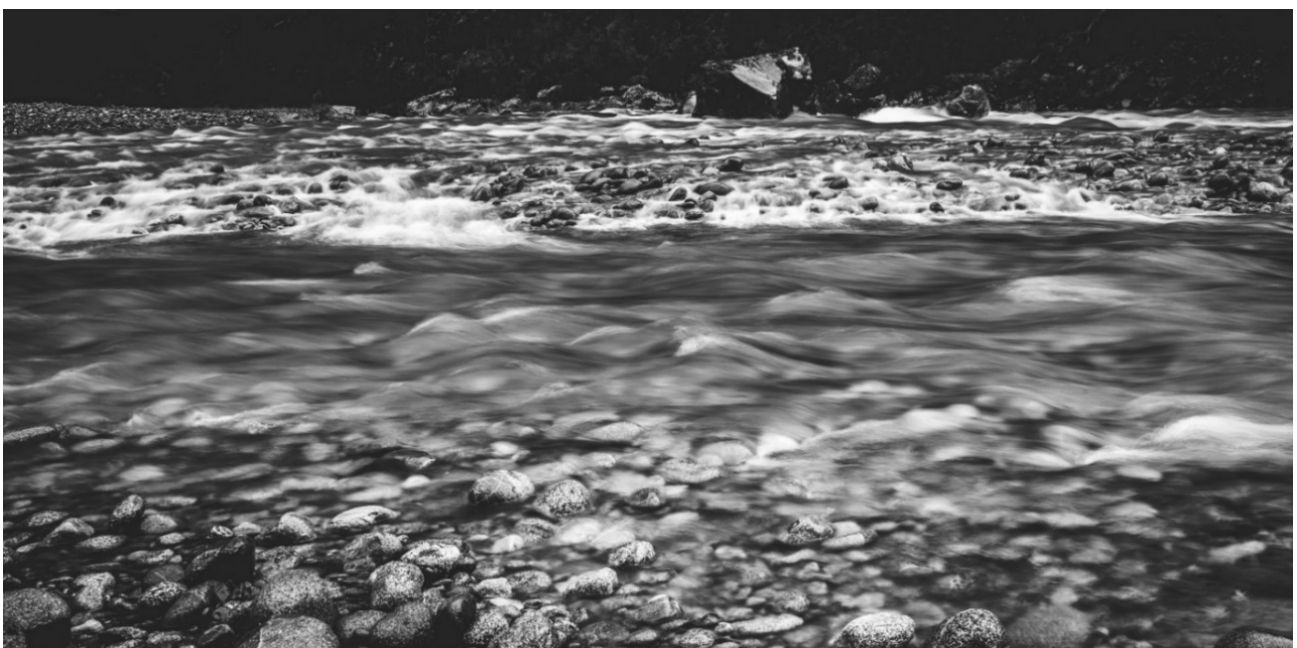


Dr Sharon Brennan-Olsen

A disproportionate disease burden occurs in disadvantaged and vulnerable populations; indeed, the social gradient of chronic disease and healthcare utilisation has never been as prominent, even in high income countries such as Australia. The program of research undertaken within the Health Equity Epi-demiology Division (HEED) investigates mechanisms that facilitate inequalities in musculoskeletal health. We address the complex, multifactorial pathways between social context, chronic diseases and healthcare utilisation, and more recently have focused on investigating biological mechanisms that might underpin health inequalities in bone, joint and muscle.

During this year Dr Brennan-Olsen initiated novel investigations aimed at explaining the well-documented social gradient of disease. This work focuses on associations between cumulative disadvantage across the life-course and biological mechanisms for disease onset including heightened inflammatory states and DNA methylation, amongst others. This new field of research is supported by

an exciting new collaboration established between Deakin University, and the University of Western Australia, University of Manitoba (Canada), McGill University (Canada), University of Cantabria (Spain), King's College (UK), University of Glasgow (UK), and Loyola University (USA). This new alliance will enable a cross-disciplinary approach that extends from basic science through to population health, in a manner that is globally unique. This work resulted in Osteoporosis Australia and the Australian and New Zealand Bone and Mineral Society awarding Dr Brennan-Olsen the prestigious Professor Philip Sambrook Award. As has been the goal of the HEED Division over the years, a keen focus was maintained on knowledge translation, which involved meaningful collaborations between HEED and the general population.



Our PhD candidates

EVALUATING DISCUSSION ENGAGEMENT IN AN ONLINE SELF-HELP PROGRAM FOR BIPOLAR DISORDER (www.moodswings.net.au)



*Emma Gliddon
PhD candidate*

There is growing evidence supporting the use of online adjunctive psychosocial interventions in the treatment of bipolar disorder. Several studies to date have included peer discussion boards, however none of these studies have specifically evaluated the role these boards play in terms of outcomes and attrition, or the influence the level of participant engagement may have on psychosocial variables. This project assesses peer discussion forums included in the MoodSwings 2.0 program, which is an online self-help program for bipolar disorder. Emma's project evaluates the impact of discussion board engagement on psychosocial outcomes (such as social support, quality of life, stigma and mood symptom severity) as well as intervention adherence, and attempts to identify key differences between active and passive discussion board users. Data analysis for this project is ongoing and results are anticipated in early 2017.

TARGETING THE PRENATAL DIET FOR MATERNAL AND INFANT GUT HEALTH

Samantha's is a second year PhD student exploring the relationship between prenatal diet quality and maternal and infant gut health. A healthy diet during pregnancy is recommended for maternal health and infant development. However, many women find it difficult to follow the dietary guidelines during pregnancy. Gut microbiota offer a new dimension to health, and are shaped by diet. Recent studies indicate that early life gut health is important for brain and immune system development, therefore a perfect time to act is during the early life period which includes pregnancy.

One of Samantha's PhD hypotheses is that an educational dietary intervention delivered during pregnancy will alter the gut microbiota of mothers and their infants. She is currently running a randomised controlled trial, called the 'Healthy Parents, Healthy Kids Study' to test this hypothesis. Right now she is recruiting pregnant women in their second trimester of pregnancy to participate in the study. The results may be relevant for future interventions aiming to target and modify microbiota as a potential risk factor for non-communicable diseases.

Samantha is based at the Murdoch Children's Research Institute in Melbourne and hosted within the Early Life Epigenetics group. Some of her notable achievements in 2016 include being awarded a travel grant to present her study protocol at the International Inflammation (In-Flame) Network conference in the Netherlands; and being awarded a highly competitive PhD top-up scholarship from the Murdoch Children's Research Institute.



*Samantha Dawson
PhD candidate*

Our PhD candidates continued...

GESTATIONAL VITAMIN D AND DEVELOPMENT IN OFFSPRING



Natalie Hyde
PhD candidate

A large proportion of women of childbearing age are vitamin D deficient. There is an increasing evidence base suggesting that maternal 25-hydroxyvitamin D (25(OH)D) is associated with not only offspring bone, but also other measures of offspring health. Furthermore, some evidence has suggested that other dietary factors may influence offspring bone, independent of 25(OH)D. Most literature to date has examined 25(OH)D at a single time point in pregnancy within individuals. However, establishing the temporality of the association is important in order to inform relevant policy with regards to vitamin D during pregnancy. Thus the aims of the project were to establish the prevalence of deficiency of nutrients which may be important for bone development, the association between these nutrients and offspring measures and birth at 11 years, and the association between 25(OH)D at two defined time points and offspring bone and body composition.

Having recently submitted her thesis for examination, Natalie is currently in the process of disseminating the findings. It is hoped that results from this study will add to the growing evidence base and used to formulate an evidence-based healthcare approach to vitamin D and other nutrition recommendations throughout pregnancy.

ACUTE HEALTH SERVICE UTILISATION IN DIABETES MELLITUS: A PROJECT IN WESTERN VICTORIA

Diabetes mellitus represents one of the most significant population health challenges of recent times. Prevalence rates continue to rise globally and in Australia with significant implications for health systems. Despite being a condition amenable to management in primary care, many people with diabetes end up using acute health services. There are significant costs associated with Emergency Department visits, hospital admissions and readmissions and, therefore, minimising reliance on acute health services is a policy objective in many countries including Australia.

In spite of its substantial economic significance, the underlying determinants of acute care use among Australians with diabetes are poorly understood. The situation is particularly challenging in regional and remote areas where inpatient admission rates for people with diabetes are up to 4 times higher as compared to metropolitan residents with the condition. This doctoral project aims to address these gaps using a variety of research settings and designs.



M. Amber Sajjad
PhD candidate

It is a multi-phase project that aims to investigate the patterns and predictors of acute health service utilisation in people with diabetes. In the initial phase, we aim to provide location-specific estimates of the rates of hospital admissions for diabetes in western Victoria. Further, associations of area-level socioeconomic status, remoteness and availability of primary care services with the use of acute health services in people with diabetes will be investigated. A manuscript describing methods for this phase has been accepted for publication and data acquisition has commenced. Moreover, employing data from the Geelong Osteoporosis Study, predictors of acute health service utilisation in people with diabetes will be identified. Data analysis for this phase of the project will be completed soon. The final phase of the project aims to provide patients' perspective on the barriers and enablers to optimal diabetes management in the community. For this phase, data collection and analysis will be completed by next year and results will be published in peer-reviewed journals.

By identifying area and individual-level determinants of acute health services utilisation, Amber's project will highlight opportunities for improved primary care management of diabetes in a regional setting.

Our PhD candidates continued...

THE USE OF MACHINE LEARNING AND DATA MINING IN THE DEVELOPMENT OF A CLINICAL RISK INDEX FOR DEPRESSION

In Australia, depressive and anxiety disorders are increasingly common, seemingly affecting people of younger and younger ages. The impact of these psychological disorders on both the individual and society is far-reaching; with a detrimental impact upon the psychological, social and economic elements of everyday life. The aim of Joanna's research study is to use machine learning and data mining techniques to identify risk factors for depression so as to develop a clinically useful tool for predicting depression.

A theoretical large-scale data mining technique, using machine learning algorithms, has promise in the analysis of large epi-demiological datasets. In 2016, research was expanded to develop a new methodology that utilises a set of machine learning algorithms with traditional statistical techniques to identify clusters of respondents associated with depression in a large epidemiological study. This methodology has been used to identify clusters of depressed respondents based on lifestyle characteristics and the research has been published in an international journal. In addition, the methodology was used to identify clusters of depressed respondents based on medical symptoms and this research is under review for publication in an international journal. The ultimate aim of this project is to develop a validated risk index of depression.



*Joanna Dipnall
PhD candidate*

BIOLOGICAL PATHWAYS THAT MEDIATE THE LINK BETWEEN DIET AND DEPRESSION



*Sarah Dash
PhD candidate*

The landscape of health as changed dramatically in recent decades; global diets are increasingly reliant on nutrient poor foods, and non-communicable diseases - including mental disorders - are on the rise. Depression is a common and highly burdensome condition, and lifestyle factors are understood to be important to the onset and discourse of common mental disorders. The relationship between diet and mental health has now been consistently demonstrated across age groups and various geographic locations; however, there is still a lack of understanding as to which biological pathways are directly and indirectly involved. There are several biological systems that are known to be associated with mood that are also influenced by diet. For example, neurotrophins, the immune and inflammatory systems and gut microbiota are proposed mediators of the diet-depression association. This projects aims to investigate the mediating role of these biological systems in the diet-depression relationship.

The Dietary Inflammatory Index (DII) is a new measure developed by our collaborators in the US, and is used to convert complex dietary information to a score that estimates the inflammatory potential of a diet. This project will be using the DII, in combination with an array of inflammatory, gut health and stress biomarkers from participants involved in the SMILES dietary RCT to elucidate important mediating biological mechanisms. By understanding the influence of changes in diet and/or mood on a variety of biomarkers, we hope to better understand and identify some of the possible mechanisms to guide the development of targeted dietary prevention or intervention strategies. Data collection for this project is now complete, analysis of biosamples is now underway and manuscripts are being prepared for submission. Preliminary findings of the association between the DII and depression in participants of the Geelong Osteoporosis Study were presented at ISBD/ISAD 2016 in Amsterdam.

MUSCLE POWER AND BRAIN POWER: OPPORTUNITIES FOR DELAYING DEMENTIA



Sophia Xin Sui
PhD candidate

There is a body of research that links cognitive impairment to excess body fat, particularly obesity in mid-life. It is known that adipokines are able to cross the blood-brain-barrier and affect brain function. However, the association between cognitive impairment and another metabolically active tissue, namely skeletal muscle, has not yet been properly investigated. Loss of muscle mass and function is key component of physical frailty, which is known to accompany cognitive impairment and clinically diagnosed dementia among older persons; yet the pathophysiological links between muscle and brain are poorly understood.

This project is designed to uncover how 'muscle power builds brain power', and will provide unique and much needed data for generating the evidence base to inform key health strategies for the prevention of cognitive decline in our ageing population.

This project will be conducted as part of the GOS. The GOS is unique in Australia in that it comprises a randomly-selected, representative sample of over 3,000 adults drawn from a broad spectrum of socio-demographic backgrounds in the Geelong region.

Sophia's PhD project will utilise existing data and generate new data from the next follow-up phase. Cognition will be tested using the Mini Mental Examination (MME) and a diagnosis of dementia/Alzheimer's Disease for study participants will be identified from medical histories and by linkage with the Geriatric Medical Centre in Geelong. Body composition will be measured using dual energy x-ray absorptiometry, physical function using tests of balance, performance and gait, and muscle strength, power and endurance, using a dynamometer. Currently, Australia lacks a coherent public health strategy for preventing cognitive decline and this project addresses this need.

THE ROLE OF HEALTH LITERACY IN THE PREVENTION AND MANAGEMENT OF OSTEOPOROSIS IN WOMEN

The Australian Bureau of Statistics estimate that 59% of Australians do not possess the health literacy skills required for basic management of health. Low levels of health literacy have been associated with poorer prevention and self-management of a range of health conditions, however there is a paucity of research regarding health literacy and osteoporosis specifically.

Sarah's project aims to address the current knowledge gap using data from the GOS and the Vitamin D in Pregnancy (VIP) Study. Health literacy measures are currently being undertaken in both cohorts using the Health Literacy Questionnaire (HLQ), a multi-dimensional tool that generates scores across nine domains of health literacy.

Participant health literacy profiles will be analysed, alongside data already collected (including osteoporosis related clinical measures, health service utilisation and lifestyle information) in order to understand the role of health literacy in preventing and/or managing osteoporosis across the lifespan.



Sarah Hosking
PhD candidate

Our PhD candidates continued...

BONE MATERIAL STRENGTH INDEX: A NEW METHOD FOR DETERMINING THE MATERIAL PROPERTIES OF BONE

As people get older, their bones become weaker and more susceptible to fracture. Current techniques used for estimating the strength of the bone usually involve assessing bone mineral density (BMD). However, BMD measurements alone do not elucidate the risk of fracture because the largest absolute number of osteoporotic fractures occurs in people with a moderate reduction in bone mass (osteopenia). Several other clinical factors such as genetics, history of fracture, cardiovascular diseases, smoking, obesity, alcohol consumption, muscle mass, physical activity and medications (such as glucocorticoids) can also contribute independently to the risk of fracture. Consequently, there is a need to directly assess the ability of the bone to resist fracture.

Pamela's project involves the use of a device known as OsteoProbe®. It is a novel, hand-held device designed for clinical measurements of bone material properties in situ. The OsteoProbe® is a reference point indentation instrument that quantifies the ability of bone to resist the growth of cracks and this is expressed as the bone material strength index (BMSi). This material property of bone, which is a component of bone quality, should be useful for determining bone strength and ability to resist fracture.

Pamela will be measuring BMSi in a cohort of men as part of their 15-year follow-up assessment. Age-specific reference ranges for BMSi for men will be generated and correlations between the BMSi and other indices of bone quality and strength will be quantified. The relationships between the BMSi, health behaviours, socio-demographics and fracture risk will also be explored.



*Pamela Rufus
PhD Candidate*

MANGOSTEEN PERICARP AS AN ADJUNCTIVE TREATMENT FOR BIPOLAR DEPRESSION



*Melanie Ashton
PhD candidate*

Melanie has a particular interest in bipolar disorder and the need for a wider range of medications for the depressive phase of the illness. Therefore, for her PhD, she aims to trial a new natural fruit supplement to be taken in addition to current treatments. The supplement is made from the husk, or pericarp, (in which the flesh of the fruit is contained) of the *Garcinia mangostana* Linn (commonly known as mangosteen) fruit. The pericarp is comprised of antioxidant, anti-inflammatory and neuroprotective properties which will hopefully target some of the changes occurring in bipolar depression. Melanie aims to recruit 80 participants into the 24-week randomized placebo-controlled trial. The study will primarily focus on changes in symptoms of depression. The study will also review changes in other secondary outcomes including global psychopathology, substance use, functioning, quality of life, safety and biological data. The study has the potential to improve treatment outcomes for those with bipolar disorder and will hopefully contribute to the understanding of bipolar depression. It will also be the launching pad for an academic career for this promising student.

Melanie has received the Australasian Society for Bipolar and Depressive Disorders (ASDBDD)/Lundbeck Neuroscience Scholarship to fund the first year of her PhD. She has also received the Australian Rotary Health - Ian Parker Bipolar Research Fund PhD Scholarship for Bipolar Depressive Disorder Research.

THE IMPACT OF MENTAL HEALTH ON CANCER ASSOCIATED MORTALITY



*Stephanie Cowdery
PhD Candidate*

Cancer is a leading cause of disease burden in Victoria with an average of 84 new diagnoses daily. The Barwon region's population is steadily increasing at a higher rate than the regional Victorian average, with an estimated population of 445,000 by 2026; which in conjunction with Australia's steadily ageing population, poses a high need for better understanding of service provision. Currently, the role of mental health and psychological factors in cancer onset and progression is contentious. As such, this project aims to examine the association between mental health, cancer and associated mortality in men and women and to further investigate the role of potential confounders in accounting for any observed associations and associated mechanisms, for example inflammation.

This study will examine psychological symptomology, quality of life measures, blood samples, and demographic, medical and lifestyle factors collected from men and women participating in the GOS. Data linkage will be undertaken with Medicare Australia, National Deaths Index, and the Victorian Cancer Registry to further examine the incidence and mortality of cancer diagnoses and the presence of psychopathology for men and women in this region. Other datasets from Norway and Finland will also be utilised.

Results of this study may assist in recognising the link between the development of psychiatric disorders in response to a medical condition, or, the presence of physical pathologies due to predisposing psychiatric disorders. Outcomes could potentially assist the integration of treatment approaches, and monitoring the comorbidity of mental and physical illnesses is likely to improve disease course and outcome as well as enhance patients' functional and health status, potentially reducing healthcare utilisation. This information is also essential from an economic and public health perspective in terms of planning for and anticipating disability.

DYSGLYCAEMIA IN WOMEN

Lelia was enrolled as a PhD candidate with the IMPACT SRC team in August 2014. She joins our team from Brazil after completing a Bachelor of Nursing and a Masters in Nursing, with a focus on diabetes. She has also worked in the Public Health sector as a registered nurse for a number of years.

Her research interests include diabetes, gestational diabetes, obesity and metabolic syndrome. Her PhD project, supervised by Professor Julie Pasco, Dr Mark Kotowicz and Dr Kara Holloway, is focussed on diabetes and pre-diabetes in female participants of the Geelong Osteoporosis Study. She will be describing the epidemiology of diabetes and pre-diabetes in the Barwon Statistical Division. In addition, she will also be determining risk factors for developing diabetes as well as investigating associations between diabetes and mental health, healthcare utilisation, fractures and mortality.



*Lelia de Abreu
PhD candidate*

BIPOLAR DISORDER AND BONE HEALTH

Bipolar disorder, a mental disorder characterised by biphasic fluctuations in mood, is a severe, chronic, episodic illness. Affecting approximately 2.4% of the population, it has been ranked the sixth leading cause of disability in the world, amongst individuals aged 15-44 years. The burden of bipolar disorder is experienced on many levels – by the sufferer, their immediate family and friends and also by the healthcare system. A common consequence of psychological disorders is the tendency to develop comorbid psychological and/or physiological illnesses.



*Vinoomika
Chandrasekaran
PhD Candidate*

Osteoporosis is an often overlooked comorbidity of mood disorders. Several studies have now shown osteoporosis to be a common consequence of unipolar depression, often exacerbated by the intake of selective serotonin reuptake inhibitors (SSRIs). Data from a pilot study conducted within our SRC has shown that bipolar disorder possibly has an even more pronounced effect on bone loss. Considering the chronic nature of both osteoporosis and bipolar disorder, it is crucial that this association is studied, and a clearer understanding provided, for which this study would essentially be a starting point.

This study will attempt to investigate the association between bipolar disorder and bone health, by recruiting individuals with bipolar disorder (cases) and using existing data from participants of the GOS with no history of bipolar disorder (controls). Further, the aim is to investigate the underlying mechanisms that are vital to this association, such as the role of psychotropic agents. Cells responsible for bone forming and reabsorption – osteoblasts and osteoclasts, will be co-cultured and treated with different psychotropic agents, and their viability measured, to better understand this association at a molecular level. The findings of Vinoomika's work will contribute to existing literature investigating other psychiatric disorders and bone health, and will also provide an evidence-base on which resource allocation and clinical and public health strategies aimed at reducing burden associated with both osteoporosis and bipolar disorder can be founded.

BIOLOGICAL FACTORS THAT UNDERPIN FRAILTY AND MUSCULOSKELETAL DECLINE



*Monica Tembo
PhD Candidate*

Frailty is a multifaceted syndrome characterised by age related decline in functional reserves across a range of physiological systems. It is not only a burden to the individuals but also to the health system in Australia as its effects can lead to fractures, disability, hospitalisation, falls and institutionalisation. With the increase in the aged population in Australia, it is vital to identify elderly people who are at risk of developing this condition. Currently there are numerous assessment tools that have been developed and used, yet there is no consensus on the gold-standard diagnostic assessment tool.

The aim of Monica's project is to firstly identify men and women from the GOS who meet the criteria for frailty according to existing frailty assessment tools. Furthermore, to determine the contribution of musculoskeletal health to frailty as well as quantify inflammatory markers associated with frailty towards developing a new frailty prediction or risk score for identifying risk factors for frailty.

Our PhD candidates continued...

SEROTONIN AND BONE METABOLISM

Serotonin (5-HT) is a neurotransmitter generated not only in brainstem neurons but mostly in enterochromaffin cells of the duodenum (up to 95%). This bioamine does not cross the blood-brain barrier, with gut-derived 5-HT (GDS) having different functions to brain-derived 5-HT. It is released into the general circulation where most is taken up by platelets; the remainder acting as a circulating hormone.

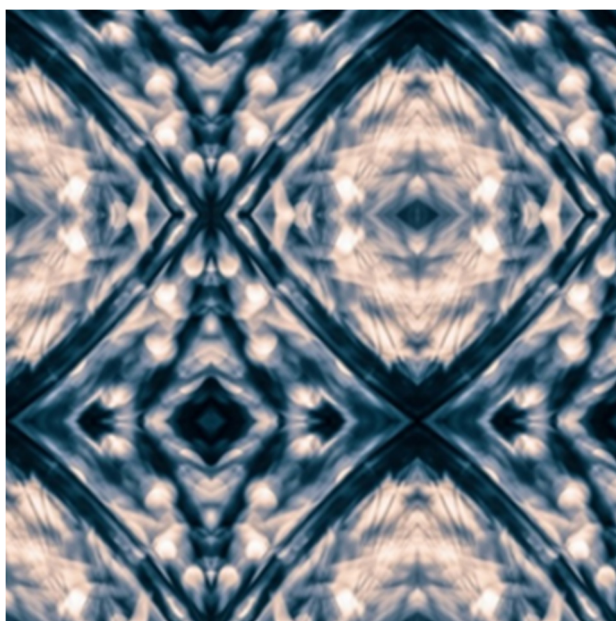
Detection of 5-HT receptors and a functional transporter (5-HTT) in bone cells indicates a possible direct action in bone homeostasis. Although there is evidence supporting this role for 5-HT in bone metabolism, the precise mechanism by which 5-HT influences bone metabolism has been a topic of controversy. It has been proposed that peripheral and central 5-HT signalling have divergent actions on bone. Peripherally, 5-HT has been shown to directly activate osteoblast 5-HT receptors to inhibit bone formation, whilst centrally it has been shown to inhibit the sympathetic nervous system thus alleviating the negative adrenergic tone on osteoblasts.

In human studies, the nature and extent of the relationship between serum 5-HT, gut processes and bone metabolism is unknown. Whereas, selective serotonin re-uptake inhibitors (SSRIs), a class of antidepressants with strong binding affinities for 5-HT, have been shown to have a clinically significant impact on bone metabolism and, in turn, increase fracture risk.

With the overarching aim of developing a better understanding of the effects of serotonin on bone metabolism, two synergistic and iterative components to this project are proposed. Firstly, human osteoblast and osteoclast will be differentiated from adipose-tissue derived mesenchymal stem cells and umbilical-cord blood mononuclear cells, respectively, to investigate the role of 5-HT and SSRIs in bone cell formation and function. In parallel, we will comprehensively investigate the relationship between serum 5-HT, gut health (lipopolysaccharide binding protein; LBP), antidepressant use and bone metabolism utilising data from our pre-existing and comprehensive fracture study (PROFRAC) and the GOS, a large population based study of over 3000 men and women.



Jasmine
Cleminson
PhD Candidate



Community engagement

Community And Research Network (CARN)



The IMPACT SRC has been striving to ensure that the research conducted is both applicable and relevant to the people it aims to help. We have established the Community and Research Network (CARN) that provides a reciprocal forum for people to discuss, plan and implement research and community activities. Chaired by our Communications Officer, Brianna Doolan, CARN's activities to date have included the promotion of community events to raise awareness about mental health, review of grant applications to include consumer-relevant aims and outcomes, and meetings to discuss community engagement, research opportunities and inform stakeholders of upcoming events or activities. Currently we have a variety of local groups involved in CARN including; Deakin University, Barwon Health, Karingal, The City of Greater Geelong, Beyond Blue, Wathaurong Aboriginal Co-operative, the Anxious Bird, and the Gordon TAFE. The network continues to grow, inviting and encouraging new members to support its vision of promoting good health and wellbeing for the community of Geelong.

IMPACT SRC has also used social media to engage with community, launching the CARN Facebook page and the Twitter hashtag #haveanIMPACT through the IMPACT SRC Twitter page @IMPACTSRC. This campaign aims to capture the significance of research and how it can be utilised and understood by the public in a social media space.

Community Events

Throughout 2016, IMPACT has facilitated several community events aimed at disseminating and translating our IMPACT research findings, educate and inform the public about the importance of mental health and wellbeing. Listed below are the community events we held this year:

World Bipolar Day – Reducing the sting of stigma education event

March 30th is World Bipolar Day, an internationally recognised event aiming to raise awareness of bipolar disorders and eliminate the social stigma that often surrounds mental illness. IMPACT SRC along with Barwon Health, held a public display and information session at the University Hospital Geelong's main cafeteria. The event was a great success, with different people approaching IMPACT bipolar disorder experts to talk about the disorder and World Bipolar Day more broadly. IMPACT also ran a quiz about bipolar disorder that had 48 entries! The lucky winner scored a prize pack including a signed 2015 limited edition Geelong Football Club framed picture, vouchers for The ROCK climbing centre Newtown, Timezone Geelong, Readings Cinemas and The Lounge Café.

Community engagement continued...

Mental Health Week Trivia Night



October 9th – 15th is Mental Health Week, an opportunity to raise awareness about the importance of mental health and wellbeing. To support this national event, IMPACT SRC held a trivia night 'Trivia with an IMPACT.' Through trivia table bookings, raffle ticket sales and collected donations, IMPACT raised over \$2000 for the Ian Parker Bipolar Research Fund (IPBRF). This philanthropic fund was established by Carol Smit in loving memory of her brother Ian Parker who passed away in 2005. In partnership with Australian Rotary Health and Brunslea Park Estate, this fund currently provides scholarships to support PhD students to undertake research in bipolar disorder within Victoria.

The event received amazing support from the Barwon Health Mental Health Week Committee grants program and several local organisations (in no particular order: Geelong Football Club, Diamond Eye Tattoo, Supatramp, Timezone Geelong, Twisted History Victoria, Secret Society, Hart to Heart Beauty Salon, Pier View Lolly Shop, The Worker's Club Geelong, Popcultcha Geelong, the Norlane RSL, S.I.M.M.A and the Highton Bowls Club), who donated their time and prizes for raffles on the evening.



Current funding 2016

NHMRC Established Career Fellowship (APP1059660). Novel therapies, risk pathways and prevention of mood disorders. Berk M. (GNT1064272). \$822,925. 2014-2018.

NHMRC Career Development Fellowship (APP1064272). Psychiatric disorders, psychotropic agents and bone health: From bench top to bedside. Williams L. \$404,884. 2014-2018.

NHMRC Project Grant (APP1078928). Gene Expression Signature Technology to Repurpose Drugs for Bipolar Disorder. Walder K, Berk M, Leboyer M. \$467,203. 2015-2017.

NHMRC Project Grant (APP1081901). ASPREE-D; Aspirin in the prevention of depression in the elderly. CIA: Berk M, McNeil J, Neilson M, Shah R, Woods R, Mohebbi M. \$767,593. 2015-2018.

NHMRC Project Grant (APP1026265). Inflammatory cytokines as risk factors for the development of both depression and osteoporosis in men. Berk M, Pasco JA, Williams LJ, Jacka FN. \$369,360.00. 2013-2016.

NHRMC Project Grant (APP1121510). The efficacy of adjunctive *Garcinia mangostana* Linn. pericarp for bipolar depression: A 24-week double-blind, randomized, placebo-controlled trial. Dean O, Berk M, Ng C, Dodd S, Hopwood M, Turner A, Jacka F. \$1,227,271.60 over 4 years 2017-2020.

NHMRC Project Grant (APP1027315). Proof of principle of the inflammatory and oxidative theory of depression: A treatment study. Berk M, Channen A, Harrigan S, Davey C, Hetrick S, Dean O, Dodd S. \$1,475,510.00 over 5 years. 2012-2017.

NHMRC Project Grant (APP1104438). Bone health in bipolar disorder. Williams LJ, Pasco JA, Maes M, Hodge J, Brennan-Olsen SL. \$329,033.60. 2016-2018.

NHMRC project grant (APP1125778). The efficacy of N-acetylcysteine as an adjunctive treatment for first episode psychosis. Cotton S, Dodd S, Wood S, Allott K, Bartholomeusz C, Bortolasci C, O'Donoghue B, Ratheesh A. Partner led grant. \$2,143,069.40. 1/1/2017 to 31/12/2021.

Stanley Medical Research Institute (#14T-007). The efficacy of adjunctive *Garcinia mangostana* Linn (mangosteen) pericarp for the treatment of Schizophrenia: A double-blind, randomized, placebo-controlled trial. Berk M, McGrath J, Dean O, Dodd S, Cotton S. 3 years. US\$899,398. 2015-2017.

Alfred Deakin Post-doctoral Research Fellowships. Holloway K, Fernandes B, post-doctoral research fellows. (\$78,146 in 2016, \$80,967 in 2017, \$10,000 project funding).

Danish Council for Independent Research, Medical Services. Project grant. Register-Wide Association Study (R-WAS). Miller S, Martin NG, Ngo TT, Berk M, Mitchell PB. DKK2.392.128 (AUD \$481,111). 2016.

Australian Respiratory Council Harry Windsor grant scheme. Can we reduce tobacco smoking using N-acetylcysteine as a cessation treatment? Berk M, Dodd S, Dean O. \$50,000. Awarded December 23, 2016.

Australasian Society for Bipolar and Depressive Disorders/Servier 2015 Depression Grant. Exploring inflammation in depression – minocycline compared with n-acetylcysteine. Dean O. \$30,000. 2016.

Australasian Society for Bipolar and Depressive Disorders/Lundbeck 2015 Neuroscience Scholarship (one year). Ashton M, PhD candidate. \$30,000. 2016.

Central Research Grants Scheme – Deakin University. Project grant. Exploring the bioactive compounds and mechanisms of action in mangosteen pericarp Investigators – Dean O, Barrow C, Pfeiffer F, Walder K, Berk M, Conlan X, Dodd S. \$29,000. 2016.

Current funding continued...

Defence Health Foundation. Establishment booster grant. December 2015 (1 year). Title: Development and roll-out of an online visual test for bipolar disorder for use in large clinical and genetic studies. Kessing MD, Gerds TA, Berk M, Ekstrøm CT, Anderson K. \$25,000. 2016.

Deakin University Central Research Grant Scheme. Psychiatric disorders, psychotropic agents and bone health Williams LJ. \$10,000. 2016.

Avant Quality Improvement Grant Program – Practitioner. Berk M. \$10,000. Awarded December 21, 2016.

Internal IMPACT SRC grants 2016

Seed Funding Grant – IMPACT SRC. Does minocycline change inflammatory markers in depressed participants? – funding to ship serum, plasma and whole blood samples from Thailand to Deakin University. Investigator: Dean O. \$6,000.00.

Seed Funding Grant – IMPACT SRC. Serotonin and bone metabolism. - Funding to analyse serum 5-HT and LBP. Investigator: Williams L. \$17,985.20.

Seed Funding Grant – IMPACT SRC. Imaging with peripheral quantitative computed tomography (pQCT). Funding to operate the pQCT. Pasco J. \$10,087.00.

Seed Funding Grant – IMPACT SRC. Does exposure to NAC alter bone turnover among individuals with depression? Funding to measure biomarkers. Pasco J, Dean O. \$5,543.00.

Seed Funding Grant – IMPACT SRC. A study of diet, mental health and the gut microbiota in adults – Funding to purchase a freezer. Jacka F. \$15,710.00.

Seed Funding Grant – IMPACT SRC. Stool collection tubes for GOS Microbiome project. Jacka F. \$15,060.00.

Seed Funding Grant – IMPACT SRC. Bone material strength index (BMSi) assessed using OsteoProbe®. Funding to cover the biochemistry costs. Holloway K. \$18,855.69

Seed Funding Grant – IMPACT SRC. Psychotropic properties of fractionated *Garcinia mangostana* Linn. – Funding for laboratory expenses. Berk M, Dodd S, Dean O. \$10,000.

Seed Funding Grant – IMPACT SRC. Minocycline as an adjunctive treatment for unipolar depression – Thai samples to Deakin University Dean O. \$5,600. 2016

Awards 2016

Dr Brisa Fernandes, post-doctoral research fellow, was awarded the Society of Biological Psychiatry 2017 Travel Fellowship Award to attend their annual meeting in San Diego, CA, USA.

Professor Felice Jacka was awarded the top ranked application in the Population Health - Level 2 Career Development Fellowship category by the NHMRC.

Professor Felice Jacka was awarded an honorary fellowship with the Australasian Society of Lifestyle Medicine.

Dr Sharon Brennan-Olsen was awarded an NHMRC Career Development Fellowship.



International collaborations with IMPACT SRC

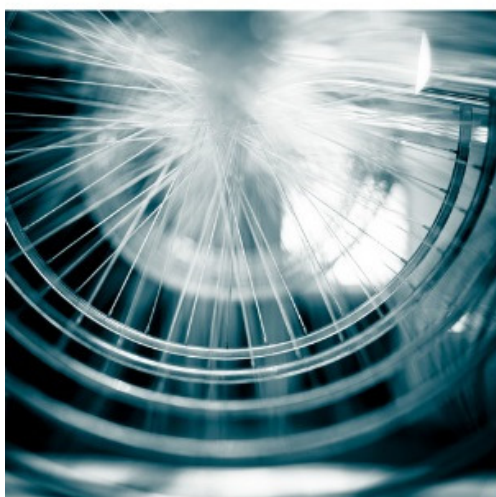
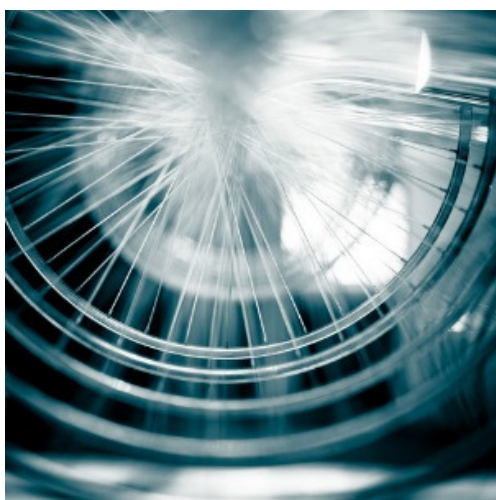
Stanford University, Stanford, CA, USA.	Harvard Medical School, Cambridge, MA, USA.
Loyola University Chicago, Maywood, IL, USA.	Northwest University, Kirkland, Washington, USA.
Edward Hines Jr VA Hospital, Hines, IL, USA.	University of Cambridge, Cambridge, UK.
University of Oxford, Oxford, UK.	University of Glasgow, Scotland, UK.
University College Cork, Cork, Ireland	University of Southern Denmark, Odense M, Denmark.
Norwegian Institute of Public Health, Nydalen, Oslo.	University of Copenhagen, København, Denmark and Beijing Genomics Institute, Shenzhen, China [collaboration].
University of Eastern Finland, Joensuu, Finland.	Norwegian University of Science and Technology, Trondheim, Norway.
University of Bergen, Bergen, Norway.	Lausanne University Hospital, Lausanne, Switzerland.
Université Paris-EST, Paris, France.	Autonomous University of Barcelona, Barcelona, Spain.
University of Barcelona, Barcelona, Spain.	Universidad Complutense, Madrid, Spain.
University of Cantabria, Santander, Spain.	Hospital Santa Maria, Lisbon, Portugal.
University of Lisbon, Lisbon, Portugal.	University of Toronto, Ontario, Canada.
University of Manitoba, Winnipeg, Canada.	Universidade Federal do Rio Grande do Sul, Porto Alegre, Brazil.
McGill University, Montreal, Quebec, Canada.	Universidad de Antioquia, Medellín, Colombia.
Universidade Estadual de Londrina, Paraná, Brazil.	Shiraz University of Medical Sciences, Shiraz, Iran.
Guiyang Medical University, Guiyang, China.	Chulalongkorn University, Bangkok, Thailand.

National collaborations with IMPACT SRC

The University of Melbourne, Parkville, Victoria.	Australian Catholic University, Melbourne, Victoria.
The University of Sydney, Camperdown, New South Wales.	The University of Western Australia, Nedlands, Western Australia.
Monash University, Clayton, Victoria.	The University of Queensland, St Lucia, Queensland.
University of New South Wales, Sydney, New South Wales.	James Cook University, Townsville, Queensland.
Queensland University of Technology, Brisbane.	University of Queensland Diamantina Institute, Woolloongabba, Queensland.
Australian National University, Canberra, Australian Capital Territory.	Curtin University, Canberra, Australian Capital Territory

National Collaborations with IMPACT SRC continued...

Orygen, The National Centre of Excellence in Youth Mental Health, Parkville, Victoria.	Florey Institute of Neuroscience and Mental Health, Melbourne, Victoria.
Murdoch Children's Research Institute, Parkville, Victoria.	The Brain and Mind Research Institute, Sydney.
Menzies Research Institute, Hobart, Tasmania.	The Black Dog Institute, Sydney, New South Wales.
QIMR Berghofer Medical Research Institute, Brisbane.	The Australian Institute for Musculoskeletal Sciences, Melbourne, Victoria.
University Hospital Geelong, Barwon Health, Geelong, Victoria.	Sir Charles Gairdner Hospital, Nedlands, Western Australia.
Royal North Shore Hospital, New South Wales.	Albert Road Clinic, Melbourne, Victoria.
The CADE clinic, Sydney, New South Wales.	The Melbourne Clinic, Richmond, Victoria.
City of Greater Geelong, Geelong, Victoria.	Kardinia Health, Geelong, Victoria.
G21 Alliance, Geelong, Victoria.	Community and Research Network (CARN), Geelong, Victoria.



Publications 2016

1. Deckersbach T, Peters AT, Sylvia LG, Gold AK, da Silva Magalhães PV, Henry DB, Frank E, Otto MW, Berk M, Dougherty DD, Nierenberg AA, Miklowitz DJ. A cluster analytic approach to identifying predictors and moderators of psychosocial treatment for bipolar depression: results from STEP-BD *J Affect Disord.* 2016;203:152-7. doi:10.1016/j.jad.2016.03.064. Epub 2016 May 31.
2. Dawson SL, Bowe SJ, Crowe TC. A combination of omega-3 fatty acids, folic acid and B-group vitamins is superior at lowering homocysteine than omega-3 alone: A meta-analysis. *Nutrition Research.* 2016;36(6):499-508. doi:10.1016/j.nutres.2016.03.010.
3. Pasco JA, Foulkes C, Doolan B, Brown K, Holloway KL, Brennan-Olsen SL. A conduit between epidemiological research and regional health policy. *Australian and New Zealand Journal of Public Health.* 2016;40(3):205-254. doi:10.1111/1753-6405.12520.
4. Sarris J, Murphy J, Mischoulon D, Papakostas GI, Fava M, Berk M, Ng CH. Adjunctive Nutraceuticals for Depression: A Systematic Review and Meta-Analyses. *The American Journal of Psychiatry.* 2016; <http://dx.doi.org/10.1176/appi.ajp.2016.15091228>.
5. Stange JP, Sylvia LG, Magalhães PV, Miklowitz DJ, Otto MW, Frank E, Yim C, Berk M, Dougherty DD, Nierenberg AA, Deckersbach T. Affective instability and the course of bipolar depression: results from the STEP-BD randomised controlled trial of psychosocial treatment. *British Journal of Psychiatry.* 2016; bjp.bp.114.162073; doi:10.1192/bjp.bp.114.162073.
6. Câmara RA, Köhler CA, Maes M, Nunes-Neto PR, Brunoni AR, Quevedo J, Fernandes BS, Perugi G, Hyphantis TN, Carvalho AF. Affective temperaments and emotional traits are associated with a positive screening for premenstrual dysphoric disorder. *Compr Psychiatry.* 2016;71:33-38. doi:10.1016/j.comppsy.2016.08.008.
7. Sajjad MA, Holloway KL, Kotowicz MA, Livingston PM, Khasraw M, Hakkennes S, Dunning T, Brumby S, Page R, Pedler D, Sutherland A, Venkatesh S, Brennan-Olsen SL, Williams LJ, Pasco JA. Ageing, chronic disease and injury: a study in western Victoria. *Australian and New Zealand Journal of Public Health.* 2016;5(2):81-86.
8. McCloskey EV, Odén A, Harvey NC, Leslie WD, Hans D, Johansson H, Barkmann R, Boutroy S, Brown J, Chapurlat R, Elders PJM, Fujita Y, Glüer CC, Goltzman D, Iki M, Karlsson M, Kindmark A, Kotowicz MA, Kurumatani N, Kwok T, Lamy O, Leung J, Lippuner K, Ljunggren O, Lorentzon M, Mellström D, Merlijn T, Oei L, Ohlsson C, Pasco JA, Rivadeneira F, Rosengren B, Sornay-Rendu E, Szulc P, Tamaki J, Kanis JA. A meta-analysis of trabecular bone score in fracture risk prediction and its interaction to FRAX. *Journal of Bone and Mineral Research.* 2016;31(5):940-948. doi:10.1002/jbmr.2734.
9. Williams LJ, Pasco JA, Kessing LV, Quirk SE, Fernandes BS, Berk M. Angiotensin Converting Enzyme Inhibitors and Risk of Mood Disorders. *Psychotherapy and Psychosomatics.* 2016; 85, 4, 250-252.
10. Oedegaard CH, Berk L, Berk M; International Society for Bipolar Disorders (ISBD) Transcultural Task Force, Youngstrom EA, Dilsaver SC, Belmaker RH, Oedegaard KJ, Fasmer OB, Engebretsen IM. An ISBD perspective on the sociocultural challenges of managing bipolar disorder: A content analysis. *Aust N Z J Psychiatry.* 2016 Nov;50(11):1096-1103. Epub 2016.

11. Baskin R, Hill B, Jacka FN, O'Neil A, Skouteris H. Antenatal dietary patterns and depressive symptoms during pregnancy and early post-partum. *Matern Child Nutr.* 2017 Jan;13(1). doi:10.1111/mcn.12218.
12. Rosenblat JD, Kakar R, Berk M, Kessing LV, Vinberg M, Baune BT, Mansur RB, Brietzke E, Goldstein BI, McIntyre RS. Anti-inflammatory agents in the treatment of bipolar depression: a systematic review and meta-analysis. Review article. *Bipolar Disorders.* 2016; doi:10.1111/bdi.12373.
13. Magalhães PV, Dean O, Andreazza AC, Berk M, Kapczinski F. Antioxidant treatments for schizophrenia. *Cochrane Database Syst Rev.* 2016;2:CD008919. doi:10.1002/14651858.CD008919.pub2.
14. Holloway KL. *An Unnatural History of Emerging Infections*, R. Barrett, G. Armelagos. Oxford University Press, Oxford (2013), ISBN 9780199608294. *International Journal of Paleopathology.* 2016;13:75–76. doi:10.1016/j.ijpp.2016.02.001.
15. Holloway KL, Williams LJ, Brennan-Olsen SL, Morse AG, Kotowicz MA, Nicholson GC, Pasco JA. Anxiety disorders and falls among older adults. *Journal of Affective Disorders.* 2016;205:20-27. doi:10.1016/j.jad.2016.06.052.
16. McKetin R, Dean OM, Baker AL, Carter G, Turner A, Kelly PJ, Berk M. A potential role for N-acetylcysteine in the management of methamphetamine dependence. *Drug and Alcohol Review.* 2016; doi:10.1111/dar.12414.
17. Barker AL, McNeil JJ, Seeman E, Ward SA, Sanders KM, Khosla S, Cumming RG, Pasco JA, Bohensky MA, Ebeling PR, Woods RL, Lockery JE, Wolfe R, Talevski J and the ASPREE Investigator Group. A randomised controlled trial of low-dose aspirin for the prevention of fractures in healthy older people: protocol for the ASPREE-Fracture substudy. *Injury Prevention* 2016; 22(4): 297-301. doi:10.1136/injuryprev-2015-041655.
18. Dean OM*, Gray KM*, Villagonzalo KA, Dodd S, Mohebbi M, Vick T, Tonge BJ, Berk M. A randomized, double blind, placebo-controlled trial of a fixed dose of N-acetylcysteine in children with autistic disorder. *Australian and New Zealand Journal of Psychiatry* (accepted 9/5/2016). (*joint first authors).
19. Passos IC, Mwangi B, Vieta E, Berk M, Kapczinski F. Areas of controversy in neuro-progression in bipolar disorder. *Acta Psychiatrica Scandinavica.* 2016; doi:10.1111/acps.12581.
20. Davis J, Eyre H, Jacka FN, Dodd S, Dean O, McEwen S, Debnath M, McGrath J, Maes M, Amminger P, McGorry PD, Pantelis C, Berk M. A review of vulnerability and risks for schizophrenia: Beyond the two hit hypothesis. *Neuroscience and Biobehavioral Reviews.* 2016;65:185-194.
21. Daglas R, Cotton SM, Allott K, Yucel M, Macneil CA, Hasty MK, Murphy B, Pantelis C, Hallam KT, Henry LP, Conus P, Ratheesh A, Kader L, Wong MTH, McGorry PD, Berk M. A single-blind, randomised controlled trial on the effects of lithium and quetiapine monotherapy on the trajectory of cognitive functioning in first episode mania: a 12-month follow-up study. *European Psychiatry.* 2016;31:20-28.
22. Kwiatkowski D, Czarny P, Toma M, Jurkowska N, Sliwinska A, Drzewoski J, Bachurska A, Szemraj J, Maes M, Berk M, Su KP, Galecki P, Śliwiński T. Associations between DNA Damage, DNA Base Excision Repair Gene Variability and Alzheimer's Disease Risk. *Dement Geriatr Cogn Disord.* 2016;41(3-4):152-71. 10.1159/000443953.

23. Kingsbury M, Dupuis G, Jacka F, Roy-Gagnon MH, McMartin SE, Colman I. Associations between fruit and vegetable consumption and depressive symptoms: evidence from a national Canadian longitudinal survey. *J Epidemiol Community Health*. 2016 Feb;70(2):155-61. doi:10.1136/jech-2015-205858.
24. Berk M, Woods RL, Nelson MR, Shah RC, Reid CM, Storey E, Fitzgerald SM, Lockery JE, Wolfe R, Mohebby M, Murray AM, Kirpach B, Grimm R, McNeil JJ. ASPREE-D: Aspirin for the prevention of depression in the elderly. *Int Psychogeriatr*. 2016;28(10):1741-8. doi: 10.1017/S104161021600079X. Epub 2016 May 31.
25. Talarowska M, Berk M, Maes M, Galecki P. Autobiographical memory dysfunctions in depressive disorders. *Psychiatry Clin Neurosci*. 2016;70(2):100-108.
26. Data-Franco J, Singh A, Popovic D, Ashton M, Berk M, Vieta E, Figueira ML, Dean OM. Beyond the therapeutic shackles of the monoamines: New mechanisms in bipolar disorder biology. *Prog Neuropsychopharmacol Biol Psychiatry*. 2016;72:73-86. doi: 10.1016/j.pnpbp.2016.09.004. [Epub ahead of print].
27. Carvalho AF, Köhler CA, Fernandes BS, Quevedo J, Miskowiak KW, Brunoni AR, Machado-Vieira R, Maes M, Vieta E, Berk M. Bias in emerging biomarkers for bipolar disorder. *Psychological Medicine*. 2016:1-11.
28. Carvalho AF, Köhler CA, Brunoni AR, Miskowiak KW, Herrmann N, Lanctôt KL, Hyphantis TN, Quevedo J, Fernandes BS, Berk M. Bias in peripheral depression biomarkers. *Psychother Psychosom*. 2016;85(2):81-90.
29. Boyce PM, Berk M. Biological models of mental illness: implications for therapy development. *Med J Aust*. 2016;204(09):339-340.
30. Grande I, Berk M, Birmaher B, Vieta E. Bipolar disorder. *The Lancet*. 2016; 387:1561-1572.
31. Chandrasekaran V, Brennan-Olsen SL, Stuart AL, Pasco JA, Berk M, Hodge JM, Williams LJ. Bipolar disorder and bone health: a systematic review protocol. *BMJ Open* IN PRESS (accepted 20/12/2016).
32. Vieta E, Berk M, Birmaher B, Grande I. Bipolar disorder: defining symptoms and comorbidities--Authors' reply. *Lancet*. 2016;388(10047):869-70. doi:10.1016/S0140-6736(16)30966-7. Epub.
33. de Campos-Carli SM, Araújo MS, de Oliveira Silveira AC, de Rezende VB, Rocha NP, Ferretjans R, Ribeiro-Santos R, Teixeira-Carvalho A, Martins-Filho OA, Berk M, Salgado JV, Teixeira AL. Cannabinoid receptors on peripheral leukocytes from patients with schizophrenia: Evidence for defective immunomodulatory mechanisms. *J Psychiatr Res*. 2016 Dec 3;87:44-52. doi:10.1016/j.jpsychires.2016.12.001.
34. Orford NR, Lane SE, Bailey M, Pasco JA, Cattigan C, Elderkin T, Brennan-Olsen SL, Bellomo R, Cooper DJ, Kotowicz MA. Changes in bone mineral density in the year after critical illness. *American Journal of Respiratory and Critical Care Medicine* 2016; 193(7): 736-744. doi:10.1164/rccm.201508-1514OC.
35. Fraher D*, Hodge JM*, Collier FM, McMillan JS, Kennedy RL, Ellis M, Nicholson GC, Walder K, Dodd S, Berk M, Pasco JA, Williams LJ*, Gibert Y*. Citalopram and sertraline exposure compromises embryonic bone development. *Molecular Psychiatry* 2016; 21(5): 656-64. *Equal authors. doi:10.1038/mp.2015.135.
36. Malhi, Berk M. Clinical update – mood disorders/depression. *ANZJP*. 2016.

37. Rapado-Castro M, Dodd S, Bush AI, Malhi GS. Cognitive effects of adjunctive N-acetyl cysteine in psychosis. *Psychological Medicine*. Epub ahead of print. doi: <https://doi.org/10.1017/S0033291716002932>. 29 November 2016.
38. Bortolato B, Miskowiak KW, Köhler CA, Maes M, Fernandes B, Berk M, Carvalho AF. Cognitive remission: a novel objective for the treatment of major depression? *BMC Medicine*. 2016;14(1):9.
39. Martin-Subero M, Anderson G, Kanchanatawan B, Berk M, Maes M. Comorbidity between depression and inflammatory bowel disease explained by immune-inflammatory, oxidative, and nitrosative stress; tryptophan catabolite; and gut-brain pathways. *CNS Spectr*. 2016 Apr;21(2):184-98. doi:10.1017/S1092852915000449. Review.
40. Brennan-Olsen SL, Quirk SE, Leslie WD, Toombs M, Holloway KL, Hosking SM, Pasco JA, Doolan BJ, Page RS, Williams LJ. Comparison of fracture rates between indigenous and non-indigenous populations: a systematic review protocol. *BMJ Open* 2016; 6: e012124 doi:10.1136/bmjopen-2016-012124.
41. Fernandes BS, Steiner J, Bernstein HG, Dodd S, Pasco JA, Dean OM, Nardin P, Gonçalves CA, Berk M. C-reactive protein is increased in schizophrenia but is not altered by antipsychotics: meta-analysis and implications. *Mol Psychiatry*. 2016;21:554-564: 10.1038/mp.2015.87.
42. Fernandes BS, Steiner J, Molendijk ML, Dodd S, Nardin P, Gonçalves C-A, Jacka F, Köhler CA, Karmaker C, Carvalho AF, Berk M. C-reactive protein concentrations across the mood spectrum in bipolar disorder: a systematic review and meta-analysis. *Lancet Psychiatry*. 2016;3(12):1147-1156.
43. Williams LJ, Pasco JA, Jackson H, Kiroopoulos L, Stuart AL, Jacka FN, Berk M. Depression as a risk factor for fracture in women: a 10 year longitudinal study. *Journal of Affective Disorders* 2016; 192: 34-40. doi:10.1016/j.jad.2015.11.048.
44. Bortolato B, Hyphantis TN, Valpione S, Perini G, Maes M, Morris G, Kubera M, Köhler CA, Fernandes BS, Stubbs B, Pavlidis N, Carvalho AF. Depression in cancer: The many biobehavioral pathways driving tumor progression. *Cancer Treat Rev*. 2017 Jan;52:58-70. doi:10.1016/j.ctrv.2016.11.004. Review.
45. O'Neil A, Fisher AJ, Kibbey KJ, Jacka FN, Kotowicz MA, Williams LJ, Stuart AL, Berk M, Lewandowski PA, Taylor CB, Pasco JA. Depression is a risk factor for incident coronary heart disease in women: An 18-year longitudinal study. *J Affect Disord*. 2016 Feb 16;196:117-124.
46. Dash SR, O'Neil A, Jacka FN. Diet and Common Mental Disorders: The Imperative to Translate Evidence into Action. *Frontiers in Public Health* 04/2016; 4(10010). doi:10.3389/fpubh.2016.00081.
47. Brennan-Olsen SL, Page RS, Berk M, Riancho JA, Leslie WD, Wilson SG, Saban KL, Pasco JA, Hodge JM, Janusek L, Quirk SE, Hyde NK, Hosking SM, Williams LJ. DNA methylation and the social gradient of osteoporotic fracture: A conceptual model. *Bone* 2016; 84: 204-212. doi:10.1016/j.bone.2015.12.015.
48. Sylvia LG1, Salcedo S, Peters AT, Magalhães PV, Frank E, Miklowitz DJ, Otto MW, Berk M, Nierenberg AA, Deckersbach T. Do Sleep Disturbances Predict or Moderate the Response to Psychotherapy in Bipolar Disorder? *J Nerv Ment Dis* 2016; [Epub ahead of print].

49. Kulkarni J, Gavrilidis E, Gwini SM, Worsley R, Grigg J, Warren A, Gurvich C, Gilbert H, Berk M, Davis SR. Effect of adjunctive raloxifene therapy on severity of refractory schizophrenia in women: a randomized clinical trial. *JAMA Psychiatry*. 2016 Sep 1;73(9):947-54. doi:10.1001/jamapsychiatry.2016.1383.
50. Bull N, Turner A, Levi C, Hunter M. Effect of core temperature and embolic load during cardiac surgery on motion perception. *Heart, Lung and Circulation*, 2016, 25(5), 512-519.
51. Rauma PH, Koivumaa-Honkanen H, Williams LJ, Tuppurainen MT, Kröger HP, Honkanen RJ. Effects of antidepressants on postmenopausal bone loss – A 5-year longitudinal study from the OSTPRE cohort *Bone* 2016;89:25-31. doi:10.1016/j.bone.2016.05.003.
52. Fernandes BS, Berk M, Pasco JA, Hodge JM, Williams LJ. Effects of depression and serotonergic antidepressants on bone: Mechanisms and implications for the treatment of depression. *Drugs & Aging*. 2016;33:21-25. doi:10.1007/s40266-015-0323-4.
53. Rosenbaum Asarnow J, Berk M, Zhang L, Wang P, Tang L. Emergency Department Youth Patients with Suicidal Ideation or Attempts: Predicting Suicide Attempts Through 18 Months of Follow-Up. *Suicide Life Threat Behav*. 2016 Nov 3. doi:10.1111/sltb.12309. [Epub ahead of print].
54. Ratheesh A, Cotton SM, Davey CG, Adams S, Bechdorf A, Macneil C, Berk M, McGorry PD. Ethical considerations in preventive interventions for bipolar disorder. *Early Intervention in Psychiatry*. 2016; doi:10.1111/eip.12340.
55. Butterworth PA, Menz HB, Urquhart DM, Cicuttini FM, Landorf KB, Pasco JA, Brennan SL, Wluka AE. Fat mass is associated with foot pain in men: the Geelong Osteoporosis Study. *Journal of Rheumatology* 2016; 43(1): 138-143. doi:10.3899/jrheum.141331.
56. Brennan-Olsen SL, Page RS, Lane SE, Lorimer M, Buchbinder R, Osborne RH, Pasco JA, Wluka AE, Sanders KM, Ebeling PR, Graves SE. Few geographic and socioeconomic variations exist in primary total shoulder arthroplasty: a multi-level study of Australian registry data. *BMC Musculoskeletal Disorders* 2016; 17(1): 291. doi:10.1186/s12891-016-1134-4.
57. Bortolato B, Berk M, Maes M, McIntyre RS, Carvalho AF. Fibromyalgia and Bipolar Disorder: Emerging Epidemiological Associations and Shared Pathophysiology. *Curr Mol Med*. 2016;16(2):119-36.
58. Hyde NK, Brennan-Olsen SL, Pasco JA. Fish intake during pregnancy and offspring adiposity. *JAMA Pediatrics* 2016; 170(8): 809. doi:10.1001/jamapediatrics.2016.1046.
59. Leslie WD, Brennan-Olsen SL, Morin SN, Lix LM. Fracture prediction from repeat BMD measurements in clinical practice. *Osteoporos Int*. 2016 Jan;27(1):203-10. doi: 10.1007/s00198-015-3259-y.
60. Debnath M, Berk M. Functional Implications of the IL-23/IL-17 Immune Axis in Schizophrenia. *Molecular Neurobiology*. 2016.
61. Dipnall JF, Pasco JA, Berk M, Williams LJ, Dodd S, Jacka FN, Meyer D. Fusing data mining, machine learning and traditional statistics to detect biomarkers associated with depression. *PLoS ONE* 2016; 11(2): e0148195. doi:10.1371/journal.pone.0148195.

62. Luo W, Phung D, Tran T, Gupta S, Rana S, Karmakar C, Shilton A, Yearwood J, Dimitrova N, Ho TB, Venkatesh S, Berk M. Guidelines for Developing and Reporting Machine Learning Predictive Models in Biomedical Research: A Multidisciplinary View. *J Med Internet Res*. 2016 Dec 16;18(12):e323.
63. Ward SK, Turner A, Hambridge JA, Halpin SA, Valentine ME, Sweetapple AL, White JH, Hackett ML. Group cognitive behavioural therapy for stroke survivors with depression and their carers. *Topics in Stroke Rehabilitation*, 2016, 5(12), e009985.
64. Jacka FN, Berk M. Gut dysbiosis in mania: a viable therapeutic target. *ANZJP*. 2016;50(2):185.
65. Slyepchenko A, Maes M, Jacka FN, Köhler CA, Barichello T, McIntyre RS, Berk M, Grande I, Foster JA, Vieta E, Carvalho AF. Gut Microbiota, Bacterial Translocation, and Interactions with Diet: Pathophysiological Links between Major Depressive Disorder and Non-Communicable Medical Comorbidities. *Psychother Psychosom*. 2017;86(1):31-46.
66. Carvalho AF, Berk M, Maes M. Editorial: Gut Permeability and the Microbiome: Emerging Roles in CNS Function in Health and Disease. *Curr Pharm Des*. 2016 Sep 29.
67. Anderson G, Seo M, Berk M, Carvalho AF, Maes M. Gut permeability and microbiota in Parkinson's disease: role of depression, tryptophan catabolites, oxidative and nitrosative stress and melatonergic pathways. *Curr Pharm Des*. 2016; [Epub ahead of print].
68. Michalak EE, Jones S, Lobban F, Algorta GP, Barnes SJ, Berk L, Berk M, Hole R, Lapsley S, Maxwell V, Milev R, McManamy J, Murray G, Tohen M, Tse S, Sanchez de Carmona M, Johnson SL; ISBD Taskforce on Community Engagement; CREST.BD. Harnessing the potential of community-based participatory research approaches in bipolar disorder. *Int J Bipolar Disord*. 2016;4(1):4.
69. Strugnell C, Lynne Millar L, Churchill A, Jacka F, Bell C, Malakellis M, Swinburn B, Allender S: Healthy together Victoria and childhood obesity—a methodology for measuring changes in childhood obesity in response to a community-based, whole of system cluster randomized control trial. 12/2016; 74(1). doi:10.1186/s13690-016-0127-y.
70. Harding JL, Sooriyakumaran M, Anstey KJ, Adams R, Balkau B, Brennan-Olsen SL, Briffa T, Davis TME, Davis WA, Dobson A, Giles GG, Grant J, Huxley R, Knuiman M, Luszcz M, Mitchell P, Pasco JA, Reid CM, Simmons D, Simons L, Taylor AW, Tonkin A, Woodward M, Shae JE, Magliano DJ. Hypertension, anti-hypertensive treatment and cancer incidence and mortality: a pooled collaborative analysis of 12 Australian and New Zealand cohorts. *Journal of Hypertension* 2016; 34(1): 149-155. doi: 10.1097/HJH.0000000000000770.
71. Berk M, Tye S, Walder K, McGee S. Hyperthermia for Major Depressive Disorder? *JAMA Psychiatry*. 2016 Sep 14. doi:10.1001/jamapsychiatry.2016.1532. [Epub ahead of print].
72. Logan AC, Jacka FN, Prescott SL. Immune-Microbiota Interactions: Dysbiosis as a Global Health Issue. *Current Allergy and Asthma Reports* 01/2016; 16(2). doi:10.1007/s11882-015-0590-5.
73. Leboyer M, Berk M, Yolken RH, Tamouza R, Kupfer D, Groc L. Immuno-psychiatry: an agenda for clinical practice and innovative research. *BMC Med*. 2016 Oct 28;14(1):173.
74. Chanen AM, Berk M, Thompson K. Integrating Early Intervention for Borderline Personality Disorder and Mood Disorders. *Harvard Review of Psychiatry*. 2016.

75. Bauer R, Conell J, Glenn T, Alda M, Ardaur R, Baune BT, Berk M, Bersudsky Y, Bilderbeck A, Bocchetta A, Bossini L, Castro AM, Cheung EY, Chillotti C, Choppin S, Del Zompo M, Dias R, Dodd S, Duffy A, Etain B, Fagiolini A, Hernandez MF, Garnham J, Geddes J, Gildebroy J, Gonzalez-Pinto A, Goodwin GM, Grof P, Harima H, Hassel S, Henry C, Hidalgo-Mazzei D, Kapur V, Kunigiri G, Lafer B, Larsen ER, Lewitzka U, Licht RW, Lund AH, Misiak B, Monteith S, Munoz R, Nakanotani T, Nielsen RE, O'Donovan C, Okamura Y, Osher Y, Piotrowski P, Reif A, Ritter P, Rybakowski JK, Sagduyu K, Sawchuk B, Schwartz E, Scippa AM, Slaney C, Sulaiman AH, Suominen K, Suwalska A, Tam P, Tatebayashi Y, Tondo L, Vieta E, Vinberg M, Viswanath B, Volkert J, Zetin M, Whybrow PC, Bauer M. Internet use by patients with bipolar disorder: Results from an international multisite survey. *Psychiatry Res.* 2016 Aug 30;242:388-94. doi: 10.1016/j.psychres.2016.05.055.
76. Slyepchenko A, Maes M, Machado-Veira R, Anderson G, Solmi M, Sanz Y, Berk M, Köhler CA, Carvalho AF. Intestinal dysbiosis, gut hyperpermeability and bacterial translocation: missing links between depression, obesity and type 2 diabetes? *Curr Pharm Des.* 2016; [Epub ahead of print].
77. Dipnall JF, Pasco JA, Berk M, Williams LJ, Dodd S, Jacka FN, Meyer D. Into the bowels of depression: Unravelling medical symptoms associated with depression using machine-learning techniques to a community based population sample. *PLoS ONE* 2016;11(12):e0167055. doi:10.1371/journal.pone.0167055.
78. Williams LJ, Pasco JA, Hodge JM & Berk M. Is there a nexus between mental and bone health? *Australian and New Zealand Journal of Psychiatry* 2016, 50 (9): 829-830. doi: 10.1177/0004867416652737.
79. Fernandes BS, Dash S, Jacka F, Dodd S, Carvalho AF, Köhler CA, Steiner J, da Graca Cantarelli M, Nardin P, Gonçalves C-A, Berk M. Leptin in bipolar disorder: a systematic review and meta-analysis. *European Psychiatry.* 2016;35:1-7.
80. Lukkala, PS, Honkanen RJ, Rauma PH, Williams LJ, Quirk SE, Kröger H, Koivumaa-Honkanen H. Life satisfaction and morbidity among postmenopausal women. *PLoS ONE* 2016;11(1):e0147521. doi:10.1371/journal.pone.0147521.
81. Hayward J, Jacka FN, Skouteris H, Millar L, Strugnell C, Swinburn BA, Allender S. Lifestyle factors and adolescent depressive symptomatology: Associations and effect sizes of diet, physical activity and sedentary behaviour. *Aust N Z J Psychiatry.* 2016 Nov;50 (11): 1064-1073.
82. Pasco JA, Brennan-Olsen SL, Holloway KL, Hyde NK and Kotowicz MA. 2016. Low lean tissue mass and physical performance as markers of sarcopenia in older men and women. *Journal of Gerontology & Geriatric Research.* 5(3):306-309. doi: 10.4172/2167-7182.1000306.
83. Hyde NK, Brennan-Olsen SL, Wark JD, Hosking SM, Pasco JA. Maternal dietary nutrient intake during pregnancy and offspring linear growth and bone: The Vitamin D in Pregnancy Cohort Study. *Calcified Tissue International* 2016 Nov 2 [Epub ahead of print]. doi:10.1007/s00223-016-0199-2.

84. Hyde NK, Brennan-Olsen SL, Bennett K, Moloney DJ, Pasco JA. Maternal nutrition during pregnancy: intake of nutrients important for bone health. *Maternal and Child Health Journal* 2016 Aug 20 [Epub ahead of print]. doi:10.1007/s10995-016-2178-7.
85. Peters AT, Shesler LW, Sylvia L, da Silva Magalhães PV, Miklowitz DJ, Otto MW, Frank E, Berk M, Dougherty DD, Nierenberg AA, Deckersbach T. Medical burden, body mass index and the outcome of psychosocial interventions for bipolar depression. *Aust N Z J Psychiatry*. 2016 Jul;50(7):667-77. doi:10.1177/0004867415616694.
86. Berk M. Mental health for all Australians. Editorial. *ANZJP*. 2016; doi:10.1177/004867416640907.
87. Arandjelovic A, Eyre HA, Forbes MP, Bauer R, Aggarwal S, Singh AB, Baune BT, Everall I, Berk M, Ng C. Mental health system development in Asia: Does Australia have a role? *ANZJP*. 2016; doi:10.1177/0004867416647798.
88. Scaini G, Rezin GT, Carvalho AF, Streck EL, Berk M, Quevedo J. Mitochondrial dysfunction in bipolar disorder: Evidence, pathophysiology and translational implications. *Neurosci Biobehav Rev*. 2016;68:694-713. doi:10.1016/j.neubiorev.2016.06.040. Epub 2016 Jul 1.
89. Afrin N, Honkanen R, Koivumaa-Honkanen H, Lukkala P, Rikonen T, Sirola J, Williams LJ, Kröger H. Multimorbidity predicts falls differentially according to the type of fall in postmenopausal women (accepted *Maturitas* 7/5/16).
90. Pasco JA, Mohebbi M, Holloway KL, Brennan-Olsen SL, Hyde NK, Kotowicz MA. Musculoskeletal decline and mortality: prospective data from the Geelong Osteoporosis Study. *Journal of Cachexia, Sarcopenia and Muscle*. 2016 [Epub ahead of print]. doi:10.1002/jcsm.12177.
91. Fernandes BS, Dean OM, Dodd S, Malhi GS, Berk M. N-acetylcysteine in depressive symptoms and functionality: A systematic review and meta-analysis. *Journal of Clinical Psychiatry*. 2016; 77(4):e457-e466.
92. Rossell SL, Francis PS, Galletly C, Harris A, Siskind D, Berk M, Bozaoglu K, Dark F, Dean O, Liu D, Meyer D, Neill E, Phillipou A, Sarris J, Castle DJ. N-acetylcysteine (NAC) in schizophrenia resistant to clozapine: a double blind randomised placebo controlled trial targeting negative symptoms. *BMC Psychiatry*. 2016;16(1):320. doi:10.1186/s12888-016-1030-3.
93. Berger GE, Smesny S, Schäfer MR, Milleit B, Langbein K, Hipler UC, Milleit C, Klier CM, Schlögelhofer M, Holub M, Holzer I, Berk M, McGorry PD, Sauer H, Amminger GP. Niacin Skin Sensitivity Is Increased in Adolescents at Ultra-High Risk for Psychosis. *PLoS ONE*. 2016 Feb 19;11(2):e0148429
94. Segan C, Baker A, Turner A, Williams JM. Nicotine withdrawal, relapse of mental illness or medication side effect? Implementing a monitoring tool for people with mental illness into Quitline counselling. *Journal of Dual Diagnosis*. Accepted 21 Nov 2016.
95. Morris G, Berk M, Klein H, Walder K, Galecki P, Maes M. Nitrosative stress, hypernitrosylation, and autoimmune responses to nitrosylated proteins: new pathways in neuroprogressive disorders including depression and chronic fatigue syndrome. *Molecular Neurobiology*. 2016; doi:10.1007/s12035-016-9975-2.

96. Jacka F. No association of dietary patterns with cancer or cardiovascular disease in older adults. *Clin Nutr.* 2016 Feb;35(1):241. doi:10.1016/j.clnu.2015.10.020. No abstract available.
97. Holloway KL, Henry MJ, Brennan-Olsen SL, Bucki-Smith G, Nicholson GC, Korn S, Sanders KM, Pasco JA, Kotowicz MA. Non-hip and non-vertebral fractures: the neglected fracture sites. *Osteoporosis International* 2016; 27(3): 905-13. doi: 10.1007/s00198-015-3322-8.
98. Kim Y, McGee S, Czeczor JK, Walker AJ, Kale RP, Kouzani AZ, Walder K, Berk M, Tye SJ. Nucleus accumbens deep-brain stimulation efficacy in ACTH-pretreated rats: alterations in mitochondrial function relate to antidepressant-like effects. *Transl Psychiatry.* 2016;6(6):e842. United States.
99. Conell J, Bauer R, Glenn T, Alda M, Ardu R, Baune BT, Berk M, Bersudsky Y, Bilderbeck A, Bocchetta A, Bossini L, Paredes Castro AM, Cheung EY, Chillotti C, Choppin S, Del Zompo M, Dias R, Dodd S, Duffy A, Etain B, Fagiolini A, Garnham J, Geddes J, Gildebro J, Gonzalez-Pinto A, Goodwin GM, Grof P, Harima H, Hassel S, Henry C, Hidalgo-Mazzei D, Kapur V, Kunigiri G, Lafer B, Lam C, Larsen ER, Lewitzka U, Licht R, Lund AH, Misiak B, Piotrowski P, Monteith S, Munoz R, Nakanotani T, Nielsen RE, O'Donovan C, Okamura Y, Osher Y, Reif A, Ritter P, Rybakowski JK, Sagduyu K, Sawchuk B, Schwartz E, Scippa AM, Slaney C, Sulaiman AH, Suominen K, Suwalska A, Tam P, Tatebayashi Y, Tondo L, Vieta E, Vinberg M, Viswanath B, Volkert J, Zetin M, Zorrilla I, Whybrow PC, Bauer M. Online information seeking by patients with bipolar disorder: results from an international multisite survey. *Int J Bipolar Disord.* 2016;4(1):17. doi:10.1186/s40345-016-0058-0. Epub 2016 Aug 24.
100. Sarris J, Oliver G, Camfield DA, Dean OM. Participant characteristics as of response to N-acetylcysteine (NAC) in obsessive-compulsive disorder. *Clinical Psychological Science* (published online 4/5/2016).
101. Quirk SE, Stuart AL, Brennan-Olsen SL, Pasco JA, Berk M, Chanen AM, Koivumaa-Honkanen H, Kotowicz MA, Lukkala PS, Williams LJ. Physical health comorbidities in women with personality disorder: data from the Geelong Osteoporosis Study. *European Psychiatry* 2016; 34: 29-35. doi:10.1016/j.eurpsy.2015.12.007.
102. Quirk S, Berk M, Chanen AM, Koivumaa-Honkanen, H, Brennan-Olsen SL, Pasco JA, Williams LJ. Population prevalence of personality disorder and associations with physical health comorbidities and health care service utilization: A review *Personality Disorders: Theory, Research and Treatment.* 2016;7(2):136-146. doi: 10.1037/per0000148
103. Karmakar C, Luo W, Tran T, Berk M, Venkatesh S. Predicting risk of suicide attempt using history of physical illnesses from electronic medical records. *JMIR Ment Health.* 2016 Jul 11;3(3):e19. doi:10.2196/mental.5475.
104. Sands N, Elsom S, Corbett R, Keppich-Arnold S, Prematunga R, Berk M, Considine J. Predictors for clinical deterioration of mental state in patients assessed by telephone-based mental health triage. *Int. Journal Mental Health Nursing.* 2016; doi: 10.1111/inm.12267.
105. Hosking SM, Pasco JA, Hyde NK, Williams LJ, Brennan-Olsen SL. Recommendations for dietary calcium intake and bone health: The role of health literacy. *Journal of Nutrition & Food Sciences* 2016; 6(1): 452. doi:10.4172/2155-9600.1000452.

106. Duong A, Che Y, Ceylan D, Pinguelo A, Andrezza AC, Young TL, Berk M. Regulators of mitochondrial complex I activity: A review of literature and evaluation in post-mortem prefrontal cortex from patients with bipolar disorder. *Psychiatry Res.*, 2016; 236: 148-157. Elsevier Ireland Ltd, Ireland.
107. Kim S-W, Jhon M, Kim J-M, Smesny S, Rice S, Berk M, Klier CM, McGorry PD, Schafer MR, Amminger GP. Relationship between Erythrocyte Fatty Acid Composition and Psychopathology in the Vienna Omega-3 Study. *PloS ONE*. 2016; <http://dx.doi.org/10.1371/journal.pone.0151417>.
108. Barbé-Tuana FM, Parisi MM, Panizzutti BS, Fries GR, Grun LK, Guma FT, Kapczinski F, Berk M, Gama CS, Rosa AR. Shortened telomere length in bipolar disorder: a comparison of the early and late stages of disease. *Rev. Bras. Psiquiatr.* vol.38 no.4 São Paulo Oct/Dec 2016. Epub Oct 17, 2016. <http://dx.doi.org/10.1590/1516-4446-2016-1910>.
109. Czarny P, Kwiatkowski D, Toma M, Gatecki P, Orzechowska A, Bobińska K, Bielecka-Kowalska A, Szemraj J, Berk M, Anderson G, Śliwiński T. Single-Nucleotide Polymorphisms of Genes Involved in Repair of Oxidative DNA Damage and the Risk of Recurrent Depressive Disorder. *Med Sci Monit*. 2016 Nov 20;22:4455-4474.
110. Aggarwal S, Berk M, Taljard L, Wilson Z. South African adolescents' beliefs about depression. *Int J Soc Psychiatry*. 2016 Mar;62(2):198-200. doi:10.1177/0020764015618226.
111. Stange JP, Kleiman EM, Sylvia LG, Magalhães PV Berk M, Nierenberg AA, Deckersbach T. Specific mood symptoms confer risk for subsequent suicidal ideation in bipolar disorder with and without suicide attempt history: multi-wave data from STEP-BD. *Depression and Anxiety*. 2016.
112. Williams LJ, Pasco JA, Mohebbi M, Jacka FN, Stuart AL, Venugopal K, O'Neil A, Berk M: Statin and aspirin use and the risk of mood disorders among men. *The International Journal of Neuropsychopharmacology* 2016; 19(6): 1-4 doi:10.1093/ijnp/pyw008.
113. Salagre E, Fernandes BS, Dodd S, Brownstein DJ, Berk M. Statins for the treatment of depression: A meta-analysis of randomized, double-blind, placebo-controlled trials. *Journal of Affective Disorders*. 2016; 200:235-242.
114. Kay-Lambkin FJ, Thornton L, Lappin JM, Hanstock T, Sylvia L, Jacka F, Baker AL, Berk M, Mitchell PB, Callister R, Rogers N, Webster S, Dennis S, Oldmeadow C, MacKinnon A, Doran C, Turner A, Hunt S. Study protocol for a systematic review of evidence for lifestyle interventions targeting smoking, sleep, alcohol/other drug use, physical activity, and healthy diet in people with bipolar disorder. *Systematic Reviews*. 2016 Jul 5;5(1):1.
115. O'Neil A, Fisher AJ, Kibbey K, Jacka FN, Kotowicz MA, Williams LJ, Stuart AL, Berk M, Lewandowski PA, Atherton JJ, Taylor CB, Pasco JA. The addition of depression to the Framingham Risk Equation model for predicting coronary heart disease risk in women. *Preventive Medicine* 2016; 87: 115-120. doi:10.1016/j.ypmed.2016.02.028.
116. Chou L, Brady SRE, Urquhart DM, Teichtahl AJ, Cicuttini FM, Pasco JA, Brennan-Olsen SL, Wluka AE. The association between obesity and low back pain and disability is affected by mood disorders: A population-based, cross-sectional study of men. *Medicine (Baltimore)* 2016; 95(15): e3367. doi:10.1097/MD.0000000000003367.
117. Bolton KA, Allender S, Kremer P, Gibbs L, Waters E, de Silva A. The association between self-reported diet quality and health-related quality of life in rural and urban Australian adolescents. *Australian Journal of Rural Health* 01/2016; doi:10.1111/ajr.12275.

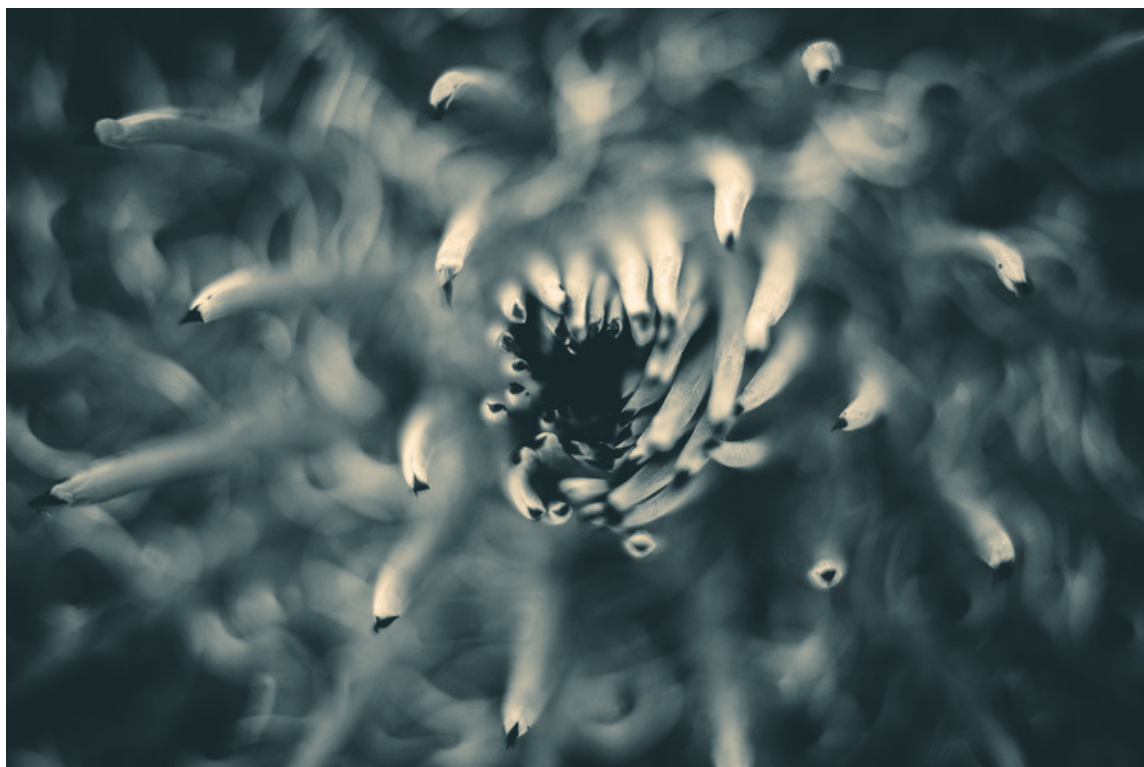
118. Sinclair R, Millar L, Allender S, Snowdon W, Waqa G, Jacka F, Moodie M, Petersen S, Swinburn B. The Cross-Sectional Association between Diet Quality and Depressive Symptomology amongst Fijian Adolescents. *PLoS ONE*. 2016.
119. Morris G, Walder K, Puri BK, Berk M, Maes M. The Deleterious Effects of Oxidative and Nitrosative Stress on Palmitoylation, Membrane Lipid Rafts and Lipid-Based Cellular Signalling: New Drug Targets in Neuroimmune Disorders. *Mol Neurobiol*. 2016 Sep; 53(7):4638-58. doi:10.1007/s12035-015-9392-y. Review.
120. Prescott SL, Allen K, Armstrong K, Collins C, Dickinson H, Gardiner K, Jacka F, Jasoni C, Moore T, Moritz KM, Muhlhausler B, Siero W, Sim K, Nanan R, Saffery R, Singh G, Vickers MH, Craig JM. The establishment of DOHaD working groups in Australia and New Zealand. 04/2016; -1. doi:10.1017/S2040174416000167.
121. Köhler CA, Maes M, Slyepchenko A, Berk M, Solmi M, Lanctôt KL, Carvalho AF. The gut-brain axis, including the microbiome, leaky gut and bacterial translocation: mechanisms and pathophysiological role in Alzheimer's disease. *Curr Pharm Des*. 2016; [Epub ahead of print].
122. Rajasekaran A, Shivakumar V, Kalmady SV, Narayanaswamy JC, Subbana M, Venugopal D, Amaresha AC, Venkatasubramanian G, Berk M, Debnath M. The impact of HLA-G 3' UTR variants and sHLA-G on risk and clinical correlates of schizophrenia. *Human Immunology*. 2016.
123. Dawson SL, Dash SR, Jacka FN. The importance of diet and gut health to the treatment and prevention of mental disorders. In Cryan J.F. and Clarke, G. (Eds) *International Review of Neurobiology: Gut Microbiome and Behavior*, Elsevier.
124. Slyepchenko A, Maes M, Köhler CA, Anderson G, Quevedo J, Alves GS, Berk M, Fernandes BS, Carvalho AF. T-helper 17 cells may drive neuroprogression in major depressive disorder: Proposal of an integrative model. *Neurosci Biobehav Rev*. 2016;64:83-100.
125. Brennan-Olsen SL, Pasco JA, Williams LJ, Hyde NK, Jacka FN. The microbiome: A biological mechanism underpinning the social gradient of musculoskeletal conditions? (Letter) *Journal of Bone and Mineral Research* 2016; 31(6): 1315. doi:10.1002/jbmr.2844.
126. Jacka FN, Logan AC, Craig JM, Prescott SL. The microbiome and mental health: looking back, moving forward with lessons from allergic diseases. *Clinical Psychopharmacology and Neuroscience* 04/2016; 14(2). doi:10.9758/cpn.2016.14.2.131.
127. Morris G, Berk M, Galecki P, Walder K, Maes M. The Neuro-Immune pathophysiology of central and peripheral fatigue in systemic immune-inflammatory and neuro-immune Diseases. *Mol Neurobiol*. 2016;53(2):1195-1219.
128. Morris G, Berk M, Walder K, Maes M. The Putative Role of Viruses, Bacteria, and Chronic Fungal Biotoxin Exposure in the Genesis of Intractable Fatigue Accompanied by Cognitive and Physical Disability. *Mol Neurobiol*. 2016 May;53(4):2550-71. doi: 10.1007/s12035-015-9262-7. Review.
129. Bora E, Berk M. Theory of mind in major depressive disorder: a meta-analysis. *Journal of Affective Disorders*. 2016;191:49-55.08/2016; 11(8). doi:10.1371/journal.pone.0161709.
130. Skvarc DR, Dean OM, Byrne LK, Gray LJ, Ives K, Lane SE, Lewis M, Osborne C, Stupart D, Turner A, Berk M, Marriott AJ. The Post-Anaesthesia N-acetylcysteine Cognitive

- Evaluation (PANACEA) trial: study protocol for a randomised controlled trial. *Trials*, 2016, 17, 395-016-1529-4, England.
131. Quirk SE, Berk M, Pasco JA, Brennan-Olsen SL, Chanen AM, Koivumaa-Honkanen H, Burke L, Jackson HJ, Hulbert C, Olsson C, Moran P, Stuart AL, Williams LJ. The prevalence, age distribution and comorbidity of personality disorders in Australian women. *Australian and New Zealand Journal of Psychiatry* 30 May 2016 [Epub ahead of print].
 132. Williams LJ, Jacka FN, Pasco JA, Coulson CE, Quirk SE, Stuart AL, Berk M. The prevalence and age of onset of psychiatric disorders in Australian men. *Australian and New Zealand Journal of Psychiatry* 2016; 50(7): 678-684. doi: 10.1177/0004867415614105.
 133. Morris G, Berk M. The putative use of lithium in Alzheimer's disease. *Curr Alzheimer Res.* 2016 Feb 18. [Epub ahead of print].
 134. Hosking SM, Buchbinder R, Pasco JA, Williams LJ, Brennan-Olsen SL. The role of health literacy in the treatment of osteoporosis. (Letter) *Journal of Bone and Mineral Research* 2016; 31(10): 1909. doi:10.1002/jbmr.2919.
 135. Morris G, Berk M, Carvalho AF, Caso JR, Sanz Y, Maes M. The role of microbiota and intestinal permeability in the pathophysiology of autoimmune and neuroimmune processes with an emphasis on Inflammatory Bowel Disease Type 1 Diabetes and Chronic Fatigue Syndrome. *Curr Pharm Des.* 2016 Sep 14. [Epub ahead of print].
 136. Morris G, Berk M, Carvalho A, Caso JR, Sanz Y, Walder K, Maes M. The role of the microbial metabolites including Tryptophan catabolites and short chain fatty acids in the pathophysiology of immune-inflammatory and neuroimmune disease. *Mol Neurobiol.* 2016; [Epub ahead of print].
 137. Daglas R, Allott K, Yucel M, Pantelis C, Macneil CA, Berk M, Cotton SM. The trajectory of cognitive functioning following first episode mania: A 12-month follow-up study. *ANZJP.* 2016.
 138. Maes M, Nowak G, Caso JR, Leza JC, Song C, Kubera M, Klein H, Galecki P, Noto C, Glaab E, Balling R, Berk M. Toward omics-based, systems biomedicine, and path and drug discovery methodologies for depression-inflammation research. *Mol Neurobiol.* 2016 Jul;53(5):2927-35. doi:10.1007/s12035-015-9183-5. Review.
 139. Oldis M, Murray G, Macneil CA, Hasty MK, Daglas R, Berk M, Conus P, Cotton SM. Trajectory and predictors of quality of life in first episode psychotic mania. *J Affect Disord.* 2016;195:148-155.
 140. Brennan-Olsen SL, Hosking SM, Dobbins AG, Pasco JA. Translating osteoporosis prevention guidelines: A case study of participatory action and the development of an oversized jigsaw. *Journal of Aging and Health* 2016; 0898264316641076. doi: 10.1177/0898264316641076.
 141. Veerabhadrapa R, Lim CP, Nguyen TT, Berk M, Tye SJ, Monaghan P, Nahavandi S, Bhatti A. Unified selective sorting approach to analyse multi-electrode extracellular data. *Sci. Rep.* 2016;6, 28533, England
 142. Kouzani AZ, Kale RP, Zarate-Garza PP, Berk M, Walder K, Tye SJ. Validation of a Portable Low-power Deep Brain Stimulation Device through Anxiolytic Effects in a Laboratory Rat Model. *Transactions on Neural Systems and Rehabilitation Engineering.* 2016;PP(99):

143. Dipnall JF, Pasco JA, Berk M, Williams LJ, Dodd S, Jacka FN, Meyer D. Why so GLUMM? Detecting depression clusters through Graphing Lifestyle-environs Using Machine-learning Methods (GLUMM). *European Psychiatry* 2016;39:40-50. doi:10.1016/j.eurpsy.2016.06.003.
144. Quinn, AL, Dean OM, Davey CG, Kerr M, Harrigan SM, Cotton SM, Chanen AM, Dodd S, Rateesh A, Amminger GP, Phelan M, Williams A, Mackinnon A, Giorlando F, Baird S, Rice S, O'Shea M, Schafer MR, Mullen E, Hetrick S, McGorry P, Berk M. Youth Depression Alleviation-Augmentation with an anti-inflammatory agent (YoDA-A): protocol and rationale for a placebo-controlled randomized trial of rosuvastatin and aspirin. *Early Intervention in Psychiatry* (accepted 9th September 2015 – published online). 2016. doi:10.1111/eip.12280.

Books and chapters 2016

1. Turner A, Ries N, Baker AL (in press) Mental health-substance use. In DB Cooper *Ethics in Mental-Health Substance Use*. Taylor and Francis. 2016. In press.
2. Turner A, O'Neil A. Psychological responses to acute coronary syndrome. In M Alvarenga and D Byne's *The Handbook of Psychocardiology*. Springer Reference. 2016.



Conference presentations 2016

<p>International Bone and Mineral Society, Brugge, Belgium. Feb 28-March 01, 2016.</p>	<ul style="list-style-type: none"> Brennan-Olsen SL, Pasco JA, Page RS, Williams LJ. Associations between inflammation, social disadvantage and bone mineral density. [Poster presentation].
<p>World Bipolar Day. University Hospital, Geelong. Geelong, Victoria, Australia. March 30, 2016.</p>	<ul style="list-style-type: none"> Education session - Dean OM, Doolan B, Stuart A, Gliddon E, Williams L, Berk M.
<p>OsteoArthritis Research Society International. Amsterdam. March 31-April 03, 2016.</p>	<ul style="list-style-type: none"> Chou L, Brady SRE, Urquhart DM, Teichtahl AJ, Cicuttini FM, Pasco JA, Brennan-Olsen SL, Wluka AE. The relationship between obesity and low back pain and disability is affected by mood disorders-A population-based, cross-sectional study of men. [Poster presentation].
<p>IN-FLAME Network Conference. Maastricht, The Netherlands. April 02-03, 2016.</p>	<ul style="list-style-type: none"> Dawson SL, Craig J, Tang MLK, Clark G, Jacka FN. Dietary targeting of maternal gut health for better child outcomes: The Healthy Parents, Healthy Kids RCT protocol. Jacka F. Dietary intervention in pregnancy to modulate maternal and infant gut microbiota.
<p>The International Society for Research on Internet Interventions Conference. Seattle, USA. April 07-09, 2016.</p>	<ul style="list-style-type: none"> Gliddon E, Berk L, Lauder S, Cosgrove V, Grimm D, Dodd S, Suppes T, Berk M. Evaluating the impact of discussion forum engagement on users within the MoodSwings 2.0 online self-guided program for bipolar disorder [oral presentation]. Gliddon E, Martini T, Berk L, Lauder S, Cosgrove V, Grimm D, Dodd, Suppes T, Berk M. Behind the screen: User characteristics from the MoodSwings 2.0 online self-guided intervention for bipolar disorder. [Poster presentation].

Conference presentations continued...

<p>World Congress on Osteoporosis, Osteoarthritis and Musculoskeletal Diseases (WCO-IOF-ESCEO), Malaga, Spain. April 14-17, 2016.</p>	<ul style="list-style-type: none"> Hyde NK, Hosking SM, Brennan-Olsen SL, Wark JD, Pasco JA. Gestational vitamin D status and offspring bone mineral measures in childhood: a preliminary analysis. [Poster presentation]. Holloway KL, Brennan-Olsen SL, Kotowicz MA, Pasco JA. Prediction of hip fractures in Australian men using FRAX scores adjusted with trabecular bone score. [Poster presentation]. <i>Osteoporos Int</i>, 2016, 27 (S431). Brennan-Olsen SL, Holloway KL, Leslie WD, Kotowicz MA, Pasco JA. Associations between regular physical activity and exceeding intervention thresholds for fracture using FRAX calculated with trabecular bone scores <i>Osteoporos Int</i>, 2016, 27 (S435). Hosking SM, Pasco JA, Buchbinder R, Hyde NK, Brennan-Olsen SL. Associations between maternal health literacy and bone mineral density of the child <i>Osteoporos Int</i>, 2016, 27 (S432).
<p>Orthomolecular Meeting Vancouver. University of Toronto. Pri-Med Conference. Canada. April 29-May 01, 2016.</p>	<ul style="list-style-type: none"> Jacka FN. Diet and Mental Health. Plenary lecture. The microbiome in Psychiatry: Diet as a prevention and treatment strategy across the lifespan.
<p>Australian Rheumatology Association. Darwin, Northern Territory, Australia. April 30 - May 04, 2016.</p>	<ul style="list-style-type: none"> Chou L, Brady SRE, Urquhart DM, Teichtahl AJ, Cicuttini FM, Pasco JA, Brennan-Olsen SL, Wluka AE. The association between obesity and low back pain and disability is affected by mood disorders-A population-based, cross-sectional study of men. [Poster presentation].
<p>5th International Congress of Arthroplasty Registries. Manchester, UK. May 28-30, 2016.</p>	<ul style="list-style-type: none"> Brennan-Olsen SL, Page RS, Lane SE, Lorimer M, Buchbinder R, Osborne RH, Pasco JA, Wluka AE, Sanders KM, Ebeling PR, Graves SE. Geographic locality, socioeconomic position and primary total shoulder arthroscopy: A multi-level study of the Australian Orthopaedic Association National Joint Replacement Registry data [oral presentation].

Conference presentations continued...

<p>World Congress of Behavioural and Cognitive Therapies. Melbourne, Victoria, Australia. June 22-25, 2016.</p>	<ul style="list-style-type: none"> • Gliddon, E, Berk L, Lauder S, Berk M. Evaluating discussion board engagement within an online intervention for bipolar disorder [oral presentation].
<p>European League Against Rheumatism. London, UK. June 08-11, 2016.</p>	<ul style="list-style-type: none"> • Chou L, Brady SRE, Urquhart DM, Teichtahl AJ, Cicuttini FM, Pasco JA, Brennan-Olsen SL, Wluka AE. The association between obesity and low back pain and disability is affected by mood disorders-A population-based, cross-sectional study of men. [Poster presentation].
<p>CINP. Seoul, South Korea. July 6-8, 2016.</p>	<ul style="list-style-type: none"> • Dean OM. Symposium – novel therapies. • Berk M. (1) A randomized controlled trial of the efficacy of lithium vs quetiapine on cognitive function in bipolar disorder. (2) A randomized controlled trial of the efficacy of mitochondrial agents in the treatment of depression in bipolar disorder. • Jacka FN. The therapeutic potential of the gut microbiota in brain and behaviour.
<p>Asia Pacific Stroke Conference. Brisbane, Queensland, Australia. July 14-16, 2016.</p>	<ul style="list-style-type: none"> • Turner A. Depression and anxiety following a transient ischemic attack.
<p>18th Annual Conference of the International Society for Bipolar Disorders Held jointly with the 8th Biennial Conference of The International Society for Affective Disorders. Amsterdam, The Netherlands. July 13-16, 2016.</p>	<ul style="list-style-type: none"> • Dean OM. Symposium – antibiotics in psychiatry • Berk M. (1) Targeting inflammation to prevent depression. (2) Lithium or atypical antipsychotic for maintenance treatment after first episode mania? (3) Staging models in unipolar depression and bipolar disorder. • Jacka FN. Diet and Mental Health. • Fernandes B. – (1) Enabling Precision Psychiatry through 'omics': from biomarkers to biological pathways, (2) C-Reactive Protein is increased in Bipolar Disorder: a systematic review and meta-analysis. • Ashton M, Berk M, Ng C, Hopwood M, Harvey B, Dean O. The efficacy of adjunctive <i>Garcinia mangostana</i> Linn pericarp for bipolar depression: a 24-week double-blind, randomised, placebo controlled trial. • Dodd S. How do we overcome the barriers to integrating a staging approach into clinical practice?

Conference presentations continued...

<p>Asia Pacific Stroke Conference. Brisbane, Queensland, Australia. July 14-17, 2016.</p>	<ul style="list-style-type: none"> • Turner A. Depression and anxiety following a transient ischemic attack. [Poster presentation].
<p>University of Melbourne, Department of Psychiatry Research Program. Melbourne, Victoria, Australia. August 18, 2016.</p>	<ul style="list-style-type: none"> • Ashton M, Berk M, Ng C, Hopwood M, Harvey B, Dean O. The efficacy of adjunctive <i>Garcinia mangostana</i> Linn pericarp for bipolar depression: a 24-week double-blind, randomised, placebo controlled trial.
<p>Australian and New Zealand Bone and Mineral Society. Gold Coast, Queensland, Australia. August 21-24, 2016.</p>	<ul style="list-style-type: none"> • Hosking SM, Buchbinder R, Stuart AL, Pasco JA, Hyde NK, Williams LJ, Brennan-Olsen SL. Health literacy and the agreement between osteoporosis defined by self-report versus bone mineral density results in older women. • Degabriele E, Hyde NK, Brennan-Olsen SL, Holloway KL, Williams LJ, Pasco JA. Asthma status, bone mineral density and bone mineral content in children. • Brennan-Olsen SL, Cook S, Leech MT, Bowe SJ, Page RS, Naidoo N, Kowal P, Pasco JA, Hosking SM, Mohebbi M. Self-reported and symptom-based arthritis prevalence according to age, sex and socioeconomic position in six lower to middle income countries: The World Health Organization Study on global ageing and adult health (SAGE) Wave 1. • Holloway KL, Amber Sajjad M, Mohebbi M, Kotowicz MA, Livingston PM, Khasraw M, Hakkennes S, Dunning TL, Brumby S, Page RS, Pedler D, Sutherland A, Venkatesh S, Brennan-Olsen SL, Williams LJ, Pasco JA. The ageing, chronic disease and injury study: Epidemiology of emergency department presentations from community falls across Western Victoria. • Green D, Brennan-Olsen SL, Williams LJ, Holloway KL, Pasco JA. The association between skeletal muscle index and cancer risk. • Clissold C, Holloway KL, Brennan-Olsen SL, Williams LJ, Pasco JA. The contribution of high alcohol consumption to fracture risk: the Geelong Osteoporosis Study. • Hyde NK, Brennan-Olsen SL, Wark JD, Hosking SM, Pasco JA. Maternal vitamin D during pregnancy and offspring trabecular bone score. • Williams LJ, Quirk SE, Stuart AL, Berk M, Brennan-Olsen SL, Chandrasekaran B, Hodge JM, Pasco JA. Personality disorders and bone: Geelong Osteoporosis Study. • Rufus P, Holloway KL, Kotowicz MA, Brennan-Olsen SL, Pasco JA. Microindentation testing of tibial bone using the OsteoProbe®: a feasibility study.

Conference presentations continued...

<p>Australian and New Zealand Bone and Mineral Society. Gold Coast, Queensland, Australia. August 21-24, 2016. Continued...</p>	<ul style="list-style-type: none"> • Marijanovic N, Holloway KL, de Abreu LLF, Pasco JA and Kotowicz MA. Bone Mineral Density In Diabetes And Impaired Fasting Glucose. The Joint Annual Scientific Meetings of the Endocrine Society of Australia, the Society for Reproductive Biology and the Australian and New Zealand Bone and Mineral Society. 2016, 21-24 August, Gold Coast, Australia. [Poster presentation]. • Stuart AL, Brennan-Olsen SL, Pasco JA, Morse AM, Holloway KL, Hosking SM, Williams LJ. Dual energy x-ray absorptiometry scans among 70+ year olds: Do reductions in out-of-pocket expenses translate to reduced burden of disease?
<p>Western Alliance. Warrnambool, Victoria, Australia. September 8-9, 2016.</p>	<ul style="list-style-type: none"> • Holloway KL, Amber Sajjad M, Mohebbi M, Kotowicz MA, Livingston PM, Khasraw M, Hakkennes S, Dunning TL, Brumby S, Page RS, Pedler D, Sutherland A, Venkatesh S, Brennan-Olsen SL, Williams LJ, Pasco JA. The ageing, chronic disease and injury study: Epidemiology of hip fractures across Western Victoria, Australia. • Cowdery SP, Holloway KL, Amber Sajjad M, Mohebbi M, Kotowicz MA, Livingston PM, Khasraw M, Hakkennes S, Dunning TL, Brumby S, Page RS, Pedler D, Sutherland A, Venkatesh S, Brennan-Olsen SL, Williams LJ, Pasco JA. The impact of age, accessibility, and socioeconomic status on cancer incidence across Western Victoria. • Pasco JA, Holloway KL, Cowdery S, Sajjad MA, Kotowicz MA, Livingston PM, Khasraw M, Hakkennes S, Dunning TL, Brumby S, Page RS, Pedler D, Sutherland A, Venkatesh S, Brennan-Olsen SL, Williams LJ and Mohebbi M. Ageing, Chronic Disease and Injury (ACDI): A Study in Western Victoria. Western Alliance, Third Annual Symposium, 2016, 9 September, Warrnambool, Australia [oral presentation].
<p>American Society for Bone and Mineral Research. Atlanta Georgia, USA. September 16-19, 2016.</p>	<ul style="list-style-type: none"> • Pasco JA, Stuart AL, Brennan-Olsen SL, Holloway KL, Williams LJ, Kotowicz MA. Muscle strength and cognition: A potential opportunity for delaying dementia. • Holloway KL, Williams LJ, Brennan-Olsen SL, Morse AG, Kotowicz MA, Nicholson GC, Pasco JA. Anxiety disorders and falls among older adults. • Brennan-Olsen SL, Cook S, Leech MT, Bowe SJ, Page RS, Naidoo N, Kowal P, Pasco JA, Hosking SM, Mohebbi M. Arthritis prevalence, defined by self-report and symptomatology, according to age, sex and socioeconomic position in six lower to middle income countries: The World Health Organization Study on global ageing and adult health (SAGE) Wave 1.

Conference presentations continued...

<p>American Society for Bone and Mineral Research. Atlanta Georgia, USA. September 16-19, 2016. Continued...</p>	<ul style="list-style-type: none"> • Hosking SM, Buchbinder R, Stuart AL, Pasco JA, Hyde NK, Williams LJ, Brennan-Olsen SL. Health literacy and the agreement between osteoporosis defined by self-report versus bone mineral density results in older women. • Marijanovic N, Holloway KL, de Abreu LLF, Pasco JA and Kotowicz MA. Bone Mineral density in diabetes and impaired fasting glucose. American Society for Bone and Mineral Research 2016 Annual Meeting, 16-19 September, Atlanta, Georgia, USA. [Poster presentation].
<p>Oceana STATA User Group Meeting. Sydney, NSW, Australia. September 29-30, 2016.</p>	<ul style="list-style-type: none"> • Dipnall JF, Pasco JA, Berk M, Williams LJ, Dodd S, Jacka FN, Meyer D. The development of a risk index for depression using Stata's GSEM with complex survey data.
<p>RANZCP CME Workshop. Hobart, Tasmania, Australia. October 08, 2016.</p>	<ul style="list-style-type: none"> • Berk M. Inflammatory and immune hypotheses in depression.
<p>International Osteoporosis Foundation Regionals 6th Asia-Pacific meeting. Singapore. November 04-06, 2016.</p>	<ul style="list-style-type: none"> • Holloway KL, Sajjad MA, Mohebbi M, Kotowicz MA, Livingston PM, Khasraw M, Hakkennes S, Dunning TL, Brumby S, Page RS, Pedler D, Sutherland A, Venkatesh S, Brennan-Olsen SL, Williams LJ, Pasco JA. The ageing, chronic disease and injury study: Epidemiology of hip fractures across Western Victoria, Australia. • Pasco JA, Holloway KL, Rufus P, Brennan-Olsen SL, Williams LJ, Hyde NK, Sui S, Kotowicz MA. Sarcopenic obesity in older women: The Geelong Osteoporosis Study. • Hosking S. Health literacy and uptake of dietary calcium recommendations in women.
<p>Lifestyle Medicine Conference. Melbourne, Victoria, Australia. November 04-06, 2016.</p>	<ul style="list-style-type: none"> • Jacka FN. Diet and Mental Health. Accepted award of honorary fellowship with the Australasian Society for Lifestyle Medicine.

Conference presentations continued...

<p>Barwon Health Research Week Geelong, Victoria, Australia. November 14-18, 2016.</p>	<ul style="list-style-type: none"> • Holloway KL, Sajjad MA, Mohebbi M, Kotowicz MA, Livingston PM, Khasraw M, Hakkennes S, Dunning TL, Brumby S, Page RS, Pedler D, Sutherland A, Venkatesh A, Brennan-Olsen SL, Williams LJ, Pasco JA. The Ageing, Chronic Disease and Injury Study: Epidemiology of hip fractures across Western Victoria. [Poster presentation]. • Ashton M, Berk M, Ng C, Hopwood M, Harvey B, Dean O. The efficacy of adjunctive <i>Garcinia mangostana</i> Linn pericarp for bipolar depression: a 24-week double-blind, randomised, placebo controlled trial. [Poster presentation]. • Gliddon E, Berk L, Lauder S, Cosgrove V, Mohebbi M, Grimm D, Dodd S, Suppes T, Berk M. The role of discussion forum engagement within an online self-help program for bipolar disorder: Impacts on social support, stigma, quality of life and mood severity. [Poster presentation]. • Gliddon E, Lauder S, Berk L, Cosgrove V, Grimm D, Dodd S, Suppes T, Berk M. Exploring the 1% rule in online discussion forums for bipolar disorder. [Poster presentation]. • Dipnall JF, Pasco JA, Berk M, Williams LJ, Dodd S, Jacka FN, Meyer D. "Why so GLUMM? Detecting depression clusters through Graphing Lifestyle-environs Using Machine-learning Methods (GLUMM). [Poster presentation]. • Dipnall JF, Pasco JA, Berk M, Williams LJ, Dodd S, Jacka FN, Meyer D. Into the bowels of depression: unravelling medical symptoms associated with depression using machine-learning techniques. [Poster presentation]. • Turner A. Depression and anxiety following a transient ischemic attack. • Williams LJ, Quirk SE, Stuart AL, Berk M, Brennan-Olsen SL, Chandrasekaran B, Hodge JM, Pasco JA. Personality disorders and bone: Geelong Osteoporosis Study. • Stuart AL, Quirk SE, Brennan-Olsen SL, Pasco JA, Mohebbi M, Berk M, Williams LJ. Pattern of psychotropic medication among Australian women use over two decades. [Poster presentation].
<p>World Psychiatric Association. International Congress. Cape Town, South Africa. November 18-22, 2016</p>	<ul style="list-style-type: none"> • Berk M. (1) Can we prevent depression? (2) Something old, something new, something borrowed, not so blue?

Conference presentations continued...

<p>Diet, Nutrition and Mental Health and wellbeing conference. London UK. December 6-7, 2016.</p>	<ul style="list-style-type: none"> • Berk M. Mental health as an emerging public health problem.
<p>Society for Mental Health Research. Sydney, NSW, Australia. December 7-9, 2016.</p>	<ul style="list-style-type: none"> • Williams LJ. Personality disorder and physical health comorbidities: A link with bone health? • Dodd S, Berk M, Mitchell PB, Bauer M, Yatham L, Young AH, Kennedy SH, Williams LJ, Suppes T, Jaramillo CL, Trivedi M, Fava M, Rush AJ, McIntyre RS, Thase ME, Lam RW, Severus E, Kasper S. Monitoring Guidelines for Antidepressant-Associated Adverse Events in the Treatment of Patients with Major Depressive Disorder: An International Consensus Statement. [Poster presentation]. Pasco JA, Holloway KL, Rufus PG, Sui SX and Williams LJ. Positive and negative affect and falls: The Geelong Osteoporosis Study. Society for Mental Health Research. 2016. 7-9 December, Sydney, Australia. • Sui SX, Stuart AL, Holloway KL, Williams LJ, Kotowicz MA, Leach S and Pasco JA. Muscle strength and cognitive decline: Data from the Geelong Osteoporosis Study of women. The Geelong Osteoporosis Study. Society for Mental Health Research. 2016. 7-9 December, Sydney, Australia. • Cowdery SP, Stuart AL, Green D, Berk M, Ashley D, Pasco JA and Williams LJ. Common Mental Disorders and Cancer Onset: A Nested Case Control Study of Women. [Poster presentation]. • Dawson SL., Craig J., Tang MLK., Clark G., Jacka FN. Dietary targeting of maternal gut health for better child outcomes: The Healthy Parents, Healthy Kids RCT protocol. • Chandrasekaran V, Brennan-Olsen SL, Pasco JA, Stuart AL, Berk M, Hodge JM, Williams LJ. Bipolar Disorder and Bone Health: A systematic review protocol. • Dawson SL, Craig J, Tang MLK, Clark G, Jacka FN Dietary targeting of maternal gut health for better child outcomes: The Healthy Parents, Healthy Kids RCT protocol.
<p>International Congress of Behavioural Medicine (ICBM). Melbourne, Victoria, Australia. December 7-10, 2016.</p>	<ul style="list-style-type: none"> • Williams LJ. Subjective well-being, health behaviour and other health factors as predictors of falls in postmenopausal women. [Poster presentation].

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