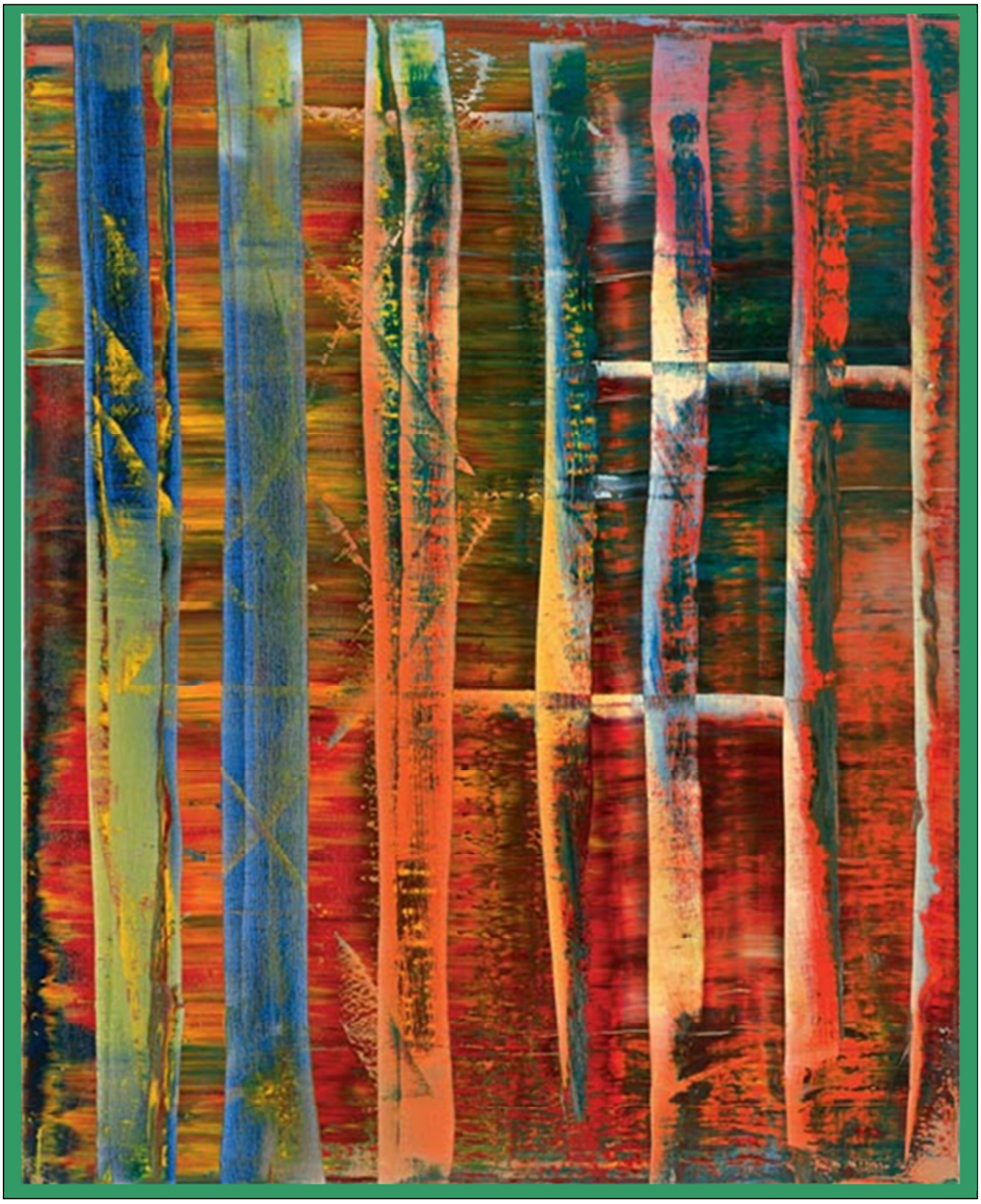
Annual Report 2012



Barwon Psychiatric Research Unit / IMPACT Strategic Research Centre

In partnership with Deakin University, Barwon Mental Health Drug & Alcohol Services and Healthscope.

Contents

Artwork used in this report is by Gerhard Richter, 1932-

Forewords

2012 saw continued growth and productivity for the unit. This success was recognised by Deakin in according official status as a strategic research centre within Deakin, and Professor Michael Berk was recognised by being awarded the title of Alfred Deakin Professor, which is the highest honour a university can bestow upon a staff member.
I commend the team for their excellent discovery, clinical and community based research and wish them every success in 2013.

Prof Lee Astheimer
Deputy Vice Chancellor, Research
Deakin University

The Barwon Psychiatric Unit has enjoyed another successful year under the stewardship of Professor Michael Berk. This success has been acknowledged by the decision of Deakin University Council to confer the Alfred Deakin Professorship title to Professor Berk. The title of Alfred Deakin Professor is the most prestigious that the University can bestow, and reflects not only the level of professional and academic achievement of Professor Berk, but also of the Barwon Psychiatric Unit.

Barwon Health is proud of the close and collaborative relationship with the Barwon Psychiatric Unit, and I look forward the continuation of the unit's success, both nationally and internationally, into the future.

Professor David Ashbridge
Chief Executive
Barwon Health

Professor Berk and team have continued to produce high quality research in the area of clinical psychiatry. The Geelong Clinic's Acceptance and Commitment Therapy and Dialectical Behaviour Therapy Programmes have provided assistance for recruitment and further research purposes. Advanced trainees from Barwon Health have continued to rotate through The Geelong Clinic under the supervision of Professor Berk and Dr Peter O'Keefe, enabling the trainees to gain valuable experience in assessment and treatment of clients with psychiatric disorders such as Eating Disorders, Depression, Anxiety, Posttraumatic Stress Disorder, Borderline Personality Disorder, Bipolar Disorder and Addictions. In a recent Australian Council of Health Care Standards accreditation visit, The Geelong Clinic was awarded an Outstanding Achievement ranking for its research involvement. We look forward to continuing the collaborative relationship between clinical and research and private / public mental health.

Mr Andrew Currie
State Manager Hospitals
VIC/TAS/WA
Healthscope Ltd

Introduction by Professor Michael Berk

Professor Michael Berk

2012 was a year of considerable growth for the Unit. The major event was that we became a Strategic Research Centre, within Deakin University, and amalgamated with Julie Pasco and her team to form the IMPACT (Innovation in Mental and Physical Health and Clinical Treatment) Strategic Research Centre. Following our success recently in achieving over a dozen competitive grants, totalling almost $5million, the major focus of the unit was commencing all the studies that were funded, and these are on track.

Team highlights included Michael Berk being appointed as Alfred Deakin Professor and the award of the RANZCP MSD senior research award, and Adrienne O'Neil obtaining Alfred Deakin and NHMRC scholarships. Research highlights included the first study proving that N acetyl cysteine is an effective antidepressant, the first study showing that diet quality in pregnant mothers alters their offspring's risk of depression, that smoking in early adolescence increases the risk for developing anxiety and that different antidepressants have toxic effects on bone.

There has been continued growth in both the number and quality of our publications. We were also able to publish in a number of high impact journals including The Lancet, Molecular Psychiatry, the British Journal of Psychiatry, Neuroscience and Biobehavioural Reviews amongst others.

We continue to strengthen links with existing Deakin units to leverage our shared interests and activities, and have a multitude of national and international partnerships. The capacity growth that the recent grant funding allows should provide a very strong foundation for the further growth and productivity of the team. We would like to thank Deakin University, Barwon Health and Healthscope for their ongoing support of our unit.

Moving into 2013 and beyond, the SRC welcomes the merger with the Epidemiology Unit for Musculoskeletal and Metabolic Research (Epi-UMMR), led by Associate Professor Julie Pasco

A/Prof Julie Pasco

The Epi-UMMR conducts population-based research into musculoskeletal and metabolic disorders, and the nexus between physical and mental health. At the heart of the Unit lies the Geelong Osteoporosis Study (GOS) which is complemented by the Geelong Fracture Grid (GFracGrid), the Social Determinants of Health Project (SDHP) and the Vitamin D in Pregnancy (VIP) study.

The Geelong Osteoporosis Study (GOS) is a prospective cohort study designed to describe the health burden of osteoporosis and identify risk factors for fragility fracture. The study is set in the Barwon Statistical Division. Over the past two decades the GOS program of research has produced credible data addressing these issues and is continuing to prospectively document comprehensive clinical and environmental data for large contemporary cohorts of young, middle-aged and elderly men and women, producing a unique dataset for investigating a broad range of physical and mental health disorders. The GOS comprises several components: GOS-musculoskeletal disorders, GOS-metabolic disorders and GOS-mental health.

The Geelong Fracture Grid (GFracGrid) is an ongoing, comprehensive repository documenting incident fractures that have occurred in the Barwon Statistical Division for nearly two decades. This unique dataset details fracture cases according to fracture site, age, sex and date. Data from the GFracGrid is being used to describe the epidemiology of fractures and to monitor changes in patterns of fractures, providing an invaluable data source for data linkage.

The Social Determinants of Health Project (SDHP) is designed to investigate how social and environmental factors impact on the health and well-being of individuals and groups, with the view of informing preventive health strategies, and health practice and policy. The research focuses on social inequity in use of medical services, with emphasis on the musculoskeletal disorders, osteoporosis and osteoarthritis. These issues are explored using local, national and international data and frequently involve linkage with large clinical databases.

The Vitamin D in Pregnancy (VIP) study is a prospective study designed to investigate the influence of maternal vitamin D levels during pregnancy and subsequent growth and development in the offspring. This is a multi-phase study that assessed expectant mothers at two stages of pregnancy. Their babies were measured at birth and at one year of age, and are currently being re-assessed at age 9-11 years. Of particular interest is how maternal vitamin D levels are associated with children's musculoskeletal development, wheezing illnesses, lung function, allergic sensitisation, mood and behaviour.

Bipolar Disorder research

Bipolar disorder research is perhaps the predominant focus within the Barwon Psychiatric Research Unit. Multiple research projects have focus on bipolar disorder, and this is the area for which the unit is internationally best known.

An active study is attempting to answer the question of which potential mood stabilising agents have the best neuroprotective properties after a first-episode of mania. In the study, individuals who have had a first-episode of mania will be randomised to receive either lithium or quetiapine and they will be followed up for a period of a year using brain imaging and neuropsychology to determine which agent best protects the brain.

A further focus is on carer-burden in bipolar disorder. A Delphi study to develop guidelines for carers of people with bipolar disorder, and an intervention based on the results of the study, has been completed. This intervention is Internet-based, and is found at www.bipolarcaregivers.org. A study investigating altered perceptions of time in patients with bipolar disorder has commenced. In conjunction with the Geelong Osteoporosis Study, we are currently recruiting a sample of participants with Bipolar Disorder from the community to investigate associated health and lifestyle factors and underlying mechanisms. Findings from this case control study may be used to inform public policy and health service delivery, leading to improved treatment and health outcomes for people with bipolar disorder. We are continuing to analyse the very rich database that exists within the Bipolar Comprehensive Outcomes Study (BCOS). To date our focus has been on clinical questions including the role of smoking and the impact of mixed states in bipolar disorder. We plan to analyse the data pertaining to illness beliefs and illness behaviour in the forthcoming year.

Our oxidative biology program has a major focus on bipolar disorder. Having shown that N-acetylcysteine (NAC) effectively treats the symptoms of depression in bipolar disorder, we completed a study to answer the question as to whether N-acetylcysteine has the ability to prevent relapse in individuals with bipolar disorder. As part of this research project we are also examining biomarkers including measures of inflammatory and oxidative stress as well as neuroimaging in conjunction with our research partners led by Professor Gin Malhi at the University of Sydney. We have just commenced 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. Together with Dr Sue Tye from the Mayo Clinic, we are developing an animal model of bipolar disorder using deep brain stimulation, to examine changes in energy generation in models of both depression and mania. Lastly, with Professor Ken Walder, who has developed a drug discovery program for diabetes by looking at the gene expression signature of existing agents and finding new potential treatments that have a matching gene expression signature, we are developing an analogous drug discovery program for bipolar disorder.

Drug safety

A/Prof Seetal Dodd

The large range of modern drugs available for the treatment of mental illness have helped improve the lives of thousands, perhaps even millions, of people who have suffered from mental illness. These drugs 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 the Psychiatry and Epidemiology Strategic Research Centre work to understand and reduce the risks associated with drug treatment of mental illness.

To improve our knowledge and understanding of the risks associated with drug therapeutics, we have gathered data on the adverse effects of drugs. We have collected considerable data on the adverse effects of the drug clozapine, which can adversely impact blood cells and cardiac health and can cause weight gain and diabetes. In 2012 we produced novel data showing that clozapine can adversely impact cardiac muscle function and are currently preparing manuscripts to publish this important work.

Our Geelong based epidemiological resource provides epidemiological data on medication use. With this data we have already demonstrated a link between treatment with SSRI antidepressants and reduced bone density. An NHMRC project grant ($409,140) lead by Dr Lana Williams was obtained in 2010 to determine the impact of SSRI use on bone and to replicate our findings from Australia in a large scale epidemiology study based in Norway (HUNT 2). A similar study investigating antipsychotic drug use and bone is planned. The importance of this research was also recognised by Deakin University, with a further $20,000 being awarded to Dr Williams to aid in the data collection for these studies. In collaboration with Barwon Biomedical Research and Deakin University, we are also conducting unique in vitro and in vivo experiments to further investigate the adverse effects of psychotropic drugs on bone. There is growing concern that SSRIs, which sequester in the bone marrow at higher concentrations than brain or blood, may increase bone fragility and fracture risk. Thus, the safety of these agents is being tested using osteoblast and osteoclast cell cultures and animal models. Our first manuscript from the laboratory has just been accepted to be published in Biological Psychiatry.

We have been involved in the publication of many 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.

Highlighting our global role in this area, Associate Professor Seetal Dodd currently holds the position of Editor-in-Chief of the scientific journal Current Drug Safety.

Our research enables better assessments of the risks and benefits of drug treatment, which allows clinicians to make safer treatment decisions.

Prediction of response to antidepressants – clinical & genetic factors

Matching patients to effective tolerable medication sooner has scope to reduce the burden of illness from major depression. An international multi-centre candidate gene association study examining the role of polymorphisms of the blood brain barrier (BBB) efflux pump P-glycoprotein (ABCB1), the noradrenaline transporter (NET) gene, along with psychomotor signs and history of child abuse were studied for remission predictive utility. A total of 113 subjects were enrolled in the study.

Dr Ajeet Singh

Dr Singh was an invited opening speaker at the 2011 Royal Australian & New Zealand College of Psychiatrists Congress in Darwin where preliminary results were presented. Dr Singh was also invited to present findings at the European Congress of Neuropsychopharamcology in Paris, September 2011 and the European Psychiatric Association Congress in Prague, March 2012. He has been invited to speak on the opening day of the ASPR conference in Perth (December 2012) to present his final thesis data.

His doctoral study has demonstrated that the dose of the antidepressant escitalopram needed to remit correlates with patient ABCB1 genotype – a treatment biomarker with translational potential. This is a novel finding and recently accepted for publication in Translational Psychiatry. Additionally, a NET polymorphisms was associated with greater susceptibility to ongoing mental health impacts from child abuse – this group also having poor remission rates to antidepressants and elevated suicidality when initiated on antidepressants. His thesis data has also demonstrated an association of preferential recovery of psychomotor features of depression with venlafaxine over escitalopram, results in submission to peer review journals. Dr Singh shall present his core thesis findings at the ASPR meeting in Perth this December.

Dr Singh was awarded a 2012 Pfizer NSR neuroscience grant to further his research. He is also involved with research in Transcranial Magnetic Simulation (TMS) and runs a busy TMS unit at The Geelong Clinic. He has been an adviser to the Australian Federal Government on pharmacogenetics and has published in the field of pharmacogenetics since 2007.

Novel Therapies

Dr Olivia Dean

It is an exciting time for new therapy discovery in psychiatry. There has been rapid expansion in our current understanding of the biological underpinnings of many psychiatric disorders. Because of this, there are many new avenues of therapeutic potential to pursue. Our unit is currently focusing on alternative targets to treat the symptoms of psychiatric disorders. We have a multitude of approaches ranging from basic science through to clinical trials.

The trials included in the unit are primarily adjunctive, so that people can stay on their usual treatment and take the trial medication in addition to that. This design is employed because it allows people to continue receiving benefit from existing medications. Our trials are designed to try and fill the gap that conventional therapies often leave between getting better and complete, functional recovery. The targets of our novel therapies centre on alterations in oxidative biology, inflammation, neurogenesis and mitochondrial dysfunction, factors that are believed to be important in the pathology of many psychiatric illnesses.

To date, we have shown that treatment with the antioxidant precursor, N-acetylcysteine (NAC) can reduce symptoms in people with bipolar disorder and schizophrenia. We have recently completed a trial involving NAC in the treatment of unipolar (clinical) depression. This trial involved three months of NAC treatment or placebo in people with moderate to severe depression. The results of this study are due to be published in a scientific journal soon. As part of this study, a proportion of the participants were also involved in a brain imaging (magnetic resonance spectroscopy) study. This study looked at changes in brain molecules to determine if we could see *direct biological markers* indicating the benefits, in parallel with the improvements that participants told us they felt. The results of the sub-study are also due to be published soon. N-acetylcysteine has a wide variety of actions and because of this; it is being trialled across a wide variety of psychiatric disorders. Children with autism are also reported to have alterations in their oxidative biology and NAC targets oxidative stress. Under the direction of the team, PhD candidate, Ms Kristi Villagonzalo is undertaking a study involving six months of treatment with adjunctive NAC or placebo in children diagnosed with autism. This study is currently recruiting participants.

Several new clinical trials will commence that will involve the exploration of novel therapies focused on mitochondrial dysfunction in bipolar disorder and inflammation in depression. We are investigating the benefits of statin (cholesterol controlling medication)

and aspirin treatment in youth depression. Similarly, we are investigating an antibiotic, minocycline, in the treatment of adult depression. Depression is characterised by increased levels of inflammation, noted in peripheral (blood) samples. These agents are known to target inflammation, in addition to their traditional applications. By utilising existing therapies there are less concerns about safety and side effects. We can also select medications based on their existing properties, instead of trying to engineer new therapies that target the properties of interest. This all leads to faster outcomes and medications that are already available to participants.

In addition to clinical trials, we are currently investigating peripheral biomarkers (blood samples) to measure antioxidant levels, inflammatory markers and mitochondrial dysfunction. We have several national and international collaborators involved in the biomarkers project. The project aims to see how the new therapies may be exerting their benefits and also to expand our knowledge of the biology of psychiatric disorders.

Overall, our unit is working towards better understanding the underlying mechanisms of psychiatric illness and identifying new therapies to improve outcomes for individuals with these disorders. The unit 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 – (03) 421-53300.

Psychiatric disorders and the associated outcomes

Dr Lana Williams

Mood and anxiety disorders impose huge costs, both on the individual and the community, yet we have an incomplete understanding of their impact on lifestyle, social and in particular medical factors. Given the high prevalence and associated public health-care costs of common physical illnesses, such as cardiovascular disease, type 2 diabetes, obesity, osteoporosis, and fragility fractures worldwide, it is important to investigate and better understand the association of these illnesses with mental health issues. Less is known whether personality disorders too are associated. Understanding the association between these factors and psychiatry is vital to successful health promotion, health care delivery, and disease management.

Over the past eight years, we have been developing a program of research investigating medical, lifestyle and social outcomes associated with mood and anxiety disorders and soon personality disorders, within an epidemiological context. This research has been conducted in conjunction with the Geelong Osteoporosis Study (GOS), a large epidemiological study involving a population-based sample of over 2000 women and men randomly selected from electoral rolls for the region (Barwon Statistical Division). The GOS was originally developed to investigate predictors and consequences of osteoporosis, but expanded nearly a decade ago to examine mental illness and other common diseases. At the 10 year follow up each of the participants underwent a structured clinical interview (SCID-I/NP) and are currently being reinterviewed (SCID-I and II) at the 15 year follow up. This research program has been replicated in more than 1000 men from the Barwon region, adding further strength to this large-scale project. Dr Williams now heads this component of the study known as GOS *Mental Health*.

Results of this research to-date have revealed that approximately one in three (35%) women have experienced a mood and/or anxiety disorder. Furthermore, we found depression to be associated with reduced bone mineral density and to increase the risk of fracture by 60%. We were also one of the first to show that the SSRI group of antidepressants may increase the risk for osteoporosis (See section "Drug Safety" for further information regarding this program of research). Associations between mood and anxiety disorders and a range of medical conditions including osteoporosis, irritable bowel syndrome, pain and cardiovascular diseases, lifestyle factors such as smoking and physical activity, and social factors such as area based socioeconomic status and quality of life have also been reported.

This program of work will generate important information that can be used to provide an insight into the interaction between physical and mental health. Also, 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. This program of research is an invaluable resource for collaborative studies, both nationally and internationally and student projects. Existing collaborations include Nord-Trondelag Health (HUNT) Study, Norwegian University of Science and Technology, University of Eastern Finland, Institute of Functional Genomics of Lyon, Sapienza University of Rome, University of Manitoba and Guiyang Medical University, China which allows for further investigations and replication in even larger population based studies.

Prevention of common mental disorders

A/Prof Felice Jacka

This year we have initiated a world-first trial that aims to answer the important question, "If I improve my diet, will my mental health improve?" As such, we are in the process of recruiting approximately 200 adults suffering from major depression and randomising them to either a social support condition or an intensive dietary intervention. The dietary intervention will comprise counselling, advice, education and support for a period of three months. We will then examine the impact of dietary improvement on their depressive symptoms at the end of the trial period. This trial is being conducted at St Vincent's Hospital in Melbourne and Barwon Health in Geelong. For further information, people can email: diet@barwonhealth.org.au

This year has also seen us work closely with our collaborators in Norway to undertake a large study investigating the impact of early life nutritional exposures on children's mental health. The important results of this study are currently under review. We have also published numerous studies examining the relationship between a range of nutrients and clinical mood and anxiety disorders, including zinc, folate, magnesium, selenium and polyunsaturated fatty acids. Another important finding was that red meat intake (either less than the recommended amount or more than the recommended amount on a regular basis) was associated with an increased likelihood of clinical mood and anxiety disorders. Various papers reporting these findings have been published in the literature in 2012.

We were invited and have published editorials and commentaries calling for the recognition of the common mental disorders (CMDs) as noncommunicable disorders (NCDs) under the standard definitions used by the World Health Organisation, and for the important role of lifestyle to be recognised in the CMDs, as it is in the NCDs. These commentaries have been published in the highest impact psychiatry and medical journals including the British Journal of Psychiatry and BMC Medicine. We have also published an invited review that calls for clinicians to assess and address unhealthy lifestyle behaviours when treating patients with depression, in recognition of the new knowledge that poor diet, insufficient exercise and smoking impact the genesis and progression of depression.

Over the next few years we will be continuing and extending our international and domestic collaborations with other organisations involved in population health research, with further studies expanding the evidence base and our understanding of the contribution of poor lifestyle practices to mental health problems. We will also partner with public health organisations to develop public health messages relating to lifestyle and mental health. Our ongoing investigations will provide important data to support a preventative approach to mental illness that is highly innovative and of real importance in reducing the burden of these illnesses in the community. These studies will provide the evidence for a coherent public message about how to minimise the risk for depression.

Novel and contemporary approaches to chronic disease management

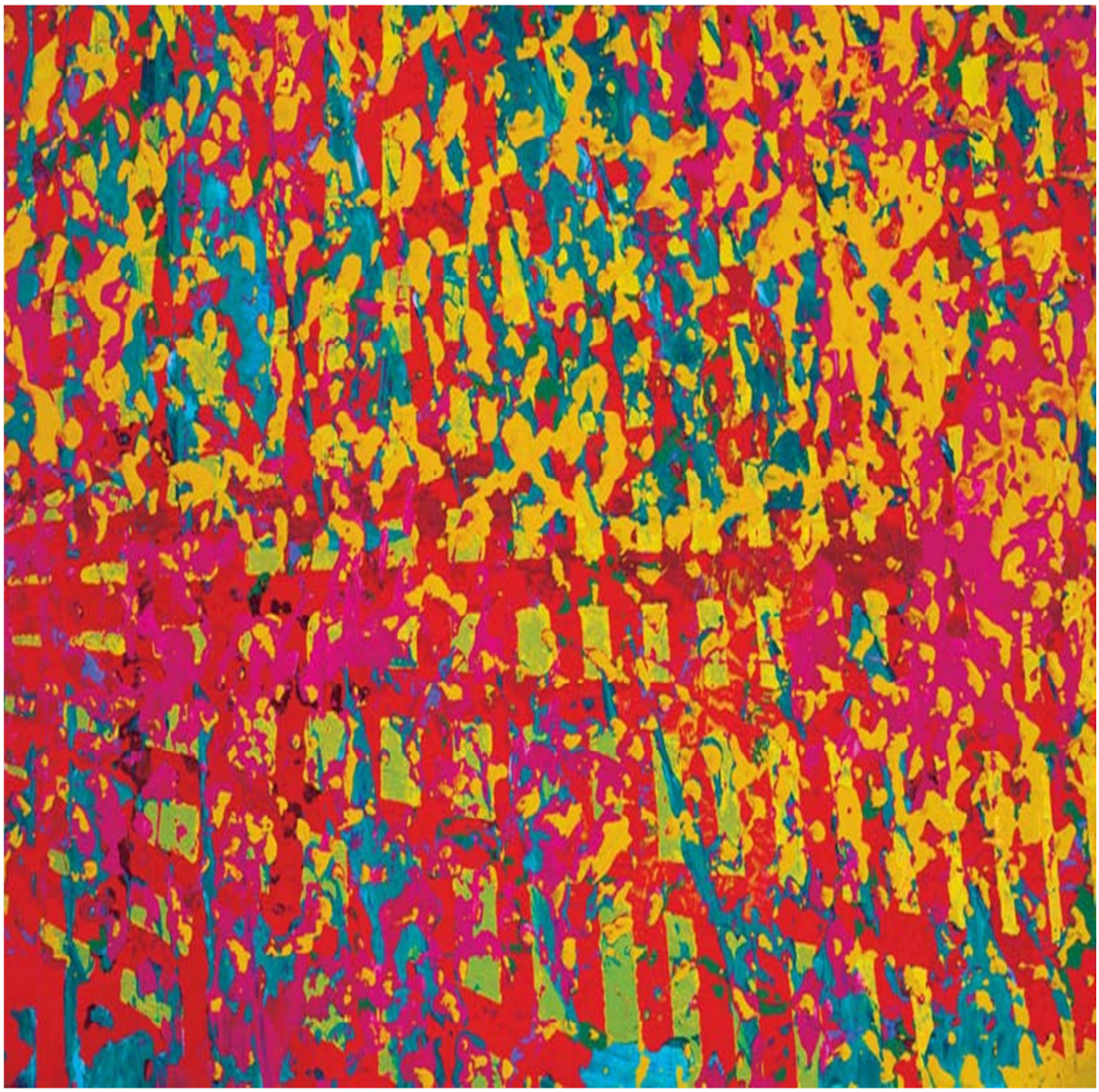
Dr Adrienne O'Neil

The burden of mental and physical health conditions such as depression, anxiety, cardiovascular disease (CVD), diabetes and obesity is rising, both on a domestic and global level. Indeed, we know that having one of these conditions can increase an individual's susceptibility to develop another condition. A major focus of the strategic research centre over the past decade has been identifying the role of lifestyle in the development of these chronic conditions, particularly mental disorders. It seems intuitive that programs that address the lifestyle factors underpinning these conditions, for both their primary and secondary prevention, be considered. Therefore, a major focus of Dr O'Neil's work has been the development and evaluation of suitable interventions which aim to promote primary and secondary prevention as well as effective self-management. Moreover, expanding upon conventional approaches to treatment by applying innovative approaches or media by which to deliver care is an area of increasing interest. This has led to the development of a research program which takes the existing evidence base regarding how lifestyle factors interact to exacerbate diseases, and specifically focuses on creating novel and contemporary approaches to chronic disease management.

Lifestyle-based programs that are adjunctive to pharmacologic treatments for chronic disease (whether a mental disorder such as depression, or a cardiovascular disorder such as heart attack), are beneficial as they are often attractive to patients and are able to be implemented in a wide range of settings. Through collaborations with colleagues at the School of Public Health and Preventive Medicine, Monash University and the Cancer Council Queensland, we previously found that a telephone-delivered model of care which promotes physical activity, improved diet, medication adherence, reduced alcohol and tobacco consumption and other lifestyle factors, can improve psychological outcomes of heart attack patients. This study further highlighted the high prevalence of cardiac patients experiencing negative emotions; approximately one in five reported depression or anxiety. As a result, the same group of collaborators is now evaluating the impact of adding a specific depression management program for the high proportion of patients with low mood. The results of this latter study are due to be released in early 2013.

While these results highlight the high prevalence of depression in individuals with CVD, recent collaborations between Dr O'Neil, Professor Berk and those at Monash University and University of Tasmania have added to our knowledge of the relationship between depression and CVD by revealing that depression most commonly occurs in the decades prior to the occurrence of the heart attack. Therefore, such a result, in conjunction with other evidence to suggest that depression may now be a robust risk factor for CVD, has lead us to consider that individuals with depression should be specifically targeted at an earlier stage of the lifespan to reduce their risk of developing CVD. In fact, our commentary in the Medical Journal of Australia published in late 2012 argues this case, where commonly the focus has been placed on traditional secondary prevention behaviours such as reducing cholesterol in older populations.

In late 2012, Dr O'Neil was awarded an Early Career Fellowship from the National Health and Medical Research Council (NHMRC) to investigate the hypothesis that treating depression earlier in the lifespan by targeting lifestyle can reduce the risk of CVD onset. As 2012 saw the initiation of a world first trial that evaluates the role of improved diet in the management of depression for those with Major Depressive Disorder, a component of this program will explore whether any potential main effects translate to reduce CVD risk for those with depression. Approximately 200 adults suffering from major depression are being randomised to either an intensive dietary intervention or a control condition (social support). We will then examine the impact of dietary improvement not just with respect to their depressive symptoms, but their subsequent CVD risk. We will do so by comparing pre- and post-intervention lipid profile and other key risk factors for CVD including age, smoking and blood pressure status of intervention and control participants at the end of the trial period. This trial is currently being conducted at St Vincent's Hospital in Melbourne and Barwon Health in Geelong. For further information, people can email: diet@barwonhealth.org.au.



Our PhD Candidates

Dr Frank Giorlando
PhD candidate

Dissociation and Changes in the Perception of Time

This doctoral study aims to combine a number of research methods to better understand how the perception of time is altered in psychiatric disease. It has involved an ongoing collaboration between the Department of Clinical and Biomedical Sciences and the Department of Physiology, Development and Neuroscience at the University of Cambridge, as well as Barwon Medical Imaging. In particular, the research focuses upon changes in the perception of the "flow" of time and ordering of events.

Over the last year, we have been conducting a study of participants who have Bipolar Disorder. Participants are asked to report the ordering of two flashed lights that are presented close to when they make a large eye movement. This often results in an illusion whereby they see the second flash before the first.

Shikha Markanday,
Research Assistant

The studies have shown that dissociative symptoms are common in the outpatient population and that changes in the perception of time involve alterations of activity in the frontal as well as temporal areas of the brain. We hope to understand more of how these differences relate to alterations in the perception of time.

Lesley Berk
PhD submitted

www.bipolarcaregivers.org.

Lesley Berk recently submitted her PhD on 'The development and evaluation of guidelines and an information website for adult caregivers of adults with bipolar disorder'. The evaluation suggested that many users of www.bipolarcaregivers.org found it relevant and useful. It is publicly accessible to close family and friends seeking information on bipolar disorder, ways to provide support, take care of themselves and access resources. Lesley is currently working on the results of psychosocial scales that were added to the Bipolar Comprehensive Outcome Study, a two year observational study. She is about to start developing guidelines similar to those developed for caregivers of people with bipolar disorder for family members of people with other mental health problems.

The impact of accident circumstance variables on mental and physical health outcomes following serious motor vehicle accidents

Jason Thompson
PhD candidate

Close to 300 people are killed on roads each year and another 16,000 injured require hospitalisation or treatment from allied health professionals. In addition to the tragic loss of life and disability incurred through motor vehicle accidents, the direct financial cost to the Victorian community of medical services and other compensation associated with road trauma is around $1billion per year. Further to this, many clients are left permanently disabled, are unable to return to work or other roles within families and communities, or continue to experience poor mental health for a time far beyond the duration of their physical injuries. Whilst the TAC maintains a largely 'no-fault' scheme, it is apparent from initial investigations, that individual client demographic and accident circumstance variables, including attributions of responsibility for the accident, may have a large effect on duration and quality of mental and physical health recovery, perceptions of service quality, and treatment costs. This study will attempt to explore this relationship within the context of existing theoretical models of post-trauma recovery processes.

Rachelle Sara Opie
PhD candidate

Developing and testing the efficacy and feasibility of a modified Mediterranean diet in the treatment of major depression

Psychopharmacology and psychotherapy are cornerstone treatments for depression, but are often ineffective. Observational studies have demonstrated that better diet quality is associated with a reduced risk of depression. However, to date, there is a dearth of evidence that structured dietary interventions, conducted under controlled conditions, can be used effectively to treat individuals with major depressive disorder (MDD). In this 12-week, parallel group, single blind, RCT of a dietary intervention in the treatment of MDD, we aim to develop and investigate the efficacy and feasibility of a modified Mediterranean diet (whole-of-diet approach). This research will provide valuable information on the efficacy and feasibility of delivering a dietary intervention to individuals with MDD. Furthermore, it will improve our understanding on the role of diet in the treatment of depressive illness with the potential to reduce the public health burden of psychiatric illness in Australia.

Sue Lauder
PhD candidate

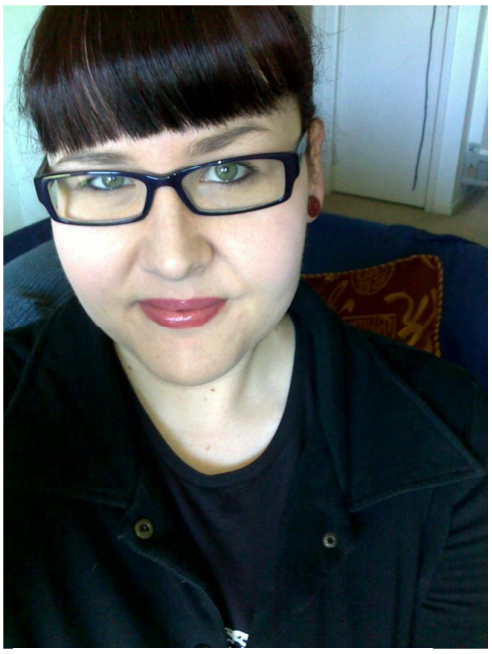
Online Psychological Interventions

There has been continued growth in online psychological interventions both in research and as a way of delivering psychologist services. These interventions overcome the barriers to accessing specialist programs and services, particularly in areas where such programs are non-existent.

There is a growing body of evidence regarding the efficacy of online interventions. These interventions cover a wide range of disorders including, anxiety disorders, unipolar depression and bipolar disorders.

Researchers at the Barwon Psychiatric Research Unit are collaborating with Stanford University after successfully obtaining funding from the NIH to further evaluate one of the first online self-help programs for Bipolar Disorder called MoodSwings www.moodswings.net.au. This intervention is based on the MAPS program, an effective group based program for bipolar disorder, developed by Lesley Berk, under the stewardship of Professor David Castle.

The MoodSwings program is completely online. It is entirely self-help and offers adjunctive psychosocial tools and information to help manage bipolar disorder. It includes a number of core modules that cover information about bipolar disorder and strategies to assist in staying well. There are also moderated discussion boards and follow up booster sessions. We have developed three different versions of MoodSwings and are comparing whether there are any differences in outcomes between a discussion only version, an information version (psycho-education), and a more intensive Cognitive Behavioural Therapy (CBT) version.



Emma Gliddon,
Research Assistant

A total of 300 participants will be involved in the MoodSwings trial, with 150 participants allocated to the Barwon Health site. Participants will be randomised to either interactive CBT, psychoeducation or discussion only groups. A previous randomised controlled trial of MoodSwings showed benefits of the program in relation to symptoms, functionality, quality of life and medication adherence. The interactive CBT group also showed some additional benefits on symptoms of mania.

Can dietary improvement lead to better mental health and quality of life in patients with major depression?

Siobhan Housden
PhD candidate

There is increasing evidence that diet quality plays an important role in both the risk for, and progression of, depression and anxiety, as well as having a significant impact on quality of life and wellbeing. However, to date there have been no studies that directly address whether dietary improvement can lead to improved mental health and well-being in patients with major depression.

For my PhD project, I will be helping to undertake the world's first randomised controlled trial testing the effectiveness of dietary improvement as a treatment for people with major depression. At the conclusion of the trial, I will use the data collected to examine the impact of dietary improvement on mental health outcomes, including symptoms of depression, anxiety, mood, wellbeing and quality of life. Importantly, I will also examine whether any impact on these mental health outcomes is mediated by biological changes – particularly those relating to the immune system. As a result of this trial we expect to observe a greater improvement in wellbeing, anxiety, depression and quality of life in those in the dietary intervention group, in comparison to those in the control condition. This will be important evidence to show that there may be a true association in the relationship between diet and mental health, and that diet change alone has a significant impact on symptoms of psychological distress. As diet is a modifiable factor, it could be an economically effective treatment strategy for depression – one that does not exist at this point.

Shae Quirk
PhD candidate

Personality disorders and personality disorder features in the community: the association with lifestyle factors, physical comorbidity, and health service utilisation

Personality disorders are chronic and maladaptive patterns of thoughts and behaviours which affect how an individual functions in their daily lives. Personality disorders are highly prevalent in psychiatric populations, and population-based epidemiological data suggests that personality disorders in the community are not uncommon. However, data examining the prevalence of personality disorders in the community utilizing clinical interviews are currently lacking. There has been a recent trend in the examination of physical health consequences and lifestyle factors associated with mental health. However, few studies have examined the associations with personality disorders. The aim of this project is to investigate the prevalence of personality disorders and features in a representative sample of Australian women participating in the Geelong Osteoporosis Study (GOS), as well as the associations with lifestyle factors, physical comorbidities and utilisation of medical and mental health care services.

The results from this study may assist in informing whether individuals with personality disorders or features may benefit from routine health screening during primary care consultations. This may assist in the on-going clinical management of both mental and physical disorders. Furthermore, data derived from this study may help to inform public health care planning and delivery.

Amie Hayley
PhD candidate

Clinical and Epidemiological Studies of Sleep

Disruptions to the sleep/wake cycle are recognized to have a variety of negative effects to both physiological and psychological systems. Excessive Daytime Sleepiness (EDS) constitutes a common complaint among patients attending sleep clinics, and epidemiological research has suggested that up to 12-20% of the general population experience these symptoms. To date, however, there is paucity of information available investigating the impact of EDS and associated lifestyle and health factors in a representative group of Australian adults. Therefore, the epidemiological arm of my PhD will assess EDS and its associations with health and lifestyle at a population level. An additional aim of this study is to identify and describe possible biomarkers commonly associated with EDS that may point to possible future therapeutic targets.

The clinical portion of my PhD will focus on the application of a novel behavioural intervention for the treatment of sleep-onset insomnia. Current available therapeutic options are suboptimal, and there is a clear need for well-controlled, easy to administer and cost effective interventions to address this growing issue. This study will use an RCT to assess the efficacy of two novel eye-movement based techniques aimed at reducing sleep onset and improving acute sleep parameters over a period of two weeks. This study will be completed in conjunction with the Sleep Laboratory at the Austin Hospital, Heidelberg, near Melbourne.

Links Between Anxiety and Smoking

Dr Steven Moylan
PhD candidate

Anxiety disorders (ADs) represent the most commonly diagnosed mental illness. In addition, multiple population-based studies have demonstrated increased rates of smoking amongst individuals with mental illness, and increased rates of mental illness amongst smokers. This is true of people with anxiety disorders. Given the widely known impact of cigarette smoking as a risk factor for the development of other health issues (e.g. cardiovascular disease, lung disease etc.), it is prudent to assess the impact of smoking on the development of anxiety disorders.

This project aims to assess the association between cigarette smoking and anxiety disorder development, with a focus on how smoking may affect the expression of anxiety in the community. The project draws upon 3 different population based studies: The Geelong Osteoporosis Study, the Tracing Opportunities and Problems in Childhood and Adolescence (TOPP) Study and the Norwegian Mother and Child Cohort (MoBA). The study aims to assess the relationship between cigarette smoke exposure in adulthood, adolescence, childhood and in utero and the later expression of anxiety, with a view to further understand both the impact of smoking and the neuropathology of anxiety disorders.

It is hoped this project will provide new insights into the development of normal and pathological anxiety throughout the developmental periods, and how cigarette smoking may interfere with this process. These insights could be utilised in anti-smoking campaigns, and also, as a template for further understanding what influences the development of anxiety disorders.

Redox Biology and Autism

Kristi-Ann Villagonzalo
PhD candidate

This study aims to investigate the antioxidant precursor, N-acetylcysteine (NAC) as a treatment for children with autism. Autism is a pervasive developmental disorder, comprising impairments in communication and social interaction, as well as repetitive or stereotyped behaviours or interests. Recent evidence has shown children with autism to have imbalances in their antioxidant defences, resulting in oxidative stress and cellular damage. It has been shown that the primary antioxidant in the brain, glutathione, is decreased in these children. This study aims to increase the amount of available glutathione by administering NAC. The double blind, randomised trial is being conducted in a total of 80 children, 40 of which are receiving the NAC treatment with the remaining 40 receiving a matched placebo. To date, we have over 70 participants enrolled in the trial, regularly attending visits at our Geelong and Melbourne sites. We aim to have all participants complete the trial by March 2013, with results to become available by May 2013.

Rothanthi Daglas
PhD candidate

A comparison of neurocognitive functioning in first episode mania patients treated with Quetiapine vs. Lithium: a 12 month follow up

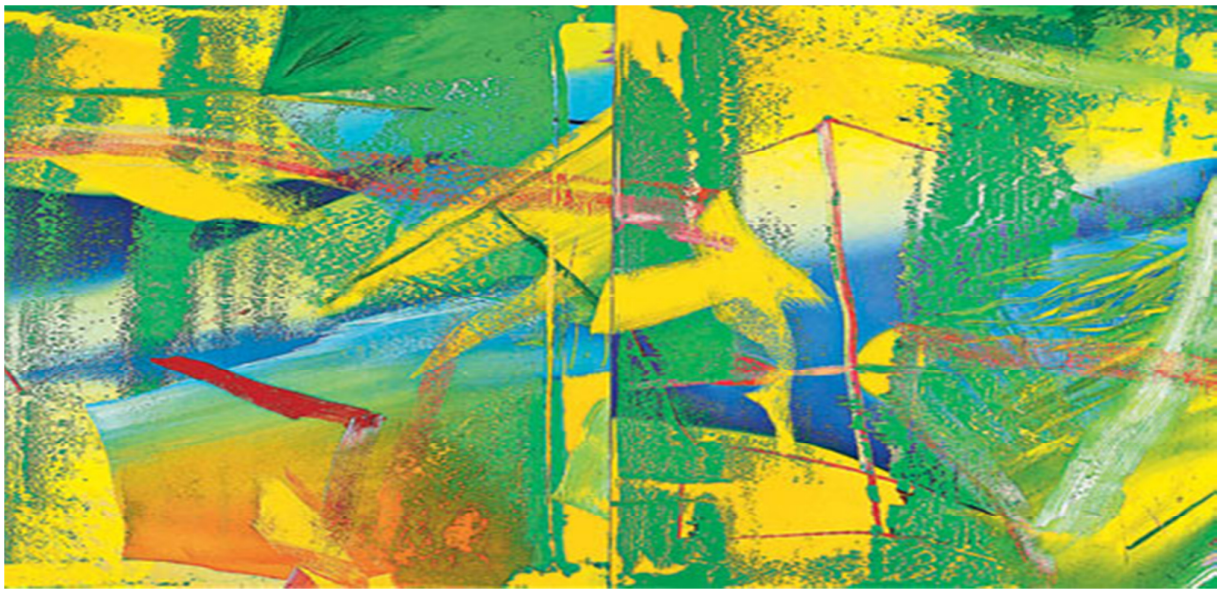
Bipolar disorder is characterised by recurrent episodes of mania and depression, interspersed with euthymia (periods of wellness). However, this idea of complete inter-episodic recovery for individuals with bipolar disorder has been increasingly challenged in the past decade. In particular, evidence increasingly indicates both acute and chronic cognitive impairments in this illness. The usual treatment for bipolar disorder is a combination of lithium and antipsychotics. The purpose of this study is to increase our understanding of how the atypical antipsychotic quetiapine can act as a protective agent for changes in the brain related to episodes of bipolar disorder. A total of 82 people with a first treated manic episode who are between 15-25 years of age will be approached to be involved in this trial. All participants will have been treated on the combination of quetiapine and lithium during their acute manic episode. Once stable, the participants will be randomised to continue either quetiapine or lithium monotherapy to compare cognitive functioning over a 12 month follow-up period. The neuropsychological assessment time points will be conducted at baseline (within a week of commencing monotherapy), at month 3 and at month 12 follow-up. An additional 30 control participants within the same age group and IQ range will be recruited into this study and have neuropsychological testing performed at baseline and month 12 follow-up.

Joanna Dipnall
PhD candidate

The use of data mining techniques to identify multiple risk factors of depression and anxiety in population based health data.

In Australia, depressive and anxiety disorders are distressingly common, affecting people at younger and younger ages every generation. The impact of these psychological disorders on the individual, and society, is far-reaching, impacting detrimentally on psychological, social and economic elements of everyday life. The rise of the digital world since its explosion during the 1980's has meant the ability to analyse a large number of records, with hundreds of variables is now viable. For example, to better identify and profile key customer segments, industries, such as banking, finance and marketing have harnessed the increased computing power for application of data mining and machine learning algorithms to large data sets. However, the area of mental health research has yet to fully capitalize on these rich mining techniques.

The aim of this research study is to gain a greater understanding of the contribution of a multitude of behavioural (e.g. lifestyle) and biological (e.g. clinical) risk factors associated with depressive and anxiety disorders in order to aid in the development of novel preventative and treatment strategies. Patterns of data from the Geelong Osteoporosis Study (GOS), a large and comprehensive study of Australian men and women, spanning 15 years, is used to harness the benefits of data mining and machine learning techniques to examine the associations and interactions between key risk factors. This will afford us a greater understanding of the complex causes of depression and anxiety in the community and inform novel strategies to combat these disorders.



Ongoing funding for 2012

1) Stanley MRI #05T-742. Kulkarni J; Berk M, Fitzgerald P; Decastella A; Damodaran S. Maximum $83,842 per year if all milestones met.

2) NHMRC ID 454356. Developing evidence for the primary prevention of depressive disorders: The role of diet and physical activity. CIA: Berk M, CIB: Pasco J, CIC: Bell C, CID: Leslie E, CIE: Jacka F. (2007: $23,850. 2008: $108,150. 2009: $108,150. 2010: $117,900. 2011: $87,000). Funding approved $445,050. 2012 carried forward.

3) BeyondBlue: Berk M, Lauder S, Dodd S, Chester A, Pitterman L, Castle D. "MoodSwings". $134,573.

4) NHMRC Project Grant – awarded October 2009 ID 628395. The Efficacy of N-acetylcysteine as an adjunctive treatment in unipolar depression. CIA: Berk M, CIB: Malhi G, CIC: Dodd S, CID: Dean O, CIE: Lagopoulos J, CIF: Ng F. $400,000 TOTAL 2010: $207,500 2011: $192,500. 2012 carried forward.

5) Eli-Lilly investigator initiated grant. Evaluation of "MoodSwings". $36,150 commencing April 2009 as per 5 milestones of $7,150 then $7,250.

6) National Health and Medical Research Council Project Grant APP1009367. Selective serotonin reuptake inhibitors (SSRIs) and osteoporosis: Mechanisms and clinical consequences. CIA Dr Lana Williams. 2011-2013. AUD $409,140.

Successful Grants 2012

1) NHMRC Project Grant: APP1021345. Scientific Title: Providing evidence for the primary prevention of the high-prevalence mental disorders in men: the role of diet in the aetiology of depression, anxiety, and psychological distress. CIs: Jacka, Berk, Pasco, Williams. 3 years commencing 2012. $292,900.

2) NHMRC Project Grant: APP1021347. Scientific Title: Diet as a therapeutic target in depression: A randomised controlled trial. 3 years commencing 2012. CIs: Berk M, Jacka F, Castle D, Brazens L, Itsiopoulos C. $481,810.

3) National Natural Science Foundation of China. Project Grant: 31260237. Scientific title: The mechanism of effects of antidepressants use on bone mineral density and bone metabolism. 2012. CIs: Tao Zou, Song Zhang, Lixia Yang, Jianhui Chen, Chao Liu, Rui Hu, Michael Berk. CNY ¥480,000.

4) Deakin University Research Equipment Support Scheme (RESS). Project Grant. Maskless Laser Lithography System for Construction of Smart Medical Micro-devices. CIs: Kouzani, Kong, Berk, Chen, Kaynak, Yang, Dai, Tye, Tsuzuki, Li, Khoo. 2012. $120,000.

5) Office of the Vice President Research & International, University of British Columbia. Title: Knowledge Translation Wellness Summit Workshop. Collaborators: co-PI Michalak E, Suto M, co-I Jorm A, Berk M, collaborators Berk L, Lapsley S, Murray G, McBride S. 2012. Amnt: Cash: $10,000 CN In-kind: $10,000.

6) Research Equipment Support Scheme (RESS) Deakin University (CI2) Project Title: Multidimensional separation and detection system for cross-disciplinary neuropsychiatry research. Investigators: Francis P, Dean O, Stevenson P. 2012. $100,000.

7) NARSAD Young Investigator Grant. 18740. Investigator: Dean O. 2012 -2013. $59,225 (TBC).

8) Alfred Deakin Postdoctoral Research Fellowship Investigator: Dean O. 2012-2014. $67,628 per annum for 2 years.

9) Simons Foundation – Autism Research Initiative. Pilot Grant 201473. Project Title: Efficacy of N-acetylcysteine in Autism. (Co-principal investigator) PI: Berk M, co-PI: Dodd S, Dean O, Gray K, Tonge B. 2012-2013. US$293,108 over 2 years.

10) National Health and Medical Research Council. Project Grant (ID: APP1026307). Project Title: The Efficacy of N-acetylcysteine as an adjunctive treatment in bipolar depression: A double-blind, randomised, placebo-controlled trial. Investigators: (Chief Investigator B) – Berk M, Dean O, Cotton S, Dodd S. 2012-2014. AUD $930,844.00 over 3 years.

11) National Health and Medical Research Council Project Grant (ID: APP1027315). Project Title: Proof of principle of the inflammatory and oxidative theory of depression: A treatment study. Investigators: (Chief Investigator F) – Berk M, Channen A, Harrigan S, Davey C, Hetrick S, Dean O, Dodd S. 2012-2016. AUD $1,475,510.00 over 5 years.

12) National Health and Medical Research Council (NHMRC). Project Grant (ID: APP 1026265). Project title: Inflammatory cytokines as risk factors for the development of both depression and osteoporosis in men. Berk M, Pasco J, Williams L, Jacka F. 2012-2015. AU $369,360.

Publications

1) Cotton SM, Lambert M, Schimmelmann BG, Gleeson JFM, Berk M. Hides L, Chanen A, McGorry PD, Conus P. Depressive symptoms in first episode schizophrenia spectrum disorder. Schizophrenia Research. 2012; 134: 20-26.

2) Macneil CA, Hasty M, Cotton S, Berk M, Hallam K, Kader L, McGorry P, Conus P. Can a targeted psychological intervention be effective for young people following a first manic episode? Results from an 18-month pilot study. Early Interv Psychiatry. 2012;6(4):380-388.

3) Magalhães PV, Dean OM, Bush AI, Copolov DL, Weisinger D, Malhi GS, Kohlmann K, Jeavons S, Schapkaitz I, Anderson-Hunt M, Berk M. Systemic illness moderates the impact of N-acetylcysteine in bipolar disorder. Prog Neuropsychopharmacol Biol Psychiatry. 2012; 37: 132-135.

4) Magalhães PV, Kapczinski F, Nierenberg AA, Deckersbach T, Weisinger D, Dodd S, Berk M. Illness burden and medical comorbidity in the systematic treatment enhancement program for bipolar disorder. Acta Psychiatrica Scandanavica 2012:125;303-308.

5) Berk, M, Berk L, Dodd S, Jacka FN, Fitzgerald B, de Castella AR, Fillia S, Fillia K, Kulkarni J, Jackson HJ, Stafford L. Psychometric properties of a scale to measure investment in the sick role: the Illness Cognitions Scale (ICS). Journal of Evaluation in Clinical Practice. 2012;(2);360-364.

6) Bechdolf A, Wood SJ, Nelson B, Velakoulis D, Yücel M, Takahashi T, Yung AR, Berk M, Wong MT, Pantelis C, McGorry PD. Amygdala and insula volumes prior to illness onset in bipolar disorder: A magnetic resonance imaging study. Psychiatry Research: Neuroimaging. 2012;201(1):34-39.

7) McGorry PD, Berk M, Berk L, Goldstone S. Commentary on palliative models of care for later stages of mental disorder: Maximising recovery, maintaining hope and building morale. Australian & New Zealand Journal of Psychiatry. 2012;46(3):276-278.

8) Jacka F, Pasco JA, Williams LJ, Mann N, Hodge A, Brzionis L, Berk M. Red meat consumption and mood and anxiety disorders. Psychotherapy and Psychosomatics. Letter to the editor 2012;81;196-198.

9) Moylan S, Giorlando F, Nordfjaern T, Berk M. The role of alprazolam for the treatment of panic disorder in Australia. Australian & New Zealand Journal of Psychiatry, 2012;46(03):212-224.

10) Dean OM, Data-Franco J, Giorlando F, Berk M. Minocycline – Therapeutic potential in psychiatry. CNS Drugs 2012;26(5);391-401.

11) Malhi GS, Berk M. Is the safety of lithium no longer in the balance? The Lancet. 2012 Feb 25;379(9817):690-2.

12) Pasco JA, Jacka FN, Williams LJ, Evans-Cleverdon M, Brennan SL, Kotowicz MA, Nicholson GC, Ball, MJ, Berk M. Dietary selenium and major depression: a nested case-control study. Complementary Therapies in Medicine. 2012;20(3):119-123.

13) Macneil CA, Hallam K, Conus P, Henry L, Kader L, Berk M. Are we missing opportunities for early intervention in bipolar disorder? Expert Rev Neurother. 2012;12(1):5-7.

14) Bechdolf A, Ratheesh A, Wood SJ, Tecic T, Conus P, Nelson B, Cotton SM, Chanen AM, Amminger GP, Ruhrmann S, Schultze-Lutter F, Klosterkötter J, Fusar Poli P, Yung AR, Berk M, McGorry PD. Rationale and first results of developing at-risk (prodromal) criteria for bipolar disorder. Curr Pharm Des. 2012;18(4):358-375.

15) Nunes SO, Vargas H, Castro MP, Vargas MM, Moraes JB, Prado ET, Dodd S, Berk M. A comparison of inflammatory markers in depressed and non-depressed smokers. Nicotine and Tobacco Research. 2012;14(5):540-546.

16) Williams LJ, Pasco JA, Jacka FN, Dodd S, Berk M. Pain and the relationship with mood and anxiety disorders and psychological symptoms. Journal of Psychosomatic Research. 2012;72(6):452-6.

17) Anderson G, Maes M, Berk M. Biological underpinnings of the commonalities in depression, somatization, and Chronic Fatigue Syndrome. Med Hypotheses. 2012;78(6):752-6.

18) Svendal G, Berk M, Pasco JA, Jacka FN, Lund A, Williams LJ. The use of hormonal contraceptive agents and mood disorders in women. Journal of Affective Disorders. 2012;140(1):92-6.

19) Maes M, Fišar Z, Medina M, Gscapagnini G, Nowak G, Berk M. New drug targets in depression: inflammatory, cell-mediated immune, oxidative and nitrosative stress, mitochondrial, antioxidant, and neuroprogressive pathways. And new drug candidates--Nrf2 activators and GSK-3 inhibitors. Inflammopharmacology. 2012;20:127-150.

20) Berk M. ANZJP this month. Australian & New Zealand Journal of Psychiatry. 2012;46(5):395-396.

21) Dean OM, Berk M. Journal Watch. Clinical Practice. 2012;9(3):244.

22) Anderson G, Maes M, Berk M. Inflammation-related disorders in the tryptophan catabolite pathway in depression and somatization. Adv Protein Chem Struct Biol. 2012;88:27-48.

23) Berk M, Berk L, Dodd S, Fitzgerald PB, de Castella AR, Filia S, Filia K, Brnabic AJM, Kelin K, Montgomery W, Kulkarni J, Stafford L. The sick role, illness cognitions and outcomes in bipolar disorder. Journal of Affective Disorders. 2012. Epub ahead of print.

24) Berk M. Is Australian psychiatry getting SHIP shape? ANZJP This month. Australian New Zealand Journal Psychiatry. 2012;46(9):801-802.

25) Berk M, Dean OM, Cotton SM, Gama CS, Kapczinski F, Fernandes B, Kohlmann K, Jeavons S, Hewitt K, Moss K, Allwang C, Schapkaitz I, Cobb H, Bush AI, Dodd S, Malhi GS. Maintenance N-acetylcysteine treatment for bipolar disorder: A double-blind randomised placebo controlled trial. BMC Med. 2012 Aug 14;10(1):91.

26) Anderson RJ, Frye MA, Abulseoud OA, Lee KH, McGillivray J, Berk M, Tye SJ. Deep brain stimulation for treatment-resistant depression: Efficacy, safety and mechanisms of action. Neuroscience and Biobehavioural Reviews. 2012 Sep;36(8):1920-33.

27) Malhi GS, Bargh DM, McIntyre R, Gitlin M, Frye MA, Bauer M, Berk M. Balanced efficacy, safety, and tolerability recommendations for the clinical management of bipolar disorder. Bipolar Disorder. 2012 May;14 Suppl 2:1-21.

28) Bauer M, Glenn T, Alda M, Andreassen OA, Ardau R, Bellivier F, Berk M, Bjella TD, Bossini L, Del Zompo M, Dodd S, Fagiolini A, Frye MA, Gonzalez-Pinto A, Henry C, Kapczinski F, Kliwicki S, Konig B, Kunz M, Lafer B, Lopez-Jaramillo C, Manchia M, Marsh W, Martinez-Cengotitabengoa M, Melle I, Morken G, Munoz R, Nery FG, O'Donovan C, Pfennig A, Quiroz D, Rasgon N, Reit A, Rybakowski J, Sagduyu K, Simhandi C, Torrent C, Vieta E, Zetin M, Whybrow PC. Impact of sunlight on the age of onset of bipolar disorder. Bipolar Disorders. 2012 Sep;14(6):654-663.

29) Dean OM, Bush AI, Berk M. Translating the Rosetta Stone of N-acetylcysteine. Biological Psychiatry. 2012 Jun 1;71(11):935-6.

30) Jacka FN, Maes M, Pasco JA, Williams LJ, Berk M. Nutrient intakes and the common mental disorders in women. Journal of Affective Disorders. 2012 Dec 1;141(1):79-85.

31) Berk M, Berk L, Udina M, Moylan S, Stafford L, Hallam K, Goldstone S, McGorry PD. Palliative models of care for later stages of mental disorder: maximizing recovery, maintaining hope, and building morale. Aust N Z J Psychiatry. 2012;46(2):92-9. Review.

32) Maes M, Berk M. Goehler L, Song C, Anderson G, Galecki P, Leonard B. Depression and sickness behavior are Janus-faced responses to shared inflammatory pathways. BMC Medicine. 2012;10(66).

33) Maes M, Kubera M, Leunis JC, Berk M. Increased IgA and IgM responses against gut commensals in chronic depression: Further evidence for increased bacterial translocation or leaky gut. J Affect Disord. 2012;141(1):55-62.

34) Berk M, Berk L. Journal Watch article on "Neuroprogression in bipolar disorder". Schneider MR, Delbello MP, McNamara RK, Strakowski SM, Adler CM. Bipolar Disord. 2012;14(4) 358-374". Clinical Practice. 2012; 9(5).

35) O'Neil A, Williams ED, Stevenson CE, Oldenburg B, Berk M, Sanderson K. Co-morbid cardiovascular disease and depression: sequence of disease onset is linked to mental but not physical self-rated health. Results from a cross-sectional, population-based study. Social Psychiatry and Psychiatric Epidemiology. 2012 Jul;47(7):1145-51.

36) Moylan S, Maes M, Wray NR, Berk M. The neuroprogressive nature of major depressive disorder: pathways to disease evolution and resistance, and therapeutic implications. Mol Psychiatry. 2012. Epub ahead of print. Pubmed ID 22525486.

37) Lauder S, Chester A, Castle D, Dodd S, Berk L, Klein B, Austin D, Gilbert M, Chamberlain JA, Murray G, White C, Piterman L, Berk M. Development of an online intervention for bipolar disorder. www.moodswings.net.au. Psychology, Health & Medicine. 2012 epub ahead of print. PMID: 22712771.

38) Markanday S, Data-Franco J, Dyson L, Murrant S, Arbuckle C, McGillvray J, Berk M. Acceptance and commitment therapy for treatment-resistant depression. Letter to the editor. ANZJP. 2012. PMID 22563038.

39) Sarris J, Moylan S, Camfield DA, Pase MP, Mischoulon D, Berk M, Jacka FN, Schweitzer I. Complementary medicine, exercise, meditation, diet and lifestyle modification for anxiety disorders: a review of current evidence. Review article. Evidence-Based Complementary and Alternative Medicine, 2012; Epub ahead of print. PMID: 22969831.

40) Magalhães PV, Dodd S, Nierenberg AA, Berk M. Cumulative morbidity and prognostic staging of illness in the Systematic Treatment Enhancement Program for Bipolar Disorder (STEP-BD). 2012;46(11):1058-67.

41) Anderson JA, Maes M, Berk M. Schizophrenia is primed for an increased expression of depression through activation of immuno-inflammatory, oxidative and nitrosative stress, and tryptophan catabolite pathways. Progress in Neuro-Psychopharmacology & Biological Psychiatry. 2012. Epub ahead of print. PMID: 22930036.

42) Maes M, Kubera M, Leunis J-C, Berk M, Geffard M, Bosmans E. In depression, bacterial translocation may drive inflammatory responses, oxidative and nitrosative stress (O&NS), and autoimmune responses directed against O&NS-damaged neoepitopes. Acta Psychiatrica Scandinavica. 2012 epub ahead of print. PMID: 22900942.

43) Maes M, Kubera M, Mihaylova I, Geffard M, Galecki P, Leunis J-C, Berk M. Increased autoimmune responses against auto-epitopes modified by oxidative and nitrosative damage in depression: Implications for the pathways to chronic depression and neuroprogression. Journal of Affective Disorders. 2012. 22898471.

44) Malhi GS, Tanious M, Berk M. Mania: Diagnosis and treatment recommendations. Bipolar Disorders. 2012; epub ahead of print. PMID: 22986995.

45) Maud C, Berk M. Neuropsychiatric presentation of Lyme disease in Australia. Australian & New Zealand Journal of Psychiatry. 2012 epub ahead of print PMID: 23015751.

46) Jacka FN, Pasco JA, Williams LJ, Meyer BJ, Digger R, Berk M. Dietary intake of fish and PUFA, and clinical depressive and anxiety disorders in women. British Journal of Nutrition. 2012. doi: 10.1017/S0007114512004102.

47) Dean OM, Bush AI, Copolov DL, Kohlmann K, Jeavons S, Schapkaitz I, Anderson-Hunt M, Berk M. Effects of N-acetylcysteine on cognitive function in bipolar disorder. Psychiatry and clinical neurosciences. 2012;66:514-517.

48) Berk M, Jacka F. Preventive strategies in depression: gathering evidence for risk factors and potential interventions. British Journal of Psychiatry. 2012; 201, 339–341.

49) Jacka FN, Berk M. Depression, diet and exercise. MJA Open Suppl 4: 21-23.

50) Singh AB, Bousman CA, Ng CH, Byron K, Berk M. ABCB1 polymorphism predicts escitalopram dose needed for remission in major depression. Translational Psychiatry. 2012;2:e148. Doi: 10.1038/tp.2012.115.

51) Nunes SOV, de Castro MR, Vargas HO, Vargas MM, Machado RR, Fonseca ICB, Dodd S, Berk M. Clinical characteristics and smoking cessation: an analysis of gender and depressive disorders differences. Addictive disorders and their treatment. 2012.

52) Magalhães PVS, Dean O, Andreazza AC, Berk M, Kapczinsk F. Adjunctive antioxidants for bipolar disorder. Cochrane Reviews. 2012.

53) Castle D, Piterman L, Berk M. Difficult to treat depression. Medical Journal of Australia. 2012.

54) Berk M, Berk L, Davey CG, Moylan S, Giorlando F, Singh AB, Kalra H, Dodd S, Malhi GS. Treatment of Bipolar Depression. MJA Open. 2012.

55) Data-Franco J, Berk M. The Nocebo Effect – A clinicians guide. Australian and New Zealand Journal Psychiatry. 2012.

56) Munkholm K, Vinberg M, Berk M, Kessing LV. State-related alterations of gene expression in bipolar disorder: a systematic review. Bipolar Disorders. 2012. doi: 10.111/bdi.12005. PMID: 23043691.

57) Ghanizadeh A, Berk M. Zinc for treating of children and adolescents with Attention deficit hyperactivity disorder; A systematic review of randomized controlled clinical trials. European Journal of Clinical Nutrition. 2012.

58) Ghanikzadeh A, Berk M, Farrashbandi H, Alavi shoushtari A, Villagonzalo K. Targeting the mitochrondrial transport chain in autism, a systematic review and synthesis of a novel therapeutic approach. Mitochondrion. 2012.

59) Williams LJ, Pasco JA, Jacka FN, Hodge JM, Kotowicz MA, Berk M. Quantitative heel ultrasound (QUS) measures of bone quality in association with mood and anxiety symptoms. Journal of Affective Disorders. 2012.

60) Jacka FN, Rothon C, Taylor S, Berk M, Stansfeld S. Diet quality and mental health problems in adolescents from East London: a prospective study (accepted Nov 1st 2012) Journal of Social Psychiatry and Psychiatric Epidemiology.

61) Jacka FN, Mykletun A, Berk M. Moving towards a population health approach to the primary prevention of common mental disorders. Invited opinion BMC Medicine (Nov 2012).

62) Parker GB, Fletcher K, Berk M, Paterson A. Development of a measure quantifying adverse psychotherapeutic ingredients: the Experiences of Therapy Questionnaire (ETQ). Psychiatry Research. 2012.

63) Stange JP, Nierenberg AA, Sylvia L, Berk M, Vieira da Silva Magalhaes, Deckersbach T. Extreme Attributions Predict the Course of Bipolar Depression: Results from the STEP-BD Randomized Controlled Trial of Psychosocial Treatment. The Journal of Clinical Psychiatry. 2012.

64) Ghanizadeh A, Berk M. Clock face drawing test performance in children with ADHD. Basic and Clinical Neuroscience Journal. 2012.

65) Ghanizadeh A, Freeman RD, Berk M. Efficacy and adverse effects of venlafaxine in children and adolescents with ADHD: A systematic review of non-controlled and controlled trials. Rev Recent Clin Trials. 2012 Nov 15. [Epub ahead of print].

66) Ratheesh A, Lin A, Nelson B, Wood SJ, Brewer W, Betts J, Berk M, McGorry P, Yung AR, Bechdolf A. Neurocognitive functioning in the prodrome of mania-an exploratory study. J Affect Disord. 2012. [Epub ahead of print].

67) Khasraw M, Ashley D, Wheeler G, Berk M. Using lithium as a neuroprotective agent in patients with cancer. BMC Med. 2012 Nov 2;10(1):131. [Epub ahead of print].

68) Anderson G, Berk M, Dodd S, Bechter K, Altamura AC, Dell'osso B, Kanba S, Monji A, Fatemi SH, Buckley P, Debnath M, Das UN, Meyer U, Müller N, Kanchanatawan B, Maes M. Immuno-inflammatory, oxidative and nitrosative stress, and neuroprogressive pathways in the etiology, course and treatment of schizophrenia. Prog Neuropsychopharmacol Biol Psychiatry. 2012 Oct 18. [Epub ahead of print].

69) Moylan S, Jacka FN, Pasco JA, Berk M. Cigarette smoking, nicotine dependence and anxiety disorders: a systematic review of population-based, epidemiological studies. BMC Med. 2012 Oct 19;10(1):123. [Epub ahead of print].

70) Macneil CA, Hasty MK, Conus P, Berk M. Is diagnosis enough to guide interventions in mental health? Using case formulation in clinical practice. BMC Med. 2012 Sep 27;10(1):111. [Epub ahead of print].

71) Svendal G, Bernt Fasmer O, Engeland A, Berk M, Lund A. Co-prescription of medication for bipolar disorder and diabetes mellitus: a nationwide population-based study with focus on gender differences. BMC Medicine 2012, 10:148.

72) Kulkarni J, Filia S, Berk L, Filia K, Dodd S, de Castella A, Brnabic AJ, Lowry AJ, Kelin K, Montgomery W, Fitzgerald PB, Berk M. Treatment and outcomes of an Australian cohort of outpatients with bipolar I or schizoaffective disorder over twenty-four months: implications for clinical practice. BMC Psychiatry. 2012 Dec 17;12(1):228. [Epub ahead of print] PMID:23244301.

73) Möller, M., Du Preez, J.L., Viljoen, F., Berk, M., Emsley, R., Harvey, B.H., Social isolation rearing induces immunological, neurochemical, mitochondrial and behavioural deficits in rats, and is reversed by clozapine or N-acetyl cysteine, Brain, Behavior, and Immunity (2012), doi: http://dx.doi.org/10.1016/j.bbi. 2012.12.011.

74) Yatham L, Kennedy S, Schaffer A, Parikh S, Beaulieu S, O'Donovan C, MacQueen G, McIntyre R, Sharma V, Ravindran A, Young L, Young A, Alda M, Milev R, VietaE, Calabrese J, Berk M, Ha K, Kapczinski F. Canadian Network for Mood and Anxiety Treatments (CANMAT) and International Society for Bipolar Disorders (ISBD) collaborative update of CANMAT guidelines for the management of patients with bipolar disorder: update 2013. Bipolar Disorders 2012, doi: 10.1111/bdi.12025. [Epub ahead of print].

75) Hodge JM, Wang Y, Berk M, Collier FM, Fernandes TJ, Constable MJ, Pasco JA, Dodd S, Nicholson GC, Kennedy RL, Williams LJ. Selective Serotonin Reuptake Inhibitors inhibit human osteoclast and osteoblast formation and function. Biol Psychiatry. 2012 Dec 19. doi:pii: S0006-3223(12)00982-1. 10.1016/j.biopsych.2012.11.003. [Epub ahead of print] PMID: 23260229.

76) Seetal Dodd. Is there a need for safety monitoring guidelines for antidepressant treatment? (Editorial). Current Drug Safety. 2012; 7(1): 1-2.

77) Svendal G, Bernt Fasmer O; Engeland A; Berk M, Lund A. Co-prescription of medication for bipolar disorder and diabetes mellitus: a nationwide population-based study with focus on gender differences. BMC Medicine 2012, 10:148 doi: 10.1186/1741-7015-10-148.

78) Ratheesh A, Lin A, Nelson B, Wood SJ, Brewer W, Betts J, Berk M, McGorry P, Yung AR, Bechdolf A. Neurocognitive functioning in the prodrome of mania—an exploratory study. Journal of Affective Disorders. 2012; pii: S0165-0327(12)00645-3. doi: 10.1016/j.jad.2012.09.017.

79) Jacka FN, Rothon C, Taylor S, Berk M, Stansfeld S. Diet quality and mental health problems in adolescents from east London: a prospective study (accepted Nov 1st 2012) Journal of Social Psychiatry and Psychiatric Epidemiology. PMID: 23,160,714.

80) Jacka FN, Mykletun A, Berk M. Moving towards a population health approach to the primary prevention of common mental disorders. Invited opinion BMC Medicine (Nov 2012) Munkholm K, Vinberg M, Berk M, Kessing LV. State-related alterations of gene expression in bipolar disorder: a systematic review. Bipolar Disorders. 2012. doi: 10.111/bdi.12005. PMID: 23043691.

81) Ghanizadeh A, Berk M. Zinc for treating of children and adolescents with Attention deficit hyperactivity disorder; A systematic review of randomized controlled clinical trials. European Journal of Clinical Nutrition. 2012. doi: 10.1038/ejcn.2012.177. PMID: 23169472.

82) Ghanikzadeh A, Berk M, Farrashbandi H, Alavi shoushtari A, Villagonzalo K. Targeting the mitochrondrial transport chain in autism, a systematic review and synthesis of a novel therapeutic approach. Mitochondrion. 2012. doi:pii: S1567-7249(12)00222-X. 10.1016/j.mito.2012.10.001 PMID: 23063712

83) Williams LJ, Pasco JA, Jacka FN, Hodge JM, Kotowicz MA, Berk M. Quantitative heel ultrasound (QUS) measures of bone quality in association with mood and anxiety symptoms. Journal of Affective Disorders. 2012. doi:pii: S0165-0327(12)00657-X. 10.1016/j.jad.2012.09.025. PMID 23122528.

84) O'Neil A. Response to Stampfer, Hince, Dimmitt: The role of depression in the primary prevention of cardiovascular disease (CVD)(2012). Medical Journal of Australia. 197 (8): 445.

85) O'Neil A, Hawkes A, Atherton J, et al. (2012). Telephone-delivered, health coaching improves anxiety outcomes after myocardial infarction: the 'ProActive Heart' trial. European Journal of Preventive Cardiology. doi:10.1177/2047487312460515.

86) Hawkes A, Patrao T, Atherton J, Ware RS, Taylor CB, O'Neil A, et al. (2012). Effect of a 'real-world' randomised trial of a telephone-delivered secondary prevention program for myocardial infarction patients ('ProActive Heart') on health-related quality of life and health behaviors. International Journal of Behavioral Medicine. In Press.

87) O'Neil A. The role of depression in the primary prevention of cardiovascular disease (CVD)(2012). Medical Journal of Australia. 197 (8): 445.

88) O'Neil A. (2012). The relationship between Coronary Heart Disease (CHD) and major depressive disorder (MDD): key mechanisms and the role of quality of life. Europe's Journal of Psychology. In Press.

89) O'Neil, A. (2012). Health services utilization for heart disease patients. In the Blackwell Encyclopedia of Health and Society (eds) William Cockerham, Stella R. Quah and Robert Dingwall. In Press.

90) Li H, Oldenburg B, Chamberlain C, O'Neil A, et al. (2012). Diabetes prevalence and determinants in adults in China mainland from 2000-2010: a systematic review. Diabetes Research and Clinical Practice, Published ahead of print 10.1016/j.diabres.2012.05.010.

91) O'Neil A, Hawkes A, Atherton J, et al. (2012). Telephone-delivered, health coaching improves psychological outcomes after myocardial infarction: the 'ProActive Heart' trial. Heart, Lung and Circulation, 21, 315.

92) O'Neil A, Williams ED, Stevenson CE, et al (2012). Co-morbid depression is associated with poor work outcomes in persons with cardiovascular disease (CVD): A large, nationally representative survey in the Australian population. BMC Public Health, 12, 47.

93) O'Neil A, Stevenson CE, Williams ED, et al. (2012). The Health Related Quality of Life burden of co-morbid Cardiovascular Disease and major depressive disorder in Australia. Findings from a population-based, cross sectional study. Quality of Life Research. Published ahead of print DOI: 10.1007/s11136-012-0128-4.

Publications in press

1) Magalhães PVS, Dean O, Andreazza AC, Berk M, Kapczinsk F. Adjunctive antioxidants for bipolar disorder. Cochrane Reviews. 2012.

2) Castle D, Piterman L, Berk M. Difficult to treat depression. Medical Journal of Australia. 2012- 10761R1.

3) Berk M, Berk L, Davey CG, Moylan S, Giorlando F, Singh AB, Kalra H, Dodd S, Malhi GS. Treatment of Bipolar Depression. MJA Open. 2012.

4) Parker GB, Fletcher K, Berk M, Paterson A. Development of a measure quantifying adverse psychotherapeutic ingredients: the Experiences of Therapy Questionnaire (ETQ). Psychiatry Research. 2012.

5) Stange JP, Nierenberg AA, Sylvia L, Berk M, Vieira da Silva Magalhaes, Deckersbach T. Extreme Attributions Predict the Course of Bipolar Depression: Results from the STEP-BD Randomized Controlled Trial of Psychosocial Treatment. The Journal of Clinical Psychiatry. 2012.

6) Ghanizadeh A, Berk M. Clock face drawing test performance in children with ADHD. Basic and Clinical Neuroscience Journal. 2012.

7) Nunes SOV; de Castro MRP, Vargas HO, Vargas MM, Machado RR, Fonseca ICB, Dodd S, Berk M. Clinical characteristics and smoking cessation: an analysis of sex and depressive disorders differences. Addictive Disorders and their Treatment. 2012.

8) Vajda F, Dodd S, Horgan D. Lamotrigine in epilepsy, pregnancy and psychiatry - a drug for all seasons? Journal of Clinical Neuroscience 2012.

9) Brennan SL, Otmar R, Williams LJ, Pasco JA. The association between utilisation of photocopying machines and psychological distress within the research institution: a systematic review. Australasian Epidemiologist.

Conference presentations

Istanbul, Turkey	12th European Congress of Psychology	2012	• Socio demographic and psychological predictors of long term use of benzodiazpines in the general Norwegian population: The HUNT Study. M Berk.
Istanbul, Turkey	5th Biennial Conference of the International Society for Bipolar Disorders	2012	• Lifestyle factors in optimizing therapeutic outcomes. M Berk. • Novel therapeutics opportunities for bipolar disorder: New research data. M Berk. • Time to revisit the definition and treatment of bipolar I disorder in a multidimensional way. M Berk. • The Illness Cognitions Scale: A new scale to measure maladaptive illness beliefs and behaviours that may impede recovery. S Dodd.
Stockholm, Sweden	28th CINP World Congress	2012	• Psychoneuroimmunology: Mental health and the immune system. M Berk. • Oxidative and immune biomarkers as targets for the development of novel therapies. M Berk. • Serotonergic Antidepressants and Hyponatraemia in Aged Psychiatry. S Dodd.
Prague, Czech Republic	20th European Congress of Psychiatry	2012	• Safety monitoring guidelines for treatments for depressive disorder. S Dodd.
Medellin, Colombia	3rd International Congress of Bipolar Disorder	2012	• Illness staging in bipolar disorder; Oral presentation. S Dodd. • Smoking and mental health – current evidence. S Dodd.
Melbourne, Australia	Biological Psychiatry	2012	• Lifestyle as a modifiable risk factor for the common mental disorders in children, adolescents and adults: new evidence supporting a preventative approach to mental illness. F Jacka.

Perth, Western Australia	Asia-Pacific Bone and Mineral Research meeting and Australia and New Zealand Bone and Mineral Society (ANZBMS) annual scientific meeting	2012	• Selective serotonin reuptake inhibitor use and bone mineral density in men: Geelong Osteoporosis Study. L Williams.
Adelaide South Australia	Public Health Congress	2012	• Socioeconomic status and quality of life in population-based Australian men. L Williams.
Brisbane, Australia	Cardiac Society of Australia and New Zealand	2012	• Telephone-delivered health coaching improves psychological outcomes after myocardial infarction. A O'Neil.
Canberra, Australia	Australian Academy of Science, Science Pathways 2012: Getting Science on the National Agenda	2012	• Attendance: CRC for Mental Health Representative. O Dean.
London, UK	International Society for Affective Disorders (ISAD) Conference	2012	• Lifestyle predictors of unipolar depression. M Berk. • Diet and Nutrition: New opportunities for the prevention and treatment of mood and anxiety disorders. F Jacka. • Mood disorders and somatic comorbidity: from associations to mechanisms. L Williams.
Fukuoka, Japan	East Asian Bipolar Forum	2012	• Oxidative an inflammatory pathways as new treatment targets, neuroprogression and staging. M Berk. • Lifestyle management of bipolar disorder and depression. M Berk.
Singapore	ASEAN Federation of Psychiatry & Allied Health conference	2012	• Bipolar Disorder - current and new pharmacological treatment: are we getting any better? M Berk.

Fremantle, Western Australia	Australasian Society for Psychiatric Research (ASPR) 2012 Conference	2012	• Poster: The association between diet quality, dietary patterns and depression in adults. A systematic review. S. Housden. • Oral presentation: Lifestyle and depression and anxiety in children, adolescents and adults: New evidence for a preventative approach to the common mental disorders. F Jacka. • Oral presentation: Contribution of pre and postnatal diet to the mental health of children. F Jacka. • Oral presentation: Selective serotonin reuptake inhibitor (SSRI) use and its effect on bone in men L Williams. • Oral presentation: Diet as a therapeutic target for depression: a randomised controlled trial. A O'Neil. • Oral presentation: Inflammatory profile and smoking cessation: an analysis of gender and depressive disorder differences of smokers in Smoking Cessation Interventions. S Odebrecht Vargas Nunes, Brazil. • Oral presentation: Debugging depression: The potential of minocycline as a treatment for unipolar depression. O Dean. • Oral presentation: N-acetylcysteine as a treatment for bipolar disorder: Effects on cognition ollowing 24 weeks of treatment in a double blind, randomised, placebo controlled trial. O Dean. • Poster: Efficacy of N-acetylcysteine in Autism: A double blind, placebo-controlled randomised trial. KA Villagonzalo. • Poster: Physical comorbidities in men with mood and anxiety disorders: A population-based study. A Stuart.

			• Poster: Depression and falls in men: the Geelong Osteoporosis Study. A Stuart. • Oral presentation: Cluster C personality disorders: an unstable diagnosis in psychiatric patients with depressive symptoms? S Quirk. • Poster: Prospective effect of adolescent smoking on early adult anxiety symptoms. S Moylan. • Poster: Adverse events associated with clozapine use: A determination of the risk factors and prevalence of development. N Hyde.

Contact:

Professor Michael Berk
Kitchener House
285 Ryrie Street
PO Box 281, Geelong
Victoria 3220 Australia
Phone: +61 3 421-53330
Fax: +61 3 421-53491
email: mikebe@barwonhealth.org.au