

Nutritional Psychiatry: Implications for the prevention and treatment of mental disorders



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Mental disorders are a leading cause of disability worldwide

(GBD study)



Poor diet and its sequelae is the leading cause of early death globally

(GBD study)



Nutritional Psychiatry



Diet and Depression in Adulthood



Molecular Psychiatry
<https://doi.org/10.1038/s41380-018-0237-8>

REVIEW ARTICLE

Healthy dietary indices and risk of depressive outcomes: a systematic review and meta-analysis of observational studies

Camille Lassale^{1,2} · G. David Batty¹ · Amaria Baghdadi^{3,4} · Felice Jacka⁵ · Almudena Sánchez-Villegas^{6,7} · Mika Kivimäki^{1,8} · Tasnime Akbaraly^{1,3,9}

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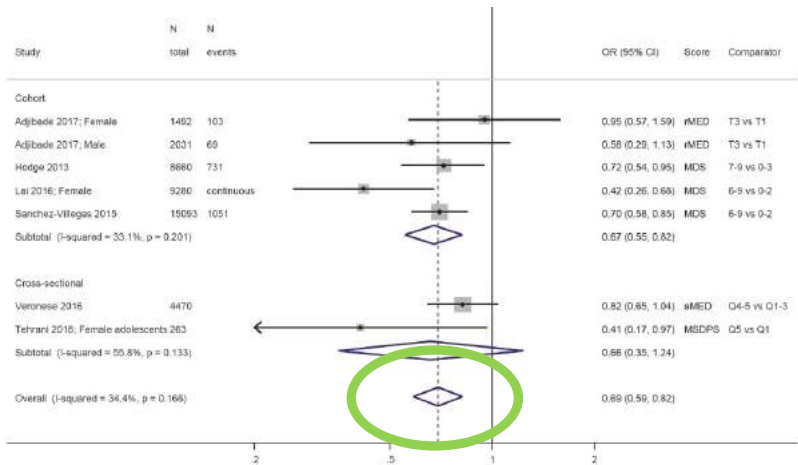


Fig. 1 Meta-analysis of studies investigating the association between a traditional Mediterranean diet and depressive outcomes. Estimates are ORs, RRs or HRs of depression for people with highest adherence compared to lowest adherence (categories or quantiles specified). MDS Mediterranean diet score, rMED relative MDS, aMED alternative MDS, T tertile, Q quintile

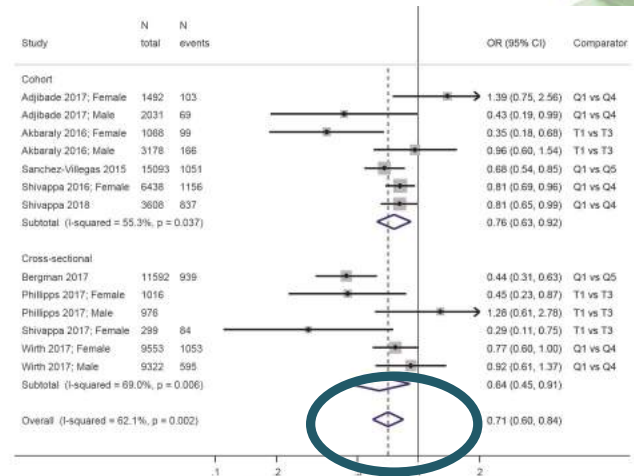


Fig. 4 Meta-analysis of studies investigating the association between the Dietary Inflammatory Index DII and depressive outcomes. Estimates are ORs, RRs, or HRs of depression for people with lowest adherence compared to highest adherence (categories or quantiles specified). T tertile, Q5 quintile, Q4 quartile

Decreased incidence of depression:

Adherence to a Mediterranean diet:
0.67 (95% CI 0.55–0.82)

Lower Dietary Inflammatory Index:
0.76 (95% CI 0.63–0.92)



@Tetyana_Rocks

Mental Health in Young

1 in 7 young people experience a mental health condition



Half of all mental health issues start by 14 years of age





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Diet and Mental Health in Early Life



NEW RESEARCH

Maternal and Early Postnatal Nutrition and Mental Health of Offspring by Age 5 Years: A Prospective Cohort Study

Felice N. Jacka, Ph.D., Eivind Ystrom, Ph.D., Anne Lise Brantsaeter, Ph.D., Evalill Karevold, Ph.D., Christine Roth, M.Sc., Margaretha Haugen, Ph.D., Helle Margrete Meltzer, Ph.D., Synnve Schjolberg, M.A., Michael Berk, Ph.D.



Impact of early life nutritional exposures extends from physical to mental health

BMJ Open The importance of maternal diet quality during pregnancy on cognitive and behavioural outcomes in children: a systematic review and meta-analysis

Tiril Cecilie Borge,¹ Heidi Aase,² Anne Lise Brantsæter,³ Guido Biele¹

Borge et al. BMJ Open 2017

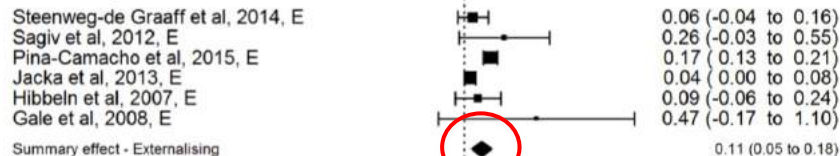
Externalising,
internalising,
socioemotional,
cognitive outcomes

Better maternal diet quality had a small, statistically significant association with child neurodevelopment

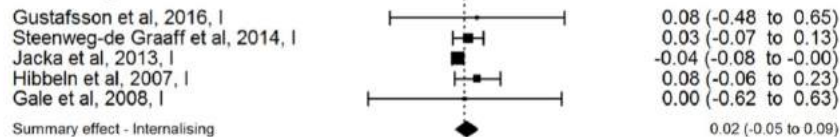
Cognitive



Externalising



Internalising



Socioemotional



REM

0.11 (0.07 to 0.15)



Hedges' g

The SMILES trial



Diet as Intervention for Depression



The **SMILES** trial

67 adults with depression

Adjunctive to current treatment

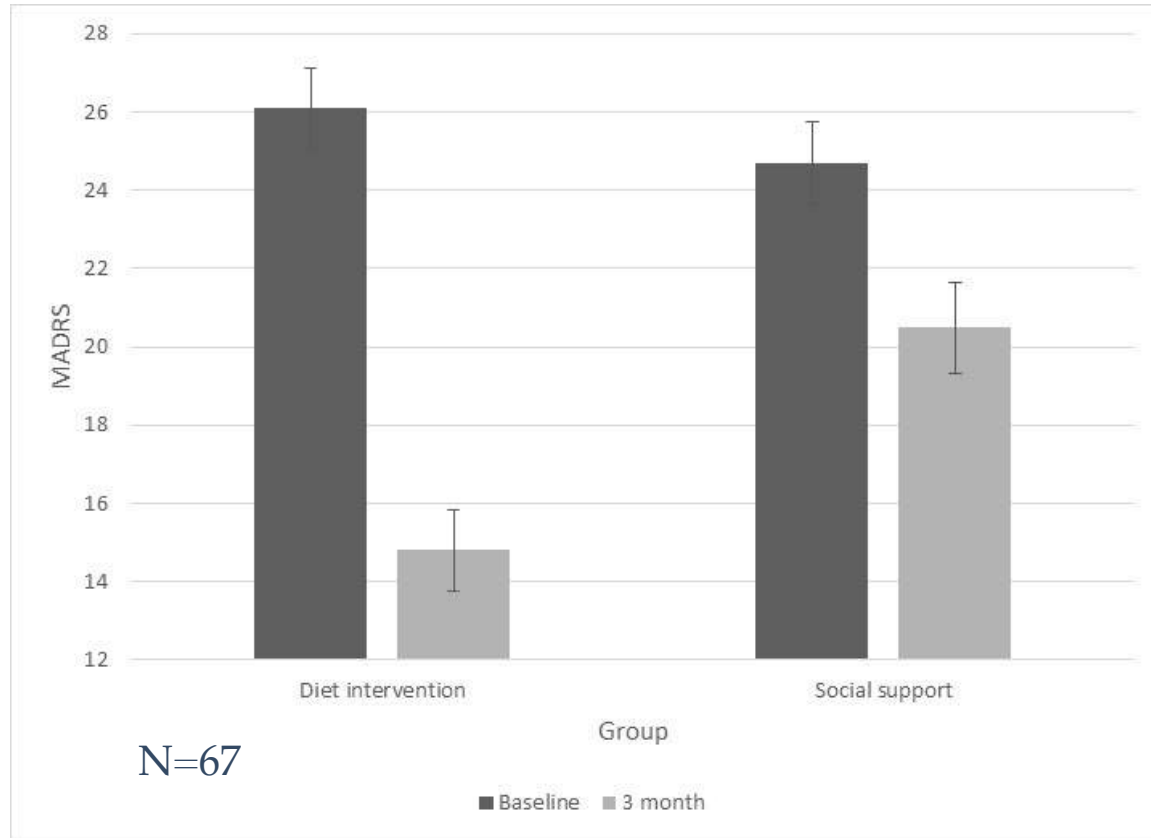
12 week study

Individual **nutritional** consulting
sessions

Social support protocol

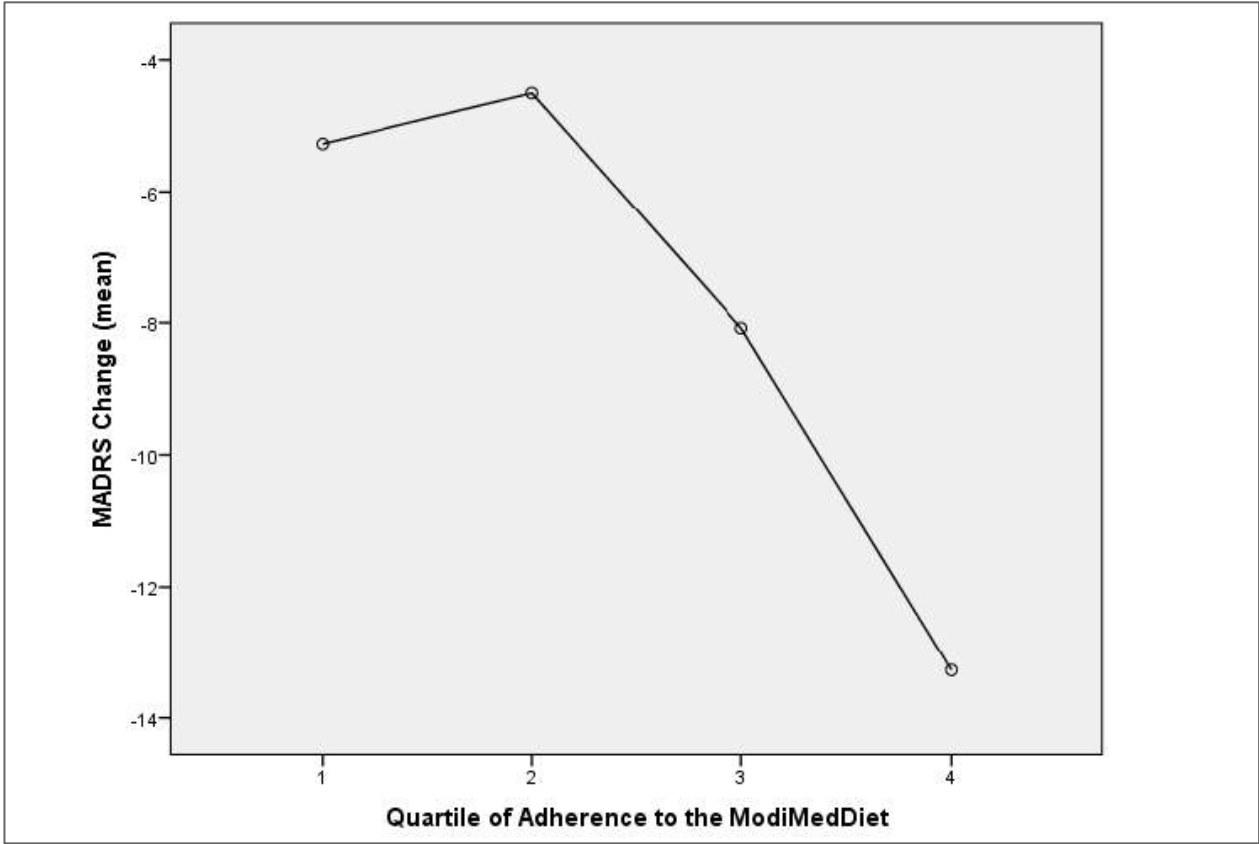
Effect size:
Cohen's $d = -1.16$
(95% CI -1.73, -0.59)

NNT= 4.1





Degree of dietary adherence closely correlated with degree of symptom improvement


















Change in MADRS over 3 months across quartiles of adherence to ModiMedDiet





"Money" by jollyUK



Protein	AND	Cereals and Starchy Vegetables	AND	Vegetables
<p>Tinned sardines</p> 		<p>with wholegrain biscuits</p> 		<p>plus avocado, tomato and cucumber</p> 
<p>Tinned salmon</p> 		<p>with tinned chickpeas</p> 		<p>and salad</p> 
<p>Tinned tuna</p> 		<p>plus instant brown or basmati rice</p> 		<p>with tinned corn, peas and beetroot</p> 
<p>Egg</p> 		<p>on wholemeal toast</p> 		<p>with avocado, tomato and mushrooms</p> 
<p>Supermarket rotisserie chicken (skin removed)</p> 		<p>with couscous</p> 		<p>and frozen vegetables</p> 



Eating Well for Mental Health \$\$?

Baseline diet

SMILES diet

\$138

\$112



Participants **SAVED** approx. \$30AUD per week

Economic Evaluation



- We measured time lost (absenteeism) from paid and unpaid work (volunteering, study, house-keeping)
- We measured visits to health care professionals
- We measured the costs of delivering the interventions and the diet itself
- Compared with the social support condition, average total health sector costs were \$856 lower and average societal costs were \$2591 lower for those receiving dietary support.
- These differences were driven by lower costs arising from fewer allied and other health professional visits and lower costs of unpaid productivity

(Chatterton et al. (2018) BMC public health)



Whole Diet-Focused Treatment

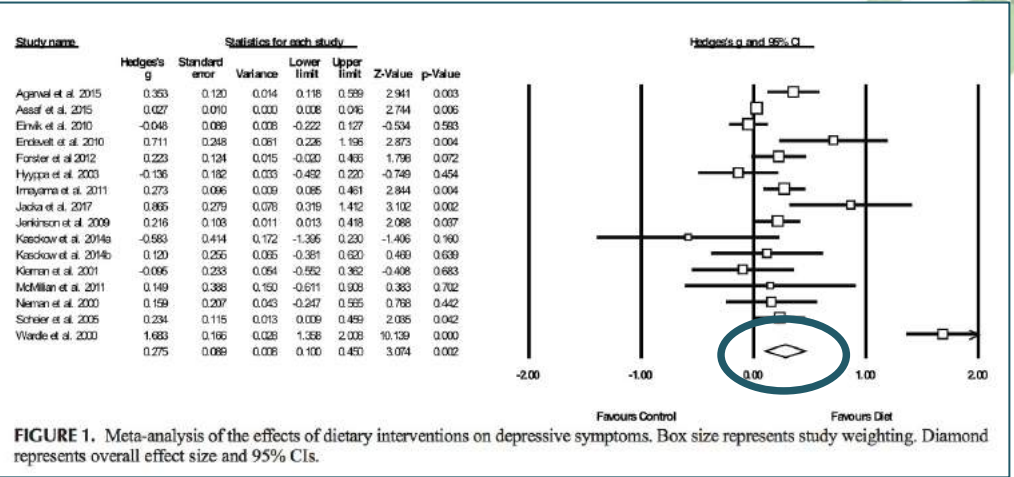
SYSTEMATIC REVIEW/META-ANALYSIS

OPEN

The Effects of Dietary Improvement on Symptoms of Depression and Anxiety: A Meta-Analysis of Randomized Controlled Trials

Joseph Firth, PhD, Wolfgang Marx, PhD, Sarah Dash, PhD, Rebekah Camey, PhD, Scott B. Teasdale, PhD, Marco Solmi, MD, Brendon Stubbs, PhD, Felipe B. Schuch, PhD, André F. Carvalho, MD, Felice Jacka, PhD, and Jerome Sarris, PhD

Firth et al. (2019) Psychosomatic Med



- N=16 RCTs with 45,826 participants
- Dietary interventions significantly reduced depressive symptoms
- No effect was observed for anxiety (but few studies)
- Greater benefits in females for both depression and anxiety
- Greater benefits when delivered by nutrition professionals



Diet matters to mental and brain health

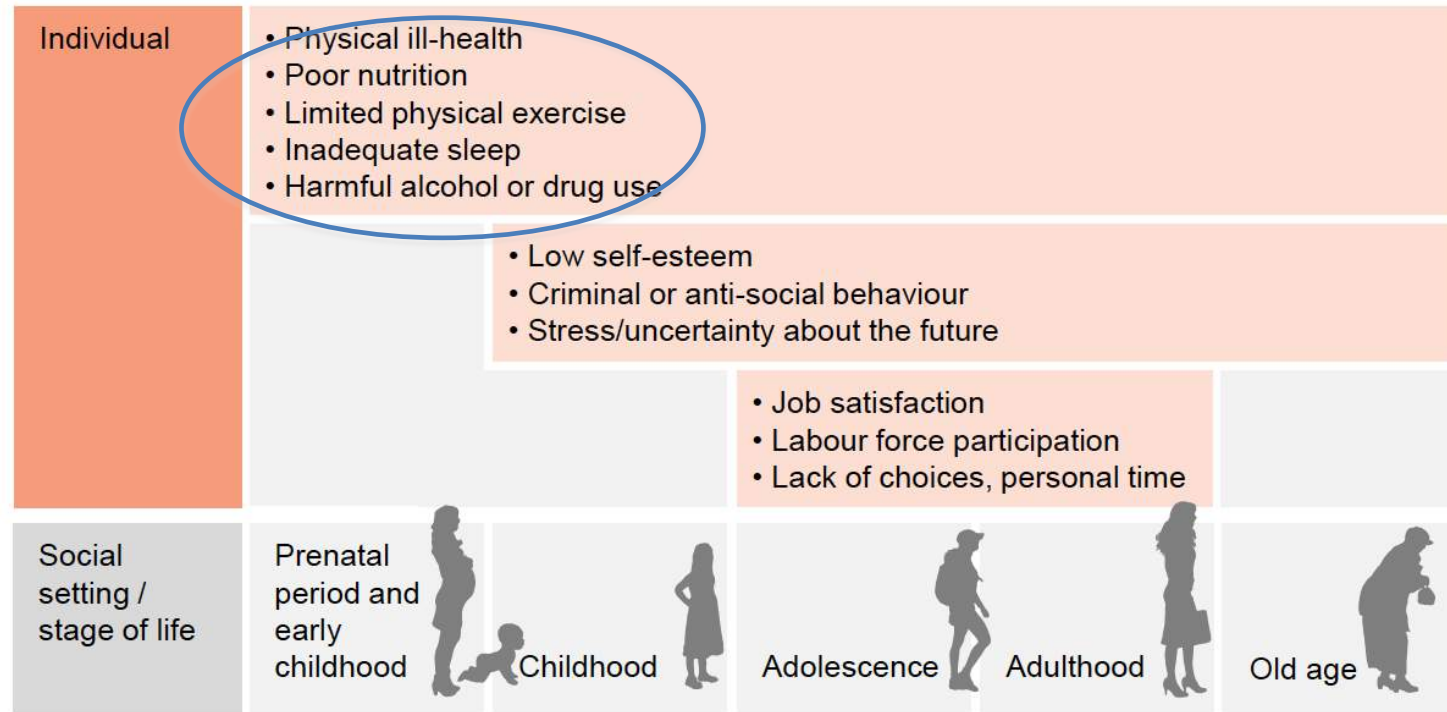
DIET IS *MODIFIABLE* – TARGET FOR PREVENTION AND TREATMENT

More than 80 policy documents



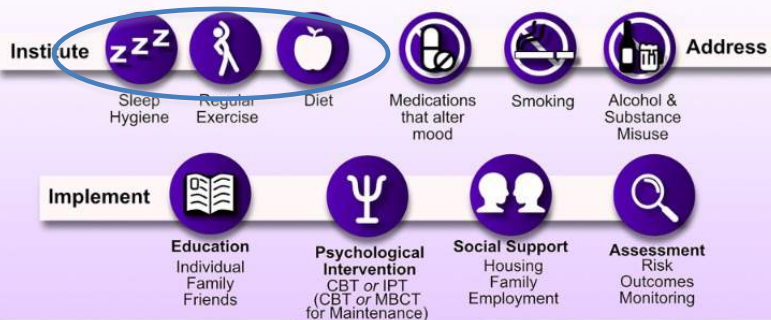
- United Nations
 - World Health Organisation
 - UNICEF
 - European Commission
- Country-level policies including Australia, Canada, Finland, France, Germany, Latvia, New Zealand, Norway, the United Kingdom, and the United States

Productivity Commission Mental Health Report 2020



The Management of Major Depression

ACTIONS



CHOICES



ALTERNATIVES

The 2020 Royal Australian and New Zealand College of Psychiatrists clinical practice guidelines for mood disorders

Australian & New Zealand Journal of Psychiatry
2021, Vol. 55(1) 7-117
DOI: 10.1177/0004867420979153
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Article reuse guidelines: sagepub.com/journals-permissions
journals.sagepub.com/home/ajp
SAGE

Gin S Malhi^{1,2,3}, Erica Bell^{1,2,3}, Darryl Bassett⁴, Philip Boyce^{5,6}, Richard Bryant⁷, Philip Hazell⁶, Malcolm Hopwood⁸, Bill Lyndon¹, Roger Mulder⁹, Richard Porter⁹, Ajeet B Singh¹⁰ and Greg Murray¹¹



“First, the framework shows that lifestyle changes and psychological interventions are **foundational** in the treatment of mood disorders.

These are **essentially non-negotiable** and to be discussed with all patients.

Lifestyle changes include smoking cessation, limiting alcohol and substance misuse, instituting exercise, sleep hygiene and **a healthy diet.**”



Online Courses / Healthcare & Medicine



Food and Mood: Improving Mental Health Through Diet and Nutrition

★★★★☆ 4.7 (276 reviews)

Explore the relationship between nutrition and brain health, why it matters, and how to work towards positive food changes.

Join course for free



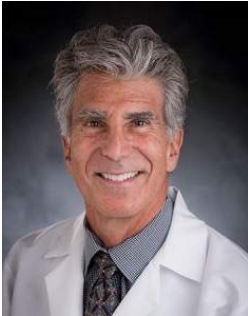
Continuing Professional Education



- Introduction to Nutritional Psychiatry – Nutri-Psyche
 - Endorsed by the RANZCP
 - Aims to build knowledge and skills to support psychiatric practitioners
- Lifestyle Medicine for Clinical Services – Life and Mind
 - Developed in collaboration with JCU and ASLAM
 - Aims to support all health professionals working with SMI



***World Federation of Societies of Biological Psychiatry & Australasian Society of Lifestyle Medicine
Lifestyle-Based Mental Health Care Clinical Guidelines for the management of depression***



Food & Mood Centre Program

Our Vision: A world in which nutrition is recognised as fundamental to mental and brain health

Our Mission: To generate and implement world's-best evidence for nutritional psychiatry



Early Life

Pregnancy
Birth
Infancy
Neurodevelopment



Health Behaviours & Determinants

Diet
Stress
Physical Activity
Sleep



Mental & Brain Health

Depression
Anxiety
Psychosis
Eating disorders
PTSD
Cognition
Neurobiology



Physical Health

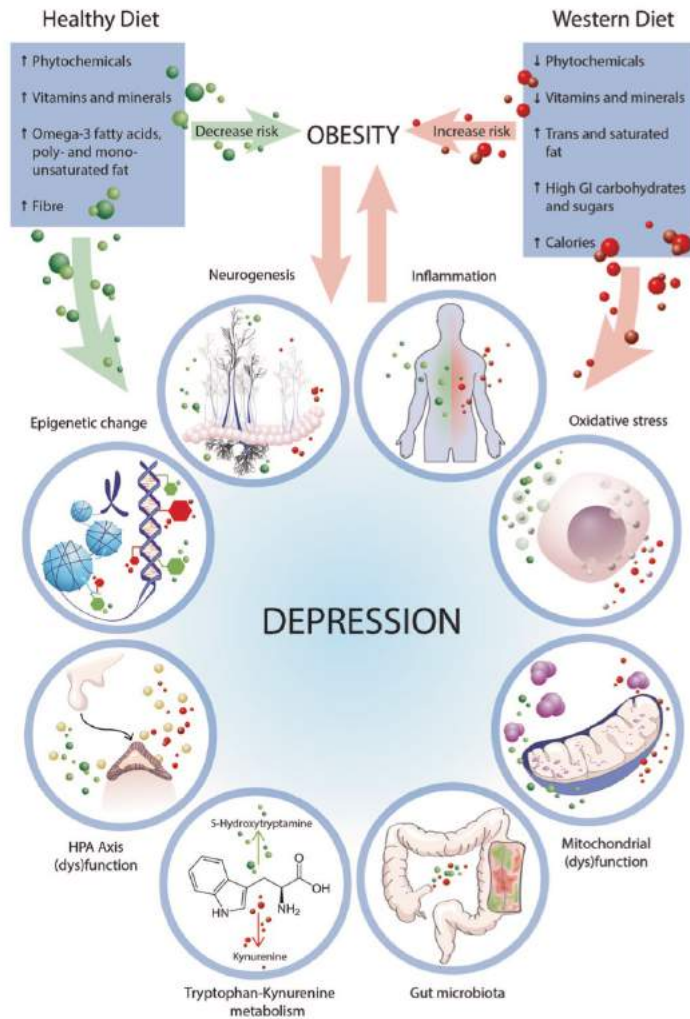
Cardiac health
Metabolic health
Vascular health
Gut health



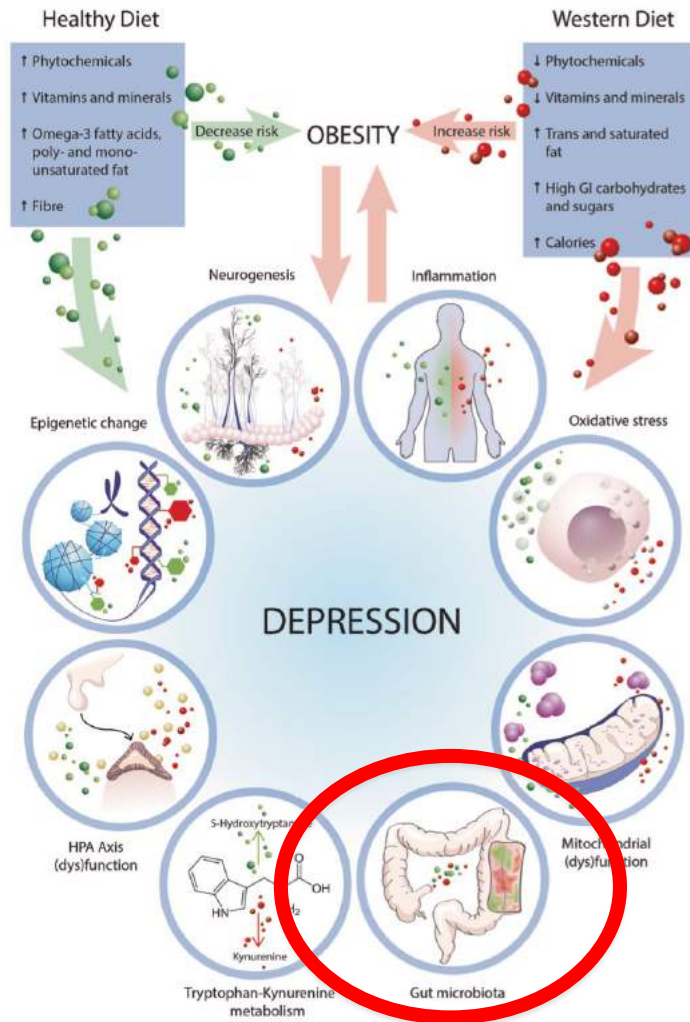
Healthy Ageing

Cognitive decline
Neurodegeneration

Population health | Novel interventions | Mechanisms | Implementation science | Education and training

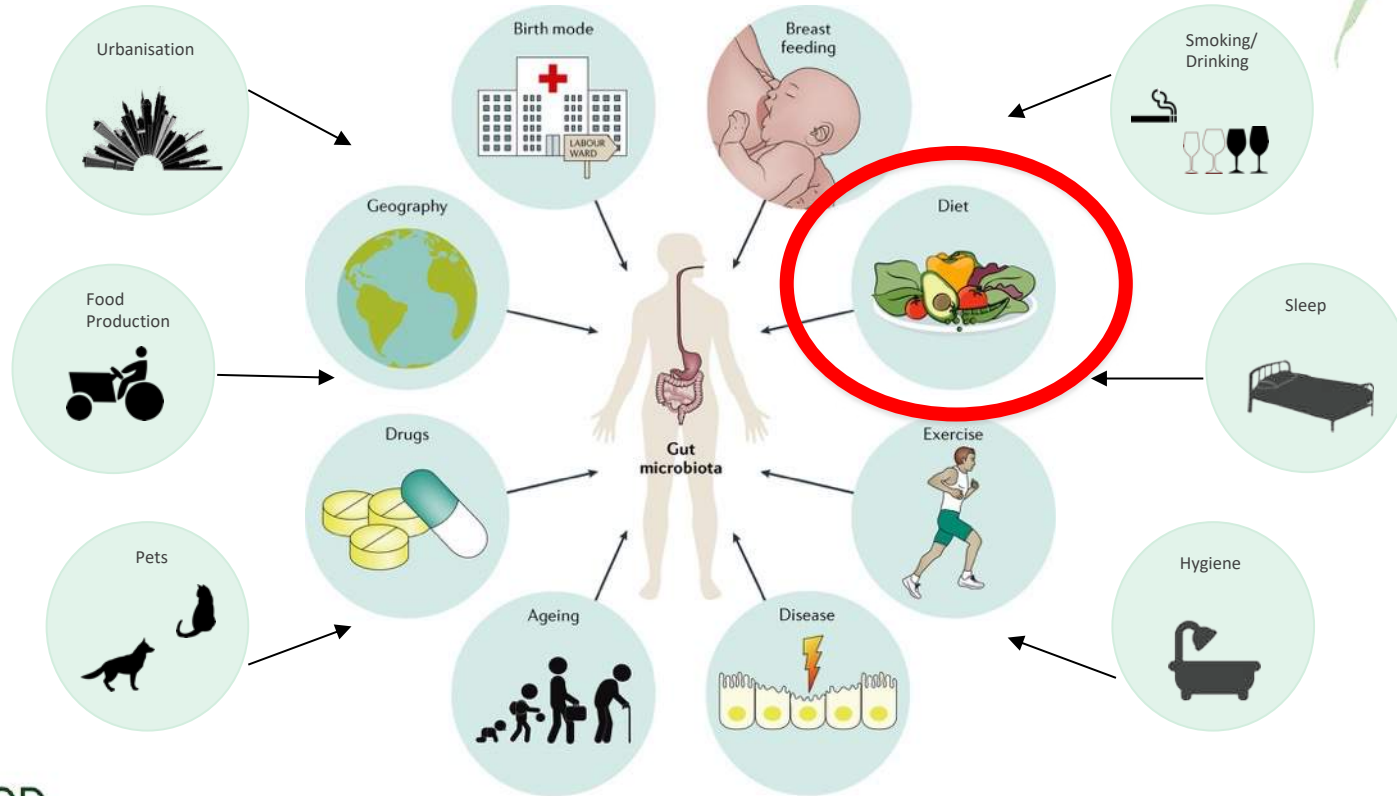


Marx et al. (2020) *Mol Psych*



Marx et al. (2020) *Mol Psych*

Factors Influencing Gut Microbiota



MOVING MOODS (pilot)

Human microbial transfer as an adjunctive treatment for MDD

Primary outcome measure

Feasibility

Aim

n = 15

Target population

adults with moderate to severe MDD

Primary objective

Investigate the feasibility of FMT as an adjunctive treatment for depression in adults

Secondary objectives

Establish whether FMT changes biological parameters in depressed adults, including the faecal microbiome, Hypothalamic Pituitary Axis activity, Neurogenesis, inflammation, cardiovascular and metabolic risk factors, cognition, Quality of life, gastrointestinal symptoms and tolerability. Depression symptoms (MADRS) will also be assessed.



The CALM Trial

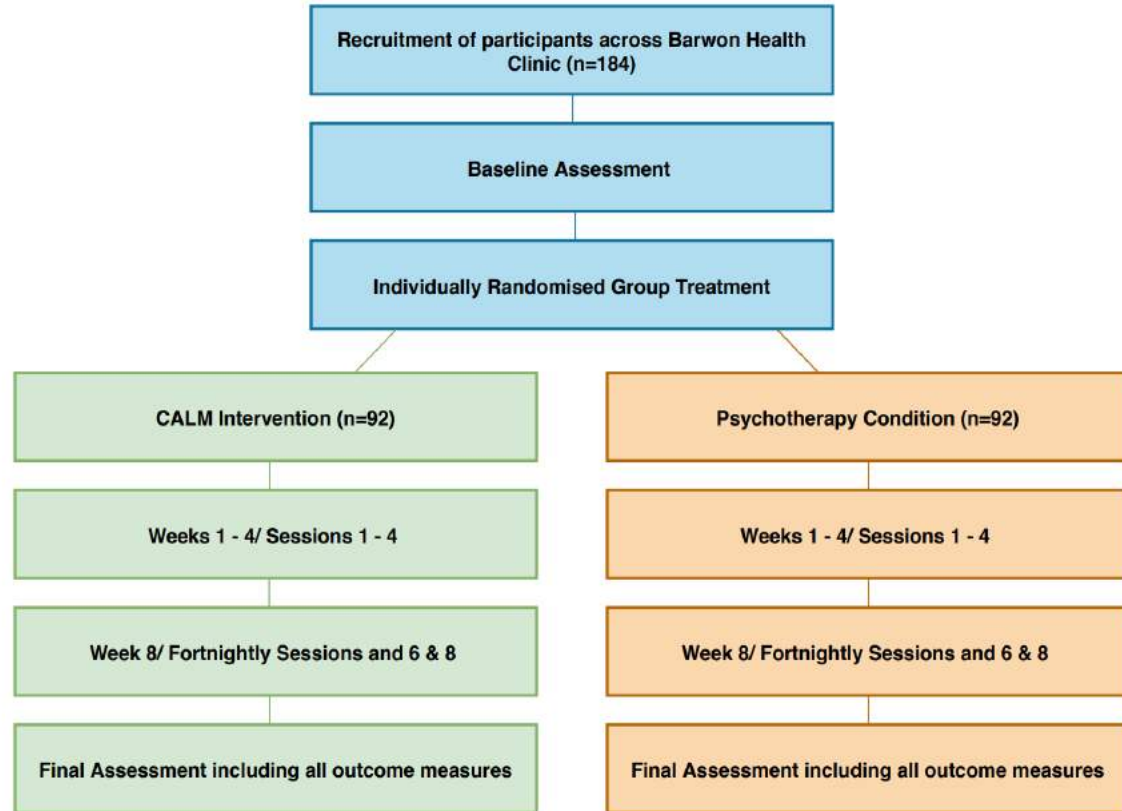
AIM: To investigate the effectiveness of CALM for Victorians experiencing COVID distress compared to a group-based, telehealth psychotherapy program led by psychologists.

Primary Outcome

Depressive symptoms (PHQ-9 scores)

Secondary Outcome s

Anxiety (GAD-7), psychological distress (K-10), remission and recovery (GAD-7, PHQ-9), health behaviours, functioning and cardiovascular profile



BeNEFIT - Bringing e-Health Nutrition Education to populations For Improved depression Treatment: A Randomised Controlled Trial



N=672
Adults
PHQ-8 >5






Med Diet
Intervention



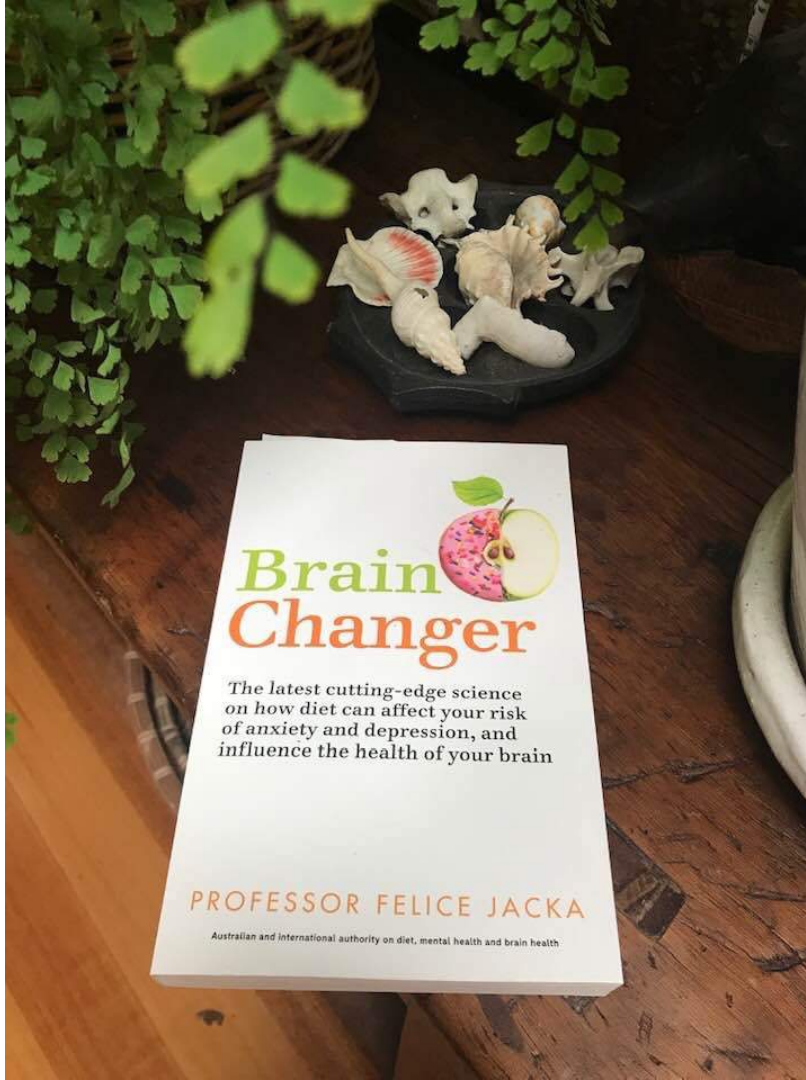
Nutrition Education
Control



Outcomes

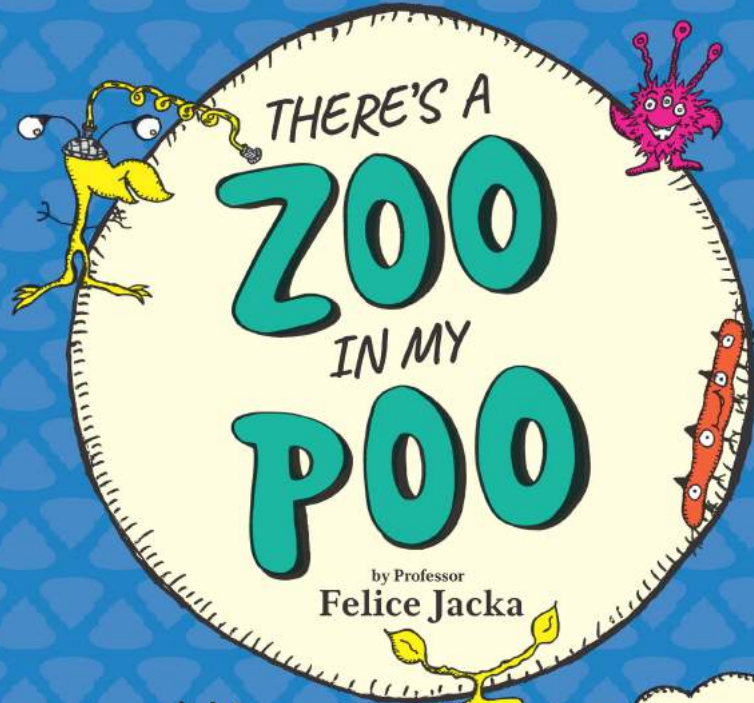
-  PHQ-8, HADS, PGI-I
-  GSRs, BSFS
-  MEDAS, supplement use
-  Stool sample (n=100, Baseline & wk4)
-  Motivation & readiness to change





Pan Macmillan Press
February 2019

*Brilliant. Clear and charming, with delightful illustrations.
I would have loved this as a child. Dr Michael Mosley*



by Professor
Felice Jacka

illustrated by
Rob Crow

*Getting to the guts of what
makes a healthy, happy you.*

Pan Macmillan Press
August 2020



FOO



International Society for Nutritional Psychiatry Research

"To support scientifically rigorous research into nutritional approaches to the prevention and treatment of mental disorders and their comorbidities"



WILSON
FOUNDATION



www.austrotaryhealth.org.au



Australian Government
National Health and Medical Research Council
Australian Research Council



IMPACT
INSTITUTE FOR MENTAL AND PHYSICAL
HEALTH AND CLINICAL TRANSLATION



A DEAKIN IDEA



WWW.FOODANDMOODCENTRE.COM.AU



FOOD & MOOD

CENTRE

A **DEAKIN** IDEA

