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## **Productivity Commission Submission April 2019**

While mental and substance-use disorders account for the leading cause of global disability, poor diet is now the leading contributor to early death across middle and high-income countries, and the second leading cause overall (1).

## THESE TWO LEADING CAUSES OF DISEASE BURDEN ARE LINKED, WHICH HAS IMPORTANT IMPLICATIONS FOR PUBLIC HEALTH, POLICY, AND CLINICAL PRACTICE

- Diet quality is a risk factor for common mental disorders, particularly depression: This is true
  across countries and cultures, independent of a wide range of potential confounding factors such
  as socioeconomic status, education, body weight and other health behaviours, with associations
  not explained by reverse causality.
- These relationships have been repeatedly confirmed at the meta-analytic level, showing an approximate 30% reduction in the risk for depression in those with healthier diets (2)
- Unhealthy dietary patterns are independently associated with an increased risk for depression (3)
- There are also extensive data showing that diet quality is a factor in adolescent depression, the primary age of onset for common mental disorders (e.g. 4-6)
- Maternal and early life nutrition are predictors of children's mental health (7)
- The relationship between maternal diet and child emotional and cognitive outcomes is confirmed at the meta-analytic level (8)
- Diet quality is also a risk factor for cognitive decline (9)
- Diet quality is inversely associated with hippocampal volume, of relevance to learning, memory and mental health across the lifespan (10-12)
- Two randomised controlled trials have confirmed that dietary improvement can successfully address depression, with large effect sizes and close correlations between the degree of dietary change and depression improvement (13, 14)
- Studies in depressed and other populations have also shown that dietary improvement results in improvements in depression, verified at meta-analytic level (15).
- Taking a dietary approach to treating depression is highly cost-effective; this indicates substantial benefits to overall health and functioning in addition to mental health benefits (16, 17)
- People with serious mental illnesses such as schizophrenia have a 20 year mortality gap due to the impact of their illness and associated medications and lifestyle behaviours on their physical health
- World-leading data has shown that support to improve diet in this population can mitigate the impact on metabolic health in the short and longer term (18)

Diet should now be a key consideration for food policy, public health, and clinical practice, including ensuring access to dietitians for people with mental health conditions. Such an approach will result in substantial cost savings to the community, business and the public



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## **REFERENCES**:

- 1. Global Burden of Disease Study Collaborators. Global, regional, and national comparative risk assessment of 84 behavioural, environmental and occupational, and metabolic risks or clusters of risks, 1990-2016: a systematic analysis for the Global Burden of Disease Study 2016. Lancet. 2017;390(10100):1345-422.
- 2. Lassale C, Batty GD, Baghdadli A, Jacka F, Sánchez-Villegas A, Kivimäki M, et al. Healthy dietary indices and risk of depressive outcomes: a systematic review and meta-analysis of observational studies. Mol Psychiatry. 2018.
- 3. Lai JS, Hiles S, Bisquera A, Hure AJ, McEvoy M, Attia J. A systematic review and meta-analysis of dietary patterns and depression in community-dwelling adults. Am J Clin Nutr. 2014;99(1):181-97.
- 4. Jacka FN, Kremer PJ, Berk M, de Silva-Sanigorski AM, Moodie M, Leslie ER, et al. A prospective study of diet quality and mental health in adolescents. PLoS One. 2011;6(9):e24805.
- 5. Jacka FN, Kremer PJ, Leslie ER, Berk M, Patton GC, Toumbourou JW, et al. Associations between diet quality and depressed mood in adolescents: results from the Australian Healthy Neighbourhoods Study. Aust N Z J Psychiatry. 2010;44(5):435-42.
- 6. Khalid S, Williams CM, Reynolds SA. Is there an association between diet and depression in children and adolescents? A systematic review. Br J Nutr. 2016;116(12):2097-108.
- 7. Jacka FN, Ystrom E, Brantsaeter AL, Karevold E, Roth C, Haugen M, et al. Maternal and early postnatal nutrition and mental health of offspring by age 5 years: a prospective cohort study. J Am Acad Child Adolesc Psychiatry. 2013;52(10):1038-47.
- 8. Borge TC, Aase H, Brantsaeter AL, Biele G. The importance of maternal diet quality during pregnancy on cognitive and behavioural outcomes in children: a systematic review and meta-analysis. BMJ Open. 2017;7(9):e016777.
- 9. Psaltopoulou T, Sergentanis TN, Panagiotakos DB, Sergentanis IN, Kosti R, Scarmeas N. Mediterranean diet, stroke, cognitive impairment, and depression: A meta-analysis. Ann Neurol. 2013;74(4):580-91.
- 10. Jacka FN, Cherbuin N, Anstey KJ, Sachdev P, Butterworth P. Western diet is associated with a smaller hippocampus: a longitudinal investigation. BMC Med. 2015;13:215.
- 11. Croll PH, Voortman T, Ikram MA, Franco OH, Schoufour JD, Bos D, et al. Better diet quality relates to larger brain tissue volumes: The Rotterdam Study. Neurology. 2018;90(24):e2166-e73.
- 12. Akbaraly T, Sexton C, Zsoldos E, Mahmood A, Filippini N, Kerleau C, et al. Association of Long-Term Diet Quality with Hippocampal Volume: Longitudinal Cohort Study. Am J Med. 2018;131(11):1372-81 e4.
- 13. Jacka FN, O'Neil A, Opie R, Itsiopoulos C, Cotton S, Mohebbi M, et al. A randomised controlled trial of dietary improvement for adults with major depression (the 'SMILES' trial). BMC Med. 2017;15(1):23.
- 14. Parletta N, Zarnowiecki D, Cho J, Wilson A, Bogomolova S, Villani A, et al. A Mediterranean-style dietary intervention supplemented with fish oil improves diet quality and mental health in people with depression: A randomized controlled trial (HELFIMED). Nutritional neuroscience. 2017:1-14.



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- 15. Firth J, Marx W, Dash S, Carney R, Teasdale SB, Solmi M, et al. The Effects of Dietary Improvement on Symptoms of Depression and Anxiety: A Meta-Analysis of Randomized Controlled Trials. Psychosom Med. 2019;81(3):265-80.
- 16. Chatterton ML, Mihalopoulos C, O'Neil A, Itsiopoulos C, Opie R, Castle D, et al. Economic evaluation of a dietary intervention for adults with major depression (the "SMILES" trial). BMC Public Health. 2018;18(1):599.
- 17. Segal L, Twizeyemariya A, Zarnowiecki D, Niyonsenga T, Bogomolova S, Wilson A, et al. Cost effectiveness and cost-utility analysis of a group-based diet intervention for treating major depression the HELFIMED trial. Nutritional neuroscience. 2018:1-9.
- 18. Teasdale SB, Curtis J, Ward PB, Watkins A, Lederman O, Rosenbaum S, et al. The effectiveness of the Keeping the Body in Mind Xtend pilot lifestyle program on dietary intake in first-episode psychosis: Two-year outcomes. Obes Res Clin Pract. 2019.