

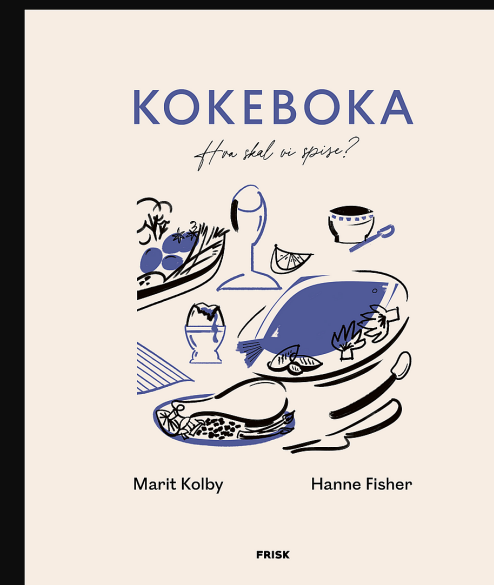
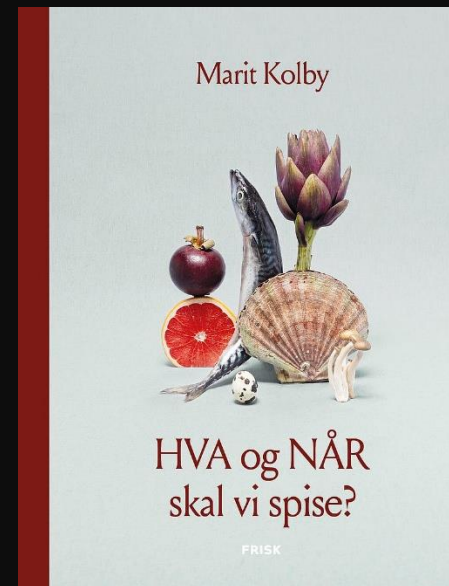


Ernæring og psykisk helse

Marit Kolby



Mine interessekonflikter



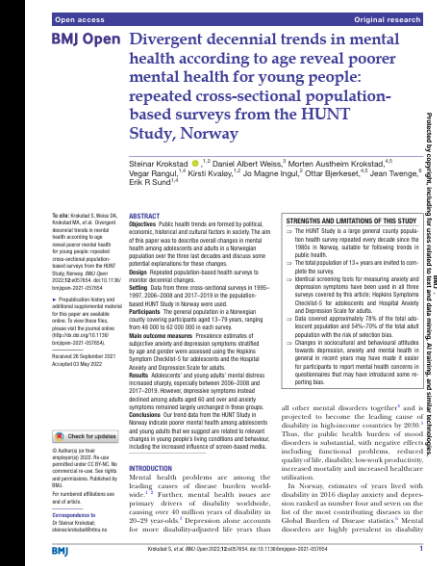
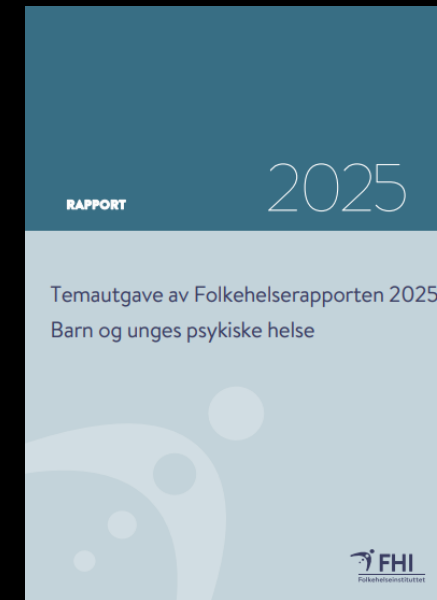


Selv-rapporterte psykiske plager blant unge øker

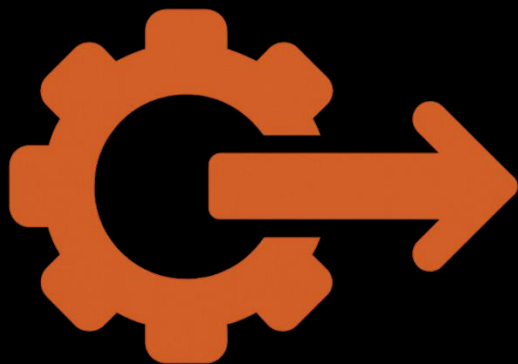
- Tenåringsjenter og unge kvinner
- Studenter

Økning i diagnoser hos barn og unge:

- Autismespekter-diagnose
- ADHD-diagnose



<https://www.fhi.no/he/fr/barn-og-unges-psykiske-helse/>
<https://studenthelse.no/tidligere-undersokelser/>
<https://bmjopen.bmj.com/content/12/5/e057654.abstract>



- Sosial isolasjon og ensomhet
- Digitale medier og oppmerksomhetsalgoritmer
- Bekymring for fremtiden
- Press og prestasjonskultur

Depresjon og angst blant unge i Norge har doblet seg de siste ti årene

Forskere peker på tre årsaker til at utviklingen går feil veg.



Én av tre studenter kan ha en psykisk lidelse: – Nå må det handling til

Nye tall om psykisk helse vekker uro. – Vi har etterlyst tiltak i mange år, sier studentorganisasjonen.



Psykolog om studenters mentale helse: — Jeg tror det går til helvete og at det er for seint å snu

Psykolog Svein Øverland sammenligner den mentale helsen til dagens unge under 35 år med klimakrisen, og mener de er «helt ødelagte». Studentleder Sigve Næss Rotvold sier at studentene har advart mot dette lenge.

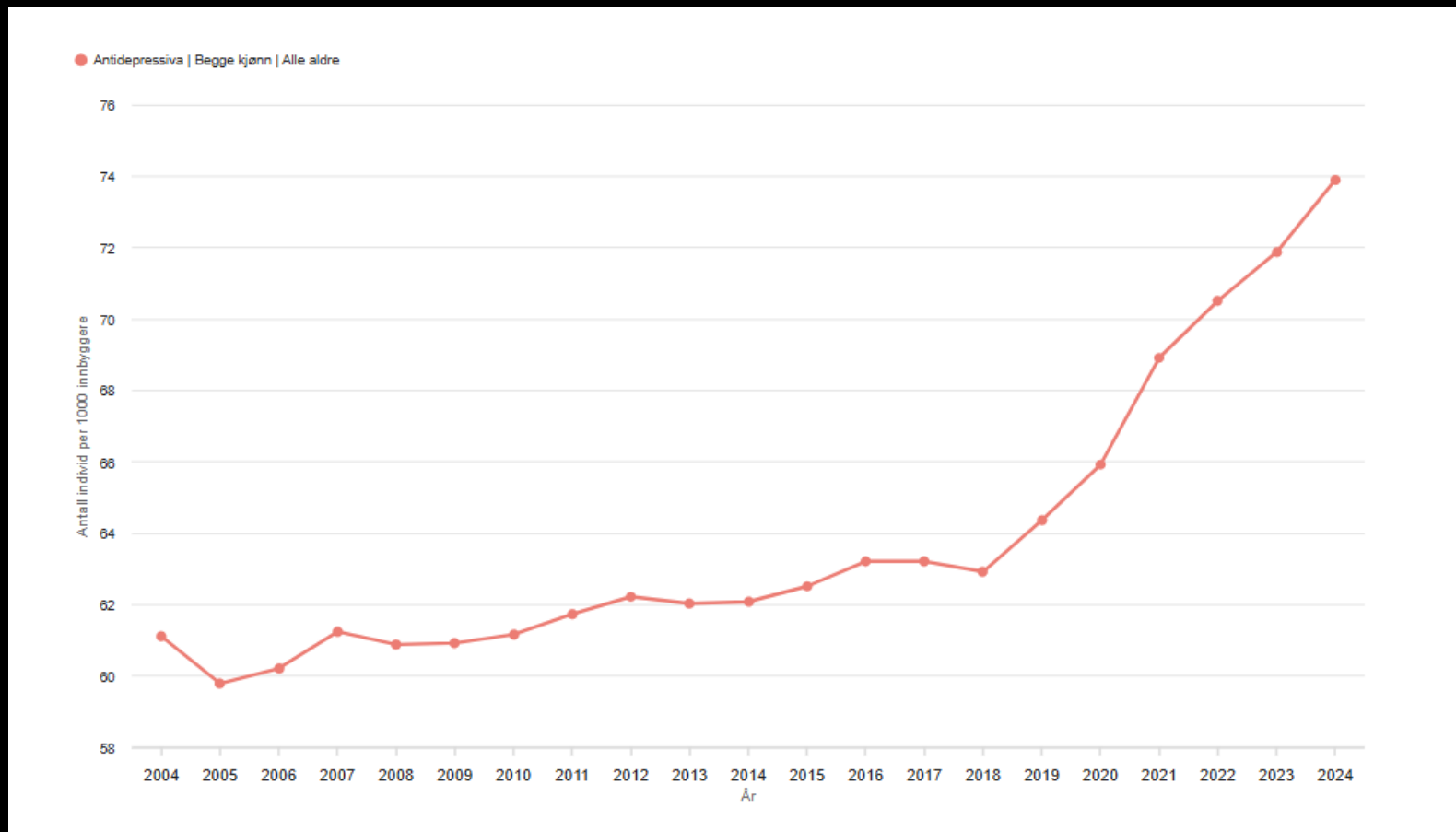


https://www.nrk.no/trondelag/hunt_-44-prosent-av-tenaringsjenter-i-norge-plages-av-stress_-angst-og-tunge-tanker-1.15993034

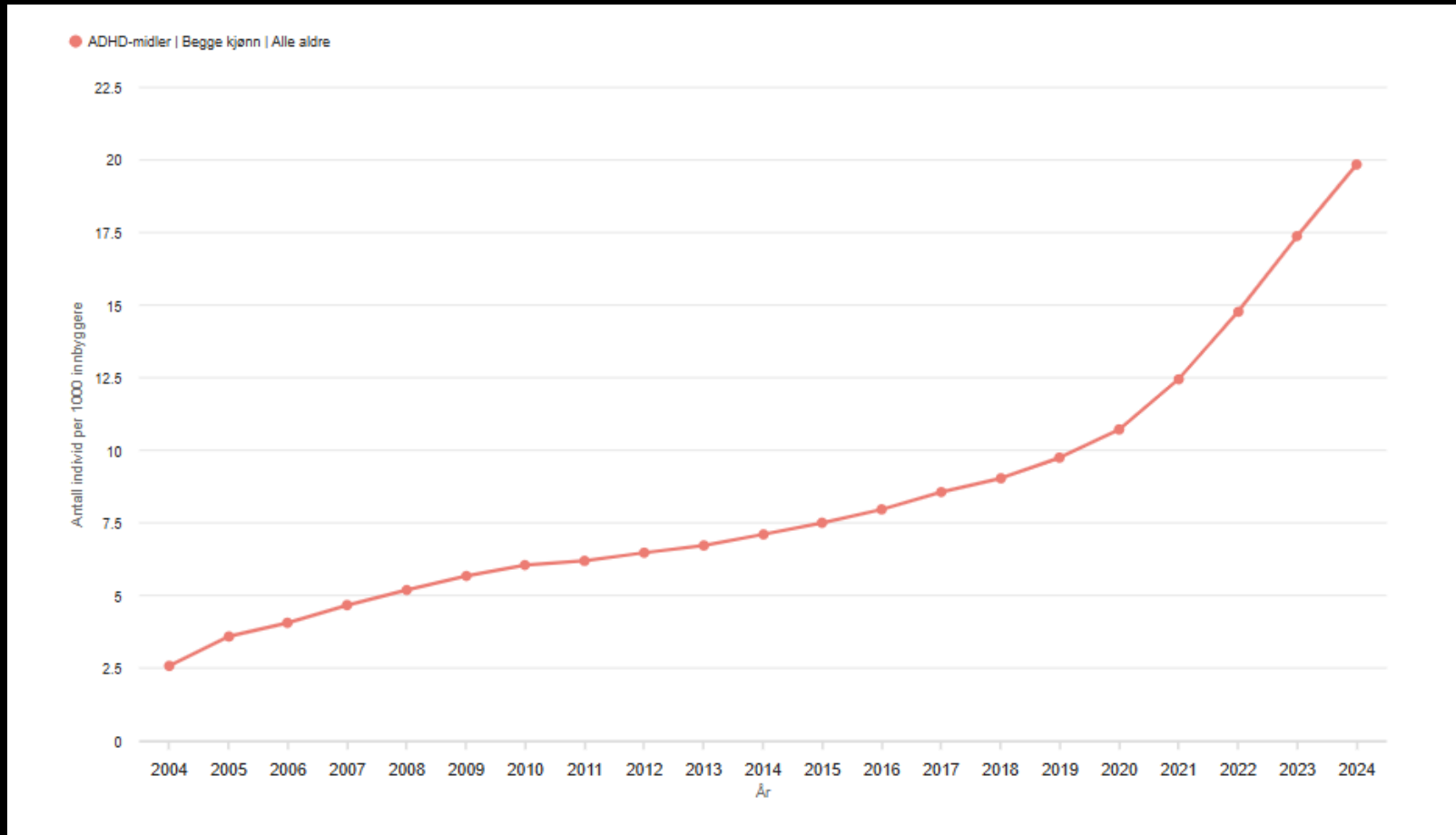
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<https://www.khrono.no/psykolog-om-studenters-mentale-helse-jeg-tror-det-gar-til-helvete-og-at-det-er-for-seint-a-snu/994053>

Legemiddelbruk – antidepressiva



Legemiddelbruk – ADHD midler



Nav-analyse: Stor økning i psykisk sykefravær i hele befolkningen

Nesten halvparten av økningen i sykefraværet fra 2019 til 2023 knyttes til sykefravær med psykiske diagnoser, men forskerne klarer ikke å finne ut hvorfor.



// Arbeid og velferd // 3 // 2025
// Stadig flere blir sykmeldt med en psykisk diagnose – hvem er de?

STADIG FLERE BLIR SYKMELDT MED EN PSYKISK DIAGNOSE – HVEM ER DE?

Av Lamija Delalic og Tobias Lunde¹

Sammendrag

De siste årene har legemeldt sykefravær med psykiske diagnoser økt betraktelig. I debatten diskuteres mulige årsaker til økningen og nivået på sykefraværet om hverandre. Samtidig mangler grunnleggende kunnskap om sykefravær med psykiske diagnoser. I denne artikkelen bidrar vi til å øke forståelsen av denne type sykefravær, i lys av utviklingen de siste årene. Med en regresjonsmodell identifiserer vi kjennetegn forbundet med økt risiko for sykefravær med psykiske diagnoser. Vi undersøker deretter om det har vært endringer i risikofaktorene fra 2018 til 2023.

Vi finner at antall sykmeldte med en psykisk diagnose har økt med 28 prosent fra 2018 til 2023. Videre har de lange fraværene blitt enda lenger. I 2018 hadde kvinner, personer mellom 30 og 39 år, de med barn, sivilstandene ugift og skilt/ separert eller enke/enkemenn samt ansatte i høyskoleyrker og salg- service og omsorgsykker høyere risiko for å bli sykmeldt med en psykisk diagnose enn sine motparter.

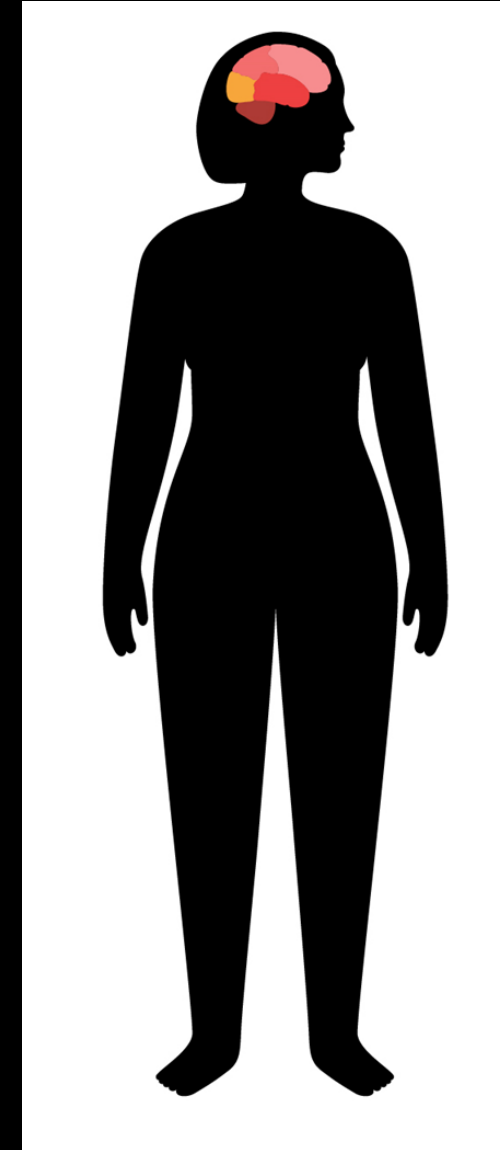
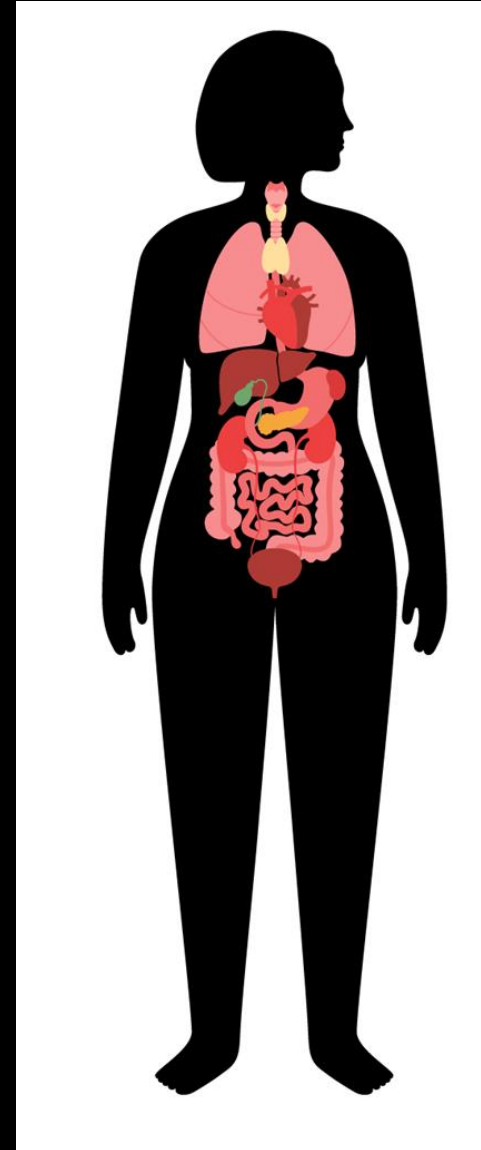
Fra 2018 til 2023 finner vi få, og små, endringer i hvem som har høyere risiko for å bli sykmeldt med en psykisk diagnose. Unges (18-29 år) risiko har imidlertid økt mer enn for personer mellom 40 og 49 år. Dette til tross for at de to aldersgruppens risiko var like høy i 2018. Utover dette finner vi at sykefravær med psykiske diagnoser har økt på tvers av befolkningen. Det svekker hypoteser om at økningen drives av forhold som har rammet enkelte grupper. Forklaringer som økt bruk av hjemmekontor, endret arbeidspress og insentiver i sykefraværsordningen, får liten støtte. Pandemiens langsiktige konsekvenser, endrede holdninger til sykefravær, og endret psykisk helse, kan være medvirkende faktorer. Disse teoriene styrkes av tall fra Finland, Sverige og Storbritannia, som viser at utviklingen ikke er unik for Norge. Vi argumenterer for at det trengs mer forskning på utviklingen i psykisk helse etter pandemien.

<https://doi.org/10.60847/NAV.5788>

¹ En stor takk rettes Ola Thune for tilrettelegging av data for analysen, og til Ola Thune og Jon Petter Nossen for gode diskusjoner underveis.



- Kosthold har stor påvirkning på alle organsystemer
- Hjernen er en del av kroppen
- Kosthold er fraværende i den offentlige samtalen om psykisk helse





Hva vet vi om kostholdets
betydning for mental helse?



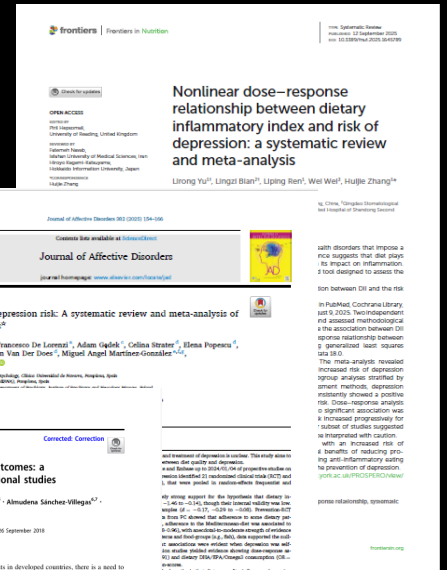


Kosthold og **depresjon** i observasjonsstudier

Redusert risiko

Sunne kosthold / høykvalitetskosthold:

- Mye frukt, grønnsaker, fisk, fullkorn, nøtter, belgvekster
- Lite hurtigmat med mye fett, sukker og salt
- «Tradisjonelt», «prudent»
- Middelhavskost, lav DII (DII – Dietary Inflammatory Index)



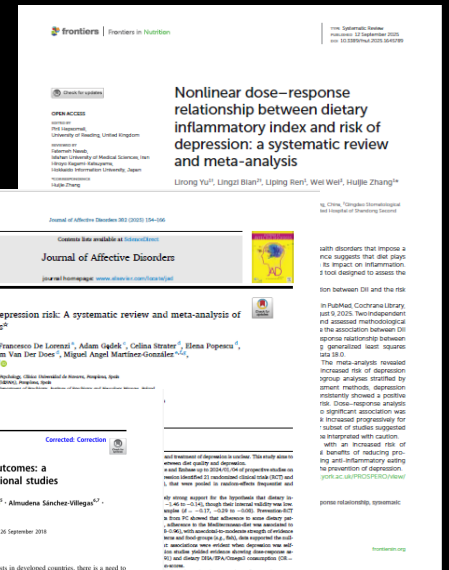
PMID: 30254236
PMID: 40158860
PMID: 41019538

Kosthold og depresjon i observasjonsstudier

Økt risiko

Usunne kosthold / lavkvalitetskosthold:

- Mye hurtigmat, snacks, søtsaker, raffinert korn, prosessert kjøtt og søte drikker
- «Vestlig» (western)
- Høy DII



PMID: 30254236
PMID: 40158860
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Ultraprosesserte kosthold

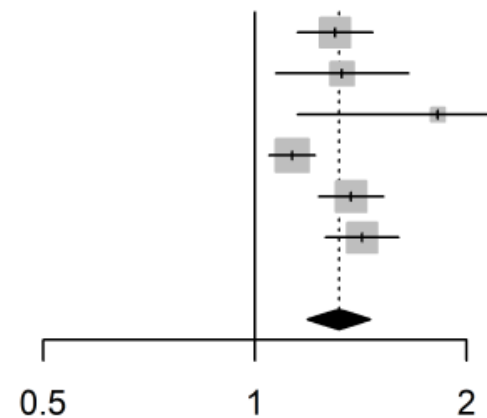
Økt risiko for **depresjon** hos de som inntar mest

- 6 kohorter: 32 % økning i relativ risiko



Study	Risk Ratio	RR	95%-CI	Weight
Adjibade et al. 2019		1.30	(1.15 - 1.47)	19.4%
Gómez-Donoso et al. 2020		1.33	(1.07 - 1.65)	12.2%
Leal et al. 2023		1.82	(1.15 - 2.88)	4.2%
Sun et al. 2023		1.13	(1.05 - 1.22)	23.5%
Samuthpongthorn et al. 2023		1.37	(1.23 - 1.52)	20.9%
Werneck et al. 2024		1.42	(1.26 - 1.60)	19.7%

Random-effects model
Heterogeneity: $I^2 = 71\%$, $p < 0.01$



PMID: 35807749
PMID: 38613906

-
- Observasjonsstudier kan ikke fastslå årsakssammenheng
 - Intervensjonsstudier er etisk og praktisk ugjennomførbare

Men vi kan jobbe “omvendt”!



The SMILES trial


Kan bedre kosthold hjelpe de som allerede er deprimerte?

- 67 deltakere med alvorlig depresjon
- 50 % fikk kostholdsending, 50 % fikk sosial støtte (kontrollgruppe)
- 12 ukers varighet

Jacka et al. *BMC Medicine* (2017) 15:23
DOI 10.1186/s12916-017-0791-y

BMC Medicine

RESEARCH ARTICLE Open Access

 CrossMark

A randomised controlled trial of dietary improvement for adults with major depression (the 'SMILES' trial)

Felice N. Jacka^{1,4,9,10,13*}, Adrienne O'Neil^{1,2,13}, Rachelle Opie^{5,13}, Catherine Itsiopoulos⁵, Sue Cotton¹, Mohammedreza Mohebbi¹, David Castle^{6,11}, Sarah Dash^{1,13}, Cathrine Mihalopoulos², Mary Lou Chatterton⁷, Laima Brazionis^{5,6}, Olivia M. Dean^{1,4,12,13}, Allison M. Hodge⁸ and Michael Berk^{1,3,12,13}

Abstract

Background: The possible therapeutic impact of dietary changes on existing mental illness is largely unknown. Using a randomised controlled trial design, we aimed to investigate the efficacy of a dietary improvement program for the treatment of major depressive episodes.

Methods: 'SMILES' was a 12-week, parallel-group, single blind, randomised controlled trial of an adjunctive dietary intervention in the treatment of moderate to severe depression. The intervention consisted of seven individual nutritional consulting sessions delivered by a clinical dietician. The control condition comprised a social support protocol to the same visit schedule and length. Depression symptomatology was the primary endpoint, assessed using the Montgomery-Åsberg Depression Rating Scale (MADRS) at 12 weeks. Secondary outcomes included mood remission and change of symptoms, mood and anxiety. Analyses utilised a likelihood-based mixed-effects model repeated measures (MMRM) approach. The robustness of estimates was investigated through sensitivity analyses.

Results: We assessed 166 individuals for eligibility, of whom 67 were enrolled (diet intervention, $n = 33$; control, $n = 34$). Of these, 55 were utilising some form of therapy; 21 were using psychotherapy and pharmacotherapy combined; 9 were using exclusively psychotherapy; and 25 were using only pharmacotherapy. There were 31 in the diet support group and 25 in the social support control group who had complete data at 12 weeks. The dietary support group demonstrated significantly greater improvement between baseline and 12 weeks on the MADRS than the social support control group, $t(62.7) = -4.38, p < 0.001$. Cohen's $d = -1.16$. Remission, defined as a MADRS score < 10 , was achieved for 32.3% ($n = 10$) and 8.0% ($n = 2$) of the intervention and control groups, respectively ($\chi^2(1) = 4.84, p = 0.028$); number needed to treat (NNT) based on remission scores was 4.1 (95% CI of NNT 2.3–27.8). A sensitivity analysis, testing departures from the missing at random (MAR) assumption for dropouts, indicated that the impact of the intervention was robust to violations of MAR assumptions.

Conclusions: These results indicate that dietary improvement may provide an efficacious and accessible treatment strategy for the management of this highly prevalent mental disorder, the benefits of which could extend to the management of common co-morbidities.

Trial registration: Australia and New Zealand Clinical Trials Register (ANZCTR): ACTRN12612000251820. Registered on 29 February 2012.

Keywords: Depression, Major depressive disorder, Diet, Nutrition, Randomised controlled trial, Dietics

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Full list of author information is available at the end of the article

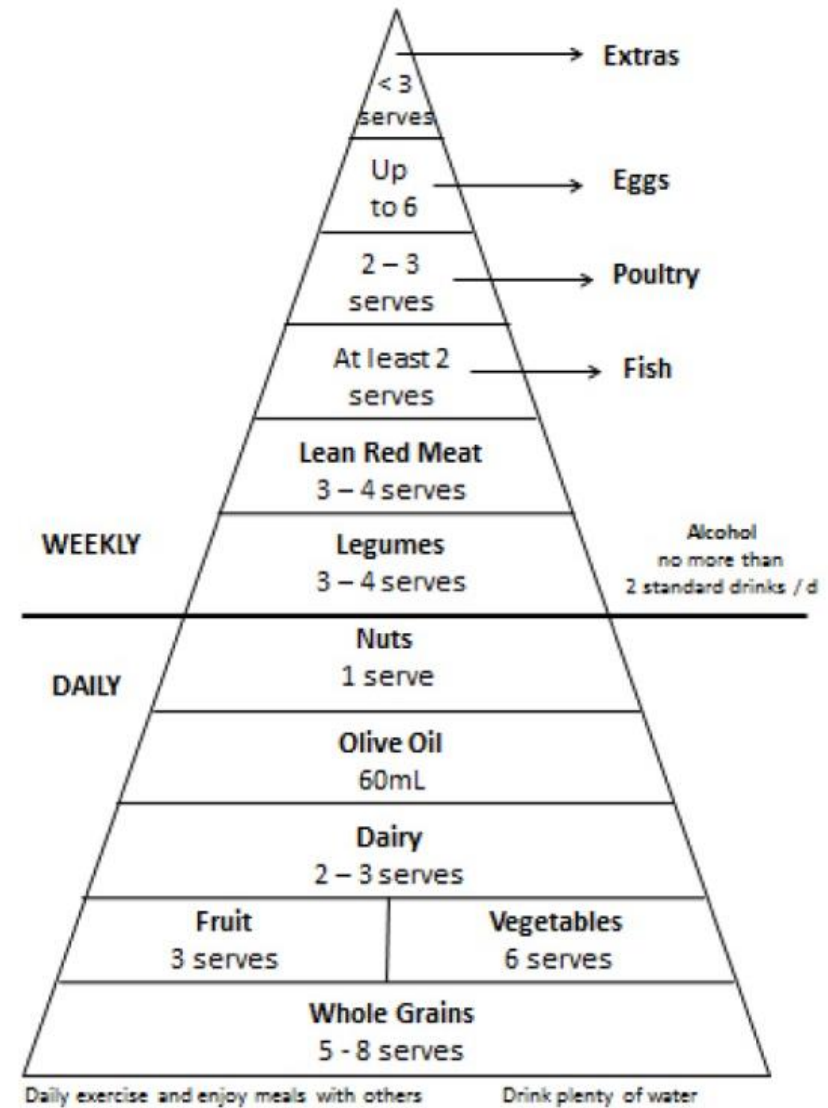
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PMID: 28137247

The SMILES trial

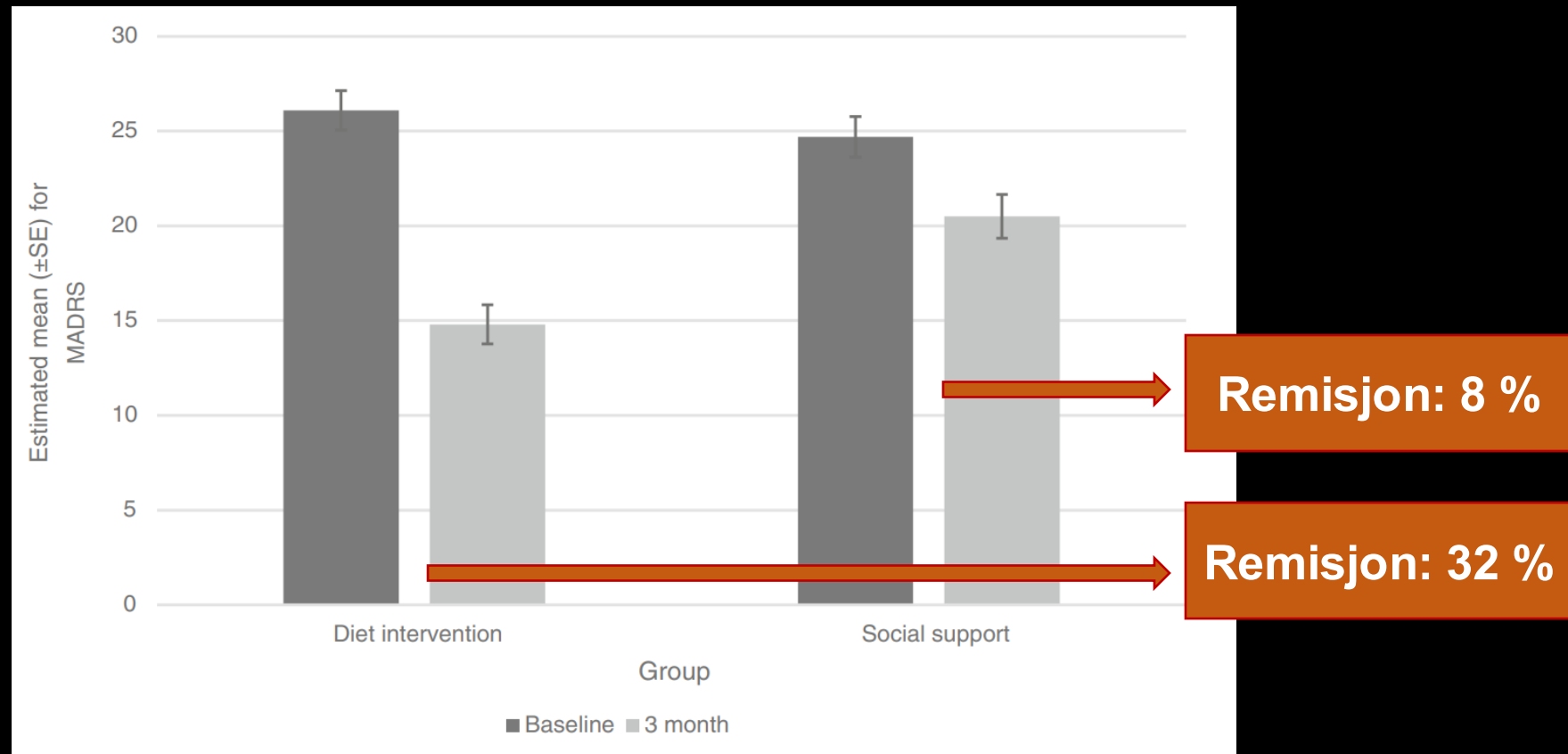
Kostintervensjonen



The ModiMedDiet Food Pyramid

The SMILES trial

Resultatet:



The SMILES trial

- Bedre kosthold er et av flere verktøy for å behandle depresjon
- De fleste klarte å forbedre kostholdet
- Jo mer forbedring i kostholdet, jo mer forbedring i depresjon
- Det nye kostholdet var rimeligere



Felice Jacka, leder for SMILES trial

Flere kostintervensjoner har vist god effekt på depresjon

The effect of a Mediterranean diet on the symptoms of young males (the "AMMEND: A Mediterranean Diet and Depression" study): a randomized controlled trial

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¹School of Public Health, Faculty of Health, University of Technology Sydney, New South Wales, Australia, ²Southern Cross University, Lismore, New South Wales, Australia

Background: Depression is a common mental health condition that affects 1 in 8 males each year, especially young adults. Young adulthood offers an opportunity for early dietary interventions, with research suggesting that a Mediterranean diet (MD) could be beneficial in treating depression.

Objectives: This study aimed to determine if an MD can improve depressive symptoms in young males with clinical depression. **Methods:** A 12-week, parallel-group, open-label, randomized controlled trial was conducted to assess the effect of an MD intervention in the treatment of moderate to severe depression in young males (18–25 y). Befriending therapy was chosen for the control group. Assessments were taken at baseline, week 6, and week 12. MD adherence was measured with the Mediterranean Diet Adherence Score (MEDAS). The primary outcome measure was the Beck Depression Inventory Scale—version II (BDI-II) score and secondary outcome was quality of life (QoL).

Results: A total of 72 participants completed the study. After 12 weeks, the MEDAS scores were significantly higher in the MD group compared with the befriending group (mean difference: 7.8, 95% CI: 7.23, 8.37, $P < 0.001$). The mean change in BDI-II score was significantly higher in the MD group compared with the befriending group at week 12 (mean difference: 14.4, 95% CI: 11.41, 17.39, $P < 0.001$). The mean change in QoL score was also significantly higher in the MD group compared with the befriending group at week 12 (mean difference: 12.7, 95% CI: 7.92, 17.48, $P < 0.001$).

Conclusions: Our results demonstrate that compared with befriending, an MD intervention leads to significant increases in MEDAS, decreases in BDI-II score, and increases in QoL scores. These results highlight the important role of nutrition for the treatment of depression and should inform advice given by clinicians to this specific demographic population. The trial was registered with Australia and New Zealand Clinical Trials Registry (trial ID: ACTRN12619001545156) and has also been registered with the WHO International Clinical Trials Registry Platform (Universal Trial Number U1111-11242-9215). *Am J Clin Nutr* 2022;116:572–580.

Keywords: young adults, male, Mediterranean diet, major depressive disorder, quality of life

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A brief diet intervention can reduce symptoms of depression in young adults – A randomised controlled trial

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¹Psychology Department, Monash University, Victoria, Australia, ²Sydney Institute of Health, University of Sydney, Australia, ³Centre for Clinical Psychology, Monash University, Australia, ⁴Department of Psychology, Monash University, Australia

Background: Depression is a common mental health condition that affects 1 in 8 males each year, especially young adults. Young adulthood offers an opportunity for early dietary interventions, with research suggesting that a Mediterranean diet (MD) could be beneficial in treating depression.

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A Mediterranean-style dietary intervention supplemented with fish oil improves diet and mental health in people with depression: A randomized controlled trial

Dorota Zarnowiecki^{1,2}, Jihyun Cho¹, Amy Wilson^{1,2}, Pololova^{1,2}, Anthony Villani¹, Catherine Itsiopoulos^{1,3,4}, Sara Blunden^{1,2}, Barbara Meyer¹, Leonie Segal^{1,2}, Kerin O'Dea¹

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Background: Depression is a common mental health condition that affects 1 in 8 males each year, especially young adults. Young adulthood offers an opportunity for early dietary interventions, with research suggesting that a Mediterranean diet (MD) could be beneficial in treating depression.

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Depression, Is It Treatable in Adults Utilising Dietary Interventions? A Systematic Review of Randomised Controlled Trials

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Abstract: This systematic literature review examined whole food or whole diet interventions to treat depression. The inclusion criteria encompassed adults, depression, a recognized depression scale and a whole food or diet intervention. APA PsycINFO, CINAHL, the Cochrane Central Register of Controlled Trials, MEDLINE and Scopus were searched for original research addressing diet as a treatment for depression in adult populations. The quality of the study was assessed using the Academy of Nutrition and Dietetics Quality Criteria Checklist. Seven studies, with 49,156 participants, met the eligibility criteria. All these studies found positive outcomes with depression levels decreasing after dietary intervention. The calculated effect size varied from small (Cohen's $d = 0.32$) to very large (Cohen's $d = 1.82$). The inconsistent nature of the studies limited the synthesis of the data. Recommendations are provided to enhance future study design and measurement outcomes. Overall, the findings show a positive result for diets that promote an increased intake of fresh produce, wholegrains, low-fat dairy and lean protein sources, while also decreasing the intake of processed and high-fat foods. No funding was provided for this review. The protocol for this review is registered with PROSPERO (CRD4202201026).

Keywords: dietary intervention; whole diet; whole food; depression

1. Introduction
Depression, a principal basis of global disability, is a key factor in the burden of worldwide disease with an estimated 264 million individuals suffering worldwide [1]. Economically this impacts governments through increased social security payments and higher demands on healthcare systems, while also decreasing income through taxes [2]. Depression has consequences at the individual and community levels, such as reduced employment, the breakdown of relationships and potentially suicide [3,4]. Additionally, depression is known to have detrimental effects on physical health, further compounding the potential issues that arise from a depressive episode [5].
The pathophysiology of depression is not completely understood, but biological and psychosocial factors influence the development of depression with interactions between genetics and the environment possibly involved [5]. Currently, depression is treated using a combination of pharmacological and psychotherapy methods [5] with varying degrees of effectiveness, particularly in regard to chronic depression [6–8]. Dietary modification may offer a possible alternative or concurrent treatment for depression, but there is a need for clarity regarding the efficacy of dietary intervention [9].
In a number of meta-analyses of epidemiological studies, diet quality has been found to be inversely related to depression [10,11]. Lassale et al. [10] concluded that the intake of a Mediterranean diet led to a lower incidence of depression. Further support for links between decreased depression levels and high-quality diets is provided by Molendijk et al. [11] and Wu et al. [12]. Lassale et al. [10] also found a low inflammatory diet decreased

PMID: 35406011

PMID: 35441666
PMID: 31596866
PMID: 29215971

Hvorfor kan kosthold
forbedre mental helse?





Råvarebaserte kosthold

Næringsinnhold ↑

Beskyttende stoffer ↑

Stressorer ↓



Tarmhelse ↑

Inflammasjon ↓

Cellekommunikasjon i akser ↑

Reparasjon, vedlikehold og
fornyelse ↑

Næringsinnhold i maten
– en blindsoner?



<https://youtu.be/3dqXHHCc5IA?si=ntj4F7NErtiKv8il>



The surprisingly dramatic role of nutrition in mental health | Julia Rucklidge | TEDxChristchurch

Næringsverdi

- Matens næringsverdi er redusert
- Inntak av næringsfattige ultraprosesserte produkter øker

Review

An Alarming Decline in the Nutritional Quality of Foods: The Biggest Challenge for Future Generations' Health

Raju Lal Bhardwaj ^{1,*}, Aabha Parashar ², Hanuman Prasad Parewa ¹ and Latika Vyas ³

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Abstract: In the last sixty years, there has been an alarming decline in food quality and a decrease in a wide variety of nutritionally essential minerals and nutraceutical compounds in imperative fruits, vegetables, and food crops. The potential causes behind the decline in the nutritional quality of foods have been identified worldwide as chaotic mineral nutrient application, the preference for less nutritious cultivars/crops, the use of high-yielding varieties, and agronomic issues associated with a shift from natural farming to chemical farming. Likewise, the rise in atmospheric or synthetically elevated carbon dioxide could contribute to the extensive reductions in the nutritional quality of fruits, vegetables, and food crops. Since ancient times, nutrient-intense crops such as millets, conventional fruits, and vegetables have been broadly grown and are the most important staple food, but the area dedicated to these crops has been declining steadily over the past few decades and hastily after the green revolution era due to their poorer economic competitiveness with major commodities such as high-yielding varieties of potato, tomato, maize, wheat, and rice. The majority of the population in underdeveloped and developing countries have lower immune systems, are severely malnourished, and have multiple nutrient deficiency disorders due to poor dietary intake and less nutritious foods because of ignorance about the importance of our traditional nutrient-rich diets and ecofriendly organic farming methods. This critical review emphasizes the importance of balance and adequate nutrition as well as the need to improve soil biodiversity and fertility; these are main causes behind the decline in nutritional density. There is also emphasis on a possible way out of alleviating the decline nutritional density of food crops for the health and well-being of future generations.

Keywords: biodiversity; micronutrient; nutrient density; traditional food; synthetic fertilizers



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1. Introduction

Globally, more than two billion people are suffering from micronutrient insufficiency, especially iodine, iron, folate, vitamin A, and zinc [1–3]. It is the main cause of premature deaths, morbidity, and retardation in the physical and mental growth of children [4]; in 2017, 11 million deaths and 255 million daily-adjusted life years (DALYs) could be attributed to malnutrition [5]. Since the 1940s, crop yield and the per-capita availability of foods have been continuously increasing due to intensive farming techniques, artificial fertilization, pesticides, irrigation, growing high-yielding varieties, and other environmental means, whereas malnutrition tends to increase incessantly due to disrupting the fine balance of soil life and decreasing the nutritional density and quality of the food crops. At present, people are overfed but undernourished due to consuming nutrient-poor diets [6,7]. It is quite difficult to obtain an equal concentration of nutrition from the food that was enjoyed before the pre-green revolution era. Important commercial high-yielding fruits such as apples, oranges, mango, guava, banana, and vegetables such as tomato and potato have lost their nutritional density by up to 25–50% or more during the last 50 to 70 years due

Næringsverdi

Intervensjoner med multi-mikronæringsstoff tilskudd har forbedret symptomer ved ADHD

- Barn
- Voksne

Vitamin-mineral treatment improves aggression and emotional regulation in children with ADHD: a fully blinded, randomized, placebo-controlled trial

Julia J. Rucklidge,¹ Matthew J.F. Eggleston,² Jeanette M. Johnstone,³ Kathryn Darling,¹ and Chris M. Frampton⁴

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Background: Evaluation of broad-spectrum micronutrient (vitamins and minerals) treatment for childhood ADHD has been limited to open-label studies that highlight beneficial effects across many aspects of psychological functioning. **Method:** This is the first fully blinded randomized controlled trial of medication-free children (n = 93) with ADHD (7-12 years) assigned to either micronutrients (n = 47) or placebo (n = 46) in a 1:1 ratio, for 10 weeks. All children received standardized ADHD assessments. Data were collected from clinicians, parents, participants and teachers across a range of measures assessing ADHD symptoms, general functioning and impairment, mood, aggression and emotional regulation. **Results:** Intent-to-treat analyses showed significant between-group differences favouring micronutrient treatment on the Clinical Global Impression-Improvement (CGI-I) (0.66), with 47% of those on micronutrients identified as responders (CGI-I range 0.35-0.66). There were two serious adverse events identified. Blinding was maintained across multiple areas of functioning, but not hyperactive/impulsive symptoms, see ADHD symptoms was modest, with mixed results across multiple areas of functioning, particularly those with both ADHD and a New Zealand Clinical Trials Registry registration: mineral, treatment, mood, aggression.

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Research Brief

Effect of Micronutrients on Behavior and Mood in Adults With ADHD: Evidence From an 8-Week Open Label Trial With Natural Extension

Julia Rucklidge,¹ Mairin Taylor,¹ and Kathryn Whitehead²

Abstract

Objective: To investigate the effect of a 36-ingredient micronutrient formula consisting mainly of minerals and vitamins in the treatment of adults with both ADHD and severe mood dysregulation (SMD). **Method:** 14 medication-free adults (9 men, 5 women, 18-55 years) with ADHD and SMD completed an 8-week open-label trial. **Results:** A minority reported transient mild side effects. Significant improvements were noted across informants (self-observer, clinician) on measures of inattention and hyperactivity/impulsivity, mood, quality of life, anxiety, and stress all with medium to very large effect sizes (all $p < .01$); however, the mean of inattention remained in a clinical range whereas the means on measures of mood and hyperactivity/impulsivity were normalized. Follow-up data showed maintenance of changes or further improvement for those who stayed on the micronutrients. **Conclusions:** Although as an open trial, does not in itself prove efficacy, it provides preliminary evidence supporting the need for a randomized clinical trial of micronutrients as treatment for the more complex presentations of ADHD.

Keywords

ADHD, treatment, minerals, vitamins, micronutrients, severe mood dysregulation

ADHD is one of the most common childhood disorders, characterized by problems with inattention, hyperactivity, and impulsivity (American Psychiatric Association, 2000) with worldwide-pooled prevalence estimates for childhood ADHD falling at 5.29% (Polanczyk, de Lima, Hosta, Biederman, & Rohde, 2007). It is now estimated that as many as 4% to 5% of adults may suffer from ADHD (Almeida Montes, Hernandez Garcia, & Ricardo-Garcell, 2007; Kessler et al., 2006). Response to medications tend to be lower in adults with ADHD as compared to children with ADHD, it is estimated that between 34% and 78% of adults with ADHD will respond to psychopharmacological interventions with placebo response rates ranging from 11% to 56% (Torgersen, Bjervan, & Rasmussen, 2008). Methylphenidate shows the best response rates (66%-76%) in adults with ADHD with no co-occurring conditions (Biederman et al., 2006; Spencer et al., 2005). For the few studies that have included participants with other psychiatric conditions, the response rates are below 40% (Torgersen et al., 2008). However, as 75% of adults with ADHD have at least one additional diagnosis, the relevance of the medication trials to clinical practice is questionable (Kolar et al., 2008; Torgersen et al., 2008). Furthermore, long-term effectiveness is rarely evaluated.

Indeed, in the two follow-up studies found (up to 12 months), almost none of the participants were still taking the medication (Gualtieri, Chadrusak, & Fairley, 1985; Mattes, Boswell, & Oliver, 1984).

Given that at least a fifth of the adult ADHD population (higher if other problems are present) do not respond to pharmaceutical medications or have adverse effects like nausea, cardiovascular side effects, insomnia, and agitation, many individuals seek other treatments for ADHD symptoms (Bauermeister, 1999). Reviews on alternative treatments for ADHD (Arnold, 1999; Rucklidge, Johnstone, & Kaplan, 2009) indicate that the number of peer-reviewed studies on such treatments is very limited in comparison to the hundreds on psychopharmacological approaches. Studies investigating one ingredient at a time have shown some promise (e.g., zinc/zinc sulphate; Akhondzadeh, Mohammadi, & Khoshdel, 2004).

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- Autismespekterforstyrrelse
- Spiseforstyrrelser
- Alkoholmisbruk



The Ketogenic Diet as a Transdiagnostic Treatment for Neuropsychiatric Disorders: Mechanisms and Clinical Outcomes

Jacey Anderson¹ · Elif Ozan¹ · Virginia-Anne Chouinard² · Garrison Grant¹ · Aaron MacDonald¹ · Leah Thakkar¹ · Christopher Palmer²

Accepted: 14 October 2024
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Abstract

Purpose of Review This review explores the evidence for using a ketogenic diet as a transdiagnostic treatment for mental health disorders. We examine the biological pathophysiological mechanisms that underlie many neuropsychiatric disorders—such as mitochondrial dysfunction, oxidative stress, inflammation, glucose hypometabolism, and glutamate/GABA imbalance—that can be ameliorated by the ketogenic diet. Additionally, a literature review summarizes clinical trials and case reports on the ketogenic diet as a treatment for various psychiatric disorders.

Recent Findings Recent research provides evidence that the ketogenic diet may be an effective treatment for schizophrenia/schizoaffective disorder, bipolar disorder, depression, anxiety disorders, Alzheimer's disease, autism spectrum disorder, somatic disorders, eating disorders, and alcohol use disorder.

Summary Many psychiatric disorders have shared metabolic pathways that exacerbate or cause psychopathology. The ketogenic diet is a transdiagnostic treatment that can not only address metabolic dysfunction, but can also ameliorate symptoms like depression, anxiety, mania, psychosis, and cognitive impairment. These effects suggest that the diet has the potential to serve as a non-pharmacological treatment option and ease the global disease burden of neuropsychiatric disorders.

Keywords Ketogenic Diet · Neuropsychiatric Disorders · Schizophrenia · Bipolar Disorder · Alzheimer's Disease · Mitochondrial Dysfunction

Introduction

Neuropsychiatric disorders, including psychotic, mood, and anxiety disorders, account for a considerable portion of global disability and represent substantial social, health, and economic challenges. These disorders result in the loss of approximately 7.4 to 8.6 years of life per person on average [1]. In 2019, they accounted for approximately 19% of global years lived with disability and approximately \$1.7 trillion USD of lost productivity globally [2].

The comorbidity and heterogeneity of neuropsychiatric disorders further complicate their impact. Individuals with mental health disorders face a two- to fourfold increase in mortality related to diabetes, cardiovascular disease, respiratory illness, infectious diseases, and cancer [2]. This correlation sometimes exists even among individuals who are healthy in weight and not taking medication, suggesting the possibility of shared biological pathways between mental illnesses and other chronic diseases [3]. Thus, reducing the disease burden of neuropsychiatric disorders in conjunction

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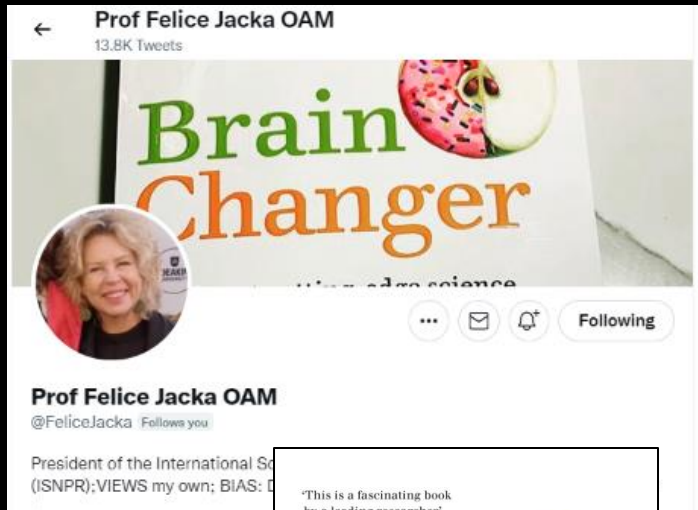
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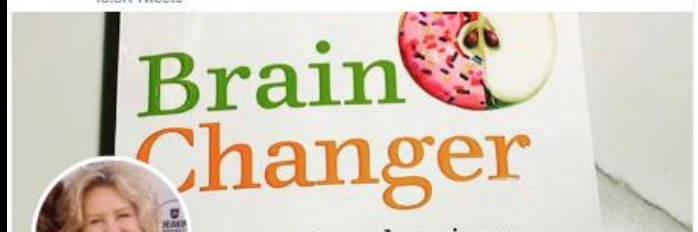
Mentale helseproblemer kan forebygges og behandles ved næringsrike, råvarebaserte kosthold som begrenser ultraprosesserte produkter



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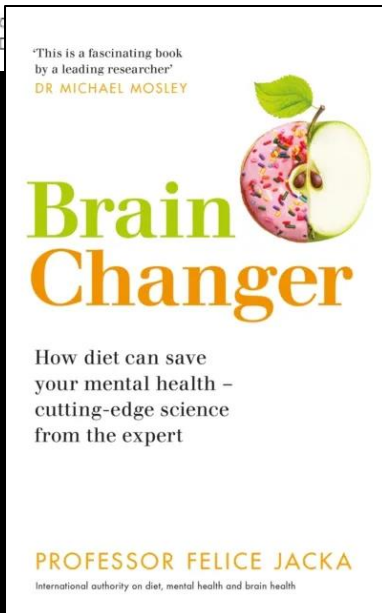
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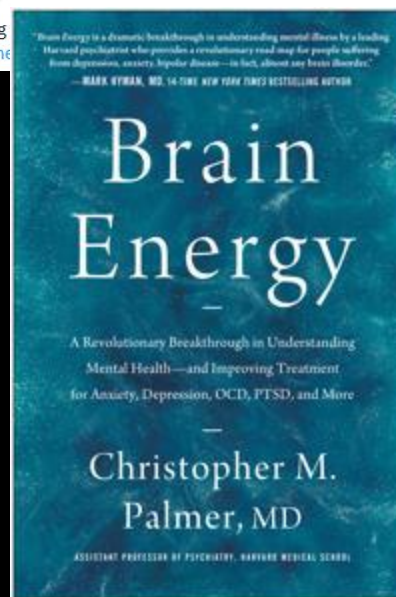
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ASSISTANT PROFESSOR OF PSYCHIATRY, HARVARD MEDICAL SCHOOL



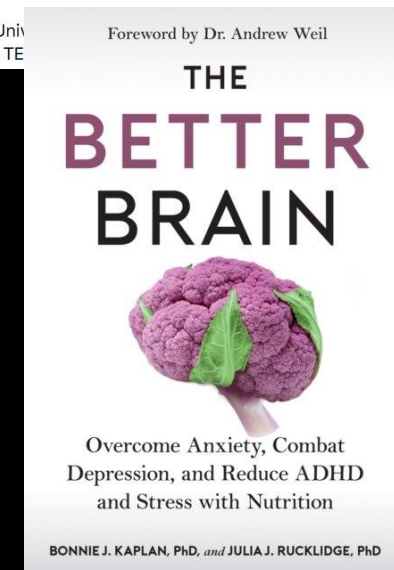
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THE BETTER BRAIN
Overcome Anxiety, Combat Depression, and Reduce ADHD and Stress with Nutrition

Julia Rucklidge
@JuliaRucklidge

Prof Clinical Psychology at University of Canterbury. Co-author The Better Brain; The Better Brain; The Better Brain. Foreword by Dr. Andrew Weil



Foreword by Dr. Andrew Weil

THE BETTER BRAIN

Overcome Anxiety, Combat Depression, and Reduce ADHD and Stress with Nutrition

BONNIE J. KAPLAN, PhD, and JULIA J. RUCKLIDGE, PhD

Ernæring og mental helse - Et satsningsområde ved Oslo Nye Høyskole

v/Ella Marie Heyerdahl, Høyskolelektor, Institutt for Helsefag



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	Andre semester	7.5 studiepoeng	7.5 studiepoeng
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Andre studieår	15 studiepoeng		15 studiepoeng
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ERN2050 Mikronæringsstoffer og andre bioaktive komponenter		ERN2060 Ernæringsepidemiologi og forskningsmetode	
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