out/in social situations, higher emotional eating, and lower knowledge regarding the effect of diet on health (all $p < 0.001$; consistent across subgroups).

Conclusions: Diet and nutrition education present an important target for primary care of people with SMI. Targeting at-risk populations also presents an opportunity for prevention. Although research has identified the contribution of individual nutrients to mental health, further research needs to elucidate the role of whole diet and nutrition and mental illness.

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MACRO AND MICRONUTRIENT DIFFERENCES OF *AD—LIBITUM* PALAEOLITHIC VS AUSTRALIAN GUIDE TO HEALTHY EATING DIETS

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Background/Aims: To investigate the differences in the macronutrient composition between the palaeolithic and AGHE Diet.

Methods: Thirty nine healthy women (mean ± SD age 47 ± 13 years, BMI 27 ± 4 kg/m^2) were randomised to either the palaeolithic ($n = 22$) or AGHE diet ($n = 17$) for 4-weeks. A 3-day weighed food record (WFR) was collected pre- and post-intervention. WFR were analysed using Food-Works (AUSNUT2007, Xyris Software, QLD, 2012). Within group analysis was performed using paired t-tests, between group analysis was conducted using Mann-Whitney and independent t-tests.

Results: The palaeolithic group had a lower intake of carbohydrate (28 ± 8% vs 41 ± 9% of energy, $p < 0.05$), and higher intake of fat (40 ± 10% vs 33 ± 7%, $p < 0.05$) and protein (27 ± 7% vs 22 ± 6%, $p < 0.05$) compared to AGHE. Within group analyses showed reductions in saturated fat intake in both groups ($p < 0.05$) but no change to dietary fibre or total sugars. Within the palaeolithic group, there were significant reductions in energy, thiamin, riboflavin, sodium and calcium and increases in vitamins C, E and β-carotene (all $p < 0.05$).

Conclusions: Despite the reduction in carbohydrates due to the removal of whole grain cereals and dairy, fibre intake was not impacted in the palaeolithic group. However, significant reductions in B vitamins and calcium were seen. Further research to explore the health implications related to long-term palaeolithic dietary patterns are recommended.

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LONG-TERM EFFECTS OF VERY LOW- AND HIGH-CARBOHYDRATE WEIGHT LOSS DIETS ON MOOD RESPONSE IN OBESE ADULTS WITH TYPE 2 DIABETES

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Background/Aims: Very low carbohydrate, high fat (LC) diets are used for T2DM management. Previous research has shown compared to a high carbohydrate, low fat (HC) diet, a LC diet have less favourable effects on mood state in obese patients without diabetes. However, effects in T2DM at heightened risk of mood disturbance and depression remain unknown. This study compared the effects of an energy-restricted LC diet and an isocaloric HC diet on mood state over 12-months.

Methods: Subjects ($n = 115$; mean ± SD age: 58 ± 7 years; BMI: 34.6 ± 4.3 kg/m^2; HbA1c: 7.3 ± 1.1%) were randomly assigned to consume either a hypocaloric (~6-7 MJ), planned isocaloric LC or HC diet, combined with exercise (3 day/week) for 1-yr. Body weight and psychological mood state measured by validated questionnaires - Profile of Mood States (POMS), Beck Depression Inventory (BDI) and Spielberger State-Trait Anxiety Inventory (STAI) were assessed monthly. Data was analysed with mixed models.

Results: Overall weight loss was 9.5 ± 0.5 kg; no difference between groups ($p = 0.91$). Over the course of the study there were significant improvements in BDI and the POMS scores (total mood disturbance and 6

subscales (anger-hostility, confusion-bewilderment, depression-dejection, fatigue, vigor and tension-anxiety), $p < 0.05$ for time, effect size: 14-43%. STAI remained largely unchanged ($p = 0.08$ time). There was no diet effect on the responses for any of the outcomes ($p = 0.22$ time × diet).

Conclusions: Over 1 year both diets achieved substantial weight loss and similar improvements in mood state and affect. This suggests either an LC or HC diet when combined with exercise in a lifestyle modification program improve psychological wellbeing in T2DM.

Funding source(s): NHMRC.

RICE INTAKE IS INVERSELY RELATED TO CARDIOVASCULAR MORTALITY AMONG CHINESE ADULTS

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Background/Aims: Few studies have assessed the association between rice intake and mortality. The results from these studies are inconsistent. We assessed whether rice intake was associated with CVD mortality, cancer mortality and all-cause mortality in a Chinese population.

Methods: We prospectively studied 2,832 adults aged 20 years and above with a mean follow up of 10 years. Rice intake was assessed by 3-day weighed food record (WFR) in 2002. HRs and 95%CI were calculated by competing risks regression (CVD and cancer mortality) and Cox proportional hazards analysis (all-cause mortality). A meta-analysis on rice intake and CVD mortality was conducted.

Results: We documented 184 deaths (70 CVD deaths and 63 cancer deaths) during 27,741 person-years of follow-up. Rice intake was inversely associated with CVD mortality. HRs for CVD mortality across tertiles of rice intake was 1.00, 0.53 (95%CI: 0.25, 1.11), and 0.34 (95%CI: 0.13, 0.90), p for trend 0.019. No association between rice intake and all-cause mortality was found. There was a trend of increased risk of cancer mortality among those with high intake of rice. In the meta-analysis which included three prospective studies, a high rice intake tended to be associated with reduced CVD mortality with pooled RR of 0.91 (95%CI: 0.76, 1.11).

Conclusions: Rice intake was inversely related to CVD mortality. There was no association between rice intake and cancer- or all-cause mortality.

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DIETARY PROTEIN AND THE METABOLIC SYNDROME: A RANDOMISED CONTROLLED TRIAL

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Background/Aims: The aim of this study was to investigate the effect of three diets controlled for saturated fat (SFA) and varying in type (animal vs. plant) and amount (18% vs. 27%) of dietary protein on metabolic syndrome (MetS) criteria.

Methods: Sixty-two overweight adults with MetS (age: 30 - 60 y; mean ± SD BMI: 34.8 ± 0.5 kg/m^2) consumed a healthy American diet (HAD) for 2 weeks before being randomised to either a modified-DASH diet rich in plant protein (M-DASH: 18% protein, 2/3 plant sources, $n == 21$); a modified-DASH diet rich in animal protein (BOLD: 19% protein, 2/3 animal sources, $n = 20$); and a moderate protein diet (BOLD+: 27% protein, 2/3 animal sources, $n = 21$). Diets were compared at three levels of energy balance: controlled weight maintenance (WM), controlled weight loss including exercise (WL), and free-living weight loss (FL). Differences in MetS criteria, cholesterol, insulin and adiposity at the end of each phase were tested using repeated measure ANCOVA (adjusted for age and sex).

Results: While no between groups differences were observed, there was a significant main effect of phase ($p < 0.01$) for all endpoints except for insulin. After the WM phase, all groups had a MetS prevalence of 80-90%, which decreased significantly to 50-60% after WL and maintained through FL.