Conclusions: Weight loss was the primary driver of MetS resolution regardless of protein source or amount. These data suggest that heart-healthy dietary patterns that emphasize animal or plant protein improve criteria for MetS when SFA is controlled.
Funding source(s): National Cattleman's Beef Association.

EFFECTIVENESS OF A MEDITERRANEAN DIET INTERVENTION FOR IMPROVING FOOD INTAKE IN PEOPLE WITH SERIOUS MENTAL ILLNESS

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Background/Aims: People with serious mental illness die 25-30 year sooner than the general population due largely to cardiovascular disease. Lifestyle is a major contributor, including poor diet. Mediterranean-style diets, characterised by high consumption of vegetables, nuts, legumes, olive oil and fish, have been associated with better cardiovascular and mental health. The aim of this study was to evaluate the effectiveness of a Mediterranean diet-based intervention for improving diet in people with serious mental illness.
Methods: A three month pilot feasibility study of the HELFIMED dietary intervention was conducted with 23 residents in a community rehabilitation centre in South Australia. Participants received nutrition education, food hampers, cooking workshops and shopping support based on Mediterranean diet principles. At three months, 20 semi-structured interviews were conducted with participants and support staff to evaluate the intervention. Interviews were transcribed and independently coded for key themes by two researchers.
Results: The framework thematic analysis revealed improvements in participants' knowledge of and intake of the key elements of Mediterranean diet (fruit and vegetables, olive oil, fish, legumes), reduction in poor nutrition habits (soft drinks, energy drinks, take away meals), as well as the development of independent living skills, including culinary skills such as food preparation and cooking of simple recipes, food shopping and budgeting, healthy meal planning, and social interaction.
Conclusions: A Mediterranean diet-based intervention conducted in a community setting is feasible and achieved positive change in dietary behaviours associated with CVD prevention for participants with serious mental illnesses.
Funding source(s): NHMRC.

THE DIETARY PREDICTORS OF PULSE WAVE VELOCITY IN A COHORT WITH DIABETES

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Background/Aims: Diabetes is associated with a higher risk of CVD and diet is a modifiable risk factor. However, few studies have examined the association between dietary intake and arterial stiffness, a well-established predictor of CVD, in people with diabetes. The aim was to investigate the relationship between dietary intake and pulse wave velocity (PWV) in a cohort of people with type 1 and type 2 diabetes.
Methods: Participants were adults with type 1 ($n = 8$) or type 2 diabetes ($n = 87$) who completed the Dietary Questionnaire for Epidemiological Studies version 2 food frequency questionnaire and had carotid-femoral PWV measured using a SphygmoCor® XCEL (Sydney, Australia). Dietary data was analysed in grams per MJ. Data was analysed using linear regression after adjustment for predictors of PWV
Results: After multivariate adjustment there was a negative association between total dairy intake and PWV (β = -0.011; t = -2.1; p = 0.038). Further analysis showed that only reduced fat dairy was inversely associated with PWV (β = -0.01; t = -2.2; p = 0.031), and no association was evident for full fat dairy. When the different types of reduced fat dairy were investigated only yoghurt was associated with PWV (β = -0.05; t =

2.3; p = 0.026). An inverse association existed between vegetable intake and PWV (β = -0.04; t = -2.7; p = 0.009).
Conclusions: Greater consumption of reduced fat dairy and vegetables is associated with less arterial stiffening in a cohort of people with diabetes.
Funding source(s): University of South Australia.

PALMOLEIN AND OLIVE OIL CONSUMED AS PART OF HIGH PROTEIN TEST MEALS DO NOT IMPAIR POSTPRANDIAL ENDOTHELIAL FUNCTION

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Background/Aims: Postprandial hyperlipidaemia following high fat meals impair endothelial function. However, effects of different fat types are inconsistent and may be due to other meal components such as protein sources rich in L-arginine, a potent vasodilator. This study assessed the postprandial effects of high fat, high protein meals containing either palmolein or olive oil on endothelial function in overweight/obese men.
Methods: Men ($n = 28$; aged 32-65 years; BMI 25-35 kg/m^2) consumed, in random order 1 week apart, isocaloric high protein, high fat meals (30%E protein, ~3 g L-arginine, 58%E fat) prepared with either 40 g palmolein or 40 g olive oil after an overnight fast. Brachial artery flow-mediated dilation (FMD), circulating endothelial function markers, nitrotyrosine (oxidative stress marker), TAG, glucose and insulin were assessed pre-meal and hourly for 5 hours. Mixed model procedures were used to analyse data.
Results: Meal consumption increased serum TAG (time effect, $p < 0.001$) with no meal differences (meal $\times$ time interaction, p = 0.93). FMD, serum intercellular adhesion molecule-1 (ICAM-1) and E-selectin were unaffected (meal $\times$ time effect, p = 0.4). Olive oil transiently increased plasma nitrotyrosine after 1 hour compared to palmolein (meal $\times$ time interaction, p = 0.002) whereas both meals increased serum vascular cell adhesion molecule-1 (VCAM-1) after 1 hour (time effect, $p < 0.001$; meal $\times$ time interaction, p = 0.98). Both nitrotyrosine and VCAM-1 returned to pre-meal concentrations after 2 h.
Conclusions: In the context of high protein/high L-arginine meals, palmolein similarly to olive oil did not impair postprandial endothelial function in overweight/obese men.
Funding source(s): Malaysian Palm Oil Board.

LONG-TERM CONSUMPTION OF A LOW CARBOHYDRATE, LOW SATURATED FAT DIET IMPROVES TYPE 2 DIABETES MANAGEMENT

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Background/Aims: Few well-controlled studies have examined the long-term effects of very low carbohydrate (LC) diets for type 2 diabetes (T2DM) management.
Methods: Subjects with T2DM ($n = 115$, mean $\pm$ SD BMI 34.6 $\pm$ 0.4 kg/m^2, age 58 $\pm$ 1 years; HbA1c 7.3 $\pm$ 0.1%) were randomised to consume a hypocaloric, very low carbohydrate diet [LC: 14% energy as carbohydrate (< 50 g/day), 28% protein, 58% fat (< 10% saturated fat)] or an isocaloric high carbohydrate, low fat diet [HC: 53% carbohydrate, 17% protein, 30% fat (< 10% saturated fat)] combined with structured exercise (3 days/week) for 52 weeks. Data were analysed using random effects, linear mixed models
Results: Both groups achieved similar completion rates (LC vs. HC 71%, 65%), reductions in weight (-9.8 $\pm$ 1.0, -10.1 $\pm$ 1.0 kg), fat mass (-7.9 $\pm$ 0.9, -8.6 $\pm$ 0.9 kg), blood pressure (-7.1/-6.2 $\pm$ 1.7/1.0, -5.8/-6.4 $\pm$ 1.8/1.0 mmHg), HbA1c (-1.0 $\pm$ 0.1, -1.0 $\pm$ 0.1%), fasting glucose (-0.7 $\pm$ 0.3, -1.5 $\pm$ 0.3 mmol/L) and LDL-C (-0.1 $\pm$ 0.1, -0.2 $\pm$ 0.1mmol/L); no diet effect (p = 0.09). Compared to HC, LC achieved greater reductions in diabetes medication requirements (-0.6 $\pm$ 0.1, -0.2 $\pm$ 0.1; p = 0.02 time $\times$ diet), glycemic variability including Mean Amplitude of Glucose Excursion (-1.7 $\pm$ 0.3, -0.8 $\pm$ 0.3 mmol/L), Continuous Overall Net Glycemic Action-1 (-0.5 $\pm$ 0.1, -0.05 $\pm$ 0.1 mmol/L) and SD$_{Glucose}$ (-0.7 $\pm$ 0.1, -0.4 $\pm$ 0.1 mmol/L; p = 0.003-0.09