



EFFECT OF OMEGA-3 SUPPLEMENTATION ON LIPID PROFILE IN CHILDREN & ADOLESCENTS: A SYSTEMATIC REVIEW AND META-ANALYSIS OF RANDOMIZED CLINICAL TRIALS

Khorshidi, M ; Hazaveh, ZS ; Alimohammadi-Kamalabadi, M et al.
Nutrition journal. 2023;22(1):9

Dyslipidaemia is considered a substantial risk factor for cardiovascular disease (CVD). It is characterised by increased levels of triglyceride and low-density lipoprotein (LDL) and decreased levels of high-density lipoprotein (HDL). Consumption of omega-3 supplements play an important role in reduction of CVD events and its associated mortality by ameliorating lipid profile via lowering triglyceride levels. The aim of this study was to evaluate the effect of omega 3 supplementation on lipid profile in children and adolescents. This study is a systematic review and meta-analysis of fourteen studies. Three trials out of 14 had cross-over design, while others were parallel randomised trials. Results show that omega-3 supplementation may exert therapeutic effects on triglyceride (TG) levels, however, there weren't any remarkable effects on HDL, LDL, and total cholesterol status. The subgroup analysis showed an improvement in TG levels in studies conducted on participants ≤ 13 years old and those with hypertriglyceridemia. The omega-3 supplementation improved HDL levels when administered with longer duration. Authors conclude that omega-3 supplementation may have favourable hypolipidemic effects through reduction of TG levels. Additionally, clinical trials with longer duration of intervention and appropriate designs are recommended for younger children and those with hypertriglyceridemia.

THE EFFECTIVENESS OF DIET INTERVENTION IN IMPROVING THE METABOLISM OF OVERWEIGHT AND OBESE WOMEN: A SYSTEMATIC REVIEW AND META-ANALYSIS

Chen, M ; Chen, Q ; Liu, W ; Tong, H ; Wu, Y
American journal of translational research.
2022;14(5):2926-2938

At present, the treatment for obesity includes regular physical activity, diet intervention, medication and bariatric surgery. The aim of this study was to summarise the current literature and investigate whether different dietary interventions influence the metabolic indicators of overweight or obesity. This study is a systematic review and meta-analysis of twelve papers, eight of which were of medium quality. The duration of dietary therapy was usually an average of 19 weeks, from 4 weeks to 24 weeks. Dietary interventions included a calorie-restricted diet, a Mediterranean diet, a low-carb diet, a low-fat diet, and a ketogenic diet. Results show that dietary intervention had a significant effect on changes in fasting insulin, fasting glucose and insulin resistance changes in women. Additionally, dietary intervention also had a positive effect on triglycerides, total cholesterol, low-density lipoprotein cholesterol and high-density lipoprotein cholesterol. Authors conclude that obese women should follow dietary interventions to improve their metabolic index. Furthermore, future large-scale randomised controlled trial experiments should be performed on specific diet therapies.



EFFECTS OF OAT BETA-GLUCAN INTAKE ON LIPID PROFILES IN HYPERCHOLESTEROLEMIC ADULTS: A SYSTEMATIC REVIEW AND META-ANALYSIS OF RANDOMIZED CONTROLLED TRIALS.

Yu, J ; Xia, J ; Yang, C ; Pan, D ; Xu, D ; Sun, G ; Xia, H
Nutrients. 2022;14(10)

With Expert Review from Gail Brady

Dyslipidaemia is one of the risk factors associated with cardiovascular disease. Beta-glucan is a viscous soluble fibre found in microalgae, fungi and grains like oats, barley, sorghum etc. This systematic review and meta-analysis included thirteen randomised controlled trials to evaluate the effectiveness of oat beta-glucans on the lipid profiles of patients with hypercholesterolemia. This research showed a significant reduction in total cholesterol and low-density lipoprotein levels in hypercholesterolemic adults after beta-glucan intake. However, beta-glucans did not impact triglyceride and high-density lipoprotein cholesterol. Beta-glucan's effect on lipid profiles depended on the severity of hypercholesterolemia, the duration of the intervention, the source of beta-glucan, and the dosage of beta-glucan. Healthcare professionals can use the results of this study to understand the lipid profile-improving effects of beta-glucans in adults with moderate hypercholesterolemia. However, further robust studies are required to evaluate the effects of beta-glucan on lipid profiles and how the effect is affected by gender differences.



EFFECT OF INTERMITTENT FASTING DIET ON GLUCOSE AND LIPID METABOLISM AND INSULIN RESISTANCE IN PATIENTS WITH IMPAIRED GLUCOSE AND LIPID METABOLISM: A SYSTEMATIC REVIEW AND META-ANALYSIS.

Yuan, X ; Wang, J ; Yang, S ; et al. International journal of endocrinology.
2022;2022:6999907

With Expert Review from Miranda Harris

The prevalence of obesity and metabolic syndrome may increase the risk of cardiovascular disease (CVD), diabetes, and neurological conditions. The imbalance in glucose and lipid metabolism and hypertension characterises the development of these chronic diseases. Intermittent fasting (IF) has been considered an effective dietary strategy for reducing the risk of obesity, insulin resistance, dyslipidaemia, diabetes, and CVD. This systematic review and meta-analysis include ten randomised controlled trials to evaluate the effects of IF intervention on glucose and lipid metabolism in people with metabolic syndrome. IF intervention regulated glucose metabolism by improving fasting blood glucose, glycosylated haemoglobin, insulin, and insulin resistance. IF intervention also positively impacted the body mass index and waist circumference. The total cholesterol, low-density lipoprotein levels, and triglyceride levels also improved, followed by the IF, showing the impact on lipid metabolism.

Further robust studies are required due to heterogeneity between the included studies in type of IF, duration, the health status of participants, ethnicity, and outcome measurements. However, healthcare professionals can use the results of this systematic review and meta-analysis to understand the therapeutic effect of IF intervention on glycolipid metabolism in people with metabolic syndrome.

