



### IMPACT OF DIETARY ANTHOCYANINS ON SYSTEMIC AND VASCULAR INFLAMMATION: SYSTEMATIC REVIEW AND META-ANALYSIS ON RANDOMISED CLINICAL TRIALS.

Fallah, AA, Sarmast, E, Fatehi, P, Jafari, T

Food and chemical toxicology : an international journal published for the British Industrial Biological Research Association. 2020;135:110922

Low-grade chronic inflammation contributes to the development of various chronic conditions like diabetes mellitus type2, chronic kidney disease, stroke, atherosclerosis, cardiovascular diseases, and cancer. Anthocyanins, a member of the flavonoid family, are water-soluble pigments that give plants their red-orange to blue-violet colours and have been shown to have antioxidant properties.

The aim of this review and meta-analysis of 32 randomised controlled trials was to evaluate the impact of pure anthocyanins or anthocyanin-rich extracts/powders on inflammatory markers. The quality of studies for the meta-analysis was high for the inflammatory markers CRP (C-reactive protein), IL-6, TNF-alpha, adiponectin, and VCAM-1.

There was a significant reduction in the pro-inflammatory CRP, IL-6, TNF-alpha and VCAM-1, and a significant increase in the anti-inflammatory adiponectin. Quality of studies was poor for other inflammatory markers evaluated. Higher doses tended to have a bigger positive effect. The authors conclude that anthocyanins may reduce inflammation.

### IMPACT OF PROBIOTIC ADMINISTRATION ON SERUM C-REACTIVE PROTEIN CONCENTRATIONS: SYSTEMATIC REVIEW AND META-ANALYSIS OF RANDOMIZED CONTROL TRIALS.

Mazidi, M, Rezaie, P, Ferns, GA, Vatanparast, H  
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C-reactive protein (CRP) is a blood marker of inflammation and is frequently elevated in chronic conditions such as heart disease, obesity and Type 2 diabetes. Some strains of probiotics (bacteria that exert health benefits) are thought to act as anti-inflammatory agents through various mechanisms.

This systematic review and meta-analysis of 20 randomised controlled trials (RCTs) aimed to investigate the effects of probiotic supplementation on CRP levels as one measure of inflammation. The meta-analysis indicates that probiotic supplementation with various strains of bacteria has a significant impact on serum CRP levels, with a weighted mean difference of -1.35mg/l. Whilst positive impacts were also seen for interleukin-10 and tumour necrosis factor-alpha (other markers of inflammation) with probiotics, these did not reach significance. The authors of this study point out that the results need to be interpreted with caution owing to the wide variety of study types, study size, probiotic strains and health outcomes measured in the included RCTs. However, Nutrition Practitioners working with clients with raised CRP levels may want to investigate the use of certain probiotic strains as part of an anti-inflammatory protocol.



### ROLE OF WHOLE GRAINS VERSUS FRUITS AND VEGETABLES IN REDUCING SUBCLINICAL INFLAMMATION AND PROMOTING GASTROINTESTINAL HEALTH IN INDIVIDUALS AFFECTED BY OVERWEIGHT AND OBESITY: A RANDOMIZED CONTROLLED TRIAL.

Kopf, JC, Suhr, MJ, Clarke, J, Eyun, SI, Riethoven, JM, Ramer-Tait, AE, Rose, DJ  
Nutrition journal. 2018;17(1):72

Poor diet is the leading risk factor for premature death and disability in the United States. Poor diets lead to metabolic syndrome and its associated diseases such as heart disease and diabetes.

The purpose of this study was to determine the impact of increasing intake of wholegrains or fruit and vegetables against a typical Western diet on inflammatory markers and gut microbiota composition. The study was a randomized, parallel arm feeding trial which enrolled fifty-two participants. The subjects were randomized into three groups (control, wholegrains, and fruit & vegetables).

Results indicate that the wholegrain and fruit and vegetable diets had significant positive impacts on inflammatory markers.

Interestingly, while both treatment groups decreased inflammatory markers, each decreased a different biomarker. The treatments induced individualised changes in microbiota composition such that treatment group differences were not identified.

The authors conclude that wholegrain and fruit & vegetable diets have a positive impact on metabolic health in individuals affected by overweight or obesity.

