Berry Polyphenols

THE INFLUENCE OF A POLYPHENOL-RICH RED BERRY FRUIT JUICE ON RECOVERY PROCESS AND LEG STRENGTH CAPACITY AFTER SIX DAYS OF INTENSIVE ENDURANCE EXERCISE IN RECREATIONAL ENDURANCE ATHLETES

Valder, S ; Habersatter, E ; Kostov, T ; et al.
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Physical activity can result in exercise induced muscle damage (EIMD), inflammation and oxidative stress, which can affect performance. Chokeberry juice is a polyphenol rich drink that may have antioxidant properties, and based on results from other polyphenol rich berry juices, may aid muscle recovery. This study aimed to determine whether a red fruit drink with a chokeberry content of 25% could impact EIMD, strength in the lower body, oxidative stress, and training performance. This was a 4-week randomised; double-blind, placebo controlled, cross-over study of 18 recreational endurance athletes.

The results showed that compared to placebo, the red juice did not impact EIMD (measured by creatinine kinase), oxidative stress (measured by oxidised low density lipoprotein), inflammation, or a reduction in strength. The authors concluded that whilst the training did induce muscle damage, there was no effect of the red juice on EIMD or oxidative stress. Further research on prolonged application and a higher polyphenol content is required.

A ONE-WEEK ELDERBERRY JUICE INTERVENTION AUGMENTS THE FECAL MICROBIOTA AND SUGGESTS IMPROVEMENT IN GLUCOSE TOLERANCE AND FAT OXIDATION IN A RANDOMIZED CONTROLLED TRIAL.

Teets, C ; Ghanem, N ; Ma, G ; et al
Nutrients. 2024;16(20)

Anthocyanins are a group of naturally occurring chemicals found in plants, which may benefit metabolism by increasing insulin sensitivity, and mitigating lipid oxidation. This study aimed to determine if metabolic benefits associated with other berries extend to elderberries.

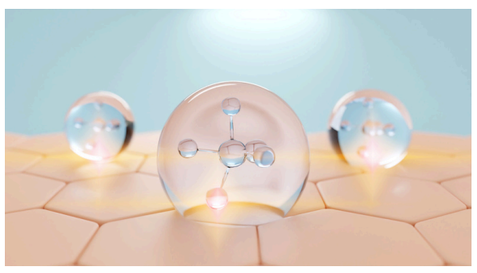
This was a randomised, placebo-controlled, crossover trial of overweight and obese adults given elderberry juice (EBJ) (355g of 100% EBJ) or placebo over a 1-week period with a 3-week washout period.

The results showed that compared to placebo, EBJ improved the gut microbiome as represented by an increase in Faecalibacterium, Ruminococcaceae and Bifidobacterium and a reduction in Bacteroides and lactic acid producing bacteria. Additionally, EBJ reduced blood glucose following a meal tolerance test and increased fat oxidation during moderate physical exercise. The authors concluded that EBJ increased healthy gut microbiota and improved outcomes related to obesity.

POLYPHENOL-RICH CRANBERRY BEVERAGE POSITIVELY AFFECTED SKIN HEALTH, SKIN LIPIDS, SKIN MICROBIOME, INFLAMMATION, AND OXIDATIVE STRESS IN WOMEN IN A RANDOMIZED CONTROLLED TRIAL

Zhao, J ; Liang, G ; Zhou, G ; et al.
Journal of ethnopharmacology. 2024;321:117493

Oxidative stress, inflammation, and advanced glycation end products (AGEs) are at the centre of skin ageing. There may also be some involvement of the skin microbiome. Polyphenols have been shown to have anti-inflammatory and antioxidant properties. This study aimed to determine whether daily consumption of a polyphenol-rich cranberry drink affects the skin ageing parameters; oxidative stress and inflammation in women. Its effects on skin lipids and microbiome were also investigated.
This study was a 6-week randomised, double blind, placebo-controlled trial of 24 women aged 25-65 years old with the Fizpatrick skin types 2 and 3, given either 2 bottles of cranberry beverage or placebo.
The results showed that cranberry beverage protected the skin against UV-induced erythema, improved skin elasticity, and reduced oxidative stress. This was especially prominent in women over 40 years old. Cranberry beverage altered the skin microbiome at the species and strain level. Skin lipids were modulated regardless of the treatment. The authors concluded that cranberry drink may benefit the skin of women over 40 years old.



WILD BLUEBERRY EXTRACT INTERVENTION IN HEALTHY OLDER ADULTS: A MULTI-STUDY, RANDOMISED, CONTROLLED INVESTIGATION OF ACUTE COGNITIVE AND CARDIOVASCULAR EFFECTS.

Cheng, N ; Barfoot, KL ; Le Cozannet, R ; Fança-Berthon, P ; Lamport, DJ ; Williams, CM
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Cognitive performance can fluctuate throughout the day, most commonly at 2pm, due to circadian and homeostatic declines, and postprandial effects. Studies have shown that anthocyanin-rich foods which are a group of naturally occurring pigments found in foods such as berries, may attenuate age-associated cognitive decline. But it is unclear if there are any acute effects of wild blueberry extract (WBE) on cognitive function. This randomised, double-blind, cross-over, placebo-controlled study was split into 2 studies. Study 1 (ROAB) aimed to determine the efficacy of WBE at various doses in maintaining executive function (EF) and episodic memory (EM) throughout the day, alongside measures of cardiovascular outcomes. This study recruited 28 older individuals over 5-weeks. Study 2 (BEAT) aimed to determine cognitive decline and cardiovascular outcomes 1-hour postprandially following acute WBE (222mg) supplementation in 45 older individuals. The results of ROAB showed that WBE attenuated a dip in executive functioning, 4 hours after administration. WBE 222mg reduced systolic and diastolic blood pressure compared to placebo. BEAT showed that WBE attenuated a loss in EF reaction time at the predicted postprandial dip at 2pm, with no other changes to cognitive and cardiovascular outcomes. The authors concluded that WBE may have cardiovascular and cognitive benefits, particularly when experiencing a postprandial dip. However, effects were small and only observed in a few of the measures.