

Purple Tea Extract Clinical Evidence

Effects of Purple Tea on Muscle Hyperemia and Oxygenation, Serum Markers of Nitric Oxide Production and Muscle Damage, and Exercise Performance. 2020;3(3) Cesareo, K., Ziegenfuss, T., Raub, B., Sandrock, J., & Lopez, H.

Topic	Which effects does Purple Tea Extract have on muscle hyperemia, oxygenation, serum markers of nitric oxide production, muscle damage, and exercise performance?
Background	In vitro studies have demonstrated that purple tea can enhance nitric oxide production, aid in exercise recovery, and reduce muscle damage through its antioxidant and anti-inflammatory properties. A narrative review explored the potential effects of tea supplementation and its constituents on various aspects of the exercise recovery process. Currently, there are no controlled scientific studies published in peer-reviewed literature that examine the effects of purple tea consumption on exercise performance, recovery, and the processes associated with muscle damage in human participants.
Study Type	Clinical intervention trial
Study Design	Randomized, placebo-controlled, double-blind, crossover study

Subjects	30 healthy and recreationally active men.
Dosage	Participants received either 100 mg of Purple Tea Extract (PTE) (PurpleForce®, Oryza Oil & Fat, Ltd.) or a maltodextrin placebo (PLA) for an eight-day supplementation, with a two-week washout period between treatments.
Results	After eight days of supplementation and an exercise performance challenge, lactate dehydrogenase levels were significantly reduced in the PTE group compared to the PLA group. In contrast, arm circumference increased in the PLA group after five days of supplementation. The PTE group exhibited significantly greater decreases in impedance, while the differences in oxygen saturation post-leg extension exercise were more pronounced in the PTE group at 30 seconds into recovery. The total number of bench press repetitions completed was higher in the PTE group than in the PLA group. Additionally, the total number of repetitions completed in the PTE group increased from day five to day eight, with no change observed in the PLA group. No significant between-group changes were noted in the visual analog scales; however, only the PTE condition demonstrated a significant improvement in willingness to exercise.
Conclusion	Acute Purple Tea Extract (PTE) supplementation reduced lactate dehydrogenase, a marker of muscle damage, while concurrently enhancing lower body muscle endurance. The supplementation was well-tolerated without adverse effects. However, further investigation through rigorous, randomized, double-blind, placebo-controlled trials is essential to determine the specific types of exercise benefiting most from PTE, potential variations in response among different athletes, and optimal dosage for efficacy.

Purple Tea Extract Clinical Evidence

Four-Week Oral Treatment Study of Purple Tea in Healthy Volunteers
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Topic	Which effects does Purple Tea Extract have on observable changes in body fat, metabolic parameters, and skin health in healthy male and female subjects?
Background	Purple tea is a new variety of the tea plant <i>Camellia sinensis</i> from Kenya. The purple color is from the rich levels of anthocyanins unique to this novel cultivar of tea and is cultivated in the equatorial mountains of Kenya at a higher elevation. The leaves being exposed to more intense UV rays from the sun stimulate a greater formation of polyphenols and anthocyanins to protect the plant from damage. The purple tea also contains the typical polyphenols such as catechin and epigallocatechin found in green tea, but also contains 1,2-di-O-galloyl-4,6-O-(S)-hexahydroxy-diphenoyl- β -D-glucose (GHG) a uniquely specific compound in purple tea.
Study Type	Human clinical intervention trial
Study Design	A four-week clinical study of Purple Tea Extract was conducted with 11 male and 7 female test subjects to observe changes in body fat, metabolic parameters, and skin health. Purple Tea Extract was made from dried purple tea leaves using a hydroethanolic solution. Subjects ingested the capsules containing 100 mg of Purple Tea Extract after breakfast every day for four weeks. On the last day of the test period, measurements were carried out again to compare them with the values before ingestion.

Subjects	11 Male and 7 Female Healthy Volunteers
Dosage	100 mg
Results	After using Purple Tea Extract, subcutaneous fat thickness in the abdomen and upper arms of male subjects was significantly reduced. In female subjects, body fat mass and hip size significantly decreased. LDL-cholesterol and blood glucose levels of female subjects demonstrated a trend to lower levels. Skin improvement parameters of male and female test subjects using a collagen score, and moisture content measurement of their cheeks showed a tendency for increases in both. Oil on the forehead showed a tendency to decrease though this was not significant. Using ultrasound images of the dermis, the collagen score of the cheeks of male test subjects significantly increased however the the score of female test subjects only demonstrated a tendency to increase.
Conclusion	Purple Tea Extract used at 100 mg a day significantly decreased fat parameters in the dermis of both male and females. There was a trend for increased collagen, reduced skin oil, and increased moisture content of the skin. In males the increase in collagen was significant.

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Four-Week Oral Treatment Study of Purple Tea in Healthy Volunteers
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Research & Development Department, Oryza Oil & Fat Chemical Co., Ltd.
March 1st, 2014

Topic	What effect does purple tea have on obesity parameters in healthy males?
Background	Purple tea is rich in anthocyanins and is cultivated in mountain areas 1500 and 2500 meters above sea level in the equatorial region of Kenya which enables the leaves to be exposed to strong UV rays from the sun and build up large amounts of polyphenols for protection. Purple tea contains similar green tea polyphenols such as catechin and epigallocatechin, though in addition it also contains 1,2-di-O-galloyl-4,6-O-(S)-hexahydroxy-diphenoyl-b-D-glucose (GHG) as a specific compound found only in this tea variety. Male subjects were 32 to 69 years old (average age: 47.1 years old). Fasting blood samples were collected from test subjects. Bodyweight, body fat mass, waist and hip sizes, and the subcutaneous fat thickness of the abdominal and upper arm regions were measured. Test subjects ingested 2 portions of a tea beverage each day made from a purple tea leaves portion that weighed 1.5 g each. Measurements were made on the last day of the test to compare with those before ingestion.
Study Type	Human clinical intervention trial
Study Design	Dried purple tea leaves (1.5 g/portion) were given to the subjects. The portion was extracted with hot water (100-200 mL) and the extracted solution was given as a beverage to each subject. The subjects were allowed to take the tea twice a day for 4 weeks.
Subjects	10 Healthy Male Volunteers

Dosage	2 portions (1.5 g each) of purple tea leaves as tea
Results	After a four-weeks of ingesting purple tea made from the leaf, the body mass index, bodyweight, body fat mass, abdominal fat, body fat ratio, muscle ratio, waist size, hip size, and abdominal and right upper arm fat thickness were significantly improved compared to before ingestion. There were no changes in blood parameters, however, HDL-cholesterol and HbA 1c levels tended to be lower than those of before ingestion, though not significantly.
Conclusion	Purple tea in only 4 weeks improves some aspects of obesity in males including BMI and bodyweight.