Garcinia, Raspberry Ketone & Green Coffee Bean Extract

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Losing weight and keeping it off is not a simple process. In fact, the majority of persons who lose weight regain the weight within 1 to 5 years.[1] The reasons for over 80% recidivism rate in gaining back weight previously lost are multifactoral, and include metabolic, behavioral, neuroendocrine and autonomic mechanisms.[2] Consequently, a multifaceted approach to losing weight and keeping it of is required. This can include the use of science-based dietary supplements such as Garcina cambogia, raspberry ketone, and green coffee been extract.

Garcinia cambogia

The dried fruit rind of *Garcinia cambogia*, also known as Malabar tamarind, is a unique source of (−)-hydroxycitric acid (HCA), and has been safely used for centuries in Southeastern Asia to make meals more filling.[3] In rats, an extract of Garcina providing significant quantities of HCA was found to reduce leptin levels from abdominal fat, as well as reduce body weight gain.[4] The same results were found in similar research.[5] This is important because higher levels of leptin are associated with weight gain, while lower levels are associated with weight loss.

Research in humans has also suggested that Garcinia extract helps reduce leptin levels.[6] Furthermore, in a 6-week randomized placebo-controlled single-blinded cross-over trial[7], 2 weeks of daily administration of Garcinia extract (providing 300 mg HCA, 3 times daily) on food intake and satiety in overweight men and women were assessed. The results were that food intake was decreased by 15 –30% with Garcinia extract treatment compared to placebo, and body weight tended to decrease.

In another randomized, double-blind, placebo-controlled human study[8], Garcinia extract alone (4667 mg daily) and in combination with niacin-bound chromium (4 mg daily) and a standardized Gymnema sylvestre extract (400 mg daily) was evaluated on weight loss in moderately obese subjects who received a 2000 calorie per day diet and participated in supervised walking. Results indicated that body weight and body mass index or BMI (a gross measure of obesity) decreased by 5–6% in both the Garcinia extract alone and combination groups; and food intake, total cholesterol, low-density lipoproteins (the "bad" cholesterol), triglycerides and serum leptin levels were also significantly reduced in both groups. Likewise high-density lipoprotein (the "good" cholesterol) levels and excretion of urinary fat metabolites increased in both groups. A marginal or non-significant effect was observed on all parameters in the placebo group.

Raspberry ketone

Raspberry ketone is a natural phenolic compound of the red raspberry. The chemical structure of raspberry ketone is similar to the structures of capsaicin and synephrine, compounds known to exert promote the metabolism and breakdown of body fat.[9] Likewise, raspberry ketone has been shown to

promote fat metabolism. In one study, mice were fed a high-fat diet, along with raspberry ketone. The results showed that the raspberry ketone prevented the high-fat diet from causing weight gain in the mice, including visceral adipose tissue (i.e., fat around the mid-section or "belly fat"). It also prevented an accumulation of fat in the liver. The raspberry ketone was found to increase lypolysis, which is the release of fat from fat cells—a very exciting development. [10]

Additional research was undertaken to more fully understand the mechanism of action by which raspberry ketone exerts its ability to promote the release of fat from fat cells, and ultimately keep body weight down. In this study, fat cells were treated with raspberry ketone. As previously seen, raspberry ketone increased lipolysis. In addition, raspberry ketone increased the secretion of adiponectin, a hormone produced by fat cells. This is important because adiponectin plays a role in fatty acid metabolism, and higher levels of adiponectin are associated with a lower percentage of body fat. Furthermore, raspberry ketone increased fatty acid oxidation (the burning of body fat as an energy fuel) and reduced the accumulation of new fat in fat cells.[11]

In a randomized, placebo-controlled, double-blind study,[12] 70 obese men and women used a supplement providing raspberry ketone in combination with a few other ingredients, or a placebo. All subjects followed and diet and exercised during the eight weeks of the study. Those using the raspberry ketone product experienced significantly great reductions in body weight and body fat, as well as waist and hip girth. In a smaller double-blind study,[13] a combination product featuring raspberry ketone resulted in increased calorie-burning over a 4-hour period.

Green coffee been extract

Before coffee beans are roasted, they are still green and they have more chlorogenic acid, a natural compound that has the ability to reduce the amount of carbohydrates absorbed. It does this by naturally reducing the level of a gastrointestinal hormone known as GIP (glucose dependent insulin tropic polypeptide). A decrease in the level of GIP shifts the site of glucose absorption away from the small intestine resulting in a lower net level of glucose entering the bloodstream.[14] In addition, chlorogenic acid has the ability to reduce the amount of glucose that can be created from metabolism carbohydrates and proteins.[15] [16] When the body is unable to derive energy from these sources, it is forced to draw upon stored sources of energy (such as body fat) to help meet energy needs.

The benefit of this was seen in a 22-week, randomized, double-blind, placebo-controlled study[17] where overweight adults were given a Green Coffee Bean extract every day. The results were significant reductions in body weight (over 17 lbs) and percent body fat (4%). Furthermore, the body mass index for six subjects shifted from preobesity to the normal weight range.

Likewise, in another randomized, placebo-controlled study,[18] 50 overweight men and women were given Green Coffee Bean extract or a placebo daily. Changes in weight, body mass index (BMI), and Muscle Mass/Fat Mass ratio were recorded at TO and T60. After 60 days of treatment, the results were that those taking Green Coffee Bean extract experienced a weight loss of about 11 lbs, and body mass index also decreased significantly. Moreover, Muscle Mass/Fat Mass ratio improved significantly with Green Coffee Bean extract. The significant decrease of weight, body mass index and fat mass showed that Green Coffee Bean extract is able to complement the effect of a low caloric diet in people who are overweight.

The results from a clinical study[19] in 12 healthy volunteers with different coffee products containing glucose (a sugar) showed that instant coffee enriched with chlorogenic acid, the active compound in Green Coffee Bean extract, reduced the absorption of glucose by 6.9%. No such effects were seen with normal or decaffeinated instant coffee. In another comparative, randomized, double-blind, 12-week study of 30 overweight people, coffee enriched with chlorogenic acid resulted in an average weight loss of almost 12 lbs. Researchers concluded that chlorogenic acid-enriched coffee has a significant effect on the absorption and utilization of glucose from the diet, and when used for an extended time may result in a reduction in body weight and body fat.

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