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File: ■ Garcinia (*Garcinia cambogia*, Clusiaceae) ■ Weight Loss

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RE: Review Finds Garcinia Has Limited Effectiveness as a Weight Loss Aid

Fassina P, Scherer Adami F, Terezinha Zani V, et al. The effect of *Garcinia cambogia* as coadjuvant in the weight loss process. *Nutr Hosp*. December 1, 2015;32(6):2400-2408.

The World Health Organization has classified the incidence of obesity as a global epidemic. Obesity is correlated with a number of disorders, including metabolic syndrome, type 2 diabetes, hypertension, dyslipidemia, and cardiovascular disease, all of which result in a decrease in life expectancy and quality of life. Decreases in weight and body mass index (BMI) reduce the risk of developing the disorders associated with obesity. A number of medicinal plants have been studied in order to test their effectiveness as weight loss aids. Garcinia (*Garcinia cambogia*, Clusiaceae) is a popular weight loss aid, but there is conflicting scientific evidence regarding its efficacy. The purpose of this literature review was to summarize studies that measured the effect of garcinia on weight loss in animal models and humans.

The databases LILACS-BIREME, SciELO, and MEDLINE were searched from 2007 to 2014 for the terms garcinia cambogia, weight loss, obesity, and hydroxycitric acid (HCA). HCA is thought to be the main active component of garcinia responsible for weight loss. Twenty animal and human studies that met the authors' criteria (details not provided) were included in the review.

Garcinia is hypothesized to reduce weight and body fat by increasing the metabolism of fat, reducing fat uptake and production, and/or suppressing appetite. A study in human subjects found a decrease in de novo lipogenesis with garcinia consumption when compared to a control. One study in rats found a decrease in body fat with garcinia consumption, while another study, also in rats, found a decrease in food consumption. Several other studies found that garcinia did not affect weight loss or satiety. One literature review found only one study out of 16 in which garcinia consumption was associated with weight loss. Another literature review, which included a meta-analysis, found a small but significant effect of garcinia on weight loss.

HCA is known to inhibit citrate lyase, which results in a decrease in appetite and increase in lipid degradation. Three studies found that garcinia can reduce blood lipid levels, whereas four other studies found no effect of garcinia on blood lipids. In addition,

there is evidence that garcinia helps increase insulin sensitivity and reduce blood glucose levels, which are important risk factors for type 2 diabetes. Other studies have shown that garcinia consumption affects the regulation of genes associated with obesity.

The studies conducted in humans used a range of garcinia between 500 and 5600 mg/d. The usual dosage of garcinia used by consumers is 900-1500 mg/d.

Many of the studies and reviews cited found no adverse effects of garcinia in concentrations up to 4000 mg/d. Long-term garcinia consumption in rats was associated with hepatotoxic effects. In a case report, six healthy subjects who consumed garcinia experienced abnormalities in hepatic markers and adverse effects, including nausea, vomiting, jaundice, abdominal pain, and fever. In addition, one review found that adverse effects were twice as high with garcinia consumption when compared with controls.

The authors conclude that studies show some positive results using garcinia for weight loss by various mechanisms, including appetite control, affecting lipogenesis, and improving certain biochemical levels. But, there is no consensus on an ideal daily dose and little research or evidence of adverse effects. The authors stress that further randomized, controlled studies are needed. The methodological quality of the included studies was not reviewed by the authors and may limit the value of conclusions made in this review.

—Cheryl McCutchan, PhD

Referenced article can be accessed at http://www.aulamedica.es/nh/pdf/9587.pdf.