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FILE: ▪Obesity
▪Weight Loss
▪Aging

HC 060486-365

Date: November 25, 2008

RE: Review of Alternative Modalities in Treating Obesity

Cherniak EP. Potential applications for alternative medicine to treat obesity in an aging population. *Altern Med Rev*. 2008;13(1):34-42.

Obesity affects a growing number of people, contributes to several disease conditions, and reduces quality of life and lifespan. Ill effects increase with age and over time. Efficacy of conventional therapies is limited. Many elderly are obese, despite conventional weight loss therapies, and the aging US population will likely add to their number. No alternative weight therapy has been studied specifically in the elderly, nor enough in any population to be definitively recommended. However, exercise and dietary modification, with the possible addition of supplements, acupuncture, or hypnosis, may help stem the swelling tide of obesity.

Most weight loss special diet studies have been conducted in middle-aged women. A review of studies of low carbohydrate diets found 1-10% body weight loss. In 120 obese individuals, significantly more on a low carbohydrate diet (76%) adhered to it than those on a low fat diet (59%). The low carbohydrate group lost a mean 12.9% body weight; the low fat group, a mean 6.7%. In other trials, no significant weight loss difference was found between low carbohydrate and high carbohydrate diets, and no difference was found after one year between a low carbohydrate and a conventional diet. In a one-year study comparing low carbohydrate, higher fat Atkins and Zone diets with low fat Ornish and LEARN diets in premenopausal women, those on Atkins lost more. The Ornish low animal protein, high complex carbohydrate diet can modify risk factors for coronary artery disease and reduce risk of atherosclerosis. Concerns about long-term use of low carbohydrate diets include potential vitamin, mineral, and fiber deficiencies.

Supplements for weight loss include conjugated linoleic acid (CLA) from beef and dairy products, taken as a triglyceride, which produced small but significant loss after one year in a double-blind, randomized, placebo-controlled trial. Continued for a year as an open-label

trial, no further loss was seen. When CLA was given as free fatty acids rather than a triglyceride, no loss was seen. Chitosan, a polysaccharide extract from invertebrate shells, aided weight loss in animal studies, blocking fat absorption, but results in humans have been mixed. A meta-analysis recognized weight loss in chitosan trials, but said studies were not methodologically sound enough to establish a benefit.

Among botanicals, tea (*Camellia sinensis*) leaves, especially green tea (processed soon after collection) in encapsulated form, has received most attention. Some increased energy expenditure is attributed to tea's caffeine. However, catechins are thought to be the main catalyst. Catechins are polyphenols which may inhibit the breakdown of norepinephrine, generating thermogenesis (internal body heat production) or, alternatively, slow angiogenesis and growth of fat tissue. Studies using different levels of catechins with other agents make it difficult to tell which cause weight loss or to determine effective doses. Green tea extracts are used to maintain weight loss. One study found this most effective in those with lower habitual caffeine intake, who regained 13% less weight with green tea than with placebo. Oolong tea (fermented before processing) did not produce fat or weight loss in humans unless green tea extract was added. No study has found that black tea (crushed before fermentation) causes weight loss, but one study found higher metabolic rates after consumption of black tea, guarana (*Paullinia cupana*; a source of caffeine), ginger (*Zingiber officinale*), dill weed (*Anethum graveolens*), vitamin C, and rutin (a plant polyphenol).

Garcinia (mangosteen; *Garcinia cambogia*) fruit's active ingredient is said to be (-)-hydroxycitric acid (HCA), but in one double-blind trial of standardized HCA with a low-calorie diet, the active group lost only slightly more than the placebo group. Synephrine alkaloids from bitter orange (*Citrus* x *aurantium*) may cause weight loss, but have been combined with other agents in trials, making conclusions difficult. Two botanicals have only been tested in animals. Platycodin, from platycodon (*Platycodon grandiflorum*) root, produced 13% more weight loss than placebo. Guabiroba, from perfume guava (*Campomanesia lineatifolia*), used in Brazilian traditional medicine, prevented gain in rats fed a high fat diet.

Acupuncture has been more studied for weight loss than any other alternative modality, but poor study design prevents determination of efficacy. In one trial, 55 women received electroacupuncture, a restricted diet, or neither. The electroacupuncture group averaged 4.8% loss; restricted diet, 2.5%; the control group did not lose weight. In another study, obese and non-obese participants receiving auricular acupuncture lost weight; non-obese participants receiving sham acupuncture did not. Hypnosis, used for over 30 years for weight loss, was found in a meta-analysis to produce six pounds of loss when added to other weight loss regimes and to become more effective over time.

— Mariann Garner-Wizard

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