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Behind the claims of supplements

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There are dietary supplements that claim effects such as changing the way we metabolize or "handle" carbohydrates or the synthesis of fatty acids. Some other supplements build their reputation on the dietary fiber they provide. Let's have a look.

Metabolics

Several supplements fall into this group.

Chromium: Chromium in dietary supplements is usually in the form of chromium piccolinate. Chromium is an essential mineral that plays a role in carbohydrate and lipid metabolism, but its role as a weight-loss aid is less clear. A formal analysis of 10 randomized studies found that chromium achieved small weight losses of about 2½ pounds over 6 to 14 weeks.

Conjugated linoleic acid, or CLA: These trans-fatty acids are supposed to interfere with fat deposition. Mouse studies suggested some benefit in obese mice; however, trials in humans produced no change in body mass index. CLA is found naturally in dairy foods and beef, and so is generally considered safe. Side effects included mild to moderate gastrointestinal complaints.

Garcinia cambogia: This is a tropical fruit native to India from which hydroxycitric acid, or HCA, is derived. HCA may inhibit fatty acid synthesis. Results of trials using this supplement have been mixed, however. In one 12-week study, women who took HCA lost an average of 3 pounds more than those who didn't. In another, larger study, HCA had no apparent effect.

Pyruvate: Pyruvate is produced in the body naturally through the breakdown of carbohydrates and protein. It is claimed to increase metabolism and reduce body fat. Some studies have suggested that pyruvate may improve body composition and enhance exercise performance, but the data on weight loss is mixed.

Green tea extract

Green tea seems to be the magical food of the moment. It either cures what ails you or prevents what doesn't ail you yet.

Green tea differs from black tea in that it is unfermented, and so contains higher amounts of anti-oxidants called catechins. Population surveys have suggested that people who drink green tea may have lower rates of cancer, heart disease and liver disease.

A few studies have suggested that green tea may reduce body fat and weight, though there has been confusion about whether the effect was due to catechins or caffeine. In a recent Japanese trial, men who drank green tea lost more weight (5.3 pounds vs. 2.9 pounds) over 3 months than control subjects who drank oolong tea.

Dr. Robert Bonakdar of the Scripps Center for Integrative Medicine is cautiously enthusiastic about green tea. "I'm interested in specific types of green tea extract that work on metabolic systems without being stimulants."

David Grotto, a dietitian and natural foods expert in Chicago, says, "Green tea may have some promise, certainly beyond its caffeine content. But I haven't been wowed by any of the research out there regarding the long term."

Fibers

Fiber-containing dietary supplements are supposed to absorb water in the gut, producing a feeling of fullness and lowering calorie intake. Although we know that high-fiber, low-calorie foods such as fruits and vegetables are helpful in weight management, trials of fiber products have had mixed results.

Glucomannan: This fiber is made from konjac root. In one well-designed study, 1 gram of glucomannan before each meal resulted in an average 5½-pound weight loss over eight weeks in obese subjects. Cholesterol levels were also reduced. No ill effects were reported.

Psyllium: In a study of overweight persons with diabetes, psyllium produced no change in body weight. It was well-tolerated, however.

Guar Gum: Guar gum is made from the Indian cluster bean. In a review of 20 published studies, researchers concluded that guar gum is not effective in reducing body weight. The main side effects were gastrointestinal complaints.

Chitosan: Not really a fiber, this supplement is made from the shells of crustaceans. It is supposed to prevent fat absorption by binding fat in the gut. While some initial studies were promising, subsequent studies failed to produce any difference in weight loss. Reviewers concluded that chitosan appears to be safe but ineffective.

Wendy Goldstein of Mustard Seed Market says her customers have had good luck with fiber-containing dietary supplements. "I've found fiber supplements to be helpful in helping people to feel fuller. Greens like wheat grass and barley grass are also good in terms of helping people to be satiated."

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