

## The Skinny on Foods and Metabolism

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Want to blaze through calories without sweating at the gym? Most dieters would jump at such a plan, and plenty of diet books make such claims. But before you start downing egg white omelets and green tea, read what the experts say about speeding your metabolism.

**Metabolism 101.** Metabolism is the full system of biochemical processes working inside your body, and your metabolic rate is the rate at which you use energy or calories for these processes. You burn the most calories each day with basic bodily functions like breathing, circulating blood and maintaining body temperature. This is your basal metabolic rate, which accounts for 60 to 75 percent of your total calorie needs. Physical activity and the digestion, absorption and storage of food make up the rest. Age, gender and genetics—things you can't change—largely determine your metabolic rate. Diet, exercise and body composition also influence your calorie-burning potential, but many diets make exaggerated promises. Here's the latest science on some common, metabolism-boosting strategies.

**Protein Power.** You "waste" some calories every time you eat, says Eric Ravussin, Ph.D., Director of Nutrition at the Obesity Research Center at Pennington Biomedical Research Center in Louisiana. He reports that on average about 10 percent of calories are used for digestion, absorption and then storage of these calories. More calories are used to process protein than for carbohydrate or fat, so beefing up the diet with extra protein can help you burn more calories, but in tiny amounts, around 20 calories a day. Ravussin explains that this metabolic boost doesn't really make much of a difference, especially when you compare it to the amount of calories you could burn by just walking half a mile. More importantly, adequate protein can nourish your body and help you feel full longer.

**Add Spice.** Capsaicin, the compound responsible for the burn of chili peppers, might also rev your metabolic motor. These hot peppers can bump up your metabolic rate and use up a few more calories (about 76 calories) for a short period of time by stimulating your sympathetic nervous system, according to research. In addition, hot peppers appear to reduce appetite. The caveat: Because capsaicin is so pungent, it's hard to consume it regularly over the long term.

**Get a Buzz On.** A caffeine buzz, that is. Just as caffeine speeds your heart rate, it can speed your metabolic rate. When 10 lean and 10 obese women drank caffeinated coffee, their metabolic rates jumped on average 174 calories for the lean subjects and 98 calories for the obese subjects, reported researchers in the October 1995 issue of *The American Journal of Physiology—Endocrinology and Metabolism*. The

boosted metabolic rate didn't last till the next day, but it did last longer in the thin women than in the obese women. Does this mean caffeine-charged coffee will supercharge your metabolic rate? Although this study looks promising, other long-term studies have not linked caffeine with weight loss (a typical indicator of metabolic boost), suggesting that you might build up tolerance to the metabolic effects of caffeine.

**Go Green.** A study in the December 1999 issue of the *American Journal of Clinical Nutrition* suggests that green tea extract spikes metabolic rate by 4 percent (about 78 calories.) Tea compounds called catechins might be responsible for this jump by affecting brain neurotransmitters. A February 2009 study in the *Journal of Nutrition* examined the weight loss effects of a beverage containing green tea catechins and caffeine compared to a drink containing equal amounts of caffeine without catechins. For 12 weeks, participants maintained their usual diets and engaged in at least three hours of moderate exercise weekly. Those in the green tea group lost more belly fat and tended to lose more weight overall, suggesting that green tea catechins enhance exercise-induced changes in the body.

**Eat Frequently?** Spreading your food intake out over your day and beginning the day with a balanced breakfast is a smart way to meet your nutritional needs and control hunger, but it's unlikely to boost your metabolic rate. Contrary to the tenets of some diet plans and diet books, fasting will not cause someone to gain weight more readily, says Lewis Landsberg, M.D., of the Comprehensive Center of Obesity at Northwestern University's Feinberg School of Medicine. Fasting decreases your metabolic rate by as much as 10 percent, but it returns to normal once you resume your usual calorie intake, he explains. "Metabolic rate, to a large extent, increases proportional to how many calories you ingest," explains Susan B. Roberts, Ph.D., Director of the Energy Metabolism Laboratory at the Jean Mayer USDA Human Nutrition Research Center on Aging at Tufts University. So, for example, if you eat a balanced 1,500-calorie meal plan, the metabolic rate will be about the same whether you eat those 1,500 calories in three meals or six.

**Move, Move, Move.** You exercise more control over your metabolic rate through physical activity than by anything else. When you increase your physical activity, you raise your metabolic rate significantly. According to the Compendium of Physical Activities Tracking Guide (a listing of more than 600 activities and their expected calorie burn), an individual weighing approximately 140 pounds blasts through 570 calories during an hour of vigorous cross-country skiing, 320 calories per hour of low-impact aerobic dancing and 210 calories for 60 minutes of walking at three miles per hour. Planned exercise isn't the only way to boost metabolic rate. Additional energy is used for just about any non-exercise activity, such as wiggling your foot, unloading the dishwasher, or washing your face. When researchers examined 10 obese and 10 lean sedentary individuals, they found that the lean participants were in an upright position doing daily activities for about 152 minutes longer each day than the obese individuals. They reported in the January 28, 2005 issue of *Science* that such non-exercise movement equaled about 350 calories—about the same amount of calories burned in an hour of low-impact aerobic dancing or consumed in one glazed, cream-filled donut.

Your muscle mass also drives your metabolic engine. As we age, we lose muscle mass, giving us a slower metabolism. Lifting weights slows this loss and even builds more muscle. Is weight training more important than aerobic exercise? "Fit people do both," says Landsberg.

**EN's Bottom Line.** Though certain foods are linked with revving up your metabolic rate slightly, cutting back on calories in food and pushing your activity level trumps the possible metabolic effects of particular foods. Roberts adds, "People get very hung up on low metabolism, but in fact, families with genetically low metabolism are not fatter than those with genetically high metabolism—showing clearly that how many calories you eat is the big issue." —*Jill Weisenberger, M.S., R.D., C.D.E.*

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