

MD Fat Bytes

Contributed by Robbie Durand
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Gastric Bypass Improves Sexual Performance In Morbidly Obese Men

Grossly

obese men have an increased risk of sexual dysfunction, including erection problems and decreased sex drive. High levels of body fat trigger insulin resistance, which interferes with nitric oxide (NO) production— an important regulator of blood flow to the penis and the rest of the body. Ramzi Dailai, from the Albert Einstein Health Network, found that sexual performance improved following gastric bypass surgery in morbidly obese men (body mass index greater than 51 kg/m²; 30 is overweight). The amount of weight lost following surgery was highly predictive of improvements in sexual performance capacity. Sexual performance returned to near normal values in men who lost 67 percent of excess weight. Poor metabolic health is the principal cause of sexual problems in aging men, such as erectile dysfunction. Gastric bypass surgery improves metabolic function and sexual performance. (Journal American College of Surgeons, 207: 859-864, 2008)

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By Steve Blechman and Thomas Fahey, EdD

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Meltdown Increases Caloric Expenditure And Fat-Burning Before and After Exercise

Meltdown

is a weight-loss supplement that includes synephrine, caffeine, phenylethylamine, yohimbine, and hordenine. Each of these substances is thermogenic (increases caloric expenditure). In our Supplement Research column this month, we reported a study by Jay Hoffman and co-workers, showing that Meltdown increased resting caloric expenditure by 20 percent for several hours.

A

study by Darryn Willoughby from Baylor University and colleagues found that Meltdown increased caloric expenditure and fat burning before and after a short, maximal bout of exercise in college-age men. They rested one hour, took 3 Meltdown capsules (500 mg) or a placebo (fake Meltdown), rested another hour, took a maximal treadmill test (approximately 12 minutes of exercise to exhaustion) and then rested another hour. Meltdown increased caloric expenditure by 10 percent during the two-hour experimental period (rest + exercise + rest) and increased estimated fat use by 6 percent. Blood pressure and heart rate were similar between Meltdown and placebo. Meltdown increases metabolic rate at rest and during recovery from exercise without imposing additional loads on the cardiovascular system. (Journal of the International Society of Sports Nutrition, 5: 23, 2008)

Green Tea Decreases Abdominal Fat

Green

tea is a popular weight-loss supplement that also improves blood sugar regulation and influences fat cell turnover. While it is not a magic bullet that instantly improves metabolic health, it helps. Kevin Maki from the Provident Clinical Research, in Bloomington, Indiana showed decreases in total abdominal fat, subcutaneous abdominal fat (under the skin), and blood triglycerides (blood fats) in people consuming a green tea beverage containing 625 mg of catechins and 39 mg of caffeine for 12 weeks, compared to a placebo (green tea without catechins or caffeine). The people also did 180 minutes per week of moderate-intensity exercise.

Caffeine

and catechins—particularly epigallocatechin-3-gallate—speed metabolism and fight fat. Other studies found that green tea extract increased the conversion of testosterone to estrogen in fat cells, which might have negative effects in bodybuilders. Green tea is an effective fat fighter that complements the effects of exercise. However, bodybuilders should use it with caution. (Journal of Nutrition, 139: 264-270, 2009; Journal of Nutrition, 138: 2156-2163, 2008)

Caffeine Works Faster In Men Than In Women

Ninety percent of Americans consume

caffeine every day in one form or another. Most people drink coffee, tea, or other caffeinated beverages as pick-me-ups to increase alertness, or consume them as weight loss supplements to lose body fat. Caffeine is a central nervous system stimulant that improves wakefulness, alertness, and some types of athletic performance. It affects some people more than others, depending on tolerance, body size and gender.

A University of Barcelona (Spain)

study showed that caffeine had a greater, faster effect in men than women. The scientists measured the short-term (first 30 minutes) and long-term (rest of the day) effects of caffeine ingestion in nearly 700 college students. Coffee increased alertness within 45 minutes, but the effects were greater in men than women. Decaffeinated coffee also increased alertness, although the effects were less than regular coffee. In most people, the effects of caffeine last for 2-3 hours, but can last as long as 10-12 hours in pregnant women and in people with liver disease. (Progress in Neuro-Psychopharmacology and Biological Psychiatry, 32: 1698 DO, 2008)

Endurance Exercise Reduces Fat Surrounding The Heart

Fat

surrounding the organs, particularly in the abdomen, decreases metabolic health, which can lead to heart attack, diabetes and stroke. Heart fat (epicardial fat) restricts movement of the heart and increases blood pressure. Abdominal fat promotes insulin resistance, which interferes with important chemicals that regulate blood flow and blood pressure. A Japanese study found that 12 weeks of endurance training (three times a week for 60 minutes) decreased abdominal and epicardial fat. Blood pressure decreased in direct proportion to decreases in heart fat. Exercise is an effective technique for decreasing abdominal and heart fat and improving metabolic health. (Journal of Applied Physiology, 106: 5-11, 2009)

Sleep Less, Snack More

Sleep-deprived

people eat more snacks. Inadequate sleep is linked to obesity, but scientists aren't sure why. Arlet Nedeltcheva and co-workers from the University of Chicago found that appetite and food intake from snacks increased more following sleep deprivation (5.5 hours of sleep per night) than normal sleep (8.5 hours). Eleven middle-aged adults lived in a sleep laboratory for 14 days and had free access to good-tasting food. During their stay, they were allowed long and short sleeps. Sleep duration did not affect caloric intake during meals. However, people ate 221 more calories and 4 percent more carbohydrates per day from snacks following sleep deprivation. Energy expenditure (metabolism plus physical activity) was the same on long and short sleep days. People eat more snacks when they don't get enough sleep, which promotes obesity. (American Journal of Clinical Nutrition, 89: 126-133, 2009)

Uncoupling Might Be Key To Future Weight-Loss Drugs

Energy

metabolism works through a series of coupled reactions. This means that energy released by breaking down fats, carbohydrates and proteins is captured in other reactions such as making ATP (a high energy chemical) or storing fats and carbohydrates. Uncoupling occurs when the energy from food breakdown is released as heat instead of being captured as ATP. The cell mitochondria (cell energy centers) contain uncoupling proteins such as UCP1, which convert energy directly into heat. All

mitochondria contain UCP1, but they are particularly concentrated in brown fat.

The body has evolved to store energy (fat) efficiently, but developed the ability to generate heat through uncoupling to protect itself from cold and hypothermia (drop in body temperature). Drug makers are targeting genes that cause uncoupling in cells to increase metabolic rate and help people lose fat.

This could lead to new, more effective drugs for weight loss. (International Journal of Obesity, 32, S32-S38, 2008)

Rimonabant Combined With Metformin Promotes Weight Loss

Rimonabant

and metformin improve blood sugar regulation and promote fat loss. Rimonabant (Accomplia) decreases body fat and reduces heart disease risk factors in overweight people. The drug works by blocking the same receptors that give marijuana users the munchies. The endocannabinoid-CB1 system—the receptors that cause the marijuana high—promote food cravings linked to obesity. While it is widely prescribed outside the United States, the Food and Drug Administration has not approved it, because of its severe psychological side effects.

Metformin,

sold as Glucophage, Riomet, and Fortamet, is the most common drug used to treat type 2 diabetes, particularly when obesity and insulin resistance accompany it. It works by moving sugar from the bloodstream into the cells. It is a good drug for active diabetics because it rarely causes low blood sugar, even during intense exercise. A study conducted at the University of Hull in Great Britain showed that obese women who lost weight with rimonabant maintained weight loss with metformin. This drug combination is particularly effective in overweight people with diabetes. However, it is unlikely that the FDA will approve rimonabant anytime soon. (Clinical Endocrinology, 70: 124-128, 2009)