Why endorphins (and exercise) make you happy

Get in a workout this winter- Winter is here – and so is the cold air that makes you want to snuggle up with a cup of hot cocoa. Many let the season’s wrath keep them from exercising outdoors, but which offer great full-body workouts. So put down the cocoa, bundle up and head outside to try a few other activities.

What are Endorphins?
Neurochemicals called endorphins are produced in the brain’s hypothalamus and pituitary gland. Endorphins, which are structurally similar to the drug morphine, are considered natural painkillers because they activate opioid receptors in the brain that help minimize discomfort. They can also help bring about feelings of euphoria and general well-being. Endorphins are also involved in natural reward circuits related to activities such as feeding, drinking, sexual activity and material behavior.

Chasing the Runner’s High
The idea that exercise creates a huge endorphin rush entered popular culture soon after endorphins were discovered 40 years ago. “Long-distance running was quite popular in the mid-1970s around the same time that endorphins were discovered. Anecdotally, there were a lot of reports of the so-called runner’s high. By suppressing the experience of pain, a number of researchers put forth the idea that endorphins could be the source of this euphoric feeling after intense exercise.” But was that really the case?

The Blood-Brain Disconnect
Yes, blood plasma endorphin levels do increase in response to stressors and pain, research shows. For example, a 2003 study found that the more severe pain someone experience post-surgery, the higher their blood plasma endorphin levels. And research shows that exercise can have similar effect, but research also suggest that endorphins levels might not increase at all until an hour after you’re started working out.(Which doesn’t explain why those 30-minute HIIT sessions still leave you feeling awesome.)

So what gives? The problem with jumping to the conclusion that endorphins cause your “exercise high” is that in large-scale studies, scientists measure endorphins present in the blood – not the brain. Then, they make the assumption that if endorphin levels rise in the blood, then it must be because of an increase of endorphins in the brain. But their findings don’t necessarily prove that. And it’s the endorphins in your brain that would be causing that “High.”
In fact, a recent German study found that, while endorphins levels are higher after a run, endorphin can’t pass through the blood-brain barrier, which means they probably don’t affect the brain, researchers found, was a neurotransmitter called anandamide, which is elevated after exercises and can travel from the blood to brain.

While there have been some studies to show that exercise can lead to elevated endorphin levels in blood plasma, there have been no consistent findings that, indeed, exercise leads to that famous ‘endorphin rush.

**What’s really Going On?**

So if you aren’t an endorphin junkie, then what are you? Well, you might be a serotonin or norepinephrine junkie. When you exercise, your brain increases production of these neurotransmitters, which send messages throughout your nervous system. In the case of exercise, those messages might be something along the lines: “You're running! This is awesome! Cheer up!

Studies have linked low levels of serotonin and norepinephrine to depression, which is a much more solid link to feeling of post-workout euphoria than the evidence for endorphins. And it’s not just that exercise leads to an increase in serotonin and norepinephrine which may, in turn, reduce depression and stress.

Exercises may actually help ward off depression and anxiety by enhancing the body’s ability to responding to stressors.

What appears to be happening is that exercise affords the body an opportunity to practice responding to stress, streaming the communication between the systems involved in the stress response, “ says Matthews. “The less active we become, the more challenged we are in dealing with stress.”

While the science about why you feel a rush after exercise may be complicated that doesn’t mean the runner’s high isn’t a real feeling. And don’t worry, we won’t judge you if you still wear your “endorphin junkie” T-shirt to the gym.


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**16 ways to lose weight fast**

To lose weight, you need to burn more calories than you consume which inevitably means one thing: portion control. But you’re not necessarily doomed to a growling stomach until you reach your goal.

“Portion control doesn’t mean you have to eat tiny portions of everything. You don’t want to feel like you’re on a diet, but you have to eat fewer calories.

Here are 14 easy ways to cut portions, trim calories, and lose fat without counting the minutes until the next time.
**Instead of: Nonfat fruit yogurt**  
Try: Low-fat or nonfat Greek yogurt topped with fresh berries and unsalted nuts.

Benefits: Greek yogurt has nearly double the protein of regular yogurt (9 grams vs. 17 grams per 6-ounce serving) for greater staying power: fresh berries and antioxidants and fiber: and nuts provide healthy fats that slow the release of natural sugars into the bloodstream. Plus you’ll drop nearly 12 grams of added sugar – and all for the about the same number of calories.

**Instead of: Fried egg on a toasted English muffin**  
Try: Hard-boiled eggs and avocado on a sprouted whole-grain English muffin

Benefits: Sprouted grains have more protein, fiber, and micronutrients (such as folate, vitamin C, and essential fatty acids), and fewer carbs than plain English muffins. Can’t find sprouted? Go for whole grain (just make sure whole wheat or another whole grain is the first ingredient). Adding a quarter of an avocado provides healthy fats so you’ll be more satisfied. Boiling the egg instead of frying it in butter eliminates heart-clogging saturated fats. Boil a bunch at once and keep them in the fridge so you can prep this meal quickly in the a.m.

**Instead of: Cheddar omelet with two eggs**  
Try: Veggie avocado omelet with one egg and three egg whites

Benefits: You’ll pack in more protein – three egg whites have nearly 10 grams of protein, compared to 6.3 grams of a whole egg while being cholesterol conscious. An omelet is a great way to sneak veggies into breakfast-try spinach, mushroom, and bell pepper. Plus, you get healthy monounsaturated fat from the avocado (which is also high in potassium and a natural de-bloater). Eliminating the cheese saves 115 calories and 5 grams of saturated fat per ounce.”

**Instead of: Store-bought smoothie**  
Try: Homemade smoothie with 1 cup of fruit, a handful of veggies (kale, spinach, celery). 1 Tbsp. almond butter, and 1 cup almond milk or Greek yogurt

Benefits: Making your own smoothie means more veggies and less fruit - so you’ll get fewer calories and less sugar, along with plenty of filling fiber. The almond butter provides good fat, which makes you feel satisfied, and which you need in order to absorb many of the antioxidants from the fruits and veggies.
Instead of: **Pre-packaged sweetened oatmeal**  
Try: Homemade oatmeal: Blend together ¼ cup rolled oats with ¼ cup unsweetened whey protein powder: add ¼ cup hot coconut milk (from the dairy aisle): top with a small apple, sliced or chopped, and 1 tsp.

Benefits: You’ll ditch the added sugars of the pre-packaged stuff and, by adding protein power, actually displace some of the oatmeal, trading quick-burning carbs for slow-burning protein. Coconut milk, besides being delicious, adds good fat (medium-chain triglycerides) that boosts metabolism and good cholesterol: the apple provides vitamin C and over 4 grams of fiber: and cinnamon has many health perks, including that it slows stomach emptying and improves insulin sensitivity.

**Instead of: Chef’s salad with bacon and cheese**  
Try: Green salad with salmon, tuna, or sardines

Benefits: The word “salad doesn’t guarantee nutrition. Swap out the bacon and cheese for fish. It provides the same protein—or more—and adds omega-3 fatty acids, which boost mood, help reduce inflammation in the body, and may help with weight loss (and a 2014 analysis found that we don’t get enough omega-3 fatty acid in our diets). Second best choice is grilled chicken, another lean protein that will save fat and calories over bacon and cheese.

**Instead of: Meat and cheese sandwich on a roll with Mayo**  
Try: Meat or cheese sandwich open-faced on whole grain bread with mustard, lettuce, and tomato

Benefits: Eliminate one source of animal protein to have your saturated fat. Swapping out half the bread-and choosing whole grain over white-cuts out around 15 grams of carbs and doubles fiber, which can help lower blood sugar and cholesterol. Dropping mayo for mustard saves saturated fat. If you add hummus instead, you also get more flavor, protein and fiber: add guacamole instead and you get heart-healthy fats and fiber. Lettuce and tomato add phytonutrients plus extra fiber, so you’ll feel fuller longer.

**Instead of: Creamy tomato soup**  
Try: Black bean soup with dollop of low-fat Greek yogurt

Benefits: Ditching the cream base halves the calories, and beans add tons of filling fiber plus antioxidants, vitamins, and minerals. “Beans are pulse, and studies show that people who eat them tend to weigh less and have smaller wariness. Switching up the cream for a scoop of Greek yogurt still delivers calcium but without all the saturated fat.
Instead of: Beef burrito on a flour tortilla with sour cream
Try: Bean burrito bowl with veggies and salsa

Benefits: Ditching the tortilla saves up to 350 calories and 58 grams of processed carbs, Pick beans and veggies instead of beef to lose the heart-clogged saturated fat in red meat and score a major boost in both filling fiber and vitamins (beans are one of the highest-fiber foods you can eat). With salsa over sour cream, you get extra nutrients for fewer calories and less fat.

Instead of: Sushi with spicy mayo
Try: Sashimi with wasabi and miso soup

Benefits: Sushi is made with white rice, which offers little nutrition for its 29-gram carb, 133-calorie per quarter-cup price tag. Spicy mayo can add 99 calories and a whopping 11 grams of fat per tablespoon, Sashimi is just the fish - with all its lean protein and omega-3 fatty acids. Top it with wasabi, which is anti-inflammatory and certainly clears the sinuses. Pair it with a small bowl of miso soup: studies from Cornell University show that people who begin a meal with broth-based soup get fuller faster and eat less overall.

Instead of: Meatloaf made with ground beef
Try: Meatloaf made with ground turkey, mushrooms, and pureed spinach

Benefits: Turkey has less saturated fat than beef (choose at least 93% lean); the veggies add moisture, flavor, vitamins, minerals, antioxidants, and fiber, and allow you to eat less meat. When you mix pureed baby spinach into the ground meat, you won’t even taste it.

Instead of: Pepperoni pizza on white-flour crust
Try: Veggie pizza on cauliflower crust

Benefits: A cauliflower crust replaces white processed carbs with veggies, upping fiber and other nutrients. Cruciferous veggies are also anti-cancer and healthy, protecting the branches of blood vessels against buildup of plaque. Save on saturated fat by skipping meat toppings (or try a vegetarian “pepperoni” – Just watch the sodium) and swapping out some of the mozzarella for smaller amounts of a more flavorful cheese like parmesan.
Instead of: Spaghetti with beef meatballs
Try: Zucchini noodles with turkey meatballs (plus oats) and add veggies

Benefits: Switching from beef to turkey saves saturated fat, as does displacing some of the meat with rolled oats (use them as you would bread crumbs). Make sure to use a low-sugar tomato sauce. “Zoodles” replace carb-heavy pasta with a fresh vegetables that has vitamins, minerals and filling fiber. If you can’t live without real pasta, mix in noodles made with whole wheat, black beans, quinoa, or almond flour, for more fiber carbs. Top with flavorful veggies of your choice – try bell peppers, broccoli, tomatoes, mushrooms.

Instead of: Fried chicken
Try: Chicken dredged in almond or chickpea flour and baked

Benefits: You’ll save mega calories and carbs and get some added nutrients and fiber. Baking instead of frying slashes calories and prevents the formation of certain cancer-causing compounds which may develop when cooking with oil at high temperatures.

Instead of: Pork stir-fry with store bought sauce
Try: Shrimp stir-fry with homemade sauce

Benefits: Lose the high-fructose corn syrup and sky-high sodium by making your own supper-easy stir-fry sauce: 1 Tbsp., rice vinegar, 1 Tbsp., orange juice, ½ tsp. grated ginger, and 1/8 tsp. crushed acids. Use frozen shrimp to make this dish super-fast and super cheap!

Instead of: Potato chips
Try: Roasted chickpeas or edamame

Benefits: Whole chickpeas or edamame, roasted in the oven with a bit of vegetable oil spray and sea salt, until they’re crunchy, make a delicious, savory snack that boasts more fiber and vitamins than any chip. Not in the mood to DIY? Try The Good Bean Sea Salt Flavor Crispy Crunchy Chickpeas

Instead Of: Crackers
Try: Popcorn

Benefits: Popcorn is a whole grain while crackers – even those made from whole wheat or ancient grains – are processed food. And because popcorn is filled with air and fiber, it’s very filling, delivering long-lasting crunchy satisfaction.
Instead of: Cheese and crackers
Try: Cheese and apple slices

Benefits: You lose the refined carbs of the crackers, which will just turn into sugar in your body, and gain instead a fiber- and vitamin-rich whole food with its own natural crunch and sweetness.

Instead of: Fruit-flavored gummies
Try: Dried fruit or low-sugar leather

Benefits: Trade in artificial colors and flavors and added sugars for real fruit or low-sugar fruit leather and you’ll ditch near two-thirds of the calories, two-thirds of carbs, and over half the sugar, and gain filling fiber and vitamins. (Keep the portions small-about the size of a golf ball.)

Instead of: Granola bar
Try: Trail mix made with nuts, seeds, unsweetened dried fruit, and/or dark chocolate chips

Benefits: Though homemade trail mix may have more fat than bar, it’s heart-healthy mono- and polyunsaturated fat from nuts, which also provide long-lasting energy from protein, something you won’t find in a bar that’s primarily oats or puffed rice. You’ll also lose the added sugars many granola bars are loaded with. Just stick to a handful of trail mix (about ¼ cup) because the calories add up.