

# Break a Sweat Before Breakfast For Maximum Fat Loss

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Bodybuilding is a unique sport in that it's judged by criteria that aren't concrete and objective measures of the contestants' individual talents, experience or abilities. Rather, bodybuilding is much akin to art because the final determination is based on a subjective visual impression formed by spectators and judges who critique based on relative displays of muscular development, symmetry, definition and presentation. When people scoff at your gallon jug of distilled water or a sink full of protein-caked shakers, they will be dumbfounded, much like the effect of Samuel L. Jackson's hit man character Jules paraphrasing Ezekiel 25:17 in the motion picture cult classic "Pulp Fiction";

## Designed to Consume Every Calorie

Success onstage is dependent on maximizing muscle and minimizing subcutaneous body fat. Though these two goals are paired together so often that public opinion assumes they naturally occur together, experienced bodybuilders know that emphasizing muscle growth typically forces one to accept fat gain, while focusing on fat loss usually involves sacrificing muscle size and strength. This is particularly evident in drug-free athletes, as drug protocols have been developed that allow enhanced individuals to "manually override" the metabolic fail-safes normally protecting against the marginal energy stores present in conditions of extremely low body fat, or limit muscle growth to reduce the amount of caloric energy necessary to maintain great masses of metabolically active tissue.

Our bodies don't realize we live in the 21st century. Physiologically, we're designed to consume every calorie in our reach and store it as fat in preparation for long, cold winters. Thanks to efficient building insulation and heating-cooling systems, we're not exposed to seasonal variations in weather, but consider that our genes still remember the last ice age, which ended in 1850.<sup>1</sup>

So, bodybuilders are forced to train and diet in a manner that continues to build and maintain muscle, but also drops body fat in a subtle, sneaky way. It's not a simple matter of combining intense cardio and weight training, as the body's response to muscle-building weight training often sabotages its response to fat-burning endurance exercise and vice versa. This is called the concurrent training effect and it's been observed down to the genetic level.<sup>2</sup>

Bodybuilders and powerlifters shouldn't include aerobic exercise as a major component of their training— at least for the purposes of maximizing muscle size and strength. Certainly, there are numerous health benefits to aerobic exercise, but those are outside the scope of this article. Yet, unless one is willing to follow a very strict diet, some form of cardio is necessary to increase fat loss. The question is: how does one maximize fat burning without resorting to muscle-wasting aerobic exercise?

## The Best Routine for Burning Fat

A very simple step can be taken that's effective and fits easily into the daily schedule. It's a trick used by top bodybuilders, celebrity trainers and successful dieters. Maximal fat loss can be achieved, without suffering the catabolic muscle loss associated with high-intensity, long-duration aerobic exercise. The only sacrifice required is getting up a little earlier and walking on a treadmill for 45 minutes.

A recent article published in the journal *Applied Physiology, Nutrition and Metabolism* describes how and why moderate, early morning cardio is the best routine to adopt for burning stored fat and getting cut without affecting resistance training.<sup>3</sup> Cells burn sugars, fatty acids and amino acids for energy, though the relative amount of energy derived from each nutrient group varies based on metabolic demand and hormonal conditions.<sup>4-6</sup> For instance, it's known that eating a low-fat diet reduces lipolysis and fat oxidation in skeletal muscle.<sup>7</sup> Amino acids (the building blocks of protein) don't provide a significant energy source in most circumstances, so for the sake of simplicity, this discussion will focus on the balance between sugars and fatty acids for ATP (energy) production.

Scientists can measure how much energy is being provided by fatty acids in comparison to sugars by analyzing the air breathed in and out. Sugar molecules contain oxygen, whereas fatty acids do not. Both sugars and fatty acids are oxidized when burned for energy, but since sugar already contains oxygen, it takes less oxygen from the air to completely oxidize sugars. By attaching a breathing mask on a subject, scientists can calculate the ratio of oxygen consumed compared to carbon dioxide that's exhaled, and estimate the relative amount of fatty acids being burned. This is called the respiratory exchange ratio (oxygen exchanged for carbon dioxide).<sup>8</sup>

Ideally, for the bodybuilder looking to drop body fat, the greatest percentage of calories possible from fat would be utilized during cardio, preserving muscle stores of sugar (glycogen) for resistance training when explosive energy is needed. In order to do this, it is vital that the exercise intensity be moderate, so that the lactate threshold is not exceeded. The lactate threshold is the point at which the level of intensity requires energy faster than can be produced using the more efficient, but slower, aerobic process. Certainly, running will burn more total fat calories than walking, but it will also eat into glycogen (stored sugar) and even break down muscle to release amino acids for energy. Thus, the ideal rate is a level of intensity high enough to maximize fatty acid oxidation, but preserve muscle mass and glycogen stores. This level is roughly equivalent to fast walking on a slight incline. One study concluded that it can be reliably predicted to occur at a pulse 25 beats per minute above your heart rate during a light warm-up.<sup>9</sup>

## The Benefits of Coffee

In addition to the type and level of intensity of exercise, timing is also important. For the average person who sleeps at night, early morning is a unique time relative to the body's metabolism and hormonal patterns. Typically, this is the only time of day when food hasn't been consumed for 8 hours or more, allowing the body to activate hormonal responses that break down and release stored fat for energy.<sup>10</sup> Also, receptors on the fat cell surface are primed to be stimulated by epinephrine (adrenaline).<sup>11,12</sup> The lipolytic or fat-releasing effect of adrenaline (released during exercise to increase muscular contraction force, heart rate, etc.) can be increased by consuming strong coffee (no creamer or sugar) or a 100- to 200-milligram tablet of caffeine.<sup>13</sup> It's interesting to note that in addition to the quick pick-me-up coffee provides with its 100 milligrams of caffeine per 8-ounce serving, numerous health benefits have also been associated with coffee consumption. Individuals who consume three or more cups of coffee per day have a lower risk of type 2 diabetes and are less likely to die young or suffer a heart attack or stroke.<sup>14-16</sup> Coffee also has some anti-bacterial properties, protecting against salmonella, making it a wise addition to an omelet breakfast at any questionable restaurant.<sup>17</sup>

Once a meal is consumed, insulin is released from the pancreas, essentially shutting down stored fat breakdown or release.<sup>18</sup> Insulin acts at the fat cells to turn off enzymes that break down stored fat and turns on other enzymes that promote fat storage. Obviously, bodybuilders want to increase energy demand when the body is primed to use stored fat.

Accepting the truth of that statement, moderate cardio before breakfast is best—how significant is the difference? Clearly, it would have to be fairly considerable to justify getting up an hour earlier and drudging through 45 minutes of treadmill work. This is the question answered by Drs. Bennard and Doucet of the University of Ottawa.<sup>3</sup> Note that the treadmill session was ended after 400 calories were expended (approximately 40-45 minutes) to avoid local muscle fatigue, meaning the legs should remain ready for a workout later the same day.

In a four-part experiment, healthy young men, who had been tested to determine how long and fast they would need to walk on a treadmill in order to expend 400 calories, performed four different exercise and meal routines on separate days in random order. The routines were: 1) exercise followed by a low glycemic meal; 2) exercise followed by a high glycemic meal; 3) a low glycemic meal followed by exercise; and 4) a high glycemic meal followed by exercise. All meals provided 400 calories; the low glycemic meal had a glycemic index of 48.3, the high glycemic meal had a glycemic index of 103.3. Glycemic index refers to how quickly sugars are released into the bloodstream, with a higher glycemic index representing an easily absorbed carbohydrate meal that quickly raises blood glucose (sugar) and insulin.<sup>19</sup>

The subjects' total and relative fat burned for energy were calculated. From the results, the authors discovered some interesting and relative findings for bodybuilders.

#### The Fatty Acid Connection

First and most importantly, more of the energy burned during moderate treadmill work in the fasted state comes from fat, compared to energy use after a meal. Eating before getting on the treadmill caused the dietary sugars from breakfast to get shuttled into the working muscle and reduced the need for fatty acids.<sup>20</sup> Choosing to eat before getting on the treadmill is the metabolic equivalent of saying you want to preserve your fat stores and reduce the amount of sugar that can replenish your muscle glycogen stores after a night's sleep. While the total difference for each session isn't an astounding amount (roughly 5 grams of fat), over time, this difference can easily result in the loss of an additional pound of stored body fat in three months with no additional work!!! As tedious as cardio is and the absolute need to cut fat without affecting the ability to maintain muscle fullness and strength is, it makes little sense for bodybuilders not to follow this simple plan if they are serious about their goals.

Another interesting point learned in the study was that the glycemic index of the meal made no appreciable difference. It was assumed that the high glycemic meal would reduce fat calorie use by a greater degree compared to the low glycemic meal, but the effect was the same for both, even though more insulin was released after the high glycemic meal.<sup>3,20</sup> This suggests that once a threshold amount of insulin is released, fatty acid release is effectively shut down; making it important to emphasize that no creamer or sugar should be added to coffee if it's consumed prior to the workout.

Granted, it's easy to fall into the trap of hitting the snooze button or staying up all night playing the Xbox 360, but when you consider the benefits of an early morning jaunt on the treadmill, combined with the need for a good night's sleep to avoid weight gain (a clear association has been established between not getting enough sleep and weight gain/obesity), it makes for a strong argument for hitting the sack before any television show with the word "late" in its title comes on the air.<sup>21</sup>

Our parents used to say, "Early to bed, early to rise, makes a man healthy, wealthy and wise." Perhaps for the Iron generation it should be, "Early to bed, early to rise, brings out the abs without losing size."

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